Preview - Information

Thank you for your interest in this bundle. Within this preview, you will see:

- ✓ A selection of worksheets included in each workbook. Keep scrolling to find the next resource included in the bundle.

When you make a purchase, you will receive a folder with the .pdf workbook files inside.

Thank you for shopping with us. Please let us know if you have any questions at:

rob@supersimplesheets.com

Grade 7

Strand: Number

	Curriculum Expectations	Pages
N7.1	Demonstrate an understanding of division through the development and application of divisibility strategies for 2, 3, 4, 5, 6, 8, 9, and 10, and through an analysis of division involving zero.	5-14
N7.2	Expand and demonstrate understanding of the addition, subtraction, multiplication, and division of decimals to greater numbers of decimal places, and the order of operations.	15-91
N7.3		129, -148, -174
N7.4	Expand and demonstrate an understanding of percent to include fractional percentages between 1% and 100%.	-142, 149-166
N7.5	Develop and demonstrate an understanding of adding and subtracting positive fractions and mixed numbers, with like and unlike denominators, concretely, pictorially, and symbolically (limited to positive sums and differences).	175-195
N7.6	Demonstrate an understanding of addition and subtraction of integers, concretely, pictorially, and symbolically.	200-216
TQ	Tests and quizzes	92-95, 196-199, 217-218

Name: _____ 5

Curriculum Connection
NF.1

Divisibility Rules

We can determine whether one whole number is divisible by another without doing division. We can use the following divisibility rules:

- A number is divisible by **2** if the last digit is even (0, 2, 4, 6, or 8)
- A number is divisible by **3** if the sum of the digits is divisible by 3
- A number is divisible by **4** if the last two digits form a number divisible by 4
- A number is divisible by **5** if the last digit is 0 or 5
- A num[illegible] divisible by **6** if the number is divisible by both 2 and 3
- A num[illegible]visible by **8** if the number formed by its last three digits is divisible by 8.
- A nu[illegible]e by **9** if the sum of the digits is divisible by 9
- A[illegible] **10** if the last digit is a 0

Instruction [illegible]be[illegible]he left, place a checkmark under the numbers it is [illegible] by.

Number	2	[illegible]	[illegible]4	[illegible]	6	8	9	10
1) 65								
2) 20								
3) 105								
4) 81								
5) 120								
6) 548								
7) 423								
8) 657								

Name: _____ 6

Curriculum Connection
NY.1

Divisibility Rules – 2 and 3

We can determine whether one whole number is divisible by another without doing division. We can use the following divisibility rules:

- A number is divisible by **2** if the last digit is even (0, 2, 4, 6, or 8)
- A number is divisible by **3** if the sum of the digits is divisible by 3

Part 1 Is the number divisible by 2?

1) _____ 2) 953 _____

3) 2 682 _____ 4) 8 694 _____

Part 2 [illegible] by 3?

1) 268 _____ _____

3) 1 458 _____ 4) [illegible]428 _____

Part 3 Which numbers are divisible by 2? Circl[illegible]

41	58	162	247	358	[illegible]	583
685	714	805	901	1 025	1 714	2 058

Part 4 Which numbers are divisible by 3? Circle them.

73	58	84	105	215	324	515
645	683	729	806	1358	2355	5484

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Is the number divisible by 2 or 3?

	Number	Divisible by 2?	Divisible by 3?
1)	5 002		
2)	3 789		
3)	8 136		
4)	10 046		
5)	7 815		
6)	18 029		

Name: _____

Is the number divisible by 2 or 3?

	Number	Divisible by 2?	Divisible by 3?
1)	5 002		
2)	3 789		
3)	8 136		
4)	10 046		
5)	7 815		
6)	18 029		

Name: _____

Is the number divisible by 2 or 3?

	Number	Divisible by 2?	Divisible by 3?
1)	5 002		
2)	3 789		
3)	8 136		
4)	10 046		
5)	7 815		
6)	18 029		

Name: _____

Is the number divisible by 2 or 3?

	Number	Divisible by 2?	Divisible by 3?
1)	5 002		
2)	3 789		
3)	8 136		
4)	10 046		
5)	7 815		
6)	18 029		

Name: _____ 8

Curriculum Connection
NY.1

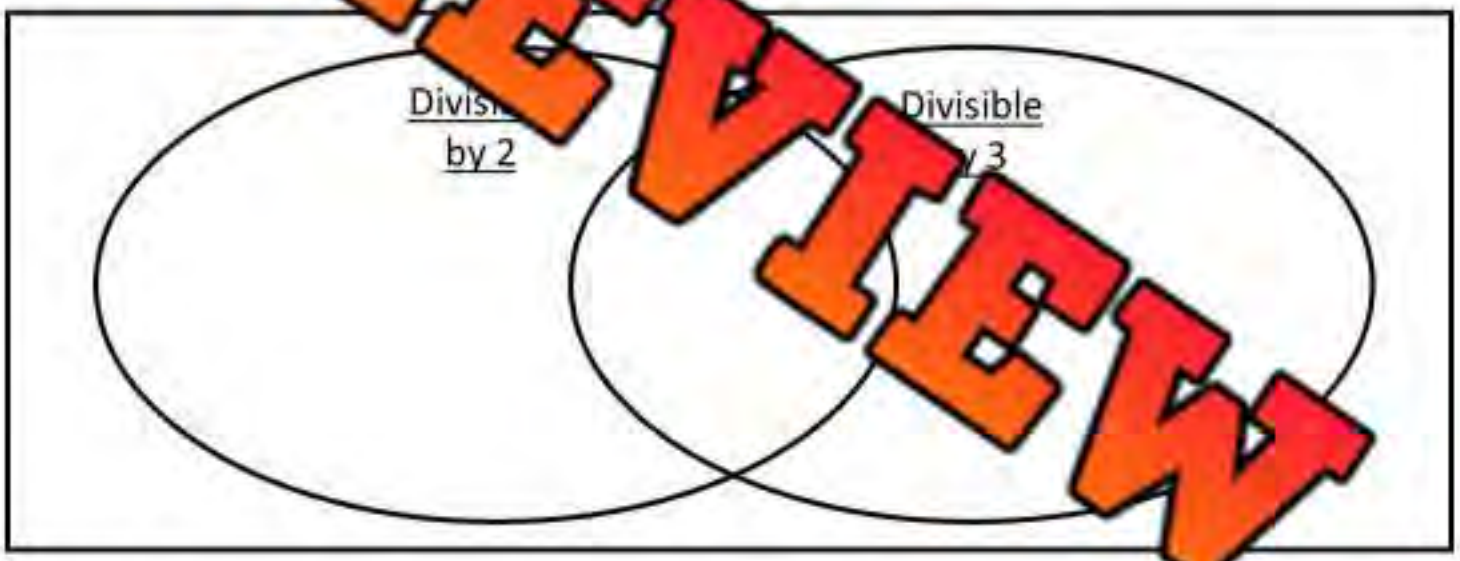
Divisibility Rules – 2 and 3

We can determine whether one whole number is divisible by another without doing division. We can use the following divisibility rules:

- A number is divisible by **2** if the last digit is even (0, 2, 4, 6, or 8)
- A number is divisible by **3** if the sum of the digits is divisible by 3

Part 1 Sort the numbers below using the Venn Diagram.

10		12	18	14	159	2628	153
122	21		40	42	3042	116	10



Part 2 Sort the numbers into the correct categories in the Carroll diagram.

	Less Than 100	More Than 100
Divisible by 2		
Divisible by 3		

Name: _____ 12

Curriculum Connection
NY.1

Divisibility Rules – 6, 9, and 10

We can determine whether one whole number is divisible by another without doing division. We can use the following divisibility rules:

- A number is divisible by **6** if the number is divisible by both 2 and 3
- A number is divisible by **9** if the sum of the digits is divisible by 9
- A number is divisible by **10** if the last digit is a 0

Part 1 Is the number divisible by 6?

1) _____ 2) 741 _____

3) 2472 _____ 4) 4284 _____

Part 2 Is the number divisible by 9?

1) 208 _____ 4) _____

3) 2331 _____

Part 3 Is the number divisible by 10?

1) 230 _____ 2) 1685 _____

3) 3890 _____ 4) 6101 _____

Part 4 For each number on the left, place a check mark under the numbers it is divisible by:

Number	6	9	10
1) 204			
2) 450			
3) 624			
4) 1250			

Number	6	9	10
5) 2460			
6) 4734			
7) 7530			
8) 9410			

Name: _____ 13

Curriculum Connection
NY 1

Divisibility Rules – Challenge

Part 1 The number is divisible by...

9 Is divisible by... 2 3 4 5 6 7 8 9 10	27 Is divisible by... 2 3 4 5 6 7 8 9 10	18 Is divisible by... 2 3 4 5 6 7 8 9 10	36 Is divisible by... 2 3 4 5 6 7 8 9 10
[illegible] Is divisible by... 2 3 4 5 6 7 [illegible]	135 Is divisible by... [illegible] 9 10	286 Is divisible by... 2 3 4 5 6 7 8 9 10	448 Is divisible by... 2 3 4 5 6 7 8 9 10
605 Is divisible by... 2 3 4 5 6 7 8 9 10	[illegible] Is divisible by... 2 3 4 5 [illegible]	2854 Is divisible by... [illegible] 7 8 9 10	5971 Is divisible by... 2 3 4 5 6 7 8 9 10
15912 Is divisible by... 2 3 4 5 6 7 8 9 10	22785 Is divisible by... 2 3 4 5 6 7 8 9 10	[illegible] [illegible] 2 3 [illegible] 10	79568 [illegible] divisible by... [illegible] 6 7 8 9 10

Part 2 Answer the word problems below.

1)	Why can a number not be divided by 0?
2)	Ben says all odd numbers are divisible by 3. Is he correct? Explain.
3)	Sarah has 193 treats to hand out to her party guests. She wants to put 9 treats in each bag. Will she have any treats left over? Explain.

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

The number is divisible by...

5288	7917
Is divisible by... 2 3 4 5 6 7 8 9 10	Is divisible by... 2 3 4 5 6 7 8 9 10
8867	148362
Is divisible by... 2 3 4 5 6 7 8 9 10	Is divisible by... 2 3 4 5 6 7 8 9 10

Lisa has 1234 candies and wants to make small bags containing 9 candies each. Will there be any candies left over? How do you know?

Name: _____

The number is divisible by...

5288	7917
Is divisible by... 2 3 4 5 6 7 8 9 10	Is divisible by... 2 3 4 5 6 7 8 9 10
8867	148362
Is divisible by... 2 3 4 5 6 7 8 9 10	Is divisible by... 2 3 4 5 6 7 8 9 10

Lisa has 1234 candies and wants to make small bags containing 9 candies each. Will there be any candies left over? How do you know?

Name: _____

The number is divisible by...

5288	7917
Is divisible by... 2 3 4 5 6 7 8 9 10	Is divisible by... 2 3 4 5 6 7 8 9 10
8867	148362
Is divisible by... 2 3 4 5 6 7 8 9 10	Is divisible by... 2 3 4 5 6 7 8 9 10

Lisa has 1234 candies and wants to make small bags containing 9 candies each. Will there be any candies left over? How do you know?

Name: _____ 15

Curriculum Connection
N7.2

Mental Math – Adding Decimals – Place Value

Directions:
1. Add the decimals
2. Add the whole numbers
3. Add the two answers together

5.54 + 3.72
0.04 + 0.02 = 0.06
0.5 + 0.7 = 1.20
5.00 + 3.00 = 8.00
0.06 + 1.20 + 8 = 9.26

34 + 1.45 0.05 = 0.09 0.70 2.00 0.09 =	3.67 + 4.22
5.25 + 4.6	16.46 + 5.23
25.46 + 12.32	26.37
28.56 + 13.26	36.34 + 23.26

Name: _____ 16

Curriculum Connection
N7.2

Mental Math – Adding Decimals – Adding Chunks

Directions:

1. Keep the bigger number the same
2. Add the other whole number to the bigger number
3. Add the decimal your answer

5.53 + 3.74
5.53 + 3 = 8.53
8.53 + 0.7 = 9.23
9.23 + 0.04 = 9.27

2.32 + 2.45	1.57 + 4.42
5.64 + 5.3	14.53 + 6.34
18.43 + 14.24	29.34
34.56 + 12.36	42.53 + 35.42

Name: _____ 18

Curriculum Connection
N7.2

Adding Decimals – Thousandths – No Regrouping

Instruction Use the standard algorithm to solve the addition problems below.

1) 53.131 + 32.427	2) 44.553 + 21.225	3) 31.452 + 12.427	4) 56.132 + 31.313
5) 42.8[illegible] + 24.12[illegible]	6) [illegible]	7) 72.323 + 26.556	8) 31.255 + 41.103
9) 60.684 + 22.302	10) 44.297 + 32.602	11) [illegible]	12) 24.368 + 24.431
13) 32.384 + 15.314	14) 46.846 + 41.012	15) 38.348 + 41.641	16) [illegible].637 + 34.352
17) 63.246 + 4.413	18) 14.54 + 24.32	19) 63.672 + 36.124	20) 42.365 + 53.432

Name: _____ 20

Curriculum Connection
N7.2

Adding Decimals - Regrouping

Part 1 Use the standard algorithm to solve the addition problems below.

1) 63.722 + 25.[illegible]43	2) 65.458 + 23.323	3) 38.345 + 26.537	4) 35.256 + 41.632
5) 26.[illegible] + 17.33	6) [illegible]28 + 3[illegible]	7) 28.265 + 17.632	8) 66.574 + 29.213
9) 192.673 + 325.235	10) 374.214 + 53.523	11) 2[illegible] + [illegible]3	12) 652.514 + 95.337

Part 2 Answer the word problems below.

1) Neill just ran a 200m race. He ran the first 100m in 12.326 seconds and the second 100m in 13.63 seconds. How long did it take him to finish the race?

2) Erica's pet snake was 17.425cm long when she got it. The snake grew 4.39cm in the last year. How long is the snake now?

Name: _____ 22

Curriculum Connection
N7.2

Mental Math – Subtracting Decimals – Counting Up

Directions:
1. Start with the smaller number
2. Count up from the smaller number to the bigger number to find the difference
3. The difference is the answer

7.63 - 2.41

Answe = 0.5 .62 = 5.22

4.62 - 3.31

8.56 -

9.67 - 7.15

13.64 - 11.84

27.37 - 22.83

37.62 - 32.91

Name: _____ 23

Curriculum Connection
N7.2

Mental Math – Subtracting Decimals – Subtracting Chunks

Directions:

1. Keep the bigger number the same
2. Subtract the other whole number from the bigger number
3. Subtract the decimal from your answer

6.36 - 3.51
6.36 - 3 = 3.36
3.36 - 0.50 = 2.86
2.86 – 0.01 = 2.85

4.68 – 2.42
– 2 = 2.68
= 2.28
2.26

4.72 - 3.15

9.25 –

16.57 - 11.76

21.55 - 6.42

53.68 – 12.72

77.35 - 45.75

Name: _____ 25

Curriculum Connection
N7.2

Subtracting Decimals – Thousandths – No Borrowing

Instruction Use the standard algorithm to solve the subtraction problems below.

1) 65.755 − 32.[illegible]23	2) 45.362 − 42.212	3) 74.968 − 53.733	4) 45.479 − 24.331
5) 78.7[illegible] − 41.24[illegible]	6) [illegible]	7) 76.856 − 24.322	8) 91.578 − 81.224
9) 782.663 − 642.150	10) 962.663 − 821.350	11) [illegible]	12) 550.793 − 30.451
13) 337.359 − 214.336	14) 548.86 − 436.03	15) 557.89 − 442.71	16) [illegible]4.64 − 454.32
17) 593.49 − 452.47	18) 845.75 − 523.54	19) 357.69 − 132.30	20) 546.34 − 226.20

Name: _____ 27

Curriculum Connection
N7.2

Subtracting Decimals - Borrowing

Part 1 Use the standard algorithm to solve the subtraction problems below.

1) 63.743 - 25.[illegible]61	2) 75.475 - 53.743	3) 34.463 - 22.632	4) 82.542 - 43.535
5) 86.[illegible] - 37.33[illegible]	6) [illegible]46 - 5[illegible]	7) 38.254 - 27.631	8) 76.548 - 59.284
9) 652.644 - 345.373	10) 557.2[illegible]6 - 353.534	11) 6[illegible]. [illegible]3	12) 572.589 [illegible]65.323

Part 2 Answer the word problems below.

1) Wyatt weighed a Blue Jay feather, and it was 2.035 grams. He also weighed a feather from an owl, and it weighed 4.39 grams. How much more did the owl's feather weigh?

2) A 5-dollar bill weighs 1.0243 grams. A Toonie weighs 6.929 grams. How much more does a Toonie weigh?

Name: _____ 32

Curriculum Connection
NF.2

Multiplication - 2 x 2 Digits

Part 1 Use the standard algorithm to solve the multiplication problems below.

1)			
		6	3
	x		9

2)			
		8	8
	x	5	4

3)			
		4	6
	x	8	3

4)			
		4	8
	x	3	7

5)			
		8	5
	x	7	8

	x	6	

7)			
		8	3
			9

8)			
		3	9
	x	6	3

Part 2 Solve the word problems below.

1) Joseph is planning a group trip to a sporting event. He has 31 people going to the event and each person is paying $64. How much money is Joseph collecting from everyone?

2) Aria hands out a lot of candy on Halloween. She decided to buy 23 boxes of candy. Each box has 95 candies in it. How many candies did she buy in total?

Name: _____ 33

Curriculum Connection
NY 2

Multiplication – 2 x 2 Digits

Part 1 Use the standard algorithm to solve the multiplication problems below.

1) 67 x 5	2) 55 x 33	3) 85 x 62	4) 24 x 15	5) 78 x 44
6) 84 x 54	7) 96 x 6	8) 76 x 95	9) 38 x 22	10) 78 x 25
11) 48 x 67	12) 52 x 41	13) 64 x 3	14) 2	15) 68 x 53

Part 2 Solve the word problems below.

1) Harper played 42 games of basketball last season. She scored 17 points per game. How many points did she score in total for the season?

2) Brianna blinks 18 times a minute. How many times does she blink in one hour?

Name: _____ 34

Curriculum Connection
N7.2

Multiplication – 2 x 2 Digits

Step 1: Setup up the Area Model

32 x 17= _____

	30	2
10		
7		

Step 2: Multiply

32 x 17= _____

	30	2
10	30 x 10 300	10 x 2 20
7	30 x 7 210	7 x 2 14

Step 3: Add

32 x 17= 544

	30	2
10	300	20
7	210	14

300 + 210 + 20 + 14 = 544

Instru ea model to solve the multiplication problems below.

1) 56 x

2) 37 x 53 = _____

3) 73 x 41 = _____

36 =

5) 78 x 56 = _____

6) 84 x 64 = _____

Name: _____ 36

Curriculum Connection
NY.2

Front-End Estimation – Multiplication Using Decimals

Instruction Use front-end estimation to round to the nearest whole number.

1) Question	5.31 x 5 = ?
Front-End Estimation Version	5 x 5 = 25

Question	8.82 x 7 = ?
Front-End Estimation Version	_____ x _____ = _____

	6.31 x 4 = ?
Front-End Estimation Version	_____ x _____ = _____

4) Question	9.87 x 8 = ?
Front-End Estimation Version	_____ = _____

5) Question	3.83 x
Front-End Estimation Version	_____

6) Question	19.48 x 4
Front-End Estimation Version	_____ x _____ = _____

7) Question	22.13 x 9 = ?
Front-End Estimation Version	_____ x _____ = _____

8) Question	29.94 x 6 = ?
Front-End Estimation Version	_____ x _____ = _____

Name: _____ 37

Curriculum Connection
N7.2

Front-End Estimation – Multiple Choice

Instruction Which estimate is the best? Use a front-end estimate to make your choice.

1) 9.34 x 6 a) 48 b) 54 c) 66 d) 50	2) 7.12 x 4 a) 32 b) 21 c) 28 d) 35
3) 5.2[illegible] a) 48 b) 32 c) 52 d) 40	4) 3.45 x 7 a) 21 b) 28 c) [illegible]5
5) 8.36 x 5 a) 48 b) 40 c) 35 d) 32	[illegible] 12.[illegible] a) 5[illegible] b[illegible] c) 66 d) 72
7) 15.37 x 4 a) 45 b) 30 c) 75 d) 60	8) 25.04 x 4 a) 90 b) 125 c) 100 d) 110
9) 20.44 x 6 a) 100 b) 120 c) 80 d) 110	10) 30.51 x 3 a) 90 b) 60 c) 75 d) 110

Name: _____ 38

Curriculum Connection
NF.2

Front-End Estimation – Becky's Shop

Becky runs a bakery where she sells bread, muffins, and cookies. She always uses front-end estimation when charging her customers. They appreciate it because the final price is always underestimated.

Menu	Cost
Bread	$3.19
Muffins	$2.25
Cookies	$1.49

Instruction Use front-end estimation to calculate how much customers owe Becky.

1) On[illegible] sed 3 loaves of bread and 2 muffins. How much did Becky cha[illegible]

2) A customer ordered [illegible] and [illegible] of bread. How much do they owe Becky?

3) A customer ordered 5 of each item on the [illegible] owe Becky?

4) A customer used a $20 bill to buy 4 loaves of bread and 3 cookies. How much change does Becky owe them?

5) A customer ordered 4 muffins and 4 cookies. The customer right after said they wanted the same thing. How much did Becky earn on the 2 sales?

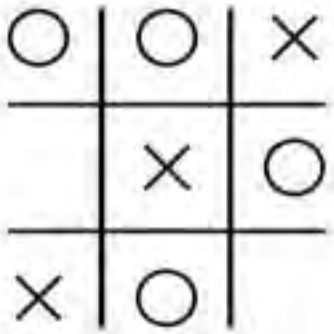
Name: _____ 41

Curriculum Connection
NF.2

Math Tic-Tac-Toe: 1-Digit Multiplier

Objective What are we learning about?

To help students practise solving decimal multiplication problems with a 1-digit multiplier in a fun and interactive way through a Tic-Tac-Toe game.



Material What you will need for the activity.

- Whiteboard or paper
- Markers – other different markers
- Math Tic-Tac-Toe grid template (can be drawn on the whiteboard or printed on paper)

Instructions How you will complete the activity.

1. Find a partner to play the game with.
2. The goal is to solve decimal multiplication problems to place your marker (X or O).
3. One player will be "X" and the other will be "O".
4. Take turns choosing a square and solving the problem in that square.
5. Write down the solution below the equation and place your marker (X or O) in the square.
6. If a player chooses a square and solves the equation incorrectly, they do not get to place their marker in that square. The other player gets a chance to solve it correctly and place their marker.
7. The first player to get three markers in a row (horizontally, vertically, and diagonally) wins the game. Continue playing with different tic-tac-toe grids on the sheet.

Name: _____ 42

Curriculum Connection
NF.2

Tic-Tac-Toe Use the following tic-tac-toe grids for the game.

5. 4 3 x 4	7. 6 3 x 7	7. 9 6 x 6
5. 7 2 x 2	3. 2 5 x 4	9. 1 8 x 5
6. 4 x	2. 6 7 x	7. 5 5 x 3

4. 2 2 x 6	5. 3 4 x 7	8. 1 6 x 4
7. 2 5 x 5	6. 4 3 x 3	3. 7 6 x 8
9. 1 8 x 2	2. 4 5 x 9	5. 6 7 x 4

7. 2 2 x 6	5 x	
5. 7 6 x 2	9. 1 7 x 5	4. 3 x
3. 2 7 x 9	6. 4 5 x 4	2. 6 8 x 7

5. 2 2 7	8. 1 8 x 6	7. 3 3 x 4
6 x 3	4. 3 4 9	5. 7 6 x 2
x		2. 6 7 x 4

6. 3 8 x 9	7. 2 2 x 3	8. 4 5 x 5
4. 3 4 x 2	5. 7 6 x 8	9. 1 2 x 7
3. 2 7 x 4	6. 4 5 x 6	2. 6 8 x 5

7. 2 2 x 5	8. 1 x 3	6. 3 3 x 7
5. 4 5 x 2	4. 3 4 x 8	9. 7 6 x 6
3. 1 8 x 9	6. 4 5 x 4	2. 6 7 x 7

Name: _____ 44

Curriculum Connection
N7.2

Multiplication – 1-Digit Multiplier – Apple Trees

Instruction Solve the word problems below.

Ross owns a small apple tree farm. He is trying to figure out how many apples he will grow this summer.

a) On average, one apple tree has 42 branches. Each branch grows 7 apples on average. How many apples grow on one apple tree?

b) Ross has [illegible] trees on [illegible] small farm. How many apples will he grow this summer?

c) Ross plans to charge $2.64 per apple. If he sells [illegible] in a day, how much will he earn per day?

d) How much will Ross earn per week if he continues to sell 8 apples per day?

e) Ross expects to grow apples for 9 weeks. How much will he earn after the 9 weeks if he sells 8 apples per day?

Name: _____ 46

Curriculum Connection
N7.2

Multiplication – 2-Digit Multipliers - Earnings

Instruction Solve the word problems below.

Kevin is a high-school student who just started a new job. He is excited to start earning money, so he is calculating how much he will make. A schedule of his 6 weeks of work is listed below.

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
	1	13	15	21	22	12

1) For his first week of work, Kevin will earn only $9.25 per hour because he is just being trained. How much will he earn in week 1?

2) For his second week of work, Kevin begins earning $14.75 per hour. How much will he earn in week 2?

3) How much will Kevin earn in week 3 if he continues earning?

4) If Kevin continues earning $14.75 for weeks 2-6, how much money will he make in his first 6 weeks?

Name: _____ 47

Curriculum Connection
N7.2

Multiplying Decimals by Benchmark Numbers

Rules
1) Any decimal number multiplied by one is that decimal number
2) One tenth x one tenth results in a hundredth product
3) One tenth x one hundredth results in a thousandths products
4) One hundredth x one hundredth results in a ten thousandths product

Instructions: Fill in the table below:

	Number	x 1	x 0.1	x 0.01	x 0.001
1)			0.01	0.001	0.0001
2)					
3)	0.3				
4)	0.2				
5)	0.8				
6)	0.9				
7)	2.4	2.4	0.24	0.024	0.0024
8)	8.6				
9)	15.5				
10)	22.8				
11)	0.01	0.01	0.001	0.0001	0.00001
12)	0.35				
13)	0.95				
14)	1.54				
15)	6.89				
16)	12.85				

Name: _____ 48

Curriculum Connection
N7.2

Multiplying Decimals Numbers

Step 1: Setup up the Area Model

23.5 x 0.3= _____

	23	0.5
0.3		

Step 2: Multiply

23.5 x 0.3= _____

	23	0.5
0.3	23 x 0.3 = 6.9	23 x 0.5 = 0.15

Step 3: Add

23.5 x 0.3= 7.05

	23	0.5
0.3	23 x 0.3 = 6.9	23 x 0.5 = 0.15

6.90 + 0.15 = 7.05

Instru… …ea model to solve the multiplication problems below.

1) …0.5 =

2) 31.1 x 0.2 =

3) 36.5 x 0.4 =

4) 44.3 x …

5) 18.8 x 0.5 =

6) 52.6 x 0.6 =

Name: _____ 52

Curriculum Connection
N7.2

Multiplying Decimals Numbers

Part 1 Use the standard algorithm to solve the multiplication problems below.

1) 5 . x	2) 7 . 3 7 5 0	3) 1 2 . 1 7 x 0 . 3 0	4) 2 5 . 4 1 x 0 . 6 0	5) 3 2 . 3 7 x 0 . 4 0
6) 4 3 . 5 3 x 0 . 5 0	7) 3 6 . 4 2 x 0 . 8 0	8) 5 6 x 0 .	9) 8 . 4 8 x 0	10) 7 5 . 2 3 x 0 . 7 0

Part 2 Answer the word problem below.

Ryan bikes for 8.5 hours at a speed of 15.2km per hour. How far did Ryan bike?

Name: _____ 54

Curriculum Connection
N7.2

Division – Area Model

Instruction Use the area model to answer the division questions below.

1) 243 ÷ 6 = 40r3 (16+4)

6	33 → 200	7 → 40	0 → 3
			r3

2) 294 ÷ 4

4	200	90	4

3) 615 ÷ 2

2	600	10	5

4) 473 ÷ 6

6	400	70	3

5) 513 ÷ 6

6	500	10	3

6) 856 ÷ 5

5	800	50	6

Name: _____ 59

Curriculum Connection
NY 2

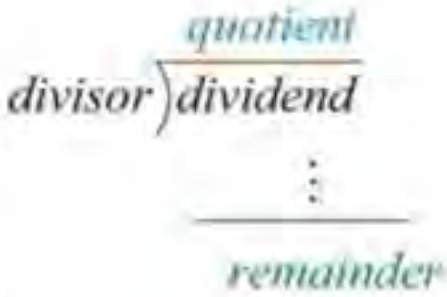
Task Cards: Division – 3 by 1 – With Remainders

Objective What are we learning about?

Students will practice dividing 3-digit numbers by 1-digit numbers and understand the concept of remainders.

Materials What you will need for the activity.

- 24 t
- [illegible] for answers
- Pen



Instructions [illegible] the activity

1. Begin by explaining the [illegible] importance of understanding how to handle remainders in division pr
2. Organize the students into pairs and provide each pair their sets of task cards.
3. Give each pair an answer recording sheet to write down their responses.
4. Encourage teamwork by having students collaborate and discuss their problem-solving strategies and approaches to finding solutions.
5. Allow students to select any task card to begin with, emphasizing that they can complete the cards in any order they prefer.
6. Instruct students to record the letter of their chosen answer (A, B, or C) on their answer sheet beside the task card's number.
7. Consider using a timer to create a dynamic challenge, adjusting the duration to fit the lesson's objectives and complexity.
8. After the activity, review the answers collectively, discussing any challenging patterns and strategies used to solve them.
9. Have students reflect on the activity, sharing the methods they applied and obstacles they overcame.

Name: ______________________ 60

Curriculum Connection
N7.2

Task Cards | Cut out the task cards below.

Card 1:

$7\overline{)831}$

a) 118 r6
b) 117 r5
c) 118 r5

Card 2: [illegible]

Jacob spent $[illegible] [illegible]ert[illegible]ts. How much did ea[illegible] [illegible]ost o[illegible]? Round your answ[illegible] [illegible]nd th[illegible]

a) 82
b) 84
c) 86

Card 3:

$7\overline{)489}$

a) 69 r5
b) 70 r0
c) 69 r6

Card 4:
A farmer has 932 apples and packs them into bags of 9 apples each. How many bags will there be? How many apples will be left over?

a) 103 r3
b) 102 r4
c) 103 r5

Card 5:

$4\overline{)574}$

a) 143 r3
b) 143 r2
c) 144 r1

Card 6:
Lily has $624 to spend on 7 books. How much can she spend on each book on average? Round your answer to find the best choice.

a) 88
b) 89
c) 90

Card [illegible]7:
Em[illegible] coll[illegible] [illegible]lls and wants to divide t[illegible] [illegible]bags w[illegible] [illegible]ashells each. How man[illegible] [illegible]ll s[illegible]? H[illegible]w many seash[illegible] will [illegible]

a) [illegible] r6
b) 93 r2
c) 91 r5

Card 8:

$5\overline{)823}$

a) 164 r3
b) 164 r2
c) 165 r3

Name: _____ 61

Curriculum Connection
NY 2

Task Cards | Cut out the task cards below.

Card 9:

$3\overline{)904}$

a) 301 r1
b) 300 r2
c) 302 r0

Card 13:

Olivia has 813 marbles and wants to put them into bags of 9 marbles each. How many bags will she have? How many marbles will be left over?

a) 90 r2
b) 90 r3
c) 90 r1

Card 10:

A sch[illegible] has 5[illegible] and wants to divide them e[illegible] buse[illegible] many kids will be [illegible]bus? H[illegible] students will be [illegible]wit[illegible]

a) 58 r3
b) 60 r2
c) 58 r2

Card 14:

Mark has $582 to buy 7 video games. How much can he spend on each game on average? Round your answer to find the best choice.

a) 85
b) 84
c) 83

Card 11:

$7\overline{)678}$

a) 96 r6
b) 97 r5
c) 95 r7

Card 15:

$9\overline{)}$[illegible]

a) [illegible]
b) 237 r[illegible]
c) 238 r3

Card 12:

$9\overline{)715}$

a) 79 r4
b) 79 r5
c) 80 r3

Card 16:

A bookstore has 723 books and wants to arrange them in shelves with 5 books each. How many books will be on each shelf? How many books will be left over?

a) 143 r2
b) 144 r3
c) 144 r2

Name: _____ 62

Curriculum Connection
NY.2

Task Cards | Cut out the task cards below.

Card 17:

$5\overline{)827}$

a) 165 r2
b) 164 r1
c) 165 r3

Card 21:

$4\overline{)476}$

a) 119 r0
b) 119 r1
c) 120 r2

Emily has $7[illegible]ys [illegible] much can she spe[illegible] toy o[illegible]? Round your answe[illegible]nd th[illegible]

a) 91
b) 92
c) 93

Card 22:

A box contains 867 marbles. If each packet can hold 8 marbles, how many packets will there be? How many marbles will be left?

a) 108 r3
b) 108 r4
c) 109 r2

Card 19:

Jake has 734 candies and wants to distribute them evenly among 6 friends. How many candies will each friend get? How many candies will be left over?

a) 122 r3
b) 122 r4
c) 122 r2

Card 23:

$9[illegible]$

a) [illegible]
b) 101 r[illegible]
c) 100 r3

Card 20:

$7\overline{)883}$

a) 126 r1
b) 126 r0
c) 127 r2

Card 24:

Lily has 784 beads and wants to divide them into boxes of 7 beads each. How many boxes does she need? How many beads will be left over?

a) 111 r5
b) 111 r6
c) 112 r0

Name: _____ 63

Curriculum Connection
N7.2

Task Cards: Division

Answers | Record your answers below:

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	

Name: _____ 66

Curriculum Connection
N7.2

Dividing Decimals – Removing Decimal

When dividing a decimal, we can remove the decimal and treat it as a whole number. We can do this as long as we add the decimal at the end.

Steps:

1) Remove the decimal
2) Calculate how many times the smaller number (divisor) fits into the dividend
3) Use front-end estimation to determine an estimated answer and add the decimal back to your final answer

Instructions: Follow the steps above to calculate the answer.

1) Question	3.30 ÷ 2 = ?
Step 1 and 2	330 ÷ 2 = 165
Step 3	3.00 ÷ 2 = 1.5 so therefore, put the decimal between the 1 and 6
Answer	1.65

2) Question	?
Step 1 and 2	
Step 3	
Answer	

3) Question	1.32 ÷ 4 =
Step 1 and 2	
Step 3	
Answer	

4) Question	3.45 ÷ 3 = ?
Step 1 and 2	
Step 3	
Answer	

Name: _____ 67

Curriculum Connection
N7.2

Dividing Decimals – Removing Decimal

Instruction	Follow the steps above to calculate the answer.

1) Question	5.38 ÷ 2 = ?
Step 1 and 2	
Step 3	
Answer	

2) Question	6.75 ÷ 5 = ?
Step 1 and 2	
Step 3	
Answer	

3) Question	80 ÷ 4 = ?
Step 1 and 2	
Step 3	
Answer	

4) Question	3.12 ÷ 8 =
Step 1 and 2	
Step 3	
Answer	

5) Question	8.35 ÷ 5 = ?
Step 1 and 2	
Step 3	
Answer	

Name: _____ 68

Curriculum Connection
N7.2

Division – Decimal Numbers

Part 1 How many times can you divide the bigger number by the smaller number?

1) 2)	2) 3) 9.63	3) 2) 8.48	4) 4) 8.60
5) 4) 4.88	6) 8)	7)) 6.39	8) 6) 6.48

Part 2 Use an area model to solve the word p… belo…

1. An ice cream tub has 2.07kg of ice cream inside. There are … cream.

a) How many kg of ice cream are there per serving?

b) How many grams are in each serving?

2) A bag of 8 candies weighs 184g. How much does each candy weigh?

Name: _____ 69

Curriculum Connection
N7.2

Division – Decimal Word Problems

Instruction Solve the word problems below.

1) Tim bought 6 of the same candies for $6.48. How much did each candy cost?

2) Shannon [illegible] 8 [illegible] tickets for $4.24. How much was each ticket?

3) Leah bought 5 coffees for her friends a[illegible] cost her $10.45. How much money did each coffee cos[illegible]

4) Sam paid $9.36 for 3 ice cream treats. How much did each treat cost?

Name: _____ 73

Curriculum Connection
NF.2

Dividing Decimals – Scaling by 10

We can make a division statement easier by scaling it to make both numbers whole numbers.

Example:
70.5 ÷ 0.5 can be scaled by 10 (multiplied by 10), so that the question is 705 ÷ 5 = 141, therefore, 70.5 ÷ 0.5 = 141

***When scale numbers in a number sentence, we scale them by the same number for sentences to be equivalent.

Instr the division sentence by 10 and then solve.

1) Original	10.5 ÷ 0.5 =
Scaled by 10	

2) Original Question	0.3 =
Scaled by 10	

3) Original Question	8.8 ÷
Scaled by 10	

4) Original Question	12.6 ÷ 0.6 =
Scaled by 10	

5) Original Question	21.7 ÷ 0.7 =
Scaled by 10	

Name: _____ 76

Curriculum Connection
N7.2

Dividing Decimals – Scaling by 100

Instruction Scale the division sentence by 100 and then solve.

1) Original Question	2.34 ÷ 0.18 =
Scaled by 10	

2) Original Question	5.5 ÷ 0.25 =
Scaled by 10	

3) Original Question	6.12 ÷ 0.36 =
Scaled by 10	

4) Original Question	1 ÷ 0
Scaled by 10	

Word Problems Answer the word problems below.

1) Roman bought 9.12kg of canned tomatoes. Each can holds 0.48kg. How many cans did he buy?

2) Lillian returned a bag of cans and received $4.85. She received $0.05 for each can she returned. How many cans did she return?

Name: _____ 81

Curriculum Connection
NF.2

Dividing Whole Numbers by Tenths

When dividing a whole number by a decimal, it is easiest to get rid of the decimal number. We can do this by multiplying both numbers by 10 or more depending on how small the decimal is. For a decimal number to the tenth, we multiply by 10.

Directions – 180 ÷ 0.3

1) 0.3 x 10 = 3
2) Since we multiplied the decimal by 10, we must also multiply the other number by 10. So 180 x 10 = 1800
3) So 180 ÷ 0.3 has become 1800 ÷ 3 (they are both 10 times larger)
4) 1800 ÷ 3 = 600 and therefore 180 ÷ 0.3 = 600

Instruction Complete the table below:

	Question	Decimal	Whole Number x 10	New Question	Answer
1)	150 ÷ 0.2	2	1500	1500 ÷ 2 =	750
2)	200 ÷ 0.4				
3)	100 ÷ 0.5				
4)	360 ÷ 0.3				
5)	390 ÷ 0.6				
6)	420 ÷ 0.7				
7)	450 ÷ 0.2				
8)	400 ÷ 0.8				

Name: _____ 83

Curriculum Connection
NY 2

Dividing Decimals by Whole Numbers

Instruction Use the area model to answer the division questions below. #1 is done for you.

1) 0.844 ÷ 4

0.844 is really 844 thousandths

4	800	40	4
			1

Therefore, 0.8[illegible] into 4 [illegible]11 thousa[illegible]r 0.[illegible]

2) 0.224 ÷ 2

2	200	20	4

3) 0.363 [illegible]

3	300	60	3

0.396 ÷ 4

4	[illegible]00	[illegible]90	6

5) 0.455 ÷ 5

5	400	50	5

6) 0.488 ÷ 8

8	400	80	8

Name: _____ 85

Curriculum Connection
N7.2

Order of Operations - Decimals

Instruction Find out the value of the variables using BEDMAS.

1) 2 x (2.5 + 5) =	2) 4 x (10 – 7.5) =	3) 5 x 4 + (10.5 + 4) =
4) (15.7 [illegible]	5) 8.5 – 4.2 + (3 x 5) =	6) 5 x (3.5 + 3.5) =
7) 48 ÷ (9.5 – 3.5)	[illegible] ÷ 2.5 =	9) 32.3 + (9 ÷ 3) =
10) 4 x (22 ÷ 5.5) =	11) 45 ÷ [illegible] x 3.3 =	[illegible] ÷ 2.5 x (2 + 1.5) =

Word Problems Answer the word problems below.

1) Lindsay ordered two slices of pizza and soda for lunch. A slice of pizza is $2.50, and a soda is $2.00. Lindsay did the math below. What did she do wrong?

$2.50 + $2.00 x 2 = ?
$4.50 x 2 = $9.00

2) John bought 2 pieces of bubble gum for $0.20 each and 3 chocolate bars for $0.70 each. How much did he spend? Write the equation.

Name: _____ 90

Curriculum Connection
N7.2

Order of Operations – Decimals – Who's Right?

Instruction Walker and Hugh both answered the questions below. Circle who's right:

	Question	Walker's Answer	Hugh's Answer
1	1.5 + 3.5 x 4	15.5	20
2	2.3 x 3	19.5	11.1
3	– 4	5.8	19.6
4	2.2 x 3 + 12.5	9.1	18.1
5	15 ÷ 2.5 x (1.5 + 2.5)	24	
6	81 ÷ 9 + (6.5 – 2.3)	12.2	13.2
7	10(15 – 2.5)	147.5	125
8	(25 - 20) ÷ 2.5 + 12	14	12

Name: _____ 92

Curriculum Connection
TD

Addition/Subtraction/Multiplication/Division - Quiz

Part 1 Complete the addition, subtraction, multiplication and division questions.

1)

	6	1	4	.	1	8	5
+	2	5	[illegible]		[illegible]	0	3

2)

	3	5	5	.	5	1	9
+	2	8	2	.	5	2	6
				.			

3)

	5	6	4	.	6	8	7
+	3	2	9	.	2	7	1
				.			

4)

	6	6	4	.	0	[illegible]	[illegible]
–	4	2	0	.	0	2	3
				.			

5)

	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4	6	5
–	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7	3
				.			

6)

	8	2	8	.	6	3	5
–	5	5	9	.	4	5	3
				.			

7)

		4	5	1
x			.	4

8)

		7	3	4
x			.	2

9)

						[illegible]	3	8
x				.	7	[illegible]	[illegible]	6

11) $.2 \overline{)\ 11}$

12) $2 \overline{)\ 1.4}$

13) $.6 \overline{)\ 12}$

14) $4 \overline{)\ 4.8}$

Name: _____ 93

Curriculum Connection
TD

Part 2 Answer the word problems below.

1) Dane just ran a 400m race. He ran the first 200m in 31.326 seconds and the second 200m in 33.79 seconds. How long did it take him to finish the race?

2) George lives 10.455km away from school. Kennedy lives 12.192km away from school. H uch further does Kennedy live away from school?

3) Blair work s la ek earning $14.32 per hour. How much did he earn?

4) Lucas walked 96.48 metres on his He c wn to reset 4 times. On average, how far did Lucas walk each ne with om own to reset?

Part 3 For each number on the left, place a check mark under the n le by:

Number	2	4	6
1) 12			
2) 34			
3) 384			
4) 448			

Number	3	5	7
5) 66			
6) 145			
7) 406			
8) 1 410			

Name: _____ 94

Curriculum Connection
TD

Part 4 Find out the value of the variables using BEDMAS.

1) 2 x (3.5 + 5) =	2) 3 x (12.5 – 7.5) =	3) 3 x 6 + (13.5 + 4.1) =
4) (15.2 [illegible] 3) x 2 =	5) 9.5 – 4.5 + (3 x 5) =	6) 4 x (5.5 + 3.5) =
7) 42 ÷ (9.5 – 3.5) =	[illegible] 2.5 =	9) 35.3 + (11 ÷ 2.2) =

Part 5 Paul and Gary both answered the questio[illegible]. C[illegible]ight:

	Question	Paul's Answer	[illegible]nswer
1	2.5 + 4.5 x 4	20.5	28
2	6.7 + 2.1 x 2	17.6	10.9
3	14.3 – 4.2 x 2	20.2	5.9

Name: _____ 95

Curriculum Connection
TD

Part 6 Write the equation that represents the word problem.

1) Ben went for 2 different runs yesterday. He ran 2.2km each run. Today, he ran an additional 5.2km. How many total kilometres did he run?

2) C[illegible] of cola. Each bottle contains 1.5L of cola. He also bought 3 bot[illegible] lemo[illegible] bottle of lemonade is 2.5L. How many total litres of drinks did he

3) Mary slept for 8.5 hours on Monday, Tuesd[illegible] We[illegible] She slept for 6.5 hours on Thursday and Friday. On Saturday [illegible]unda[illegible] for 8 hours. How many total hours did Mary sleep for the we[illegible]

4) Levi has $342.25 in his bank account. He worked for 5 hours today earning $10.50 an hour. After work, Levi spent $52.75 on a new controller for his video game system. How much money does he have left?

Name: _____ 99

Curriculum Connection
N7.3

Generating Fractions Between Whole Numbers

Practice List at least three fractions between the numbers.

1)

Fractions

2)

Fractions

3)

Fractions

Word Problems Solve the problems below.

1) Daniel thinks $3\frac{3}{4}$ is between 2 and 3. Is he right? Explain why or why not.

2) Thomas said he has listed all the fractions between 1 and 2. Is he right? Explain why or why not. His list is written below.

$1\frac{1}{8}$, $1\frac{2}{8}$, $1\frac{3}{8}$, $1\frac{4}{8}$, $1\frac{5}{8}$, $1\frac{6}{8}$, $1\frac{7}{8}$, $1\frac{8}{8}$

Name: _____ 100

Curriculum Connection
N7.3

Generating Fractions Between Fractions

Practice List at least two fractions between the numbers.

1) $1\frac{1}{2}$ ⟷ 2

Fractions

2) $\frac{1}{12}$ ⟷ $\frac{9}{12}$

Fractions

3) $\frac{1}{3}$ ⟷

Fractions

4) $\frac{3}{6}$ ⟷ $\frac{4}{5}$

ctions

5) $\frac{2}{5}$ ⟷ $\frac{2}{3}$

Fractions

Name: _____ 105

Curriculum Connection
NY 3

Place Value Using Decimals

Decimal numbers are any numbers that represent a value less than one. We use a decimal point to represent that a number can be less than one. We would represent a single cookie with the number 1, but we can still represent a quarter of a cookie by writing 0.25. The 0 is the whole number, while the numbers to the right of the decimal show how large the part of the whole is.

PLACE VALUE						
9	3	1	.	6	4	2
Thou	ns	Ones	Decimal	Tenths	Hundredths	Thousandths

Part 1 ...the place value for the underlined number?

1) 7 72**8**.122		3) 4 35**2**.427	4) 1 713.68**8**
5) 6 412.**4**33	6) 2 45**4**.72	7) ...**2**6	8) 4 **3**57.926
9) 2 364.52**1**	10) 7 247.71**1**	...57	...) 2 4**7**9.542

Part 2 Fill in the place value table for the numbers below

1) 5 731.538

Thousands	Hundreds	Tens	Ones	Decimal	Tenths	Hundredths	Thousandths

2) 3 272.319

Thousands	Hundreds	Tens	Ones	Decimal	Tenths	Hundredths	Thousandths

Name: _____ 107

Curriculum Connection
N7.3

Counting by Hundredths – Decimals Pattern

Instruction Continue counting by hundredths by filling in the missing boxes.

Name: _____ 109

Curriculum Connection
N7.3

Comparing Decimals

Part 1 Compare the following numbers:

1) 0.125 < 0.252	2) 0.453 ☐ 0.642	3) 0.237 ☐ 0.648
4) 0.367 ☐ 0.410	5) 0.034 ☐ 0.200	6) 0.547 ☐ 0.546
7) 2.257 ☐	☐ 0.214	9) 1.008 ☐ 1.010
10) 4.507 ☐ 4.272	624 ☐ 646	12) 5.649 ☐ 5.615
13) 8.055 ☐ 8.145	14) 9.307 ☐ 99 ☐	7.491

Part 2 Compare the following numbers:

1) Nick and Ryan both ran in the 200 metre race last week. Nick r… 31.505 seconds and Ryan ran it in 31.550 seconds. Who ran it faster?

2) Lamelo Ball scores 18.652 points a game while his brother Lonzo Ball scores 18.634 points a game. Who scores more points a game?

3) Jacob jumped 4.043m in long jump. Owen jumped 4.101m. Who jumped further?

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Compare the following numbers:

1) 57.358 ☐ 57.379

2) 0.537 ☐ 0.54

Answer the word problem below:

Liam's weight is 45.89 kilograms.
Noah's weight is 45.879 kilograms.
Who weighs more?

Name: _____

Compare the following numbers:

1) 57.358 ☐ 57.379

2) 0.537 ☐ 0.54

Answer the word problem below:

Liam's weight is 45.89 kilograms.
Noah's weight is 45.879 kilograms.
Who weighs more?

Name: _____

Compare the following numbers:

1) 57.358 ☐ 57.379

2) 0.537 ☐ 0.54

Answer the word problem below:

Liam's weight is 45.89 kilograms.
Noah's weight is 45.879 kilograms.
Who weighs more?

Name: _____ 112

Curriculum Connection
NF.3

Ordering Decimals

Part 1 Order the numbers below from least to greatest:

1) 0.123, 0.39, 0.41, 0.113

_____, _____, _____, _____

2) 0.327, 0.32, 0.35, 0.326

_____, _____, _____, _____

3) 0.[illegible]4, 0.44

_____, _____, _____, _____

4) 1.554, 1.51, 1.5, 1.516

_____, _____, _____, _____

5) 13.46, 13.3, 13.[illegible]232

_____, _____, _____, _____

6) 23.2, 23.15, 23.238, 23.241

_____, _____, _____, _____

Part 2 Order the numbers below from g[illegible]st to

1) 0.25, 0.261, 0.253, 0.24

_____, _____, _____, _____

2) 0.33, [illegible]3, [illegible]34

_____, _____, _____, _____

3) 2.41, 2.419, 2.323, 2.42

_____, _____, _____, _____

4) 4.122, 4.13, 4.14, 4.232

_____, _____, _____, _____

5) 12.51, 12.29, 12.3, 12.23

_____, _____, _____, _____

6) 19.8, 19.7, 19.645, 19.71

_____, _____, _____, _____

Name: _____ 117

Curriculum Connection
NF.3

Converting Fractions and Decimals

Part 1 Fill in the table with the converted decimal and fraction.

Fraction	Decimal
	.10
	.20
50/100	
	.70
80/100	
	.90
100/100	

Fraction	Decimal
15/100	
	.28
36/100	
	.48
	.62
68/100	
	.82

Part 2 Convert the following fractions and decimals.

0.22 = /100	0.51 = /100	0.44 = /100	0.88 = /100
42/100 =	66/100 =	39/100 =	97/100 =
31/100 =	72/100 =	0.81 = /100	0.91 = /100

Name: _____ 118

Curriculum Correlation
N7.3

Generating Decimals Between Whole Numbers

Practice List at least three decimals between the numbers.

1)

Decimals

2)

Fractions

3)

Fractions

Word Problems Solve the riddles below.

1) Write a decimal that is larger than 9 but less than

2) Write a decimal that is larger than 49 but less than 50.

3) Write a decimal that is larger than 99 but less than 100.

4) Write a decimal that is larger than 999 but less than 1000.

Name: _____ 120

Curriculum Correlation
NT3

Ordering Fractions, Decimals, and Whole Numbers

Part 1 Circle the larger value:

1) 0.5 $\frac{2}{6}$	2) 0.25 1	3) 0.75 $\frac{7}{8}$	4) 0.5 $\frac{4}{7}$
5) 0.33 $\frac{3}{5}$	6) 0.66 $\frac{2}{6}$	7) $\frac{4}{8}$ 0.45	8) $\frac{3}{9}$ 0.50
9) $\frac{5}{8}$	10) $\frac{9}{10}$ 0.8	11) $\frac{4}{5}$ 0.65	12) 0.25 $\frac{1}{8}$
13) 0.	0.9 $\frac{5}{8}$	15) 0.75 $\frac{2}{4}$	16) $\frac{7}{8}$ 0.25
17) $\frac{8}{8}$	8)	19) $\frac{1}{6}$ 0.1	20) 0.4 $\frac{5}{6}$

Part 2 Compare the ... ng <, >, =

1) 0.150 < $\frac{1}{4}$	2) 0.450 [ ] $\frac{}{6}$	[ ] $\frac{1}{6}$
4) $\frac{2}{3}$ [ ] 0.75	5) 0.285 [ ] $\frac{4}{8}$	6) 0.5 [ ] $\frac{3}{5}$
7) 0.85 [ ] $\frac{2}{4}$	8) 0.750 [ ] $\frac{4}{5}$	9) 0.250 [ ] $\frac{2}{10}$
10) $\frac{4}{5}$ [ ] 0.66	11) $\frac{1}{3}$ [ ] 0.40	12) 0.750 [ ] $\frac{2}{4}$
13) 0.95 [ ] $\frac{9}{10}$	14) 0.66 [ ] $\frac{3}{4}$	15) 0.418 [ ] $\frac{2}{5}$

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Circle the larger value.

1) $\frac{6}{9}$ 0.766

2) 0.529 $\frac{3}{5}$

3) 0.813 $\frac{8}{10}$

Name: _____

Circle the larger value.

1) $\frac{6}{9}$ 0.766

2) 0.529 $\frac{3}{5}$

3) 0.813 $\frac{8}{10}$

Name: _____

Circle the larger value.

1) $\frac{6}{9}$ 0.766

2) 0.529 $\frac{3}{5}$

3) 0.813 $\frac{8}{10}$

Name: _____

Circle the larger value.

1) $\frac{6}{9}$ 0.766

2) 0.529 $\frac{3}{5}$

3) 0.813 $\frac{8}{10}$

Name: _____ 122

Curriculum Connection
NF.3

Ordering Fractions, Decimals, and Whole Numbers

Part 1 Put the integers and decimals in order from least to greatest.

1)	2.485, 2.406, $\frac{1}{5}$, 0.485, 1, 4, $\frac{1}{4}$
2)	0.217, 1, $\frac{2}{5}$, 0.325, 0, 0.475, $\frac{3}{6}$
3)	[illegible], 1.5, $1\frac{1}{3}$, 2.25, 1, 2, $2\frac{3}{5}$
4)	[illegible], 4.25, 2.5, 4.5, $\frac{13}{2}$
5)	1.666, 2.33[illegible], [illegible], $4\frac{1}{2}$, 1.25

Part 2 Answer the word problems.

1) Jason is trying to decide which bag of coffee beans to buy. T[illegible]ame price but are listed in different measurements. Put the options in or[illegible]m least to greatest.

Option	A	B	C	D	E	F
Size	1.5kg	$1\frac{1}{4}$kg	2kg	1.99kg	$2\frac{3}{6}$kg	2.4kg

2) A team of basketball players have their 3-point shooting stats listed in the table. Put the players in order from worst percentage to best.

Player	Chloe	Sofia	Lily	Mila	Ellie	Luna
Size	0.25	0.168	$\frac{2}{10}$	$\frac{4}{9}$	0.525	$\frac{15}{20}$

Name: _____ 123

Curriculum Connection
NF.3

Ordering Fractions, Decimals, and Whole Numbers

Instruction Put the integers, decimals, and fractions in order from least to greatest.

1) $\frac{2}{3}$, 0.25, 0.01, 3, $\frac{1}{2}$

2) $\frac{4}{}$, 0.07, 1, $\frac{3}{4}$

3) $\frac{1}{2}$, 0.

4) $\frac{5}{6}$, 0.40, 0.6, 1, $\frac{2}{4}$

5) $\frac{3}{5}$, 0.75, 0.05, 2, $\frac{1}{5}$

6) $\frac{4}{7}$, 0.25, 0.008, 3, $\frac{2}{4}$

7) $\frac{4}{5}$, 0.6, 0.06, 5, $\frac{2}{7}$

8) $\frac{5}{8}$, 1, 0.03, 0.003, $\frac{4}{5}$

9) $\frac{4}{5}$, 0.75, 0.03, 2, $\frac{3}{6}$

10) $\frac{4}{10}$, 0.5, 0.75, 5, $\frac{1}{4}$

11) $\frac{3}{4}$, 0.4, 0.01, 1, $\frac{5}{8}$

12) 0.666, 0.01, 1, $\frac{2}{4}$

13) 2, $\frac{1}{5}$

14) $\frac{6}{8}$, 2, 2.1 988, $\frac{9}{3}$

15) $\frac{7}{8}$, 2, 1.005, 0.54, $\frac{8}{3}$

16) $\frac{2}{5}$, 1.42, 0.333, 1, $\frac{10}{4}$

Name: _____ 124

Curriculum Connection
N7.3

Treasure Hunt: Fraction, Decimal, and Whole Number

Objective What are we learning about?

Students will practise ordering fractions, decimals, and whole numbers from least to greatest in a fun and interactive way.

Materials What you will need for the activity.

- x cards ieces of paper
- Mar s or p
- Tape
- Timer (optio
- Small prizes (op l)

Instructions How you wil mpl

1. Write a set of fractions, decimals, and whol bers o x cards. Each card should have one decimal number (or use t s w d).
2. Tape the cards in various locations around the cla asure mbers are visible but not too easy to find.
3. Explain to the students that they will be going on a treasure h decimal number cards. They should not move the cards when they fi n; instead, they should write the numbers on the top part of their page.
4. Once all the cards are found and recorded, students must write the numbers in order, from least to greatest on the bottom part of their page.
5. Allow students to move around the room individually to find the numbers.
6. Set a timer to add excitement and challenge (optional).
7. After the hunt, gather the students and discuss the correct order of the decimal numbers. Award small prizes to students who correctly ordered their numbers (optional).

Name: _____ 125

Curriculum Connection
N7.3

Index Cards | Cut out the index cards below.

0.5	1/3
2	3.14
9/10	0.9
4	5/4

Name: _____ 126

Curriculum Connection
N7.3

Index Cards | Cut out the index cards below.

11	0.333
2.5	3/2
3	1.2
7/8	2.25

Name: _____ 127

Curriculum Connection
N7.3

Index Cards | Cut out the index cards below.

0.1	4/5
10.1	9.99
1.5	1.
1/20	11.5

Name: _____ 128

Curriculum Connection
N7.3

Recording Sheet | Follow the instructions below.

1) When you find a fraction, decimal or whole number, write it in the box below.

2) Once you've fo[illegible] 24 [illegible]ite them in order from least to greatest.

1)		[illegible])	
2)		[illegible])	
3)		15)	
4)		16)	
5)		17)	
6)		18)	
7)		19)	
8)		20)	
9)		21)	
10)		22)	
11)		23)	
12)		24)	

Name: _____ 129

Curriculum Connection
N7.3

Fractions, Decimals, and Whole Numbers – Word Problems

Instruction Answer the questions below.

1) Four friends worked a week at a farm collecting strawberries. They made $1000 total. Some of the friends worked harder than others. A breakdown of how much each friend earned is below.

[illegible]	Colton	Hudson	Joel
$[illegible]	$115.75	$319.75	$239/1000

Orde[illegible]s [illegible]ho made the most money to who made the least.

2) The girls' basketb[illegible] kept st[illegible] their games. Their shooting stats are listed below.

Alex	Hanna	Rebe[illegible]	Cou[illegible]	Brianna
0.325	30/90	0.367	[illegible]	[illegible]/15

Rank the girls in order from the best shooter [illegible]

3) Brian is shopping for tomato soup.

Option	A	B	C	D
Size	0.5L	$1\frac{2}{4}$L	3L	$\frac{18}{4}$L
Price	$4	$8	$20	$22

a) Rank the options in order from smallest to largest.

b) Explain which can of soup Brian should buy? Make sure to look at the prices.

Name: _____ 130

Curriculum Connection
NF.4

Fractions, Decimals, and Percents

Part 1 Fill in the table with the converted decimal, fraction, and percent.

Fraction	Decimal	Percent
100/1000		10.0%
		20.0%
	0.300	%
400/		40.0%
500/1000		%
		60.0%
	/00	%
	0.800	%
900/1000		%
	1.000	

Part 2 Convert the following fractions, decimals and percentages.

138/1000 = %	536/1000 = 0.	42.4% = /1000	798/1000 = %
56.2% = /1000	161/1000 = %	871/1000 = 0.	0.938 = %
0.356 = %	0.682 = %	71.4% = 0.	782/1000 = 0.

Name: _____ 131

Curriculum Connection
N7.6

Fraction/Decimal/Percent Bottle Flip Challenge

Objective What are we learning about?

To practise and reinforce understanding of converting between fractions, decimals, and percents through the engaging and physically active bottle flip game.

Materials What you will need for the activity.

- [illegible] pair/group) filled to approximately one-third with water (or use[illegible] with[illegible]
- Set of frac[illegible]and[illegible]cent conversion question cards
- Answer she[illegible]n grou[illegible]

Instructions How y[illegible]mple[illegible]tivity

1. Start with a short lesson on con[illegible]betw[illegible]ctions, decimals, and percents.
2. Arrange the students into pairs or smal[illegible]s an[illegible]e a bottle and a set of question cards to each.
3. Each pair or group receives an answer sheet t[illegible]their[illegible]rs.
4. Explain the rules: One student draws a question car[illegible]d t[illegible] conversion problem between fractions, decimals, or perce[illegible]
5. Once they believe they have the correct answer, they write it do[illegible]their answer sheet.
6. The student then gets to attempt a bottle flip. A successful flip means they get a point; an unsuccessful flip means they need to try to solve another question card before flipping again.
7. Alternate turns within each group or pair until they have completed all the question cards.
8. Groups or pairs tally their successful flips and compare with the rest of the class to determine the winning team.
9. Go through the answer sheet with the class to ensure understanding and correct any misconceptions.

Name: _____ 132

Curriculum Connection
N7.1

Questions Cut out the questions below and use them for the game.

25/1000 = _____ %	805/1000 = 0 _____	42.3% = 0. _____	67% = _____/1000
0.406 = _____ %	[illegible]	79.5% = 0. _____	89.2% = _____/1000
325/1000 = _____ %	41/1000 = 0 _____	25[illegible] = 0. _____	[illegible]0
0.234 = _____ %	0.58 = _____ %	67.4% = 0. _____	74.1% = _____/1000

Name: _____ 133

Curriculum Connection
NF.4

Questions Cut out the questions below and use them for the game.

A tank is filled with 45 out of 60 liters of water. What is the fraction, decimal, and per[illegible]	A class of 30 students, 21 brought their lunch. What is the fraction, decimal, and percent for the students who brought lunch?	A car travelled 250 kilometres out of a 400-kilometre trip. What is the fraction, decimal, and percent for the distance travelled?	A store sold 120 out of 200 apples. What is the fraction, decimal, and percent for the apples that are sold?
A fiel[illegible]s 15 [illegible] of 25 flow[illegible] blooming. Wh[illegible] the fraction, decimal, and percent for the blooming flowers?	[illegible]ke[illegible]ll player [illegible]ade [illegible] of 50 [illegible]ree t[illegible] [illegible]and [illegible]?	A computer processed 18 out of 24 tasks. What is the fraction, decimal, and [illegible]ent for the [illegible]d task?	A library has 75 out of 120 books checked out. What is the fraction, decimal, and percent for the checked-out books?
A movie was watched by 200 out of 300 students. What is the fraction, decimal, and percent for the people who watched the movie?	A bakery sold 45 out of 60 loaves of bread. What is the fraction, decimal, and percent for the sold loaves of bread?	[illegible]ce w[illegible] [illegible]ted [illegible]6 of 12[illegible] [illegible]hat is the [illegible] decimal, [illegible] percent for the runners who completed the race?	[illegible] farm harvested [illegible]0 out of 240 [illegible]oes. What is [illegible]tion, [illegible] [illegible] the tom[illegible] that were [illegible]rvested?
A school has 90 out of 150 students in a club. What is the fraction, decimal, and percent for the students who are in a club?	A phone battery is charged to 80 out of 100 percent. What is the fraction, decimal, and percent for the charged amount?	A concert was attended by 450 out of 600 people. What is the fraction, decimal, and percent for the people who attended the concert?	A survey showed that 160 out of 200 people liked ice cream. What is the fraction, decimal, and percent for the people who liked ice cream?

Name: _____ 134

Curriculum Connection
N7.4

Conversions Bottle Flip Challenge

Answers Record your answers below.

1	
2	
3	
4	
5	
6	
7	
8	

9	
10	
11	
12	
13	
14	
15	
16	

Name: _____ 135

Curriculum Connection
N7.A

Conversions Bottle Flip Challenge

Answers Record your answers below.

17	
18	
19	
20	
21	
22	
23	
24	

25	
26	
27	
28	
2	
31	
32	

Successful Flips Tally	
# of Wrong Answers	
Final Score: Successful Flips – Wrong Answers	

Name: _____ 140

Curriculum Connection
N7.6

Class List – Decimal, Fraction, Percent

Mrs. Hansen just finished marking a math test. Her class list with the results of the test are below. She has simplified some of the fractions, and some students wrote a different test, meaning they are out of a different total.

Grades
A = 80% and up
B = 70%-79%
C = 60% – 69%
D = 50% – 59%
F = 49% or less

Instruction Fill in the class list

Studen	Mark	Decimal	Percent	Grade
Madi				
Stella	/100			
Matthew				
Eli	7/10			
John	1/2			
Kai	1/4			
Ivy	4/4			
Everly	1/5			
Bella	75/100			
Skylar	95/100			
Leah	8/10			
Roman	1/8			
Adrian	1/10			
Easton	4/5			
Savannah	15/18			

Name: _____ 141

Curriculum Connection
N7.6

Sport Statistics – Fractions, Decimals, and Percents

Information | Baseball Statistics – 2020 Regular Season Offensive Statistics

1) Mike Trout had 200 at bats in 2020. He had 56/200 hits, 42/200 runs, and 18/200 home runs. This means for every 200 at bats, he would have 56 hits, 42 runs, and 18 home runs.

	Hits	Runs	Home Runs
	56/200	42/200	18/200
Decimal to thousandths			
Percent			

a) If Trout had 100 at bats, how many hits would he have? _____

2) Mookie Betts had 300 at bats in 2020. He had 99/300 hits, 57/300 runs, and 27/300 home runs. This means for every 300 at bats, he would have 99 hits, 57 runs, and 27 home runs.

	Hits	Runs	Home Runs
Totals - Fraction	97/300	57/300	27/300
Decimal to thousandths			
Percent			

a) If Betts had 100 at bats, how many hits would he have? _____

Name: _____ 142

Curriculum Connection
NF.4

Sport Statistics – Fractions, Decimals, and Percents

Information | Basketball Statistics – Shooting Percentages

1) Lebron James and the LA Lakers won a Championship title in 2020. Find out his shooting percentages by filling in the table below.

	2-pointers	3-pointers	Free Throws
Fr	214/382	44/119	108/150
cent			

a) If James h nly 1 nters, how many would he have made?

b) If James had taken 3 ters, y would he have made?

c) If Lebron had taken 550 free thro man d he have made?

2) Luca Doncic had a great 2021 season wi las M cks. His stats for the regular season are listed below.

	2-pointers	3-pointers	
Fraction	647/1351	192/548	471
Decimal			
Percent			

a) If Luca had only taken 100 free throws, how many would he have made?

b) If Luca had taken 1000 3-pointers, how many would he have made?

c) If Luca had taken 850 free throws, how many would he have made?

Name: _____ 143

Curriculum Connection
N7.3

Terminating and Repeating Decimal

Terminating Decimal
- Decimals that come to an end

Example - 2/4 = 0.5

Repeating Decimal
- Decimals that never end

Example - 2/3= 0.66666... or $0.\overline{6}$

We can use a line over the repeating number or number pattern to show it repeats forever.

Part 1 decimal a repeating or terminating decimal?

1) 0.6		6) 0.9	
2) 0.3		7) $0.\overline{72}$	
3) $0.\overline{7}$		$0.41\overline{6}$	
4) 0.25			
5) $0.\overline{6}$		1 .8	

Part 2 Write the decimals below – use a line to ... eatin... nals.

1) $\frac{1}{3}$ = $0.\overline{3}$	2) $\frac{6}{10}$ =	3)
4) $\frac{2}{3}$ =	5) $\frac{8}{11}$ =	6) $\frac{3}{9}$ =
7) $\frac{1}{4}$ =	8) $\frac{11}{12}$ =	9) $\frac{4}{12}$ =
10) $\frac{3}{5}$ =	11) $\frac{4}{6}$ =	12) $\frac{1}{12}$ =
13) $\frac{5}{8}$ =	14) $\frac{1}{8}$ =	15) $\frac{7}{8}$ =

Name: _____ 145

Curriculum Connection
N7.3

Terminating and Repeating Decimal

Part 1 Write the decimal number as it would show on a calculator. Stop after 8 decimal points.

1) $0.\overline{4}$	
2) $0.\overline{001}$	
3) $0.\overline{7}$	
4)	
5) 0.6	

6) 0.9	
7) $0.\overline{285714}$	
8) 0.265615	
9) $0.\overline{85}$	
10) $0.\overline{27}$	

Part 2 Write you[illegible] minating and repeating decimals.

Terminating Decima[illegible]	Repeating Decimals

Part 3 Define the terms below in your own words.

Terminating Decimal	
Repeating Decimal	

Name: _____ 149

Curriculum Connection
N7.6

Word Problems – Missing Percentages

Questions	What percentage is missing?

1) In a class, 63% of students take a bus to school and 14% get a drive from their parents. What percentage of students walk to school?

2) In a s[illegible] 7 students, 23% thought math was fun and 42% thought math was [illegible] centage of students disliked math?

3) A shop sells 3 [illegible] tracked their sales last week and found out that 38% of the do[illegible] ocolate, and 21% were vanilla. What percentage of the donuts [illegible]

4) In a candy survey, respondents we[illegible] as their favourite. They could choose from 4 different options [illegible] ckers, or gummies. 18% chose gum, 27% chose hard c[illegible] uckers. What percentage chose gummies?

5) The Alberta Ministry of Transportation studied which [illegible] g for their vehicles. There were 3 options – gas, diesel, or electr[illegible] d diesel and 4% used electricity. What percentage of vehicles use gas?

6) A zoo has monkeys, zebras, pandas, and snakes. Of all the animals, 23% are monkeys, 29% are zebras, and 26% are pandas. What percentage of the animals are snakes?

7) Zoe spends 3 hours on 5 social media apps each day. She spends 28% of the 3 hours on Instagram, 15% on Facebook, 22% on TikTok, and 17% on Snapchat. What percent does she spend on YouTube?

Name: _____ 150

Curriculum Connection
NF.4

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

What percentage is missing?

In a market survey, people were asked their preferred type of fruit. They could choose from apples, bananas, oranges, or grapes. 34% preferred apples, 29% preferred bananas, and 20% preferred oranges. What percentage preferred grapes?

Name: _____

What percentage is missing?

In a market survey, people were asked their preferred type of fruit. They could choose from apples, bananas, oranges, or grapes. 34% preferred apples, 29% preferred bananas, and 20% preferred oranges. What percentage preferred grapes?

Name: _____

What percentage is missing?

In a market survey, people were asked their preferred type of fruit. They could choose from apples, bananas, oranges, or grapes. 34% preferred apples, 29% preferred bananas, and 20% preferred oranges. What percentage preferred grapes?

Math Basketball: Missing Percentages Challenge

Objective What are we learning about?

To reinforce students' understanding and application of calculating missing percentages through engaging word problems and a fun basketball shooting game.

Materials What you will need for the activity.

- Sm[illegible]all (e.[illegible]n ball) x number of groups
- Trash can [illegible]o s[illegible]as the hoop
- Index card[illegible] with [illegible]ge word problems
- Marker or pen
- Timer or stopwatch

Instructions How you will compl[illegible]ctiv[illegible]

1. Arrange the classroom so that there is e[illegible]space[illegible]le teams to work simultaneously. Place a desk about 6 feet [illegible]fro[illegible]et.
2. Place a stack of index cards with problems on e[illegible]
3. Provide each team with a recording sheet and a pe[illegible]
4. Divide the students into teams of about five members[illegible].
5. Each team stands in a line behind their respective desk.
6. The first student in line flips over an index card and solves the pro[illegible]
7. Once the answer is recorded, the student attempts to shoot the pa[illegible]ball into the bin.
8. If the student makes the shot, they place a tally mark on the team's tally sheet for a point. If they miss, no tally is given.
9. The student then goes to the end of the line, and the next student steps up to the desk to repeat the process.
10. The activity continues until all index cards have been solved.
11. Once all index cards are completed, the teacher collects the recording sheets and reviews the answers with the class.
12. For each incorrect answer, the team loses one point.
13. The team with the highest number of points after deductions is declared the winner.

Name: _____ 152

Curriculum Connection

Index Cards | Use the following table for the game.

In a test, 25% of the questions were true/false, 50% were multiple choice. What percentage were other types?
In a poll, 36% of people preferred summer, 29% preferred winter. What percentage preferred other seasons?
A survey [illegible] that 32% of people like chocolate ice cream, 48% like vanilla. What percent[illegible] flavors?
At a [illegible] fair, [illegible]ets were sold for games, 35% for food. What percentage were sold for [illegible]es?
A company discove[illegible] that [illegible]loyees commute by car, 25% by bike. What percentage use o[illegible]s?
During a survey, 33% of respon[illegible]nts [illegible]s, 44% liked comedies. What percentage liked other genres?
A fitness center reported that 40% of memb[illegible]efer [illegible]ises, 35% prefer weight training. What percentage prefer other [illegible]
In a computer lab, 50% of the computers are used for c[illegible], 20[illegible] design. What percentage are used for other purposes?
In a city, 35% of the population uses public transportation, 50% uses [illegible]onal vehicles. What percentage uses other forms of transportation?
During a festival, 25% of visitors attended concerts, 55% attended food stalls. What percentage attended other events?
A research found that 45% of people prefer dogs, 40% prefer cats. What percentage prefer other pets?
A bookstore reported that 55% of books sold were novels, 35% were self-help books. What percentage were other genres?

Name: _____ 153

Index Cards | Use the following table for the game.

Marry has a monthly budget of $1200. She spends 30% on rent, 20% on groceries, 15% on transportation, and 10% on entertainment. What percentage does she spend on savings?
A school's budget of $500,000 is allocated as follows: 40% for salaries, 25% for supplies, 15% for maintenance, and 10% for extracurricular activities. What percentage is left for other expenses?
In a survey, 40% of respondents prefer apples, 25% prefer bananas, 20% prefer oranges, and the rest prefer grapes. What percentage prefer other fruits?
A company distributes 50% of its annual profits to shareholders, 30% to reinvestment in new factories, and 5% to charity. What percentage is left undistributed?
During a fundraiser, $1000 was raised from donations, 25% from a charity auction, 15% from a silent auction, and 5% from a raffle. What percentage was raised from other sources?
A farmer's market has 50% of its stalls selling vegetables, 30% selling fruits, 10% selling baked goods, and 5% selling dairy products. What percentage is selling other items?
An online store's revenue comes from 35% electronics, 25% clothing, 20% home goods, and 15% books. What percentage comes from other categories?
In a marathon, 60% of participants were adults, 20% were teenagers, 12% were seniors, and 3% were children. What percentage were from other age groups?
A smartphone battery usage shows that 40% is used by the screen, 25% by apps, 20% by connectivity, and 10% by standby. What percentage is used by other functions?
A family spends 35% of their income on housing, 25% on food, 20% on transportation, and 15% on utilities. What percentage is spent on other expenses?
A cinema found that 60% of tickets sold were for action movies, 25% for dramas. What percentage were for other genres?
At a zoo, 45% of animals are mammals, 30% are birds. What percentage are other types?

Name: _____ 154

Curriculum Connection
N7.4

Word Problems - Percentages

Instruction Answer the word problems below.

1) The grade 7s voted on where their class trip would be. There were 5 options and students could only vote for one option. The results are below:

Movie Theatre	15%
Amusement Park	23%
Hockey Arena - Skating	18%
Shopping Mall	31%
Mini-Golf	

a) What percentage of students chose Mini-golf?

b) If there were 7 students, how many chose going to the mall?

2) In a math test, the percentage of grade 7s who scored an A, B, C, D, and F is listed below.

A	22%
B	35%
C	27%
D	12%
F	

a) What percentage of students received an F?

b) If 50 students took the test, how many kids got an F?

3) Ryan surveyed his grade 7 classmates, asking about their favourite food. He tallied his results as percentages.

Pizza	
Subs	21%
Steak	12%
Chicken	18%
Tacos	17%

a) What percentage of students liked pizza the best?

b) If Ryan surveyed 25 students, how many chose pizza?

Name: _____ 155

Curriculum Connection
NF.4

Word Problems – Missing Percentages

Questions	What percentage is missing?

1) A survey found out the most popular genre of music. The options were rap, pop, rock, country and jazz. What percent chose jazz?

Rap	1/4
Pop	25%
Rock	22%
Country	1/5
Jazz	

2) A s was r d to determine which sport was the most popu ons re hockey, basketball, s ball, c astics. What percent cho mna

Hockey	1/2
Basketball	17%
Soccer	1/10
Football	13%
Gymnastics	

3) Scott's website is used by differen logi Of 2300 people that access his webs eekly, data shows how many were using their phon iputer or tablet. What percentage of people use their tablet to access Scott's website?

Phone	3/4
er	17%
Table	

4) Courtney does 4 different workouts. She either runs, bikes, lifts weights, or uses a rowing machine. The amount she does each workout is listed in the table. What is the percentage of workouts where she chooses rowing?

R g	34%
Bike	5/20
Weights	31%
Rowing	

5) Nolan plays baseball. As a batter, he can get a single, double, triple, homerun, or out. His batting statistics are listed in the table. What percentage of 'at Bats' does he get out?

Single	1/4
Double	18%
Triple	1/20
Homerun	11%
Out	

Name: ______________________

Curriculum Connection
N7.4

Mental Math – Calculating Percentages – 10%, 15%

Percents represent a rate out of 100 in relation to a whole. Therefore, we can represent 10% as 0.10 and 15% as 0.15.

Hint – To mentally calculate 15%...

1. Determine 10% of the number
2. Find half of the answer (5%)
3. Add the 5% to the 10%

Example [illegible]

1. 210 [illegible] 1.0
2. Ha[illegible]
3. [illegible] 10% = [illegible]
4. The[illegible]fore, [illegible] = 31.5

Instruction [illegible] th[illegible]

	Number	[illegible]	0.05 (Half)	15%
1)	100	[illegible]	5	15
2)	200			
3)	400			
4)	500			
5)	120			
6)	180			
7)	240			
8)	310			
9)	450			
10)	680			

Name: _____ 159

Curriculum Connection
N7.4

Mental Math – Calculating Percentages – 25%, 50%

Percents represent a rate out of 100 in relation to a whole. 50% represents half of a number and 25% is a quarter of a number.

Steps – Calculating 50%...
1. Find half of the number

Example – 50% of 148
1. Divid[illegible] number 148 in half (148
2. 50%

Steps – Calculating 25%
1. Find out what 50% of the number is by halving the number
2. Halve the number one more time

Example – 25% of 188
1. 188 ÷ 2 = 94
2. 94 ÷ 2 = 47

Part 1 [illegible] of [illegible]mbers below?

1)	24	_____		[illegible]		3)	76	_____
4)	128	_____		[illegible]		6)	212	_____
7)	264	_____	8)	[illegible]		[illegible]	410	_____
10)	550	_____	11)	636	_____	[illegible]	[illegible]	_____

Part 2 Fill in the table below.

	Number	50%	25%
1)	100		
2)	200		
3)	240		
4)	164		
5)	188		
6)	264		

	Number	5[illegible]	25%
7)	348		
8)	414		
9)	560		
10)	644		
11)	828		
12)	940		

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Fill in the table below:

	Number	50%	25%
1)	376		
2)	464		
3)	780		
4)	940		
5)	1012		
6)	1460		

Name: _____

Fill in the table below:

	Number	50%	25%
1)	376		
2)	464		
3)	780		
4)	940		
5)	1012		
6)	1460		

Name: _____

Fill in the table below:

	Number	50%	25%
1)	376		
2)	464		
3)	780		
4)	940		
5)	1012		
6)	1460		

Name: _____

Fill in the table below:

	Number	50%	25%
1)	376		
2)	464		
3)	780		
4)	940		
5)	1012		
6)	1460		

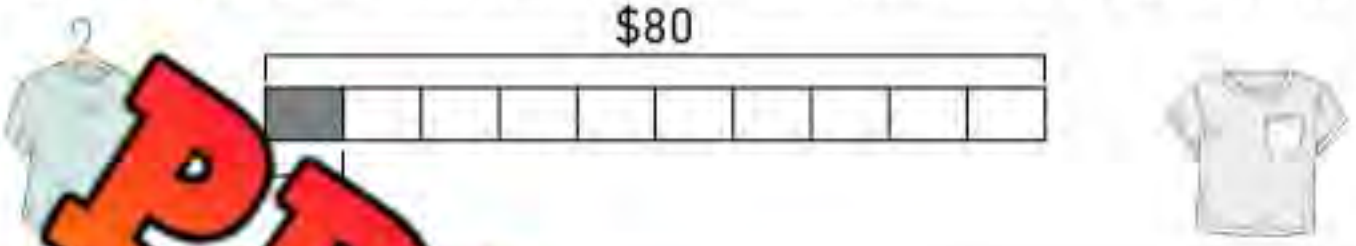
Name: _____ 161

Curriculum Connection
N7.4

Mental Math – Calculating Percentages – Visuals

When we want to find the percent of a number, scaling up and down is the best way.

For example, a shirt costs $80 at regular price. To calculate a sale price, we can scale 10% up and down. First, 10% of 80 is 8 which means 20% is 16 and 30% is 24.



Practice Solve the questions below:

1) Tom is shopping for [illegible]. He likes a pair he likes for $70.00. They are on sale for 15% off. How much [illegible] before tax?

2) Lindsay is out shopping for a new winter coat. She sees one for $90.00 plus an additional 20% off. How much will the coat cost before tax?

3) Joe brings $100 to the mall to buy some new speakers. He finds some for $78.00 with an additional 35% off.

a) How much will the speakers cost before tax?

b) With tax costing 15%, how much will the speakers cost?

c) How much of the $100 will Joe have when he leaves the mall?

Name: _____ 162

Curriculum Connection
N7.4

Determining Sales Tax

When we pay for something, we need to pay tax. Tax is an extra cost placed on a good or service that goes to the government. In Saskatchewan, we pay 11% tax.
When we purchase something, we should add 11% to the product price, so we know if we can afford it. We can do this by using a calculator or by using mental math. Follow these steps:

Calculating Sales Tax

1. Divide the price by 10 (example – $32.00 ÷ 10 = $3.20) to determine 10% of the cost
2. Divide the number by 10 to get 1% of the cost (3.20 ÷ 10 = $0.32)
3. Add the number to the second number to get the 11% tax cost (3.20 + 0.32 = [illegible])
4. Add to the price to get the total price ($32.00 + 3.52 = $35.52)

Alberta	Ontario	British Columbia	New Brunswick	Saskatchewan
5%	[illegible]	[illegible]	15%	11%

Instruction Fill in the table below [illegible] sales tax in Saskatchewan

#	Product Price	10%	[illegible]	Cost	Total Price
1	$20.00	$2.00	$[illegible]	[illegible]	$22.20
2	$10.00				
3	$30.00				
4	$40.00				
5	$50.00				
6	$60.00				
7	$25.00				
8	$100.00				
9	$42.00				
10	$88.00				

Name: _____ 163

Curriculum Connection
NY 6

Determining Sales Tax – Word Problems

Instruction Answer the word problems below.

1) Kayden has a $10 bill and wants to know if he can afford a burger and fry meal that costs $8.00 before taxes. Calculate the total cost of the meal after adding 11% tax. Can he afford the meal?

Bonus: How much money does he have left?

2) Dexter wants to buy a video game. He has $100 and the game costs $85.00 before tax. How much will the game cost after 11% tax?

Bonus: How much money will he have left if he buys the game?

3) Mya is thinking of purchasing a new pair of headphones that cost $71.00. She only has $65.00. Does she have enough money to buy them after a 11% tax is added? Explain.

Name: _____ 165

Curriculum Connection
N7.4

Calculating Percents of a Value

Instruction Answer the word problems below:

1) Jane has a 40-litre fish tank filled with water. She needs to replace 35% of the water with fresh water. How many litres of water does she need to replace?

2) The popul[illegible] small [illegible] 12,000. The town's population has increased by 8% over the last [illegible] how [illegible] sidents have moved into the town?

3) John has a collection of 220 stamps. He dec[illegible] ollection to a friend. How many stamps did John sell?

4) During a clearance sale, a clothing store offers a 40% discount on all its items. If a jacket originally costs $120, what will be the price of the jacket after the discount is applied?

Name: _____ 171

Curriculum Connection
NF.3

Converting Mixed Numbers to Improper Fractions

Instruction Convert the mixed numbers to improper fractions.

1) $6\frac{3}{4}$ =	2) $5\frac{1}{5}$ =	3) $7\frac{4}{6}$ =
4) $4\frac{4}{}$	5) $2\frac{4}{8}$ =	6) $6\frac{2}{5}$ =
7) $7\frac{2}{6}$ =	8) $\frac{3}{}$ =	9) $4\frac{3}{5}$ =
10) $6\frac{2}{4}$ =	11) $4\frac{}{}$	12) $9\frac{2}{5}$ =

Ordering Put the fractions in order fro st t

1)	$6\frac{3}{4}$	$\frac{20}{4}$	$5\frac{1}{5}$	$\frac{26}{3}$
2)	$3\frac{2}{3}$	$\frac{23}{5}$	$2\frac{3}{6}$	$\frac{31}{4}$ $7\frac{3}{9}$
3)	$9\frac{5}{5}$	$\frac{17}{3}$	$4\frac{4}{7}$	$\frac{19}{5}$ $4\frac{6}{12}$

Name: _____ 173

Curriculum Connection
N7.3

Converting Improper Fractions to Mixed Numbers

Instruction Convert the improper fractions to mixed numbers.

1) $\frac{16}{5}$ =	2) $\frac{13}{4}$ =	3) $\frac{13}{3}$ =
4) $\frac{}{5}$ =	5) $\frac{15}{2}$ =	6) $\frac{11}{3}$ =
7) $\frac{24}{4}$ =	$\frac{15}{6}$	9) $\frac{13}{5}$ =
10) $\frac{26}{3}$ =	11) $\frac{14}{4}$ =	=
13) $\frac{36}{4}$ =	14) $\frac{41}{7}$ =	15) $\frac{}{6}$
16) $\frac{46}{5}$ =	17) $\frac{63}{8}$ =	18) $\frac{47}{4}$ =
19) $\frac{71}{4}$ =	20) $\frac{55}{6}$ =	21) $\frac{75}{2}$ =

Name: _____ 174

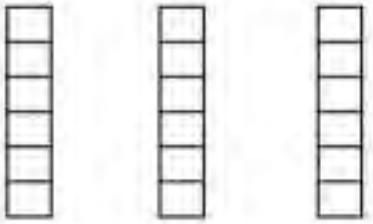
Curriculum Connection
NF.3

Adding Fractions With Common Denominators

Instruction Add the fractions below using the models.

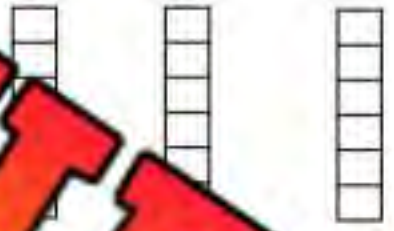
1) $\frac{2}{4} + \frac{1}{4} = \frac{3}{4}$

2) $\frac{4}{6} + \frac{1}{6} = \_\_$

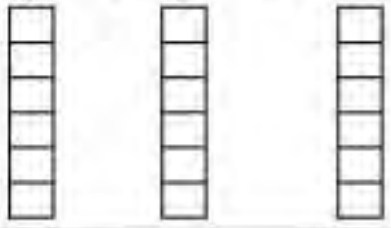


3) $\frac{2}{7} + \frac{}{7} = \_\_$

4) $\frac{2}{6} + \frac{2}{6} = \_\_$

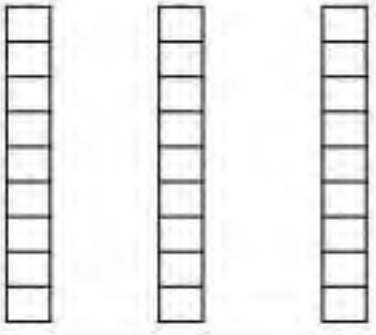


5) $\frac{4}{6} + \frac{1}{6} = \_\_$

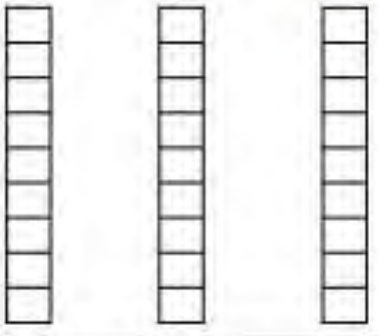


6) $\frac{}{5} + \frac{2}{} = \_\_$

7) $\frac{3}{9} + \frac{2}{9} = \_\_$



8) $\frac{5}{9} + \frac{3}{9} = \_\_$



Name: _____ 177

Curriculum Connection
NF.5

Adding Fractions With Common Denominators

Instruction Solve the word problems.

1) At the end of the birthday party, there were 3 pizza boxes left. The first box has 3/8 slices left. The second box had 2/8 slices left and the third box had 1/8 slices remaining. How much pizza is left in total?

2) Rachel and her sister [illegible] hunt. There were 30 eggs in total. Rachel found 17/30 eggs and [illegible] eggs. What fraction of the total eggs were found?

3) In a bag of 20 jelly beans, 5/20 are green and 8/20 are red. How many out of the 20 jelly beans are green and red?

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Solve the word problem below.

Out of 40 students, 12/40 participate in the math club and 15/40 participate in the science club. What fraction of the students participate in either club?

Name: _____

Solve the word problem below.

Out of 40 students, 12/40 participate in the math club and 15/40 participate in the science club. What fraction of the students participate in either club?

Name: _____

Solve the word problem below.

Out of 40 students, 12/40 participate in the math club and 15/40 participate in the science club. What fraction of the students participate in either club?

Name: _____

Solve the word problem below.

Out of 40 students, 12/40 participate in the math club and 15/40 participate in the science club. What fraction of the students participate in either club?

Name: _____ 180

Curriculum Connection
N7.5

Adding Fractions With Unlike Denominators

Instruction Add the fractions below

1) $\frac{2}{4} + \frac{1}{2} = \frac{2}{4} + \frac{2}{4} = \frac{4}{4}$

2) $\frac{1}{4} + \frac{4}{8} = \_\_ + \_\_ = \_\_$

3) $\frac{2}{2} + \frac{}{6} = \_\_ = \_\_$

4) $\frac{4}{6} + \frac{1}{2} = \_\_ + \_\_ = \_\_$

5) $\frac{1}{4} + \frac{3}{8} = \_\_ = \_\_$

$\frac{4}{} + \frac{2}{7} = \_\_ + \_\_ = \_\_$

7) $\frac{3}{6} + \frac{6}{12} = \_\_ + \_\_ = \_\_$

8) $\_\_ + \_\_ = \_\_$

9) $\frac{3}{15} + \frac{4}{5} = \_\_ + \_\_ = \_\_$

10) $\frac{10}{20} + \frac{8}{40} = \_\_ + \_\_ = \_\_$

11) $\frac{5}{12} + \frac{2}{4} = \_\_ + \_\_ = \_\_$

12) $\frac{6}{18} + \frac{5}{9} = \_\_ + \_\_ = \_\_$

13) $\frac{1}{4} + \frac{5}{16} = \_\_ + \_\_ = \_\_$

14) $\frac{3}{7} + \frac{6}{14} = \_\_ + \_\_ = \_\_$

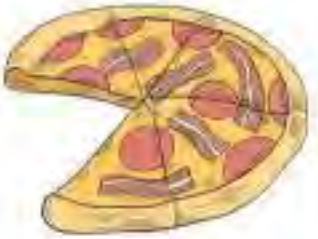
Name: _____ 183

Curriculum Connection
N7.5

Cooking With Fractions - Adding

Instruction Solve the word problems.

1) Kelly is making 5 pizzas. She needs 2/3 of a cup of flour for each pizza. How many cups of flour does she need in total?



2) A cookie recipe ca[illegible]/8 of[illegible]f sugar and 1/2 of a cup of brown sugar. How much [illegible]f in[illegible]he cookie recipe use?

3) A smoothie calls for 3/5 of a banana, 8/10 of a peach, and 1/2 of a kiwi. How many pieces of fruit are in the smoothie?

Name: _____ 184

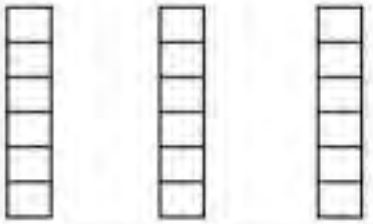
Curriculum Connection
N7.5

Subtracting Fractions – Common Denominators

Instruction Subtract the fractions below using the models.

1) $\frac{4}{4} - \frac{2}{4} = \frac{2}{4}$

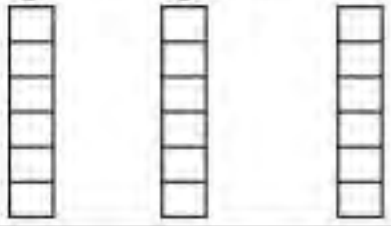
2) $\frac{5}{6} - \frac{3}{6} = \_\_$



3) $\frac{5}{7} - \frac{2}{7} = \_\_$

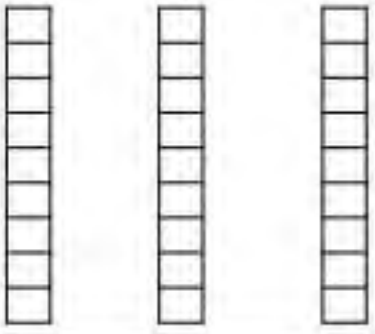
4) $\frac{6}{6} - \frac{3}{6} = \_\_$

5) $\frac{5}{6} - \frac{1}{6} = \_\_$

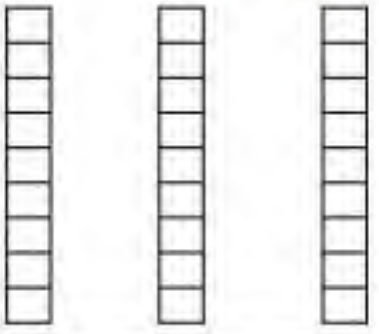


6) $\frac{5}{5} - \frac{3}{5} = \_\_$

7) $\frac{8}{9} - \frac{3}{9} = \_\_$



8) $\frac{7}{9} - \frac{2}{9} = \_\_$



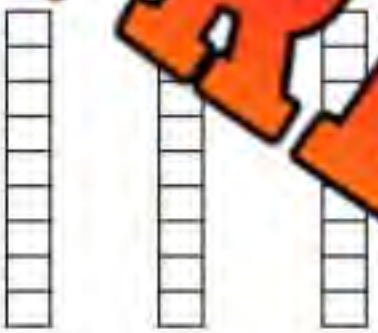
Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Subtract the fractions below using the models.

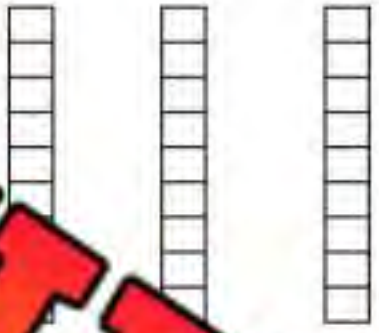
$\frac{6}{9} - \frac{4}{9} = \frac{\quad}{\quad}$



Name: _____

Subtract the fractions below using the models.

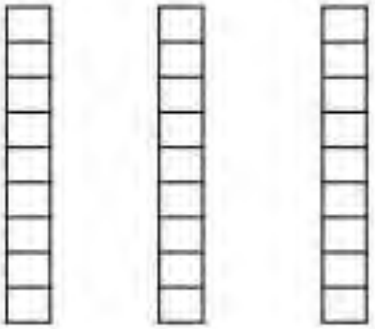
$\frac{6}{9} - \frac{4}{9} = \frac{\quad}{\quad}$



Name: _____

Subtract the fractions below using the models.

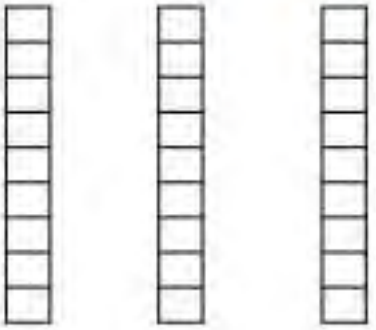
$\frac{6}{9} - \frac{4}{9} = \frac{\quad}{\quad}$



Name: _____

Subtract the fractions below using the models.

$\frac{6}{9} - \frac{4}{9} = \frac{\quad}{\quad}$



Name: _____ 186

Curriculum Connection
N7.5

Subtracting Fractions With Common Denominators

Instruction Subtract the fractions below.

1) $\frac{5}{5} - \frac{4}{5} = \frac{1}{5}$	2) $\frac{5}{5} - \frac{1}{5} =$ ___
3) $\frac{4}{}$ ___	4) $\frac{6}{9} - \frac{3}{9} =$ ___
5) $\frac{4}{7} - \frac{2}{7} =$	$\frac{5}{6} - \frac{3}{6} =$ ___
7) $\frac{6}{9} - \frac{2}{9} =$ ___	$\frac{7}{8}$ ___
9) $\frac{5}{6} - \frac{4}{6} =$ ___	10) $\frac{4}{6} - \frac{3}{6}$
11) $\frac{3}{4} - \frac{2}{4} =$ ___	12) $\frac{9}{10} - \frac{3}{10} =$ ___
13) $\frac{8}{8} - \frac{5}{8} =$ ___	14) $\frac{7}{7} - \frac{6}{7} =$ ___

Name: _____ 188

Curriculum Connection
N7.5

Subtracting Fractions With Common Denominators

Instruction Solve the word problems.

1) Steven is having a birthday party. He cuts his cake into 10 slices. He hands out 6/10 slices of cake. Write the subtraction equation using fractions below. Then solve the equation.

2) Brian took 40 dollars [illegible] nent 15/40 on a new book. How many dollars out of the 40 d[illegible]e h[illegible]

3) Kate got 70 candies when she went Trick-or-Treating on Halloween. She ate 13/70 candies when she got home. How many does she have now out of 70?

Name: _____ 196

Curriculum Connection
7D

Unit Test – Percent, Decimals, and Fractions

Part 1 Fill in the table below.

	Number	x0.01	1%	x0.10	10%	x0.05	15%
1)	100						
2)	50						
3)							

Part 2 problems below.

1) Carter found a pair of shoes that cost $85. He is lucky because they are an additional 15% off.

a) How much will the shoes be after the discount?

b) How much will they cost Carter with a 5% sales tax (after the discount)?

2) Eva wants to buy a new book, but she only has $10 in her purse. The book is priced at $8.25.

a) What will the book cost with 5% tax added?

b) How much money will she have left?

Part 3 Answer the word problems below.

The grade 7s voted on their favourite gym class game. The results are presented in the table below.

Basketball	11%
Badminton	23%
Volleyball	18%
Dodgeball	32%
Soccer	

a) What percentage of students chose soccer?

b) If there were 25 students chosen for the survey, how many chose dodgeball as their favourite?

Part 4 Is the decimal repeating or terminating decimal?

1) 0.5		4) 0.75	
2) 0.2		5)	
3) $0.\overline{12}$		6) 0.41	

Part 5 Write the decimals below – use a line to show repeating decimals.

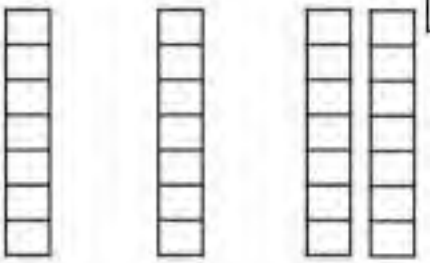
1) $\frac{1}{4}$ =	2) $\frac{7}{10}$ =	3) $\frac{}{7}$
4) $\frac{2}{3}$ =	5) $\frac{4}{11}$ =	6) $\frac{3}{9}$ =
7) $\frac{1}{5}$ =	8) $\frac{11}{12}$ =	9) $\frac{4}{12}$ =
10) $\frac{3}{5}$ =	11) $\frac{4}{6}$ =	12) $\frac{1}{12}$ =

Curriculum Connection
TD

Part 6 Add the fractions below.

1) $\frac{2}{7} + \frac{4}{7} = \frac{\quad}{\quad}$

2) $\frac{6}{7} + \frac{4}{7} = \frac{\quad}{\quad}$ $\frac{\quad}{\quad}$



3) $\frac{3}{6} + \frac{6}{1}$ $\frac{\quad}{\quad}$

4) $\frac{1}{4} + \frac{4}{8} = \frac{\quad}{\quad} + \frac{\quad}{\quad} = \frac{\quad}{\quad}$

5) $\frac{1}{2} + \frac{4}{6} = \frac{\quad}{\quad} + \frac{\quad}{\quad}$

$+ \frac{1}{2} = \frac{\quad}{\quad} + \frac{\quad}{\quad} = \frac{\quad}{\quad}$

Part 7 Subtract the fractions belo

1) $\frac{5}{5} - \frac{4}{5} = \frac{\quad}{\quad}$

2) $\frac{5}{5} - \frac{1}{5}$

3) $\frac{9}{4} - \frac{2}{4} = \frac{\quad}{\quad}$

4) $\frac{6}{9} - \frac{3}{9} = \frac{\quad}{\quad}$

5) $\frac{3}{4} - \frac{3}{8} = \frac{\quad}{\quad} - \frac{\quad}{\quad} = \frac{\quad}{\quad}$

6) $\frac{10}{14} - \frac{3}{7} = \frac{\quad}{\quad} - \frac{\quad}{\quad} = \frac{\quad}{\quad}$

7) $\frac{5}{6} - \frac{6}{12} = \frac{\quad}{\quad} - \frac{\quad}{\quad} = \frac{\quad}{\quad}$

8) $\frac{11}{16} - \frac{3}{8} = \frac{\quad}{\quad} - \frac{\quad}{\quad} = \frac{\quad}{\quad}$

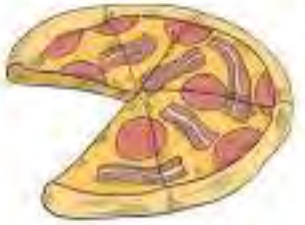
Curriculum Connection
TO

Part 8 Solve the word problems.

1) A cake recipe calls for 6/8 of a cup of white sugar and 3/4 of a cup of brown sugar. How much sugar in total does the cookie recipe use?

2) Brian made [illegible] a kg. His guests ate 2/4 of a kg. How much pasta is left?

3) Nicole had 6/12 of a pizza leftover from last night. The next day, she ate 1/3 of the pizza. How much pizza is left?

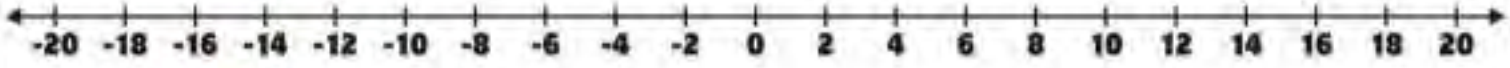


Name: _____ 200

Curriculum Connection
N7.6

Graphing Integers & Opposite Integers

Part 1 Graph each integer by writing the letter on the number line.



a) 0	e) -18	i) 3	m) -6
b)	17	j) 15	n) -7
c) 10	20	k) 20	o) -10
d) 18	7	L) -3	p) 17

Part 2 (hint: an opposite is a negative pair, for e.g. 3 and -3
Which letter pairs are opposites?

1) _____	5) _____
2) _____	6) _____
3) _____	7) _____
4) _____	8) _____

Part 3 Write the opposite integer below:

1) 8		4) 14	
2) 12		5) -4	
3) -18		6) -10	

Name: _____ 201

Curriculum Connection
N7.6

Ordering Integers – Greatest to Least

Part 1 Circle the largest integer.

1) 5, -7, -4, 3	2) -4, -8, -2, -3, 0
3) -2, 4	4) -6, 4, -2, -3, 6
5) 10,	6) 12, 7, -7, -9, 0

Part 2 Circle the

1) 8, 3, -5, -10, -9	2) -2, 0, 7, -9
3) 0, -2, -1, 2, -4	4) 12, -4, -3
5) 13, -10, -12, -5, 0	6) -4, -6,

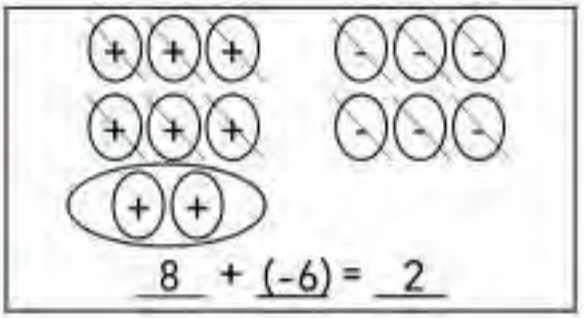
Part 3 Arrange the integers from greatest to least.

1) -7, 2, -5, -8, 5	2) 0, -5, 11, -11, -7
3) 4, -5, -7, 5, -6	4) -3, -9, -8, -10, 6

Name: _____ 203

Curriculum Connection
N7.6

Adding Integers – Zero Pairs



8 + (-6) = 2

Question: Cross out the zero pairs. What is left?

1) _____ + _____ = _____

2) _____ + _____ = _____

3) _____ + _____ = _____

4) _____ + _____ = _____

5) _____ + _____ = _____

7) _____ + _____ = _____

8) _____ + _____ = _____

9) _____ + _____ = _____

10) _____ + _____ = _____

11) _____ + _____ = _____

12) _____ + _____ = _____

Name: _____ 205

Curriculum Connection
N7.6

Golf – Adding Integers – Zero Pairs

Word Problems Solve the word problems below using counter chips.

1) Alice played 2 rounds of golf. Her final scores for both rounds are on the scorecard. What is the total score for the two rounds?

Round	Score
1	-6
2	+9
Total Score	

Equ _____ = _____

2) Theo play ds f. His final scores for all three rounds are on the scorecard. Wha otal

Round	Score
1	-5
2	-3
3	+5
al Score	

Equation: _____ + _____ + _____ = _____

3) Leah played 4 rounds of golf. Her final score on t ecard. What is her total score?

R1	R2	R3	
-4	4	-2	-4

Equation: _____ + _____ + _____ + _____ = _____

4) Miles played 4 rounds of golf. His final scores are written on the scorecard. What is his total score?

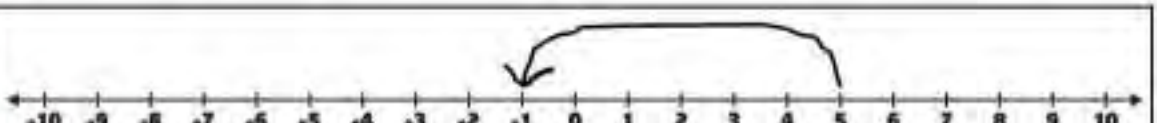
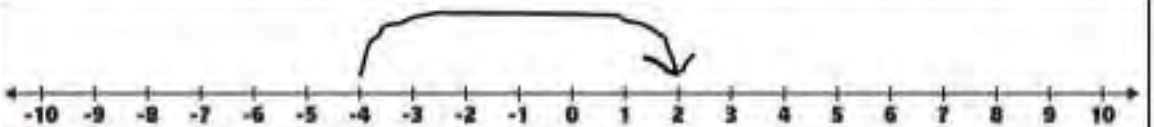
R1	R2	R3	R4	Total Score
8	3	-6	-5	

Equation: _____ + _____ + _____ + _____ = _____

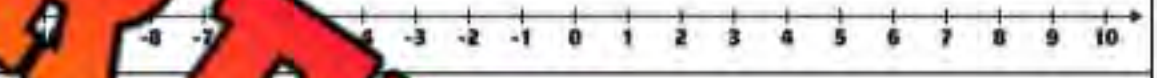
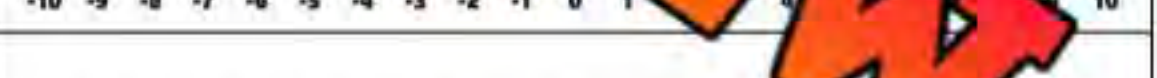
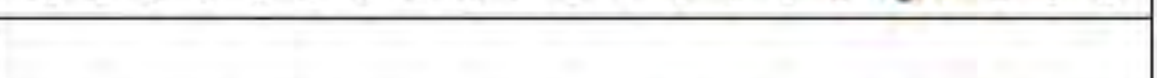
Name: _____ 206

Curriculum Connection
N7.6

Adding Integers – Using Number Lines

5 + (-6) = -1	
-4 + 6 = 2	

Instructio e the number lines to solve the questions.

1) 8 + (-3) =	
2) -9 + 5 =	
3) 8 + (-3) =	
4) -10 + 6 =	
5) 9 + (-17) =	
6) -8 + 11 =	
7) 8 + (-14) =	
8) -9 + 12 =	

Name: _____ 208

Curriculum Connection
N7.6

Adding Integers – Using Number Lines

-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Part 1 Solve the questions below.

1) 5 + (-	6) -15 + 11 + (-5)
2) 18 + (-6) + 7	7) 17 + (-6) + (-8)
3) -12 + 5 + (-6)	8) -15 + (-5) + 11 + (-7)
4) 13 + (-6) + (-4)	9) 11 + (-7) + (-5)
5) -11 + 4 + (-2)	10) 7 + (- 7

Part 2 Answer the word problems below. Write the equation for each question.

1) You take 9 steps forwards, 7 steps backwards, another 5 steps forwards, and another 4 steps forwards. How many steps have you taken?

2) The Big Dipper rollercoaster climbs straight up 30m above ground level before it drops 18m. Next, it climbs another 22m before it drops 17m. When the ride is over, the participants are how much higher than ground level?

Name: _____ 211

Curriculum Connection
N7.6

Adding Integers - Rules

Adding Integers Rules

(+) + (+) = (+) Adding 2 positive integers will always give a positive answer

(-) + (-) = (-) Adding 2 negative integers will always give a negative answer

(+) + (-) = (-) Adding integers with different signs → use the larger number

(+) + (-) = (+) Adding integers with different signs → use the larger number

*** If the integers have the same sign, add them and keep the sign

*** If the integers have different signs, subtract them and use the sign of the larger number

Part 1 Use the rules to answer the 1-step questions below.

1) 42 + (-13)	5) (-121)
2) 57 + (-66)	6) (-86)
3) -132 + (-112)	7) + (-8)
4) (+33) + (+86)	8) -328

Part 2 Simplify the multi-step questions and use the rules to help.

1) 16 + (-11) + (-17)	4) 42 + 35 + (-28) + (-55)
2) 37 + (-26) + 28	5) 68 + (-75) + (-33) + 91
3) -82 + (-42) + (-35)	6) -108 + 85 + (-72) + (132)

Name: _____ 212

Curriculum Connection
N7.6

Subtracting Integers – Keep, Flip, Change

Subtraction Integers Rules

To subtract integers, it is easiest to change the operation to addition and then follow the addition rules. We can do this by using the rule – Keep, Flip, Change. We keep the first number the same, flip the operation from subtraction to addition, and then change the third number's sign.

Example: 5 – (-6) = ? becomes 5 + 6 = 11

- **Keep** the first integer
- **Flip** the operation
- **Change** the sign of the next integer

Part 1 Evaluates a... solve the problems.

1) 8 – (-9) =	) (+37) – (+41) =
2) 24 – (-11) =	) (+5 +23) =
3) (-11) – 8 =	8) (-
4) (-23) – 13 =	9) (-53) – (=
5) (-31) – (-12) =	10) 88 – (-57) =

Part 2 Answer the word problem below. Write the equation for each question.

The highest recorded temperature on Earth is 56°C. The lowest recorded temperature is -89°C. What is the difference between these two temperatures?

Name: _____ 214

Curriculum Connection
N7.6

Subtracting Integers – Riddle

Instruction Write the letters above the answers at the bottom to solve the riddle.

E) 10 – (-4) =	N) (+17) – (+30) =
P) (	E) (+61) – (+38) =
L) (-18) – 7 =	) (-36) – (-20) =
N) (-12) – 17 =	E
V) 43 – (-18) =	A) (+63) – (+53) =

What begins with an E but only has one letter?

___	___	___	___	___	___	___	___	___	___
10	-13	14	-29	61	23	-25	-16	0	15

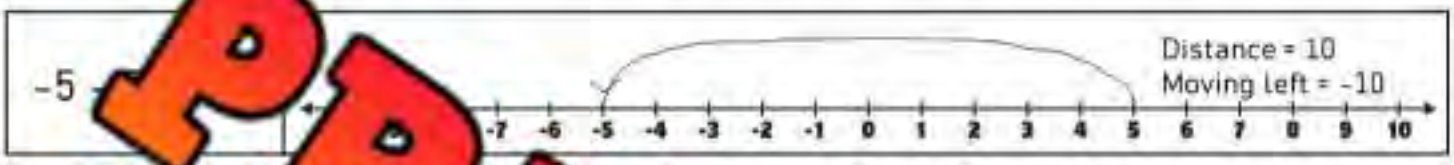
Name: _____ 215

Curriculum Connection
N7.6

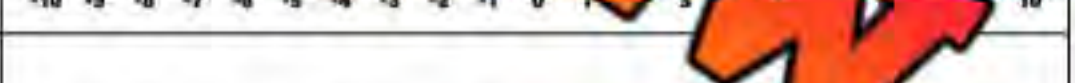
Subtracting Integers – Number Line

Follow these steps to use a number line for solving subtraction questions involving integers.

1) Determine how far the numbers are on a number line (-5 and 5 has a distance of 10 in total – magnitude of 10)
2) The direction you move **from** the **second** number to the **first** number will tell you which sign to use. When we move left, we are moving in a negative direction (-) and when we move right, we are moving in a positive direction (+)



Instruction num to solve the questions.

1) 6 – (-3) =	
2) -4 - 5 =	
3) 7 – (-3) =	
4) -6 – 1 =	
5) 0 – (-9) =	
6) -7 – (-4) =	
7) (-10) – (-1) =	

Name: _____ 217

Curriculum Connection
TD

Integers Quiz

Part 1 Arrange the integers from least to greatest.

1) 5, 3, -6, -9, 7	2) -4, 4, 8, 2, -9

Part 2 <, >, = to compare the integers below.

1) 8	☐	4	3) -7	☐	3
4) -5	☐	-4	6) -3	☐	-7

Part 3 Solve the questions below.

1) 3 + (-7) =	2) 5 + (-7) =	(-3)
4) (-5) + 9 =	5) (-2) + 7 =	6) (-5) +

Kennedy played 3 rounds of golf. Her final scores for both rounds are on the scorecard. What is her total score for the two rounds?

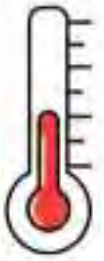
Round	Score
1	-8
2	-4
3	+6
Total Score	

Equation: _____ + _____ + _____ = _____

1) 9 – (-11) =	2) (-25) – 13 =
3) 26 – (-15) =	4) (+48) – (+13) =
5) (-17) – 9 =	6) 31 – 49 =

Part 4 Solve the word problems.

1) The [illegible] 11 degrees Celsius. Overnight, the temperature will drop ano[illegible]degree[illegible]ill be the temperature after the drop? Use a negative integer.



2) A hot air balloon is at 200 metres in the air. [illegible]n ris[illegible]0 metres and then descends 500 metres. What is its net chang[illegible]ltude[illegible]riginal position? Use a negative integer.

3) A hotel has 5 basement floors. It is at the ground floor and then rises 9 floors. Then it descends 13 floors. What floor is it on now? Use a negative integer.

Grade 7

Patterns and Relationships

	Curriculum Expectations	Pages
P7.1	Demonstrate an understanding of the relationships between oral and written patterns, graphs and linear relations.	5 – 25, 30 – 58
P		
P7.3	Demonstrate an understanding of one and two-step linear equations of the form $c\ d\ b\ ax\ +\ =$ (where a, b, c, and d are whole numbers, $c < d$ and $b \neq 0$) by modelling the solution of the equations concretely, pictorially, physically, and symbolically – and explaining the solution in terms of the preservation of equality	133 – 137
P7.4	Demonstrate an understanding of linear equations of the form $x + a = b$ (where a and b are integers) by modelling problems as a linear equation and solving the problems concretely, pictorially, and symbolically	138 – 150

Name: _____ 5

Curriculum Connection #7.1

Pattern Rule – Input/Output Tables

Instructions Fill in the input/output tables below.

Rule: add 3	
In	Out
105	
113	
134	

Rule: add 6	
In	Out
215	
233	
268	
291	

Rule: add 5	
In	Out
295	
303	
321	
347	

Rule: sub	
In	
308	
335	
367	
402	

e: subtract 10	
	Out
508	
529	
54	
588	

Rule: Subtract 8	
In	Out
605	
617	
632	
48	

Rule: multiply by 2	
In	Out
5	
10	
20	
50	

Rule: multiply by 1	
In	Out
6	
8	
10	
12	

Ru iply by 7	
	ut
8	
12	
20	

Rule: divide by 3	
In	Out
12	
24	
39	
45	

Rule: divide by 4	
In	Out
16	
36	
48	
64	

Rule: divide by 6	
In	Out
18	
30	
54	
78	

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Fill in the input/output tables below:

Rule:	
28	

Rule: multiply by 2	
In	Out

Rule: divide by 10	
In	Out
70	
150	

Rule:	act 5
In	t
217	
	356

Name: _____

Fill in the input/output tables below:

Rule: add 7	
In	Out
287	
	309

Rule: multiply by 2	
In	Out
12	
	36

Rule: divide by 10	
In	Out

Rule: subtract 5	
In	Out
217	
	356

Name: _____

Fill in the input/output tables below:

Rule: add 7	
In	Out
287	
	309

Rule: multiply by 2	
In	Out
12	
	36

Rule: divide by 10	
In	Out
70	
150	

Rule: subtract 5	
In	Out
217	
	356

Name: _____

Fill in the input/output tables below:

Rule: add 7	
In	Out
287	
	309

Rule: multiply by 2	
In	Out
12	
	36

Rule: divide by 10	
In	Out
70	
150	

Rule: subtract 5	
In	Out
217	
	356

Name: _____ 8

Recursive vs. Functional Relationships PT 1

Recursive vs. Functional Relationships

A **recursive relationship** describes the pattern between successive numbers in one of the rows/columns of a table of values. A **functional relationship** is a general rule to describe the relationship between two columns/rows of numbers in a table of values. We look across the table, instead of beside it. If there is a functional relationship, then we have a **linear pattern**, which we will learn more about later.

Part 1

Is Jeffrey describing the recursive or functional relationship?

					Jeffrey's Description	Recursive or Functional
1)	x	1		4	The pattern goes up by 3 each time.	
	y	5		11		
2)	x	10	20		number is multiplied by 10.	
	y	100	200			
3)	x	1	2	3	4	m nu ultiplied by 4 an 1 i	
	y	5	9	13	17		
4)	x	1	2	3	4	The patte 4 eac	
	y	8	12	16	20		
5)	x	1	2	3	4	$7x + 11 = y$	
	y	18	25	32	39		

Part 2

Provide a recursive and functional description of the patterns.

	Pattern				
1)	x	1	2	3	4
	y	3	9	15	21

Recursive	
Functional	

	Pattern				
2)	x	1	2	3	4
	y	12	20	28	36

Recursive	
Functional	

Name: _____ 9

Curriculum Connection
P7.1

Table of Values – Finding Term N

When finding a random term in a pattern, we can use a variable. Often *n* is used to take the place of the term number. When we use *n*, we can change the value to find the term value for any term number.

We can find the value for *n* by looking at the pattern between the term number and term value (functional relationship). To do this, we look <u>across</u> the table from the term num[illegible] to the term value.

Practi[illegible] [illegible]he pattern rule when you look <u>across</u> the table of values

Term Number	[illegible]
1	5
2	10
3	15
4	20
5	25
8	

<u>5*n*</u>

Term [illegible]	Term Value
1	1
2	[illegible]
3	[illegible]
4	[illegible]
5	[illegible]
9	[illegible]

<u>3*n* – 2</u>

Term Number	Term Value
1	6
2	12
3	18
4	24
5	30
1[illegible]	

_____

Term Number	Term Value
1	4
2	6
3	8
4	10
5	12
9	

_____

Term Number	Term Value
1	5
2	15
3	25
4	35
5	45
10	

_____

Term Number	Term Value
1	6
2	9
3	12
4	15
5	18
11	

_____

Name: _____ 11

Quadratic Expressions Pt 1

Using Algebraic Expressions

In the expression $6y + 5$, the 6 is the **numerical coefficient** of the variable and the 5 is the **constant term**. The **variable** is the y, which can represent any number.

Part 1 Use the algebraic expression to fill in the tables.

Term Number	Term Value
1	
3	
4	
5	
8	

$4x + 1$

Term Number	Term Value
1	
2	
3	
4	
5	

Term Number	Term Value
1	
2	
3	
4	
5	
11	

$t + 8$

Term Number	Term Value
1	
2	
3	
4	
5	
11	

$6n - 7$

Term Number	Term Value
1	
2	
4	
5	
10	
20	

$20 \div x + 5$

Term Number	Term Value
5	
11	

$8x - 6$

Part 2 Write 4 algebraic expressions using:
Variable = n Constant term = 6 Numerical coefficient = 3

1	
2	

3	
4	

Name: _____ 12

Curriculum Connection P7.1

Pattern Rule – Input/Output Tables

Instructions Fill in the input/output tables below by using the expression provided.

In n	Out $2n$
1	
2	
3	
4	
5	

In n	Out $2n + 3$
1	
2	
3	
4	
5	

In n	Out $5n - 5$
1	
2	
3	
4	
5	

In x	Out $3x - 3$
10	
20	
30	
40	
50	

In x	Out
2	
4	
6	
8	
10	

In x	Out $20 + x$
1	
2	
3	
4	
5	

In p	Out $3p + 10$
20	
40	
60	
80	
100	

In p	Out $10p - 12$
3	
6	
9	
12	
15	

In p	Out $7p + 20$
5	
10	
15	
20	
25	

Name: _____ 13

Activity Title: Algebraic Adventure Hunt

Objective

What are we learning about?

To help students understand and practice filling in input/output tables using given expressions involving all four operations through a fun and engaging treasure hunt.

Materials

What you will need for the activity.

- St tch or d use a smartphone)
- Index card
- Markers
- Small prizes s (fo s)
- Tape

Instructions

How you will comp acti

1) Cut out the input/output tables provided. T ll be e hunt challenge questions.
2) Hide these cards around the classroom or in a desi fe o are taping them under chairs, desks, or tucked into non-obvious s
3) Divide the class into small teams and give each team a stopwa
4) Explain the game: each team will hunt for a card, solve the problem t as quickly as they can, and return to you for verification.
5) Start the timer when you say "Go!" Each team rushes to find their first card.
6) When a team thinks they have the correct answer, they come back to you for verification. If they get it right, the teacher keeps the card. If the answer is wrong, they can try again or hide the card back in its original spot and find a new card.
7) The game continues until all cards are found or you call time. The team with the most correct answers wins.
8) Discuss the game, focusing on the concepts taught on the cards.

Name: ____________________ 14

Curriculum Connection
P7.1

Instructions Cut out the cards below.

In j	Out $34j \div 2$	In f	Out $f \div 2 + 17$	In c	Out $14c \div 2$	In p	Out $10p - 12$
3		12		3			
	102		29				8
9		36		7		3	
12			41			4	
15		60					38
In k	Out $k + 20$	In i	Out $22i$ [illegible]	[illegible]	Out $52e - 3$	In x	Out $12x$
100		1		[illegible]		2	
150		2			777		48
200		3		20		6	
250		4		25			96
300		5			1557	10	

Name: _____ 15

Instructions

Cut out the cards below.

In x	Out $r \div 5$	In p	Out $p \div 3 + 30$	In n	Out $9n - 7$	In l	Out $l \div 5 + 2$
25		9		9			
50		18		18		115	
75		27		27		125	
100		36				135	
125		45				145	

In x	Out $4s \div 2 + 1$	In x	Out $2q$		Out $5o + 10$	In m	Out $13m + 4$
10		2				8	
20		4		10			212
30		6		15		24	
40		8		20		32	
50		10		25		40	

Name: _____ 17

Function Connection
P7.1

Instructions Cut out the cards below.

In h	Out $h \div 4 + 3$	In f	Out $3f - 45$	In e	Out $15e + 3$	In b	Out $b \div 2 - 1$
8		15		2		10	
16		20		4		20	
24		25		6		30	
32		30		8		40	
40		35		10		50	

In k	Out $k \div 5 - 3$	In g	Out $2g$	In c	Out $4c + 25$	In d	Out $d \div 3 - 2$
	0	1		3			
20		2		5		6	
25		3		7		9	
30		4		9		12	
35		5		11			3

Name: _____ 19

Curriculum Connection
P7.1

Growing Patterns

Instructions How many blocks are in each term? Sketch the next 3 terms.

A)

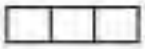
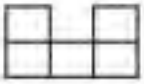
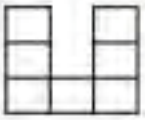
1) Describe the rule in your own words.

2) Represent the pattern using an algebraic expression:

3) How many blocks will the 15th term have?

4) How many blocks will the 30th term have?

B)

1) Describe the pattern rule in your own words.

2) Represent the pattern using an algebraic expression:

3) How many blocks will the 25th term have?

4) How many blocks will the 50th term have?

Name: _____ 20

Curriculum Connection
P7.1

Growing Patterns

Instructions How many blocks are in each term? Sketch the next 3 terms.

A)

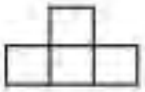
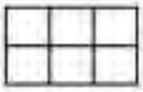
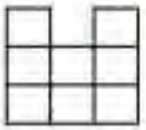
1) Describe t… …r own words.

2) Represent the pattern… …alg… …cession:

3) How many blocks will the 10th ter…

4) How many blocks will the 20th term have?

B)


1) Describe the pattern rule in your own words.

2) Represent the pattern using an algebraic expression:

3) How many blocks will the 12th term have?

4) How many blocks will the 50th term have?

Name: _____ 21

Identifying Independent and Dependent Variables

A **variable** is a quantity that changes. In an expression or equation, we use a variable to represent changing quantities, like money made while working.
There are two types of variables – dependent and independent variables. **Dependent variables** have values that change due to other factors. These values are dependent on the other variable. An **independent variable** has a value that does not rely on anything else.

Example – Emma earns $15 an hour. We can represent this situation using two variables: $e = 15h$ In this equation, earnings equals 15 multiplied by the number of hours she works. We have u variables – e for earnings and h for hours worked. The dependent variable is earnings it will change based on how many hours Emma works. The independent variable because it is not affected by how much money she makes.

Identify Identi pendent and dependent variables in the situations below.

	Independent		Dependent	
1) Jeff earns $100 nth.	gs	Month	Earnings	Month
2) Kim runs 10km every hour.		ent	Dependent	
	e		Distance	Hours
3) The plant grows 1cm a week.	Ind ent		Dependent	
	Weeks	Gr		Growth
4) The temperature decreases 1 degree every hour after 3:00 pm.	Independent			
	Time	Temperature		ure
5) Stacey's hair grows 5mm every week.	Independent		ident	
	Growth	Weeks	Growth	Weeks
6) A baby gains 1 kg every month.	Independent		Dependent	
	Months	Weight	Months	Weight
7) Tony's test results improve by 1 mark for every hour he studies.	Independent		Dependent	
	Test Results	Hours	Test Results	Hours
8) Sam finishes 10 questions every hour.	Independent		Dependent	
	Hours	Questions	Hours	Questions

Name: _____ 22

Correlation Correction P7.1

Identifying Independent and Dependent Variables

Identify What is the independent and dependent variable?

Situation	Independent Variable	Dependent Variable
1) Carl earns $15 an hour.	hours	earnings
2) Courtn…es 100 km per hour.		
3) Kerry …es every mea…		
4) Brianna bli… mi…		
5) Jane types 45 wo…		
6) A child grows 1 cm a month.		
7) The water level rises 2mm each year.		
8) A company earns $10,000 a month.		
9) The temperature of a boiling pot rises 10 degrees every minute.		
10) Nick adds 2 kg to his bench press every workout.		

Write Write your own situation with an independent and dependent variable

Situation	Independent Variable	Dependent Variable

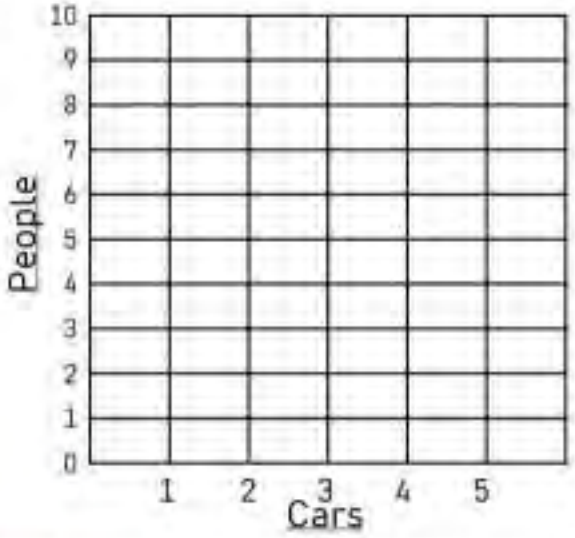
Name: _____ 23

Curriculum Connection PT 1

Graphing Increasing Patterns

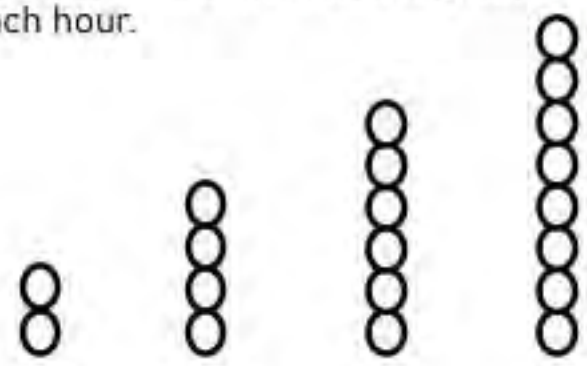
Instructions Translate the increasing patterns into a table of values and a line graph.

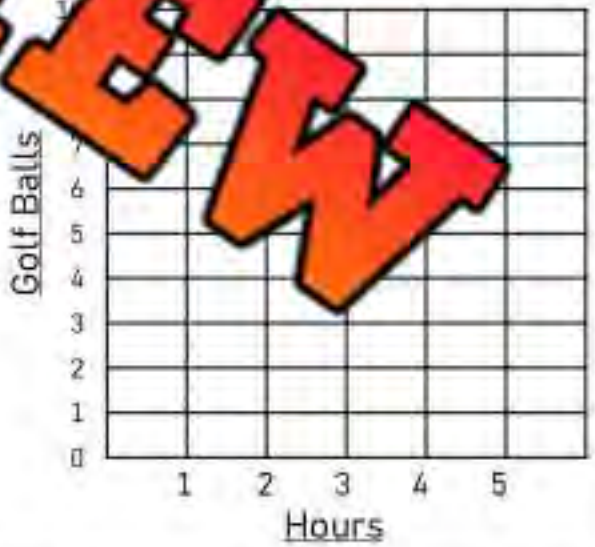
1) A train has the following people in each train car.



Term Number (Cars)			3	4	5	15
Term Value (People)						
What is the dependent variable?						
What is the independent variable?						

2) Steven is looking for golf balls in the woods. He finds the following balls each hour.





Term Number (Hour)	1	2	3	4	5	20
Term Value (Golf Balls)						
What is the dependent variable?						
What is the independent variable?						

Name: _____ 25

Curriculum Connection P7.1

Growing Patterns

Instructions How many shaded blocks are in each term? Sketch the next 2 terms.

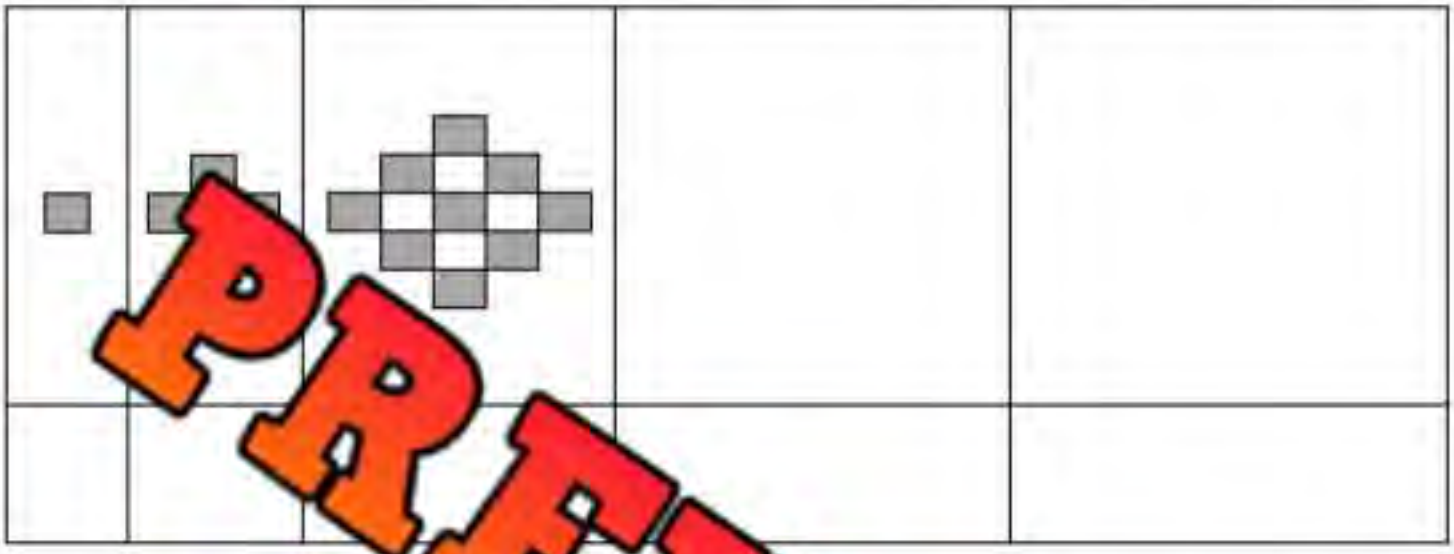
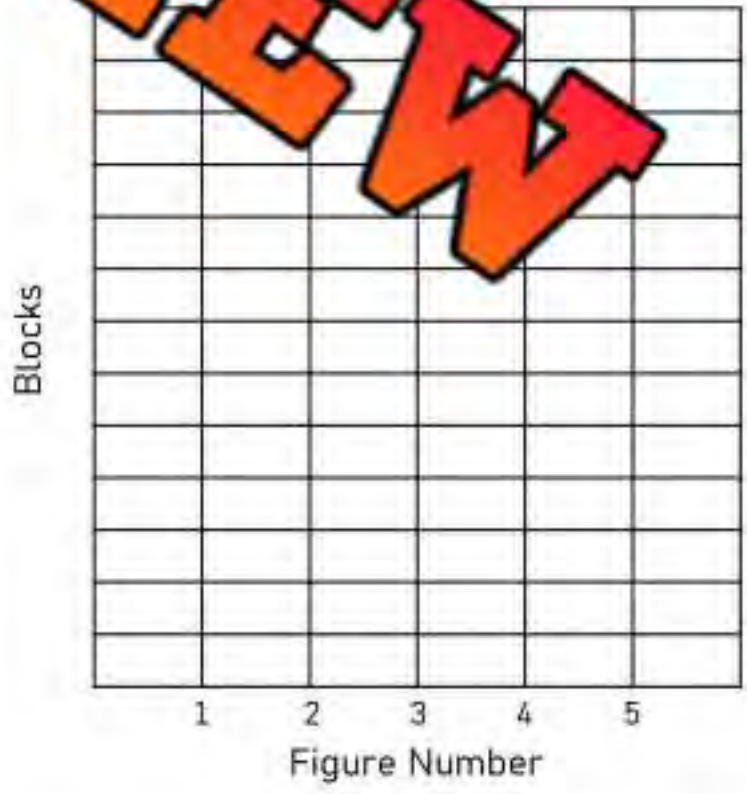


Figure Number	1			5	7	10
Number of Grey Blocks						

1) Describe the pattern rule:

2) How many blocks will the 7th term have?

3) How many blocks will the 10th term have?



Name: _____ 26

Curriculum Connection
PP.2

Writing Algebraic Expressions

Practice Answer the question below.

1)	Situation	Expression/Answer
a)	Blake sells lemonade at his stand. For every sale (s), he earns $5. Write the expression.	
b)	Blake [illegible]12 sales Monday. How much money did he mak[illegible]e expression and the answer.	
c)	B[illegible]old 22[illegible]he week, how much money did he make? Writ[illegible]ion[illegible]d the answer.	
d)	Blake earned $[illegible]este[illegible]onade. How many cups (c) did he sell?	

2)	Situation	Expression/Answer
a)	Sandy earns $14 for every hour ($h$) she works[illegible]has spend $2 each time she works to take the b[illegible]te th[illegible] expression.	
b)	Sandy worked 8 hours yesterday. How much money take home? Write the expression and the answer.	
c)	Sandy worked 12 hours today. How much money did she take home? Write the expression and the answer.	

3)	Situation	Expression/Answer
a)	Jake is driving across Alberta to visit a friend. For every hour (h) he drives, he travels 110km. Write the expression.	
b)	Jake drove 8 hours today. How far did he go? Write the expression and the answer.	
c)	Jake needs to drive 1430km. How many hours he needs to drive?	

Name: _____ 30

Curriculum Connections PT 1

Constant Rate of Change

A **constant rate** is a rate of change that remains the same and does not go up or down. For example, when you are paid $20 an hour, the rate of change is constant because for every hour you work, your pay goes up by the same amount - $20.

Instructions Fill in the tables below to show a constant rate of change.

1) Phil's [illegible] today has been represented in the table below

[illegible]	1	2	3	4	5	6	7	8
Money Earned		42	63					

What is the rate [illegible]ge? _____ Is the rate of change constant? Yes No

2) Laura sells cars. She e[illegible]om[illegible]n she sells a car. Her earnings for last week are represen[illegible]d in [illegible]. There were some days she did not earn commission.

Days Worked	1	2	[illegible]	4	[illegible]	6	7
Money Earned ($)	105	210	315	[illegible]	[illegible]	[illegible]15	1300

a) Is the rate of change constant? Yes No

b) What day do you think Laura sold the most cars? _____

c) How much did she earn that day? _____

d) How much do you think Laura made if she didn't sell a car? _____

3) Kim sells necklaces that she made. Her sales have been represented in the table.

Necklaces Sold	10	20	30	40	50	60	70	80
Money Earned ($)	30	60	90					

a) What is the rate of change? _____ Is the rate of change constant? Yes No

b) How much would Kim sell 1000 necklaces for? _____ 5000 necklaces: _____

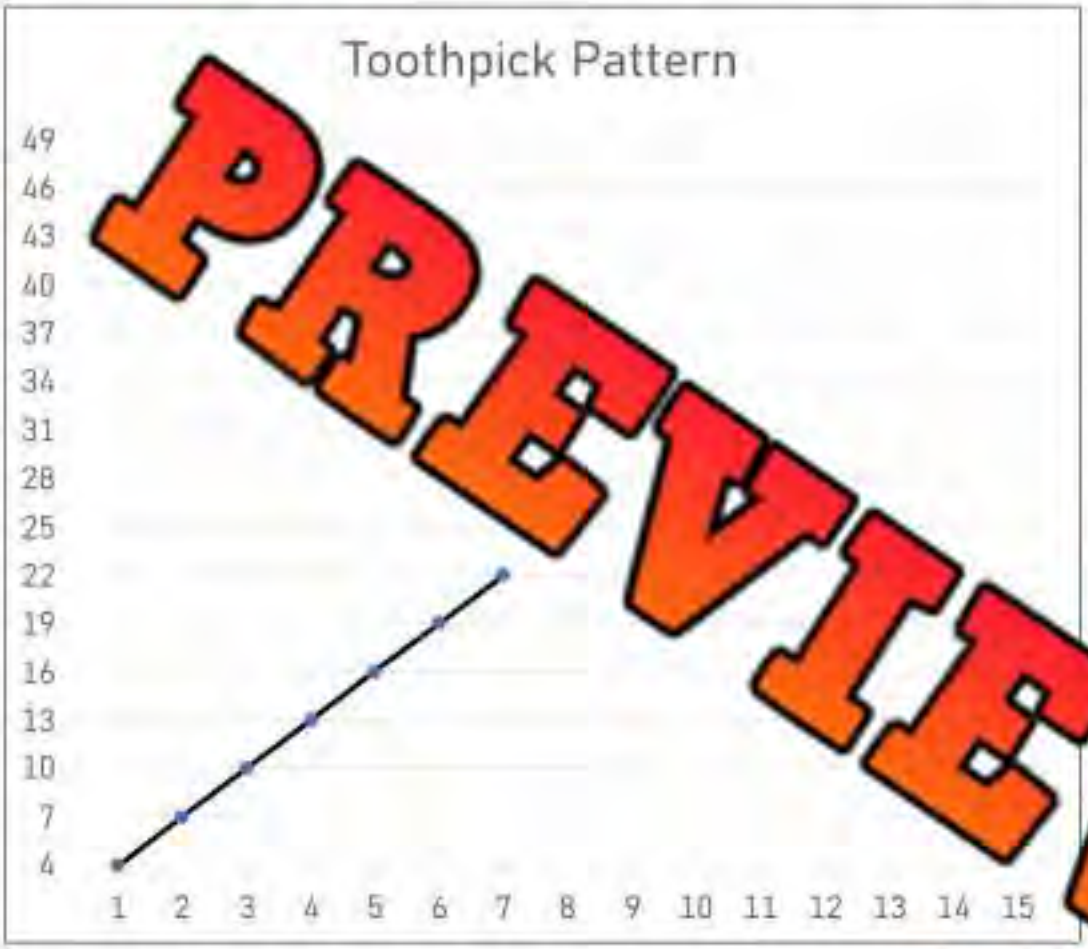
Name: _____ 31

Curriculum Connection P7.1

Reading a Linear Pattern - Graph

A **linear** pattern displays a constant rate of change. The pattern increases or decreases by the same amount each time.

Instructions Continue the line on the graph and fill in the table of values.



Term Number	Term Value
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

1) Draw the toothpick pattern below for the graph/table of values. Use any design you'd like.

Term 1	Term 2	Term 3	Term 4	Term 5

2) What is the constant rate of change?

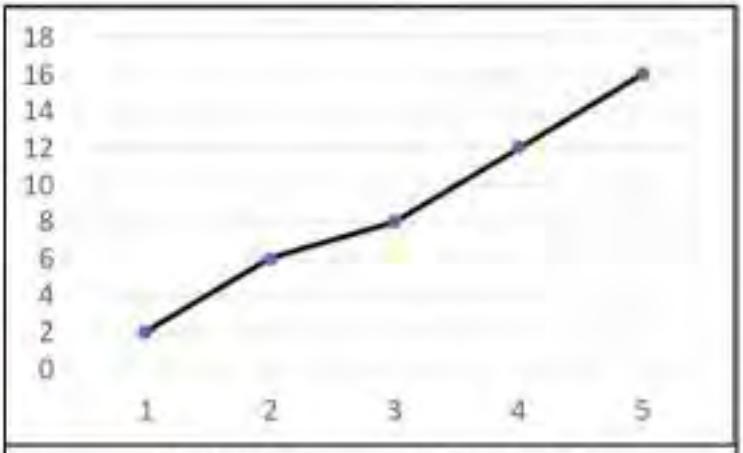
Name: _____ 32

Curriculum Connection P7.1

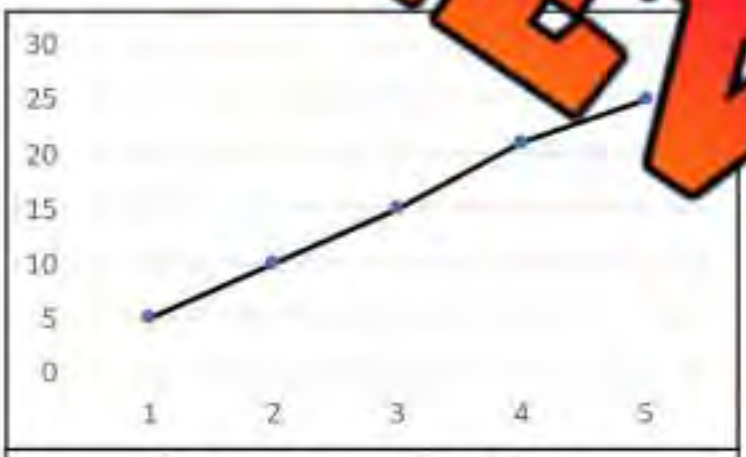
Increasing Linear Patterns – Yes or No?

Instructions Circle if the pattern displayed on the graph is linear.

1) Linear Non-Linear

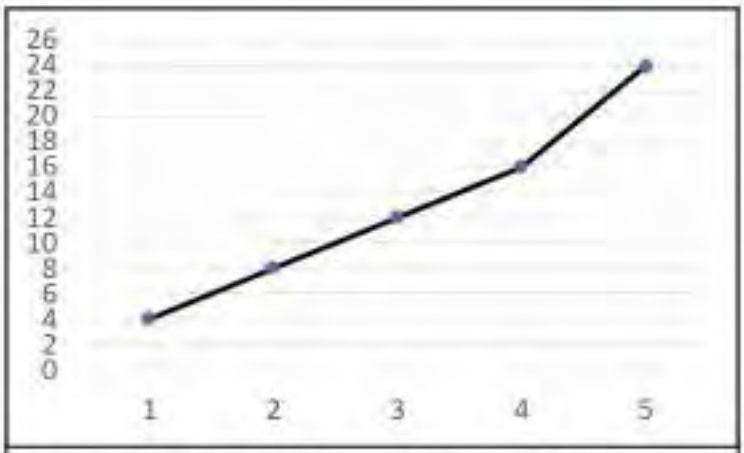


2) Linear Non-Linear

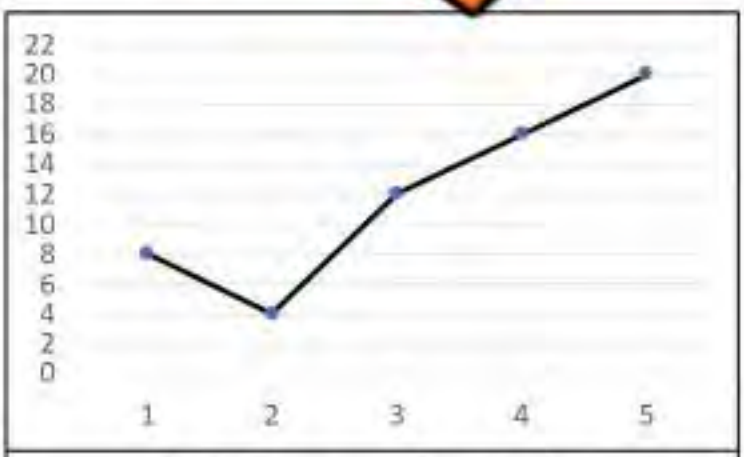


3) Linear Non-Linear

4) Linear N ar



5) Linear Non-Linear



6) Linear Non-Linear

Name: _____ 33

Curriculum Connection P7.1

Increasing Linear Patterns – Yes or No?

Instructions Circle if the pattern is linear, based on the table of values.

Term Number	Term Value
1	2
2	6
3	10
4	
5	
Linear	Non-Linear

Term Number	Term Value
1	10
2	16
3	20
4	26
5	32
Linear	Non-Linear

Term Number	Term Value
1	15
2	18
3	21
4	25
5	28
Linear	Non-Linear

Term Number	Term Value
1	14
2	19
3	24
4	29
5	34
Linear	Non-Linear

Term Number	Term Value
1	
2	
3	
4	60
5	74
Linear	Non-Linear

Term Number	Term Value
1	25
2	75
3	125
4	175
5	
	Non-Linear

Term Number	Term Value
1	112
2	126
3	138
4	152
5	166
Linear	Non-Linear

Term Number	Term Value
1	210
2	260
3	310
4	360
5	410
Linear	Non-Linear

Term Number	Term Value
1	500
2	650
3	700
4	850
5	1000
Linear	Non-Linear

Name: _____ 35

Curriculum Connection PT 1

Comparing Rates of Change

Questions Circle which variable (x or y) increases at a greater rate of change?

1) Term Number	1	2	3	4	5
x	15	30	45	60	75
y	5	25	45	65	85
		x	or	y	

2) Te	1	2	3	4	5
	35	70	105	140	175
y	50	80	110	140	170
		or	y		

3) Term Number			3	4	5
x	22		340	400	460
y	125			275	325
		x	or	y	

4) Term Number	1	2			5
x	612	635			704
y	548	575	602		
		x	or	y	

5) Term Number	1	2	3	4	5
x	315	450	585	720	855
y	438	579	720	861	1002
		x	or	y	

6) Term Number	1	2	3	4	5
x	530	715	900	1085	1270
y	655	829	1003	1177	1351
		x	or	y	

Name: _____ 36

Comparing Rates of Change PT.1

Comparing Rates of Change - Employees

Jeffrey is the boss at his company. He determines how much to pay his employees. Sometimes, Jeffrey pays his employees a starting bonus, where they get a one-time payment for starting their job.

Questions Who will get paid more money over time?

	0	1	2	3	4	5	6	7
Colton's Earnings ($)	750	1000	1250	1500	1750			
Spe... Earnings ($)	0	400	800	1200	1600			

a) Who will ...er 7 ...s? _____

b) How much is ... ea... ...ek? _____

c) How much is Spence... ...gs per ... _____

d) Whose earnings increase... ...grea... ...rate? _____

Weeks	0	1	2			5	6	7
Jacob's Earnings ($)	1550	2000	24...	...00				
Jeremy's Earnings ($)	0	650	1300	...				

a) Who will earn more after 7 weeks? _____

b) How much is Jacob's earnings per week? _____

c) How much is Jeremy's earnings per week? _____

d) If we graphed both of their earnings, whose graph would be steeper? _____

Weeks	0	1	2	3	4	5	6	7
Amelia's Earnings ($)	0	600	1200	1800	2400			
Raven's Earnings ($)	250	825	1400	1975	2550			

a) Who earned a bonus to start their job? _____

b) How much is Amelia's earnings per week? _____

c) How much is Raven's earnings per week? _____

Name: _____ 38

Curriculum Connection
P7.3

Writing Algebraic Expressions – Growing Pattern

Questions Draw the 4th and 5th term, then answer the questions.

				
Term 1	Term 2	Term 3	Term 4	Term 5

1) Questions	Expression
a) Write an expression that represents how many shapes are in the pattern?	
b) How many shapes will be in the 10th term?	
c) How many shapes will be in the 20th term?	
d) How many **rectangles** will be in the 50th term?	
e) How many **stars** will be in the 1000th term?	

				
Term 1	Term 2	Term 3	Term 4	Term 5

2) Questions	Expression
a) Write an expression that represents how many shapes are in the pattern?	
b) How many shapes will be in the 10th term?	
c) How many shapes will be in the 20th term?	
d) How many **rectangles** will be in the 50th term?	

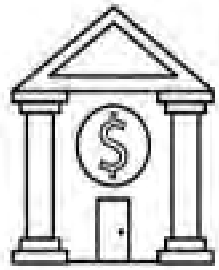
Name: ______________________ 39

Curriculum Connection
PR 1

Finding Term N – Word Problems

Word Problem Use a table of values and find the n^{th} term.

1) Jared has been saving money since he was born. He is now 15. He started saving with $45 when he was 1, $95 when he was 2, $145 when he was 3 and $195 when he was 4.



i) How much did he have when he was 7?

ii) How m[illegible]oes [illegible] that he is 15?

2) Stephanie is ramping up her exercise each week. In week 1, she exercised 15 minutes. In week 2, she exercised 35 minutes. In week 3, she exercised 55 minutes. In week 4, she exercised 75 minutes.

If the pattern continues...

i) How much will she exercise in week 10?

ii) How much will she exercise in week 30?

iii) How much will she exercise during the last week of the year (week 52)?

Name: _____ 40

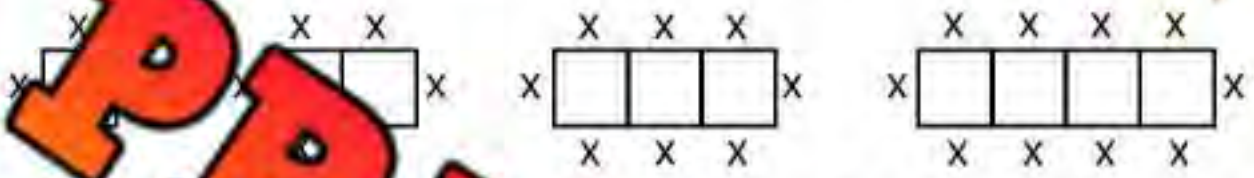
Curriculum Connection PT 1

Picnic Word Problem – T-Tables

Challenge | Answer the word problem below. Use the T-Table to help.

You have been put in charge of organizing the end of the year banquet for your baseball team. You want to have as many seats as you can.

The diagram below shows how many people can sit at the tables.



a) Fill in the t[illegible]earn [illegible]out the pattern of how many people can attend the banqu[illegible]

Tables	1		3	5	10	20	50
# of Seats							

b) Write the algebraic expression you used t[illegible] the [illegible]

c) What if you didn't put the tables together? Would 8 tab[illegible] too[illegible] less than 8 tables apart? Draw a diagram to help and fill in the[illegible]

Tables	1	2	3	4	5	6	20	50
# of Seats	4							

d) Write the algebraic expression you could use to solve any number of tables.

Name: _____ 41

Curriculum Connection P7.1

Hockey Tickets – Challenge Problem

Challenge Answer the word problem below.

Nathan is organizing a trip to see a hockey game with his friends. The cost for the bus rental is $200. The cost per person is $20.

a) Write an algebraic expression that represents the cost if p people go.

b) How much will the trip cost Nathan if 5 people go?

c) How much will the trip cost Nathan if 20 people go?

d) Nathan wants to offer food as well. Suppose food costs $10 per person. Write an algebraic expression that represents the cost of the bus, food, and ticket if p people go.

e) Suppose 20 people attend the hockey game and get food. How much will it cost Nathan?

f) How much will Nathan charge each person if 20 people go?

Ice Cream Sundae – Challenge Problem

Challenge Answer the word problem below.

At Ivy's Ice Cream Shop, a plain ice cream sundae costs $5.00. Each extra topping costs $0.50.

a) Write an algebraic expression that represents the cost of a sundae with *e* extra toppi

b) A ants t ndae with 5 toppings. How much will it cost?

c) Warren ordered a th 8 t How much will it cost Warren?

d) Warren paid with a $20 bill. How much rece nge?

e) On Thursdays, sundaes are half price! Write an algebraic expres hat represents the cost of a sundae with *e* extra toppings.

f) Dan ordered a sundae on Thursday with 10 toppings. How much did it cost him?

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Answer the word problem below:

At Bella's Bookstore, a notebook costs $3.00. Each additional sticker for the notebook costs $0.25.

1) Write an algebraic expression that represents the cost of a notebook with s extra stickers.

2) Jamie wants to buy a notebook with 6 stickers. How much will it cost?

3) Jamie paid with a $20 bill. How much will they receive as change?

Name: _____

Answer the word problem below:

At Bella's Bookstore, a notebook costs $3.00. Each additional sticker for the notebook costs $0.25.

1) Write an algebraic expression that represents the cost of a notebook with s extra stickers.

2) Jamie wants to buy a notebook with 6 stickers. How much will it cost?

3) Jamie paid with a $20 bill. How much will they receive as change?

Name: _____

Answer the word problem below:

At Bella's Bookstore, a notebook costs $3.00. Each additional sticker for the notebook costs $0.25.

1) Write an algebraic expression that represents the cost of a notebook with s extra stickers.

2) Jamie wants to buy a notebook with 6 stickers. How much will it cost?

3) Jamie paid with a $20 bill. How much will they receive as change?

Name: _____ 45

Curriculum Connection
P7.1

Integer Patterns - Adding

-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Instructions Fill in the blanks below using the pattern rule.

1) Start a[illegible]d 2 each time

2) Start [illegible] -10, [illegible] tim[illegible]

3) Start at -19, add 4 ea[illegible]

4) Start at 18, add -5 each time

5) Start at 14, add -4 each time

6) Start at -1, add -2 each time

7) Start at 19, add -5 each time

8) Start at -20, add 3 each time

Name: _____ 46

Curriculum Connection
P7.1

Integer Patterns - Adding

-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Instructions Write the pattern rule and complete the pattern.

1)

-5		3	7		

2)

-19			-1		

3)

8	5	2			

4)

15	11	7	3		

5)

-17	-12	-7	-2		

6)

-20	-14	-8	-2		

7)

17	12	7	2		

8)

20	15	10	5				

Name: _____ 47

Curriculum Connection
P7.1

Pattern Rule – Input/Output Tables - Integers

Instructions Fill in the input/output tables below.

In n	Out $n + (-3)$
1	
2	
3	
4	
5	

In n	Out $2n + (-5)$
1	
2	
3	
4	
5	

In n	Out $n + 6$
-1	
-2	
-3	
-4	
-5	

In x	Out $x + (-2)$
-2	
-4	
-6	
-8	
-10	

In x	Out
2	
4	
6	
8	
10	

In x	Out $x + 11$
-1	
3	
-9	

In p	Out $3p + (-10)$
20	
40	
60	
80	
100	

In p	Out $p + (-12)$
-3	
-6	
-9	
-12	
-15	

In p	Out $p + (-8)$
-3	
-1	
2	
4	
6	

Curriculum Connection
P7.1

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: ______________________

Fill in the input/output tables below:

[illegible]	**Out** [illegible])*n* + 7
-5	
[illegible]	
-1	
1	
3	

Name: ______________________

Fill in the input/output tables below:

In *n*	**Out** (-5)*n* + 7
-5	
-3	
-1	
1	
[illegible]	

Name: ______________________

Fill in the input/output tables below:

In *n*	**Out** (-5)*n* + 7
-5	
-3	
-1	
1	
3	

Name: ______________________

Fill in the in[illegible]/ou[illegible]

In *n*	[illegible] (-5)[illegible] 7
-5	
-3	
-1	
1	
3	

Name: _____ 49

Curriculum Connection
PT 1

Integer Pattern – Adding Word Problem

-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Instructions Answer the word problem below.

Richard i[illegible]g football. He plays defense, so he is often running backwards. He decides [illegible] steps forwards and backwards. For every step forward, he adds [illegible] backward, he adds -1.

a) Ea[illegible]quarte[illegible]akes 50 steps forwards, and -100 steps backwards. If every ste[illegible]era[illegible]step forward, how many steps did Richard take in the 4 qu[illegible] the [illegible]

b) Fill in the table of values that re[illegible]s ho[illegible] steps Richard takes in two games (8 quarters).

1	2	3	4	5	[illegible]	[illegible]

c) Write an algebraic expression to help you solve how many step[illegible]hard took in *n* number of quarters.

d) In 5 games, does Richard take more steps forward or backward?

e) How many steps does Richard take in 5 games?

Name: _____ 50

Curriculum Connection P7.1

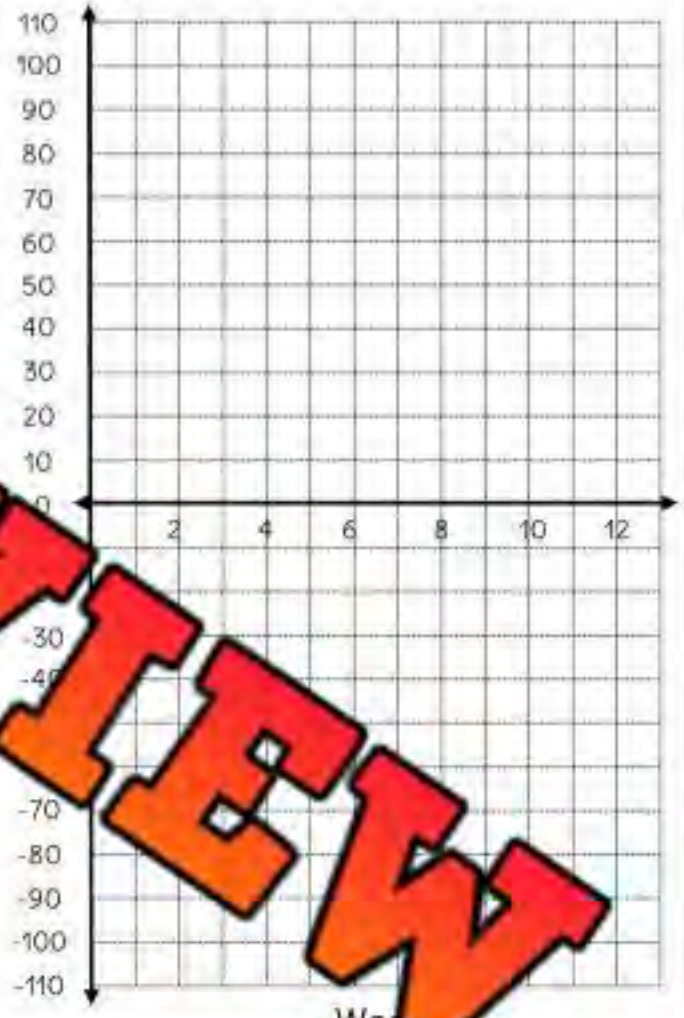
Pattern Using Negative Integers – Olivia's Money

Instructions Answer the problems below.

Olivia owes her sister $100, and she has no other money. Therefore, she has -$100. Luckily, she gets an allowance of $15 a week.

Fill in the table of values below to learn more about how long it will take Olivia to pay back her sister.

Term	Term Value (Money)



a) Graph the table of values.

b) How many weeks will it take for Olivia to pay back her sister?

c) Is this a linear pattern? Explain how you know.

d) Use the graph to determine how much money Olivia will have in 12 weeks.

e) Use an algebraic expression to determine how much money Olivia will have in 26 weeks.

Name: _____ 51

Curriculum Connection P7.1

Integer Patterns - Subtraction

-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Instructions Fill in the blanks below using the pattern rule.

1) Start a ubtract 2 each time

2) Start 5, su h me

3) Start at -3, subtract 4 e

4) Start at 2, subtract -2 each time

5) Start at -7, subtract -4 each time

6) Start at -16, subtract -3 each time

7) Start at -1 subtract 2 each time

8) Start at 2, subtract -3 each time

Name: _____ 53

Curriculum Connections P7.1

Pattern Rule – Input/Output Tables - Integers

Instructions Fill in the input/output tables below.

In n	Out $n - (-2)$
1	
2	
3	
4	
5	

In n	Out $3n - 5$
1	
2	
3	
4	

In n	Out $n - 4$
-1	
-2	
-3	
-4	
-5	

In x	Out $x - (-5)$
-2	
-4	
-6	
-8	
-10	

In x	Out
4	
6	
8	
10	

In x	Out $x - 9$
-1	
3	
-9	

In p	Out $3p - 10$
20	
40	
60	
80	
100	

In p	Out $p - (-15)$
-3	
-6	
-9	
-12	
-15	

In p	Out $p - (-12)$
-3	
-1	
2	
4	
6	

Name: _____ 54

Curriculum Connection P7.1

Integer Patterns – Average Temperatures

Instructions Fill in the blanks below using the pattern rule.

In one of the coldest cities in Canada, the average temperature in January is -32. Every month after January until August, the temperature warms +8° C. In September, the pattern reverses, with the temperature decreasing each month by -11° C. From December to January, the temperature drops -12° C.

Mo	Temperature
	-32
Fe ary	
March	
April	
May	
June	
July	
August	
September	
October	
November	
December	

a) Fill in the table to display the average temperatures each month.

b) What is the difference in temperatures between January and August?

c) [illegible] pattern rule from January to

d) What is [illegible] September to December?

e) What is the difference in temperatures between February and July?

f) Which month has the biggest change in temperature?

g) If you wanted to escape the coldest winter months, which months would you travel south for?

Name: _____ 55

Curriculum Connection PT1

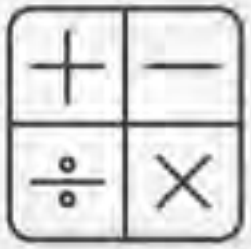
Task Cards: Patterning – All Operations

Objective What are we learning about?

To recognize and create patterns using the four basic mathematical operations.

Materials What you will need for the activity.

- 24 t
- S et for answers
- P



Instructions ou w the activity

1. Introduce the concept o s in perations and their relevance to problem-solving in everyda e.
2. Organize the students into pairs an ovide e air heir sets of task cards.
3. Give each pair an answer recording sheet t do ses.
4. Encourage teamwork by having students collabora ir p on finding solutions.
5. Allow students to select any task card to begin with, emphasiz n complete the cards in any order they prefer.
6. Instruct students to record the letter of their chosen answer (A, B, or C) on their answer sheet beside the task card's number.
7. Consider using a timer to create a dynamic challenge, adjusting the duration to fit the lesson's objectives and complexity.
8. After the activity, review the answers collectively, discussing any challenging patterns and strategies used to solve them.
9. Have students reflect on the activity, sharing the methods they applied and obstacles they overcame.

Task Cards | Cut out the task cards below.

Card 1:
Start with 60. Add 20 and then divide by 4 for the next number. What is the second number?

a) 20
b) 15
c) 25

Card 5:
Begin with 25. Subtract 5 and then divide by 2 for the next number. What is the third number?

a) 7.5
b) 10
c) 12.5

Begin with 1... 25 ... then multiply by 2 ... ext nu... hat is the th... umb...

a) 75
b) 150
c) 50

Card 6:
Start at 50 and subtract 10 each time. What is the fourth number?

a) 10
b) 20
c) 30

Card 3:
Start with 30. Divide by 3 and then add 10 for the next number. What is the second number?

a) 20
b) 15
c) 30

...7:
St... 2 and then subtra... ne... ber. What is th... ond...

a)
b) 20
c) 32

Card 4:
Start at -10, add 5 each time. What is the third number?

a) 0
b) 5
c) 10

Card 8:
Begin with 200. Divide by 5 and then subtract 15 for the next number. What is the third number?

a) 5
b) 10
c) 20

Task Cards | Cut out the task cards below.

Card 9:
Start with 12. Multiply by 3 and then add 6 for the next number. What is the second number?

a) 36
b) 42
c) 48

Card 13:
Start at 75, subtract 15 each time. What is the fourth number?

a) 30
b) 45
c) 60

Start at -12, a[illegible]each[illegible] What is the [illegible]umb[illegible]

a) -11
b) -18
c) -15

Card 14:
Begin with 90. Subtract 10 and then multiply by 3 for the next number. What is the third number?

a) 240
b) 180
c) 210

Card 11:
Begin with 60. Add 30 and then divide by 6 for the next number. What is the second number?

a) 10
b) 15
c) 12

Card 15:
St[illegible]4 and then subtrac[illegible]e ne[illegible]nber. What is th[illegible]ond[illegible]

a) [illegible]
b) -110
c) -120

Card 12:
Start with 48. Divide by 4 and then add 10 for the next number. What is the second number?

a) 22
b) 18
c) 12

Card 16:
Begin with 140. Divide by 7 and then add 5 for the next number. What is the third number?

a) 25
b) 15
c) 20

Task Cards | Cut out the task cards below.

Card 17:
Start with -32. Divide by 8 and then subtract 2 for the next number. What is the second number?

a) -2
b) 6
c) -6

Card 21:
Start with 36. Divide by 6 and then add 7 for the next number. What is the second number?

a) 13
b) 12
c) 15

Start at -20, [illegible] is the [illegible]ber?

a) -4
b) 0
c) -8

Card 22:
Begin with 120. Subtract 40 and then divide by 4 for the next number. What is the third number?

a) 20
b) 10
c) 15

Card 19:
Begin with 45. Subtract 15 and then multiply by 2 for the next number. What is the second number?

a) 30
b) 15
c) 60

Card [illegible]:
St[illegible] 2 and then subtrac[illegible]ber. What is th[illegible]

a)
b) -30
c) -42

Card 20:
Start with 50. Multiply by 2 and then subtract 25 for the next number. What is the second number?

a) 75
b) 50
c) 100

Card 24:
Start at 100, subtract 25 each time. What is the fourth number?

a) 25
b) 0
c) 50

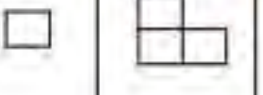
Name: _____ 59

Algebra Quiz - Patterning

Part 1 Is Anna describing the recursive or functional relationship?

	Pattern					Anna's Description	Recursive or Functional
1)	x	1	2	3	4	The term number is multiplied by 3 and then 4 is added.	
	y		10	13	16		
2)	x		1	2	3	The y variable has 15 added each time.	
				20	35		

Part 2 How many blocks are in each term? Sketch the next 3 terms.

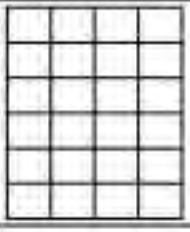
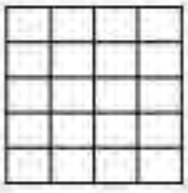
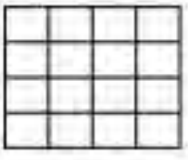
1) 					

1) Describe the recursive relationship between the number of blocks.

2) Represent the pattern using an algebraic expression.

3) How many blocks will the 15th term have?

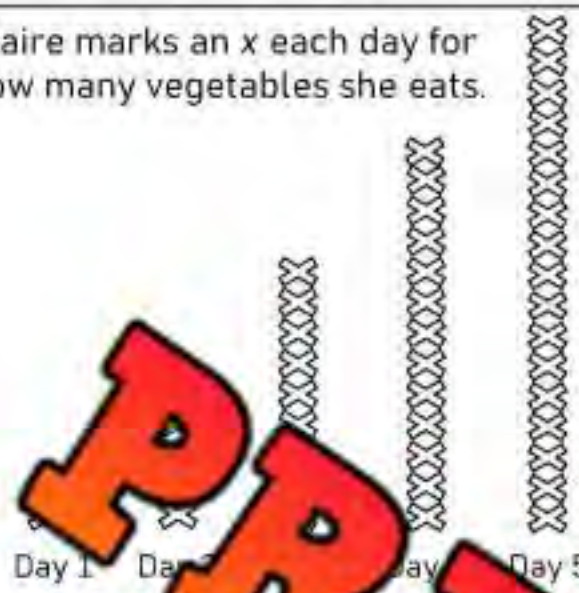
4) How many blocks will the 30th term have?

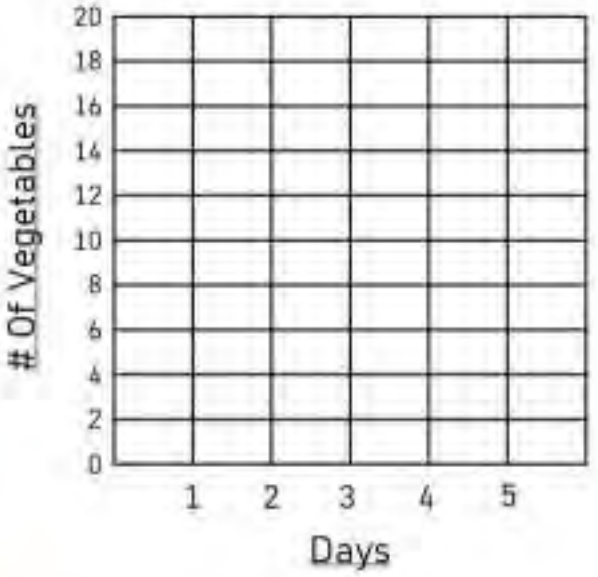
2)   					

Describe the recursive relationship between the number of blocks.

Part 3 Translate the growing patterns into a table of values and a graph.

Claire marks an *x* each day for how many vegetables she eats.





Term Number (Day)					10	25
Term Value (Vegetables)						

Part 4 Fill in the input/out[put] tables [below]

Rule: add 7	
In	Out
135	
142	
163	
178	

Rule: multipl[y]	
In	Out
3	
5	
8	
11	

[Rule]: subtract 8	
	Out
453	
488	

In *n*	Out $2n + 5$
1	
2	
3	
4	
5	

In *n*	Out $2n + (-3)$
5	
10	
15	
20	
25	

In *n*	Out $n - (-5)$
-1	
-2	
-3	
-4	
-5	

Part 5 Answer the word question below.

Admission to Fun Haven is $10. For each ride in Fun Haven, it costs an additional $2.

a) Write an algebraic expression that represents the cost to enter Fun Haven and ride extra *e* rides.

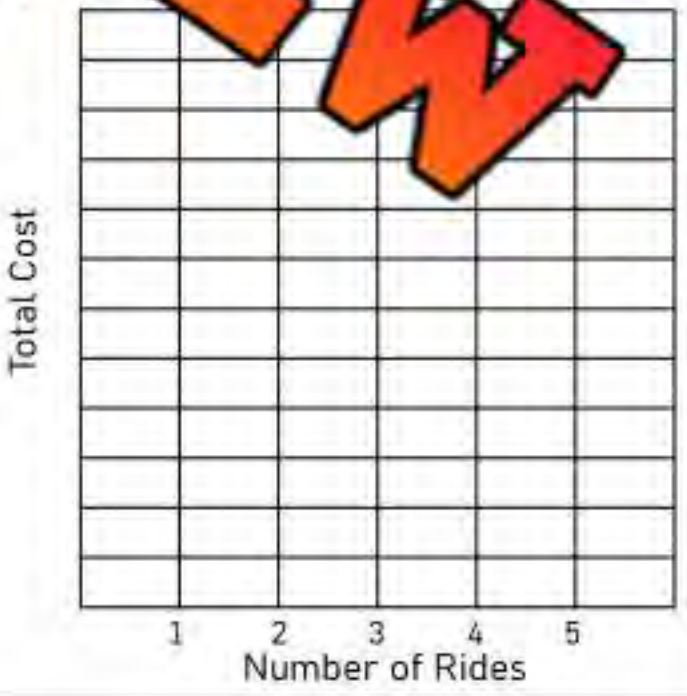
b) Claire entered the park and has gone on 8 rides. How much did it cost her?

c) Claire has $ and at the park. How many rides can she go on?

d) Fill in the table below to represent values related to going to Fun Haven.

Number of Rides	0	1	2		4	5	6
Total Cost							

e) Translate the table of values into a line graph.



f) Is the rate of change constant?

YES NO

g) What is the rate of change?

Part 6 — Who will get paid more money over time?

Weeks	0	1	2	3	4	5	6	7
Sam's Earnings ($)	500	650	800	950				
Logan's Earnings ($)	0	250	500	750				

a) Who will earn more after 7 weeks? _____

b) How [illegible] Sam's earnings per week? _____

c) [illegible] earnings per week? _____

d) Whose e[illegible] greater constant rate? _____

e) Who received t[illegible] without working? _____

Part 7 — Draw the [illegible] nd 5 [illegible] swer the questions.

Term 1	Term 2	Term 3	Term 4	Term 5
				

Questions	Expression
a) Write an expression that represents how many shapes are in the pattern?	
b) How many shapes will be in the 10th term?	
c) How many shapes will be in the 20th term?	
d) How many rectangles will be in the 100th term?	
e) How many stars will be in the 1000th term?	

Name: _____ 64

Curriculum Connections
7.P.2

Equation or Expression?

Questions Is the number sentence an expression or equation?

1) Paul has 5 cookies but needs enough for 10 people. $5 + c = 10$	Equation	Expression
2) The pa[illegible]s the following rule: [illegible] x 3 – 1	Equation	Expression
3) Maria want[illegible]n t[illegible]eek. She has already run 22km. 22 [illegible]	Equation	Expression
4) The cost to enter an a[illegible] pa[illegible]er ticket. $20 \times t$	Equation	Expression
5) Jeff works at a garden centre and earns $1[illegible] hour. He can figure out his pay by using the follow[illegible] $h \times 15$	[illegible]n	Expression
6) Bailey made $200 last week working with her mom. She worked 10 hours. $10 \times w = 200$	Eq[illegible]	[illegible]sion
7) Jane had 150 candies to give away on Halloween. She has 30 left. $150 - c = 30$	Equation	Expression
8) Ashley had 200 candies to give away on Halloween. She will give 2 candies to each kid. How many kids can she give candy to? $200 \div 2 = k$	Equation	Expression
9) Candy bags come in 30 packs. The total number of candies is represented below: $b \times 30$	Equation	Expression

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Is the number sentence an expression or equation? Circle the answer:

1) The total cost of bananas at $0.30 per banana can be calculated using the following: $0.30b$

Expression Equation

2) Jake has 48 marbles and wants to divide them equally among his 6 friends. The number of marbles each friend will get is represented by: $48 \div 6 = m$

Expression Equation

Name: _____

Is the number sentence an expression or equation? Circle the answer:

1) The total cost of bananas at $0.30 per banana can be calculated using the following: $0.30b$

Expression Equation

2) Jake has 48 marbles and wants to divide them equally among his 6 friends. The number of marbles each friend will get is represented by: $48 \div 6 = m$

Expression Equation

Name: _____ 66

Curriculum Connection
CP.2

Writing Algebraic Expressions

Using algebraic expressions helps us understand mathematical situations. We can use a variable to replace a changing number, like how many tickets are sold to a game – t x 10

Part 1 Write each algebraic expression in words.
Use the words "a number" in place of the variable.

1) 7 – t

Seven su[illegible]number

2) n[illegible]

3) 8 + b

4) 9r

5) $\frac{y}{5}$

Part 2 Write an algebraic expression for eac[illegible]nt.

1) Nineteen add a number

2) Divide a number by three

3) A number is subtracted by nineteen

4) Triple a number and add seven

5) Subtract 19 from a number, then multiply by four

Name: _____ 67

Curriculum Connection
7.EE.2

Writing Algebraic Expressions - Treats

A mathematical expression is similar to an equation, but it does not have an equal sign. We use expressions to describe a mathematical situation.

Instructions Write the expressions for the situations below.

1) Lindsay has *y* amount of cookies. She gives 27 cookies away to the students in her class.

Expression:

2) Connor cuts the brownies into *b* pieces. She eats 3 brownies.

Expression:

3) Alyse makes cupcakes to share equally with her 5 friends.

Expression:

4) Hani gives 3 candies to each of his friends.

Expression:

5) Scott has 14 sodas in his fridge and buys sodas.

Expression:

6) Dan buys 3 dozen donuts and eats *d* number of donuts.

Expression:

7) Steve buys *x* number of cookies and gives 31 to his staff.

Expression:

8) Alexa has 100 suckers that she shares equally with her *f* number of friends.

Expression:

9) Brian has 250 gummy worms and takes *n* number of gummies from his brother.

Expression:

10) Howard gives 4 books each to *s* number of students.

Expression:

Name: _____ 68

Curriculum Connection P7.2

Finger Signals Quiz - Understanding Algebraic Expressions

Objective What are we learning about?

Students will reinforce their understanding of algebraic expressions through an interactive finger signals quiz.

Materials What you will need for the activity.

- A list of questions

Instructions How to complete the activity

1. Prepare a list of questions with answer choices labeled A, B, C, and D.
2. Explain the finger signals for each answer choice: one finger for A, two fingers for B, three fingers for C, and four fingers for D.
3. Inform the students they will show their answer using the finger signals when you read each question.
4. Read the first question aloud clearly and repeat if necessary.
5. Give students a few moments to think about their answer and decide independently.
6. After a countdown (e.g., "3, 2, 1"), have all students show their answer simultaneously by raising the appropriate number of fingers.
7. Reveal the correct answer and explain why it is correct.
8. Repeat with different questions to reinforce understanding of algebraic expressions.

Name: _____ 69

Question	A	B	C	D
A teacher has s students and divides them evenly into 5 groups. How many students are in each group?	$5s$	$5 - s$	$s \div 5$	$5 \div s$
A gardener plants f flowers in each of 8 rows. What is the total number of flowers planted?	$8+f$	$8-f$	$8f$	$f \div 8$
A farmer has c cows and buys 14 more. How many cows does he have now?	$c-14$	$c+14$	$c+14$	$14c$
A painter u litres of paint each day for 10 days. Ho paint does he use in total?	$p+10$	$p-10$	$10p$	$p \div 10$
A pain int each day, for 10 da then s s. How much paint is us d?	$10p-2$	$10+p-2$	$10p+2$	$p \div 10-2$
A cyclist rides b s and more kilometres. What is al di	$b+10$	$b-10$	$10b$	$b \div 10$
A baker uses b cups of fl n add more cups. How much flour	$b+7$	$b-7$	$7b$	$b \div 7$
A writer types w words each min for minutes. What is the total number of wo	$w+3$	$w-30$	$30w$	$w \div 30$
An artist splits a litres of paint into 6 containers and then uses 2 more litres in each container. How much paint is used in each container?	2		$\div 6 + 2$	$6a + 2$
A factory produces p parts and then packages them into 4 boxes. How many parts are in each box?	$p \div 4$	$4p$		p
Lily has m marbles. She buys 5 more and then gives away 2. How many marbles does she have now?	$m+5-2$	$m-5+2$	2	$m \div 2+5$
A baker bakes b batches of cookies, each with 12 cookies. What is the total number of cookies?	$12+b$	$12-b$	$12b$	$b \div 12$
Sam has p pencils. He buys 3 packs of pencils with 4 pencils each and then loses 2 pencils. How many pencils does he have now?	$p+3\times4-2$	$p+3-2\times4$	$p-3+2\times4$	$p \div 3\times4-2$
A gardener plants g flowers in each of 7 rows. He then plants 3 more flowers in each row. How many flowers are there in total?	$7g+3g$	$g\times7+3$	$g\times7+3g$	$7g-3g$

Name: _____ 70

Curriculum Connection P7.2

Evaluating Algebraic Expressions - Addition

Part 1 Evaluate the following expressions for $x = 8$

1) $x + 12$	2) $8 + x$	3) $23 + x$	4) $x + 24$
5) $41 + x$	6) $63 + x$	7) $82 + 13 + x$	8) $92 + x + 11$

Part 2 Evaluate the following expressions for $y = 8$ and $n = -2$

1) $y + (n)$	2) $5 + (n) + y$	3) $y + (n)$	4) $y + 12 + (n)$
5) $43 + y + (n)$	6) $(n) + y + 20$	7) $(n) + y + 53$	8) $53 + (n) + y$

Part 3 Evaluate the following expressions for $x = -5$ and $p = 5$

1) $(x) + (p) - 10$	2) $10 + (x) + (p)$	3) $15 + (x) + (p)$	4) $(x) + 11 + (p)$
5) $(p) + 20 + (x)$	6) $(x) + 18 + (p)$	7) $(x) + 5 + (p)$	8) $22 + (p) + (x)$

Name: _____ 72

Curriculum Connection P7.2

Evaluating Algebraic Expressions - Subtraction

Subtraction Integers Rule

To subtract integers, it is easiest to change the operation to addition and then follow the addition rules. We can do this by using the rule – Keep, Flip, Change. We keep the first number the same, flip the operation from subtraction to addition, and then change the third number's sign.

Example: 5 – (-6) = ? becomes 5 + 6 = 11

Keep the first integer

Flip the operation

Change the sign of the next integer

Part 1 Evaluate the following expressions for $x = 5$

1) $x - 12$	2) [illegible]	3) $23 - x$	4) $x - 24$
5) $41 - x$	6) $63 - x$	7) [illegible]	8) $92 - x - 11$

Part 2 Evaluate the following expressions for $y = 10$ and n = [illegible]

1) $y - (n)$	2) $11 - (n) - y$	3) $15 - y - (n)$	4) $y - 6 - (n)$
5) $21 - y - (n)$	6) $(n) - y - 13$	7) $y - (n) - 3$	8) $32 - (n) - y$

Name: _____ 73

Curriculum Connection P7.2

Evaluating Algebraic Expressions - Cafe

Whitney works at a café selling muffins, coffee, tea, and scones. She uses algebraic expressions to determine the cost of her customer's orders.

Menu	
Scone (s)	$3.50
Muffin (m)	$2.25
Tea (t)	$2.00
Coffee (c)	$2.50

Solve Write the algebraic expression and then evaluate using the menu prices.

Customer Order	Expression	Answer
1) 2 coffees, 1 muffin	$2c + m$ $2(2.50) + 2.25$	$7.25
2) 3 teas, 1 scone		
3) 4 coffees, 2 teas		
4) 2 coffees, 2 teas, 2 muffins		
5) 3 teas, 4 muffins, 2 scones		
6) 10 coffees, 10 muffins		
7) 5 teas, 3 muffins, 2 scones		
8) 3 coffees, 3 scones		

Name: _____ 74

Curriculum Connection P7.2

Evaluating Algebraic Expressions - Canteen

Brad works at a canteen selling chips, drinks, and gummies. He calculates the cost of orders (o) and subtracts it from the payment (p) he is given - to determine how much change to give his customers.

Menu	
Chips	$1.50
Drinks	$2.50
Gummies	$1.00

Evaluate Solve the subtraction expressions below.

le Values		Expression - Customer's Change
	p	$p - o$
$ 00	20.00	
$17.50	$2	
$9.25		
$35.65		

Evaluate Calculate the order and omer's change.

Order			Expression	Pa	Change (c)
c	d	g			
1	0	2	$c + (2 \times g)$ $1.50 + (2 \times 1.00)$ $1.50 + 1.00$ $2.50	$5.0	
3	1	0		$10.00	
1	2	1		$10.00	
2	2	2		$20.00	
3	3	5		$20.00	

Name: _____ 75

Curriculum Connection P7.2

Evaluating Algebraic Expressions – (x ÷)

Part 1 Evaluate for x = 3. Use brackets to separate the numbers.

1) $5x$	2) $9x$	3) $3x$	4) $8x + 6$
5) $21x$	6) $12x - 12$	7) $5x - x$	8) $9x + 8 - x$

Part 2 Evaluate the following expressions for y = 10

1) $\frac{y}{2}$	2) $\frac{30}{y}$		4) $\frac{y}{5} + 5$
5) $\frac{30}{y} + 8$	6) $\frac{100}{y} + y$	7) $\frac{}{y}$	x y

Part 3 Write the expressions using the values/operations below

9 8 4 n + x – ÷

1) Nine times a number, add four	
2) Eight divided by four, subtract a number	
3) A number multiplied by eight, add nine	
4) Eight more than four divided by a number	
5) A number divided by nine, add eight	

Name: _____ 77

Curriculum Connection
CC.2

Writing Expressions

An **equation** is a statement that **two expressions** are **equal**. An expression has no equal sign, whereas an equation has an equal sign. When we can solve the answer to an expression, it becomes an equation because we add an equal sign.

Expression	Equation
Eight more than a number $8 + n$ $n = ?$	Eight more than a number is 14 $8 + n = 14$ $n = 6$

Part 1 Write equations for each sentence.

	Equation	Answer
1) Nine less than a number		
2) Fifteen more than a number is 22		
3) Eight times a number is 24		
4) Twelve divided by a number is three		
5) A number plus eight divided by two is 10		
6) Seven times a number plus four is 39		

Part 2 Write a sentence in words for each equation.

Equation	Sentence	Value of n
1) $4n = 24$		
2) $8 + n - 3 = 10$		
3) $5 + \frac{12}{n} = 7$		
4) $3n - 3 = 12$		

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Write a sentence in words for each equation:

1) $7d - 5 = 9$

2) $4 + \frac{10}{n} = 9$

Name: _____

Write a sentence in words for each equation:

1) $7d - 5 = 9$

2) $4 + \frac{10}{n} = 9$

Name: _____

Write a sentence in words for each equation:

1) $7d - 5 = 9$

2) $4 + \frac{10}{n} = 9$

Name: _____

Write a sentence in words for each equation:

1) $7d - 5 = 9$

2) $4 + \frac{10}{n} = 9$

Name: _____ 79

Curriculum Correction
P7.2

Addition – Are They Equal?

Are the equations equal? Put a slash through the equal sign for any equations that are not equal.

8 + 4 = 12 23 + 15 ≠ 36 47 + 13 = 50

Part 1 Put a slash through the equal sign (≠) if it is not balanced.

	2) 51 + 15 = 67	3) 47 + 13 = 50
4) 65 + 1	74 + 13 = 87	6) 92 + 11 = 103
7) 95 + 25 = 110	8) 1 88	9) 144 + 17 = 171
10) 155 + 26 = 181	11) 144 = 1	12) 212 + 12 = 224

Part 2 Fill in the missing number to bala e equatio

1) ☐ + 12 = 95	2) ☐ + 25 = 50	3) ☐ 6
4) 72 + 14 = ☐	5) 64 + ☐ = 80	6) ☐ + 50 = 65
7) 68 + ☐ = 82	8) 83 + 15 = ☐	9) 89 + ☐ = 102
10) 105 + ☐ = 116	11) 121 + 14 = ☐	12) 145 + ☐ = 160

Name: _____ 80

Curriculum Connection P7.2

Addition – Find the Variable

When we write an algebraic expression with an equal sign, it becomes an equation. An equation is a statement that two expressions are equal.

We can solve for a variable by balancing an equation, making sure both sides of the equal sign have the same value.

Part 1 Find out the value of the variable.

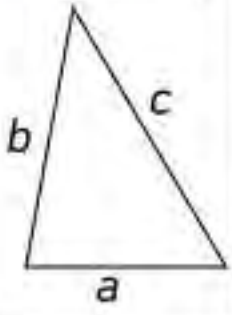
1) [illegible] n =	2) $n + 15 = 22$ n =	3) $32 + n = 41$ n =
4) $45 + p$ [illegible] p =	5) $41 + p = 62$ [illegible]	6) $p + 63 = 81$ p =
7) $77 + y = 96$ y =	8) [illegible] 15	9) $132 + 15 = y$ y =
10) $157 + t = 192$ t =	11) [illegible] $t = 2$ t =	12) $236 + t = 248$ t =
13) $123 + a = 243$ a =	14) $165 + a =$ [illegible] a =	15) [illegible] $a = 308$
16) $238 + 449 = s$ s =	17) $311 + n = 445$ s =	

Part 2 The formula for calculating the perimeter of a shape is to add the side lengths.

Use the following equation to find the perimeter of a triangle: $p = a + b + c$

1) a=6 b=12 c=10	p=
2) a=7 b=15 c=19	p=
3) a=9 b=17 c=23	p=

4) a=22 b=15 c=41	p=
5) a=19 b=32 c=49	p=
6) a=25 b=23 c=46	p=



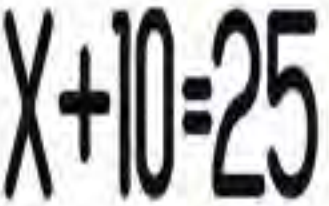
Name: _____ 81

Curriculum Connection
CT.2

Activity – Math Hot Seat: Addition Challenge

Objective What are we learning about?

Students will practice solving addition problems to find unknown values by participating in a fun and interactive game, enhancing their arithmetic skills and quick thinking.



Materials What you will need for the activity.

- Index cards with addition problems
- Chairs arranged in a circle
- Stopwatch or timer
- Whiteboard and marker

Instructions How you will complete the activity.

1. Prepare a stack of index cards with various addition problems. Ensure some problems require finding a missing number.
2. Arrange chairs in a circle with one "hot seat" in the center.
3. Explain the rules of the game to the students. One student will sit in the hot seat while the rest sit in the surrounding chairs.
4. The teacher will read an addition problem from the stack. The student in the hot seat has a limited time (e.g. 30 seconds) to solve the problem.
5. If the student in the hot seat answers correctly within the time limit, they stay in the hot seat for the next round. If they answer incorrectly or run out of time, they switch places with another student from the circle.
6. Continue the game until each student has had the opportunity to sit in the hot seat multiple times, or until the designated game time is up.
7. Keep track of the number of correct answers each student provides while in the hot seat. The student with the most correct answers wins the game.

Name: _____ 82

Curriculum Correction P7.2

Index Cards | Use the math problems below.

2 + b - 1 = 5	b = 4
3p + 4 = 19	p = 5
x / 2 = 7	x = 14
4x - 3 = 9	x = 3
6 + y - 2	y = 8
5y / 2 =	y = 4
3a -	a = 3
m + 4 = 12	m = 8
j + 7 = 20	j = 13
9x + 4 = 22	x = 2
m + 3 = 10	m = 7
2 + n = 8	n = 6
6z - 4 = 8	z = 2
x / 2 + 3 = 10	x = 14
4x / 2 = 10	5
x / 4 + 3 = 7	
3y - 1 = 5	y = 2
2x - 3 = 5	x = 4
3a + 6 = 15	a = 3
4z - 2 = 10	z = 3
7 - 2 + x = 12	x = 7
6 + 2x = 14	x = 4
3x - 4 = 5	x = 3
6 + o + 4 = 20	o = 10

Name: _____ 83

Index Cards | Use the math problems below.

$6 + 4x = 26$	$x = 5$
$3x - 5 = 19$	$x = 8$
$x / 2 + 5 = 11$	$x = 12$
$4x - 7 = 21$	$x = 7$
$8 + x / 4 = 10$	$x = 8$
$9x + 3 = 30$	$x = 3$
$7 + 3x = 2$	$x = 5$
$x / 5$	$x = 30$
$5x + 6$	$x = 5$
A farmer has 4 [illegible] fields produces the same number of bags of wheat. After harvesting, [illegible] 15 ba[illegible] 25 bags left. How many bags of wheat did each field produc[illegible]	10
A teacher has 5 boxes of [illegible] Each bo[illegible] the same number of pencils. She gives 12 pencils to each [illegible] tud[illegible] 4 pencils left. How many pencils were in each box?	8
A chef buys 6 crates of oranges. Each c[illegible] ntains [illegible] number of oranges. He uses 40 oranges to make juic[illegible] and has [illegible] ang[illegible] How many oranges were in each crate?	15
A warehouse has 80 boxes. Each box contains the [illegible] hey ship out 30 items and have 450 items left. How many it[illegible] n eac[illegible]	6
A gardener plants 7 rows of flowers. Each row has the sam[illegible] er [illegible] She then plants 8 more flowers and has 71 flowers in total. Ho[illegible] man[illegible] were in each row?	
A bookstore received 10 boxes of books. Each box has the same number [illegible] books. They sold 20 books and have 100 books left. How many books were [illegible] each box?	12
A factory produces the same number of gadgets per hour. After working for 4 hours, they give 60 gadgets as samples and have 140 gadgets left. How many gadgets do they produce per hour?	50
A runner completes 5 laps. Each lap is the same distance. After running, he walks an additional 600 meters to cool down, covering a total of 2600 meters. How long is each lap?	12
A chef has 96 eggs. He uses the same number of eggs for each cake. After baking 8 cakes, he has 48 eggs left. How many eggs does he use for each cake?	6
A car rental company has 45 cars. They divide the cars into 5 groups and then add 3 more cars to each group. How many cars were originally in each group?	6

Name: _____ 84

Curriculum Connection
P7.2

Adding Decimals – Solve The Variable

Practice Find the value of the variables below.

1) $4.5 + n = 6$ $n =$	2) $n + 5.5 = 7$ $n =$	3) $s + 5.3 = 8$ $s =$
4) p p	5) $9.2 + p = 11$ $p =$	6) $10.1 + r = 11.5$ $r =$
7) $15.3 + n =$ $n =$	$.5 = 20.5$	9) $t + 14.4 = 18$ t =
10) $24.6 + n = 28.2$ $n =$	11) $8.6 + 4$ $t =$	12) $31.6 + 5 = p$

Word Problem Write the equations below and find the

1) Jake has 1.25 pizzas left over from last night. His friend brings over some more pizza. They now have 4.25 pizzas. How much pizza did his friend bring?

2) Kelly is 1.5 meters tall. She hopes to grow to be 1.75 metres tall. How much will she have to grow?

3) Carter has $1.33 but needs $1.88 to buy a bag of chips. How much more does he need?

Name: _____ 85

Curriculum Connection P7.2

Addition Equations – Golf Tournament

Zack hosted a 2-round golf tournament. He has the results and needs to find out who won the tournament. The leaderboard is below but is missing numbers.

Instructions Fill in the leaderboard.

Pl[illegible]	Round 1	Round 2	Final Score
[illegible]ara	-2	-5	
Charlie			-5
Dominic		-2	-6
Kayden		-1	
Silas			-1
Lillian	3		
Brooklyn	-2		-5
Natalie			-1
Andrew	-4	6	
Santiago		5	

Results Who won the golf tournament?

1) Who won the golf tournament?	
2) The entry fee for the tournament was $100. All the money went to the prize (p). Write an equation that determines the value for (p).	
3) More golfers joined the tournament. The prize ended up being $1400. Write an equation that determines how many golfers (g) participated in the tournament.	

Name: _____ 87

Curriculum Connection P7.2

Equation Pairs - Addition

When we add numbers or variables (letters) together, we can change the order of the numbers/letters without affecting the answer. This is called the **communitive property.**

Directions: Isaac works at a fast-food truck. He sells burgers (b) and fries (f). His job is to calculate how much the customer owes in total (t) for their order.

Part 1 Write 2 equations for the orders below.

#	Fries	Burgers	Equation 1 ($f + b = t$)	Equation 2 ($b + f = t$)
1	3	8	3 + 8 = 11	8 + 3 = 11
2	7			
3	6	15		
4	8	8		
5	15	18		
6	10	13		
7	13	15		
8	11	16		

Part 2 Solve the addition equations below.

	Equation 1	Equation 2
1	5 + 7 + 15 + 13 =	13 + 7 + 15 + 5 =
2	12 + 17 + 18 + 13 =	17 + 13 + 18 + 12 =
3	34 + 21 + 26 + 29 =	34 + 26 + 29 + 21 =
4	55 + 66 + 34 + 45 =	55 + 45 + 66 + 34 =

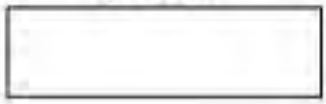
Name: _____ 88

Curriculum Connection P7.2

Addition Equations – Perimeter of a Rectangle

When we calculate the perimeter of a rectangle, we need to add all the sides together. The order of how we decide to add the sides together will not affect the answer due to the communitive property of addition.

Formula 1 – $p = a + b + a + b$
$p = 12 + 4 + 12 + 4$
$p = 32$



Formula 2
$p = 2(a + b)$
$p = 2 \times (12 + 4) = 32$

Part 1 Write two equations for the side lengths below.

#	Side length *a*	Side length *b*	Equation 1	Equation 2
1	5			
2	7			
3	11			
4	15	12		
5	17	15		
6	23	21		
7	28	31		
8	41	46		
9	55	24		
10	35	43		

Part 2 Using multiplication and addition, write two equations for the side lengths.

#	Side Length *a*	Side Length *b*	Equation 1	Equation 2
1	7	3	2 x (7 + 3) = 20	2 x (3 + 7) = 20
2	6	8		
3	9	4		
4	5	7		

Name: _____ 89

Subtraction Practice P7.2

Subtraction – Are They Equal?

Are the equations equal? Put a slash through the equal sign for any equations that are not equal.

16 - 8 = 8 95 - 11 ≠ 86 105 - 12 = 93

Part 1 Put a slash through the equal sign (≠) if it is not balanced.

[illegible]	2) 56 - 11 = 45	3) 59 - 16 = 42
4) 72 - [illegible]	[illegible]66 - 27 = 49	6) 79 - 16 = 64
7) 126 - 20 = 109	[illegible]	9) 174 - 13 = 161
10) 181 - 15 = 166	11) 126 - 20 = [illegible]	12) 195 - 30 = 165

Part 2 Fill in the missing number to balan[illegible]uati[illegible]

1) 36 - 6 = ☐	2) 53 - 7 = ☐	3) ☐ = 71
4) 58 - ☐ = 45	5) 48 - ☐ = 39	6) 65 - ☐ = 55
7) 105 - ☐ = 99	8) 146 - 15 = ☐	9) 91 - ☐ = 75
10) 158 - ☐ = 136	11) 185 - 17 = ☐	12) ☐ - 12 = 67

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Fill in the missing number to balance the equation:

1) 201 - _____ = 164

2) _____ - 230 - 122 = 94

3) 190 - 45 - 30 = _____

Name: _____

Fill in the missing number to balance the equation:

1) 201 - _____ = 164

2) _____ - 230 - 122 = 94

3) 190 - 45 - 30 = _____

Name: _____

Fill in the missing number to balance the equation:

1) 201 - _____ = 164

2) _____ - 230 - 122 = 94

3) 190 - 45 - 30 = _____

Name: _____ 91

Curriculum Connection P7.2

Subtraction – Find the Variable

A **variable** is a letter that represents an unknown number. When we don't know a number, we can use a letter to take the place of the unknown number.
Example: 39 - n = 25
We can figure out the unknown number by balancing the equation. In this equation, n = 14.

Part 1 Find out the value of the variable.

n =	2) $n - 21 = 35$ $n =$	3) $52 - n = 41$ $n =$
4) 73 - 1 $p =$	- $p = 53$	6) $p - 32 = 50$ $p =$
7) $87 - y = 61$ $y =$	8)	9) $102 - 13 = y$ $y =$
10) $109 - t = 94$ $t =$	11) 124 - $t =$	$143 - t = 129$ =
13) $158 - a = 127$ $a =$	14) $174 - a = 142$ $a =$	15 75

Part 2 Calculate the change a customer gets when they buy something.

When a customer buys something, the formula for calculating their change (c) is money given (m) subtracted from the price (p) of the item. Therefore, $c = m - p$

$m = 20$ $p = 12$	$c = 20 - 12$	$c = 8$
$m = 40$ $p = 19$	$c =$ ___ - ___	$c =$
$m = 60$ $p = 27$	$c =$ ___ - ___	$c =$

$m = 80$ $p = 61$	$c =$ ___ - ___	$c =$
$m = 100$ $p = 68$	$c =$ ___ - ___	$c =$
$m = 100$ $p = 44$	$c =$ ___ - ___	$c =$

Name: _____ 92

Curriculum Connection P7.2

Subtracting Decimals – Solve the Variable

Practice Find the value of the variables below.

1) $6.5 - n = 2$ $n =$	2) $n - 4.5 = 3$ $n =$	3) $s - 5.2 = 3$ $s =$
4) [illegible] $p =$	5) $10.1 - p = 7$ $p =$	6) $14.3 - r = 10.5$ $r =$
7) 17.4[illegible] $n =$	[illegible] $n - 4.5 = 12.5$	9) $t - 5.4 = 15$ t =
10) $24.7 - n = 20.2$ $n =$	11) [illegible] =	12) $34.6 - 5 = p$ $p =$

Word Problem Write an equation and solve using a [illegible] for the [illegible]wn amount.

1) Laura has $4.35 to spend on candy. She leaves the candy s[illegible] How much did she spend on candy (c)?

2) Randy works for 8.5 hours today. He only has 2 hours left to work. How much time (t) has elapsed?

3) Ryan jumped 3.58m in long jump. Jody jumped 2.98m. What is the difference (d) between their jumps?

4) Rebecca has 200g of sugar. She used 42.5g of sugar to make cookies. How many grams of sugar (s) does she have left?

Name: _____ 93

Activity: Decimal Subtraction Race

Objective What are we learning about?

Students will practice subtraction of decimals to solve for a variable by racing to solve equations quickly and accurately.

Materials What you will need for the activity.

- [illegible]
- [illegible] or pe[illegible]
- Timer (opt[illegible]

Instructions How [illegible] activity

1. Prepare a stack of index c[illegible]s wi[illegible] decimal equations involving variables. Include a mix of proble[illegible]nsure
2. Have students line up in a single file.
3. Call the first two students in line to the fron[illegible] t[illegible]ace to answer the multiplication algebraic equation question t[illegible]acher [illegible]rom the stack.
4. Pull a card from the stack and read the question aloud.
5. The first student to answer correctly wins the round. If a student s[illegible]he wrong answer, they are out and go to the end of the line.
6. The student who answers correctly stays at the front to compete against the next student in line.
7. The student who loses goes to the end of the line.
8. Optional: If a student wins five rounds in a row, they move to the back of the line to give others a chance to play.
9. Continue the game until all students have had a chance to compete multiple times or until the designated game time is up.

Name: _____ 94

Curriculum Connection P7.2

Multiplication Equations | Use these for the race.

$x - 3.7 = 7.3$	$y - 2.5 = 5.5$	$z - 6.8 = 9.2$
$15.4 - a = 7.3$	$b - 3.4 = 10.6$	$18.3 - c = 5.1$
d	$12.2 - e = 6.8$	$f - 3.5 = 7.7$
$26.6 - g$	$4 = 13.9$	$28.7 - i = 15.5$
$j - 3.3 = 20.6$		$l - 6.7 = 22.8$
$29.4 - m = 16.7$	$n - 2.2$	$o = 11.5$
$p - 4.8 = 9.4$	$16.5 - q = 7.9$	r
$28.8 - s = 14.2$	$t - 13.9 = 22.8$	$19.1 - u = 15.6$
$v - 5.4 = 8.8$	$27.3 - w = 18.9$	$x - 2.1 = 16.4$
$26.9 - y = 14.7$	$z - 4.3 = 10.5$	$28.6 - a = 13.9$

Name: _____ 97

Curriculum Connection P7.2

Integer Patterns – Average Temperatures

Instructions Answer the questions below.

The table below shows the average temperatures in four Canadian cities. We can use the table to compare the average temperatures in February and October.

City	October (o) Temperature	February (f) Temperature	Temperature Difference (d)
C[illegible] (NB)	6	-7	
[illegible] (ON)	10	-3	
Victoria (BC)	12	6	
Yellowknife (NT)	[illegible]	-21	
Winnipeg (MB)	[illegible]	-14	
Ottawa (ON)	[illegible]	-8	
Eureka (NU)	21	[illegible]	
Quebec City (QC)	7	[illegible]	

a) Fill in the table with the temperature d[illegible]ce fr[illegible] to February.

b) Write an equation using the variables: f, o, and [illegible]ds th[illegible]rence between the temperatures in each city from Oct[illegible]ebr[illegible]

c) Which city had the largest difference between their October and [illegible]ary months?

d) What is the difference between Victoria's February temperature and Eureka's February temperature?

e) What is the difference between Yellowknife's October temperature compared with Eureka's October temperature?

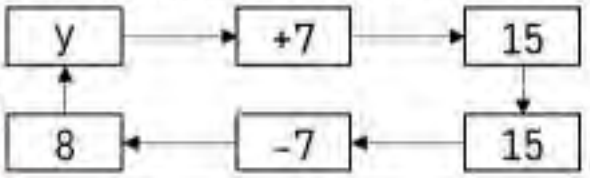
Name: _____ 98

Curriculum Connection P7.2

Adding and Subtracting Equations – Flow Chart

We can use a reverse flow chart to calculate the value of a variable in an equation.

Example: $y + 7 = 15$



- Equation represented the same

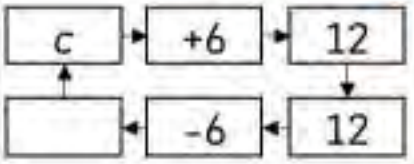
- Use the opposite operation in the middle and solve for the last box

Instructio Use the flow chart to find the value of the variable.

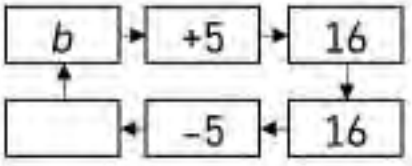
1) $t - 3 = 10$

2) $r - 5 = 8$

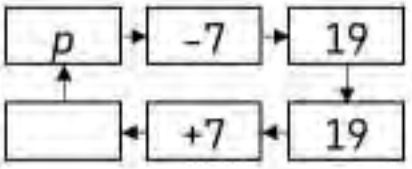
3) $c + 6 = 12$



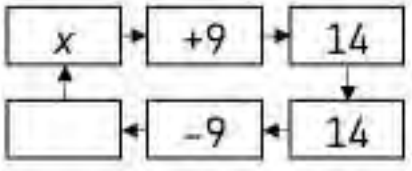
4) $b + 5 = 16$



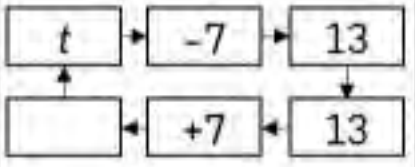
5) $p - 7 = 19$



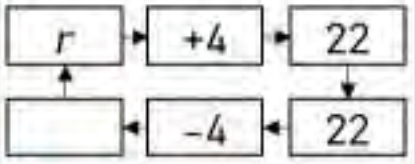
6) $x + 9 = 14$



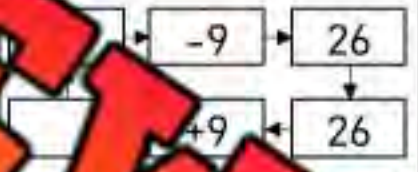
7) $t - 7 = 13$



8) $r + 4 = 22$

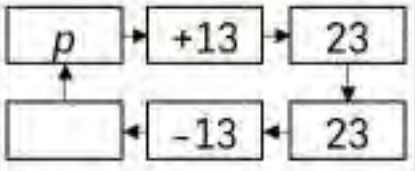


9) [illegible]

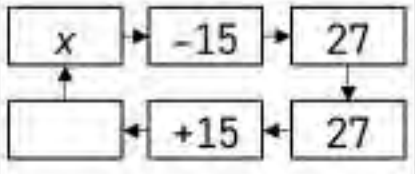


10) $b + 11 = 31$

11) $p + 13 = 23$



12) $x - 15 = 27$

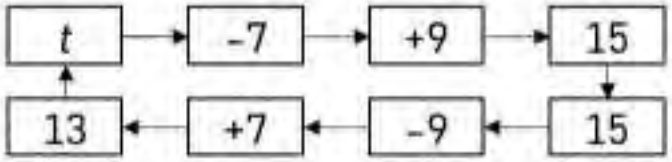
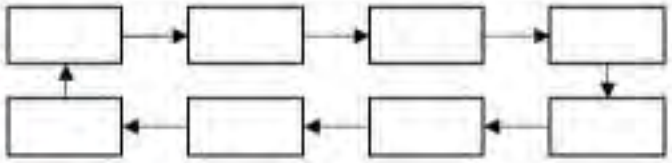
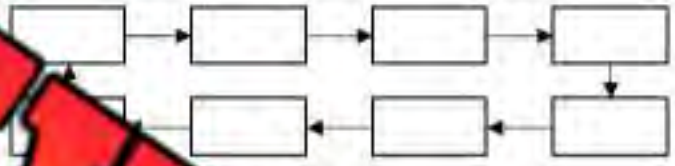
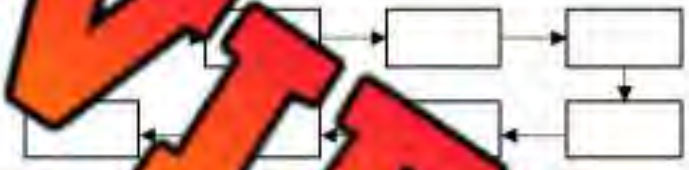
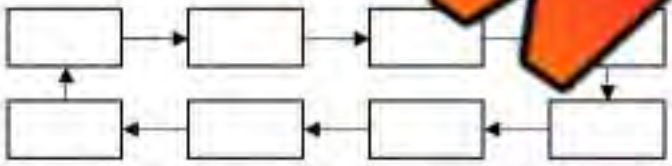
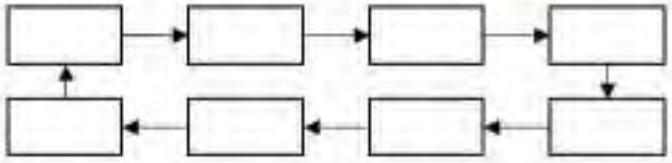
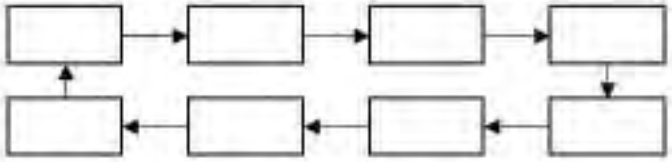


Name: _____ 100

Curriculum Correction P7.2

Adding and Subtracting Equations – Flow Chart

Instructions Fill in the blank in the flow chart.

1) $t - 7 + 9 = 15$	
2) r	
3) $c + 5 - 8 = 13$	
4) $b - 11 + 7 = 19$	
5) $p - 9 + 10 = 14$	
6) $c + 4 - 11 = 4$	
7) $b + 6 + 8 = 21$	
8) $p - 7 - 11 = 21$	

Name: _____ 101

Curriculum Connection P7.2

Multiplication – Are They Equal?

Are the equations equal? Put a slash through the equal sign for any equations that are not equal.

6 x 3 ≠ 16 3 x 8 = 24 7 x 6 ≠ 49

Part 1 Put a slash through the equal sign (≠) if it is not balanced.

1) [illegible]	21) 8 x 4 = 31	3) 8 x 3 = 21
4) 8 x [illegible]	[illegible] 9 x 2 = 18	6) 4 x 9 = 36
7) 7 x 7 = 49	8) [illegible]	9) 6 x 6 = 42
10) 3 x 10 = 30	11) 2 x 7 = [illegible]	12) 8 x 4 = 32

Part 2 Fill in the missing number to balan[illegible]ati[illegible]

1) 6 x 6 = ☐	2) 14 x 4 = ☐	3) 4 x 5 = ☐
4) 20 x 3 = ☐	5) 6 x ☐ = 18	6) 11 x ☐ = 110
7) 4 x ☐ = 44	8) ☐ x 6 = 30	9) 8 x ☐ = 48
10) 10 x 9 = ☐	11) 7 x ☐ = 56	12) 12 x ☐ = 48

Name: _____ 102

Curriculum Connection P7.2

Multiplication – Find the Variable

When we multiply a number by a variable, we do not need to use the multiplication sign. It is known that any variable next to a number means the operation we are using is multiplication.

Example: $7n = 14$ means $7 \times n = 14$

We can figure out the unknown number by balancing the equation – $n = 2$.

Part 1

Find out the value of the variable.

1) [illegible] n =	2) $4n = 16$ n =	3) $8(s) = 48$ s =
4) $9 \times 4 = p$ p =	[illegible] [illegible]	6) $7k = 21$ k =
7) $3n = 21$ n =	[illegible] n	9) $n \times 7 = 77$ n =
10) $5n = 45$ n =	11) $8 \times$ [illegible] $= t$ t =	[illegible] $\times 4 = p$
13) $8n = 96$ n =	14) $10n = 100$ n =	[illegible] $7d$
16) $9(s) = 27$ s =	17) $8 \times 8 = s$ s =	18) t =

Part 2

Calculate the area using the variables for length and width.

The formula for calculating area is: A = L x W
Calculate the area in the questions below using the values for the variables L and W

L = 3 W = 9	A =
L = 8 W = 7	A =
L = 10 W = 11	A =

L = 5 W = 9	A =
L = 11 W = 7	A =
L = 4 W = 13	A =

Name: _____ 103

Curriculum Connection P7.2

Writing Multiplication Equations – Lottery Tickets

Amelia is selling lottery tickets for $15 a ticket. She needs to calculate how much money her customers owe her for her tickets.

Part 1 Use multiplication equations to fill in the table.

#	# of Tickets (t)	Equation 1 $t \times 15 = ?$	Equation 2 $15 \times t = ?$
1	6		
2			
3	8		
4	3		
5	7		
6	9		
7	10		
8	5		

Part 2 Amelia sells tickets to two different people in the same transaction.

#	# of Tickets Person 1	# of Tickets Person 2	Equation
1	5	3	(5 x 15) + (3 x 15) = 120
2	4	7	
3	9	2	
4	2	5	
5	6	6	

Name: _____ 104

Curriculum Connection P7.2

Writing Multiplication Equations – Bakery

Jasmine works at a bakery. She sells bread, muffins, cakes, and donuts. When a customer orders from Jasmine, she uses an equation to figure out their total (t) – how much they owe for their order.

Bread (b)	Muffin (m)	Cake (c)	Donut (d)
$5.00 	$3.00 	$14.00 	$2.00 

Instructions: Complete the table below. The first one is done for you.

#					Equation	Answer
	b	m	c	d		
1	1	2	0	1	$t = b + 2m$	$t = 5 + 6$ $t = 11$
2	1	0	0	1		
3	0	2	1	0		
4	1	1	0	2		
5	2	2	0	0		
6	3	1	1	0		
7	0	2	1	2		
8	2	0	1	3		
9	1	2	1	4		

Name: _____ 105

Curriculum Correlation
P7.2

Multiplying Decimals – Solve the Variable

Practice Find the value of the variables below.

1) $2.5n = 12.5$ $n =$	2) $5.5n = 11$ $n =$	3) $2.2s = 8.8$ $s =$
4) [illegible] $p =$	5) $6.3p = 18.9$ $p =$	6) $11.1r = 55.5$ $r =$
7) [illegible] $n =$	8) $10.1s = 50.5$ [illegible]	9) $6.7n = 20.1$ $n =$
10) $6.5n = 45.5$ $n =$	11) [illegible] [illegible]	12) $7.5s = 45$ $s =$

Word Problem Write the equation using the [illegible] the equation.

1) It rained 4.1mm every hour. In total, it rained 28.7mm. How [illegible] did it rain?

2) Parker earns $13.50 per hour working on a farm. He made $81 today. How many hours (h) did he work?

3) River bought 3 cookies. The 3 cookies have a total of 9.9 grams of sugar. How much sugar (s) is in each cookie?

Name: _____ 106

Curriculum Connection P7.2

Math Basketball: Multiplication Equations Challenge

Objective What are we learning about?

To reinforce students' understanding and application of multiplication of decimals through engaging word problems and a fun basketball shooting game.

Materials What you will need for the activity.

- Index cards with problems
- Recording sheets
- Paper balls
- Bins or baskets
- Desks (one per team)

Instructions How you will complete the activity.

1. Arrange the classroom so that there is enough space for multiple teams to work simultaneously. Place a desk about 6 feet away from the starting point.
2. Place a stack of index cards with problems on each desk.
3. Provide each team with a recording sheet and a pencil.
4. Divide the students into teams of about five members each.
5. Each team stands in a line behind their respective desk.
6. The first student in line flips over an index card and solves the problem.
7. Once the answer is recorded, the student attempts to shoot the paper ball into the bin.
8. If the student makes the shot, they place a tally mark on the team's tally sheet for a point. If they miss, no tally is given.
9. The student then goes to the end of the line, and the next student steps up to the desk to repeat the process.
10. The activity continues until all index cards have been solved.
11. Once all index cards are completed, the teacher collects the recording sheets and reviews the answers with the class.
12. For each incorrect answer, the team loses one point.
13. The team with the highest number of points after deductions is declared the winner.

Name: _____ 107

Index Cards | Use the following table for the game.

A car travels 7.5 miles per hour and covers a distance of 52.5 miles. How many hours (h) did the car travel?
A printer prints 12.4 pages per minute and prints a total of 99.2 pages. How many minutes (m) did it take to print all the pages?
A baker u cups of flour for each cake and used a total of 18.4 cups. How many ca baker make?
A cycli es at ters per hour and rides a total distance of 40.8 kilometers. H rs d the cyclist ride?
A factory produces ga and produced a total of 93.6 gadgets. How many hours (h) did the erate
A garden has 3.5 plants per row and plants. How many rows (r) are in the garden?
An athlete swims at a speed of 2.7 miles pe and distance of 21.6 miles. How many hours (h) did the athlete swi
A store sells 4.9 kilograms of apples per day and sold a of How many days (d) did it take to sell all the apples?
A painter uses 1.8 litres of paint per wall and used a total of 14.4 lit ow many walls (w) did the painter paint?
A chef prepares 6.2 meals per hour and prepared a total of 49.6 meals. How many hours (h) did the chef work?
A photographer prints 8.5 photos per hour and printed a total of 68 photos. How many hours (h) did the photographer work?
A runner jogs at a speed of 5.4 miles per hour and jogged a total distance of 32.4 miles. How many hours (h) did the runner jog?

Name: _____ 108

Index Cards | Use the following table for the game.

A machine produces 9.3 parts per minute and produced a total of 74.4 parts. How many minutes (m) did the machine run?
A delivery truck travels at a speed of 10.2 kilometers per hour and travelled a total distance of 71.4 kilometers. How many hours (h) did it travel?
A worker [illegible]7.8 per hour and earned a total of $62.4. How many hours ($h$) did the work[illegible]
A stud[illegible]eads [illegible]er minute and read a total of 37.6 pages. How many minutes (m) d[illegible]
A train travels at a [illegible] hour and traveled a total distance of 92 miles. How many hours [illegible]e trai[illegible]
A farmer plants 5.6 seeds per r[illegible] w an[illegible] [illegible]of 44.8 seeds. How many rows (r) did the farmer plant?
A construction worker lays 3.9 bricks per m[illegible]nd l[illegible] [illegible]f 31.2 bricks. How many minutes (m) did the worker lay bricks?
A hairdresser cuts 2.4 heads of hair per hour and cut a [illegible]of 1[illegible] many hours (h) did the hairdresser work?
A dog drinks 1.7 litres of water per day. It drank a total of 13.6 litres[illegible] many days (d) did it take for the dog to drink that much water?
A bus travels at a speed of 12.6 miles per hour and travels a total distance of 88.2 miles. How many hours (h) did the bus travel?
A cook prepares 4.2 dishes per hour and has prepared a total of 33.6 dishes. How many hours (h) did the cook work?
A scientist measures 3.8 grams of a substance per sample and measured a total of 30.4 grams. How many samples (s) were measured?

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Find the value of the variables below.

1) 11.4w = 68.4

w = _____

2) 12.6z = 75.6

z = _____

3) 7.3y = 36.5

y = _____

Name: _____

Find the value of the variables below.

1) 11.4w = 68.4

w = _____

2) 12.6z = 75.6

z = _____

3) 7.3y = 36.5

y = _____

Name: _____

Find the value of the variables below.

1) 11.4w = 68.4

w = _____

2) 12.6z = 75.6

z = _____

3) 7.3y = 36.5

y = _____

Name: _____

Find the value of the variables below.

1) 11.4w = 68.4

w = _____

2) 12.6z = 75.6

z = _____

3) 7.3y = 36.5

y = _____

Name: _____ 110

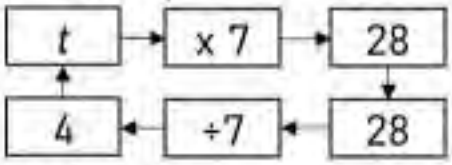
Curriculum Connection P7.2

Multiplying Equations – Flow Chart

Steps to fill in a flow chart:

1) Write the variable in the first box.
2) Write the second value in the second box.
3) Write the answer in the third box.
4) We are working in reverse now. Write the answer in the first box.
5) We d opposite to the next box as we did with the second box.
6) Fill i box to find the value of the variable, which it points to.

Example: $7t = 28$



Instruc s n the blank in the flow chart.

1) $4t = 12$	$11t = 77$
2) $8r = 48$	$= 48$
3) $5c = 35$	8) $7c = 56$
4) $6b = 42$	9) $12b = 144$
5) $9p = 72$	10) $9n = 63$

Name: _____ 112

Curriculum Connection P7.2

Division – Are They Equal?

Are the equations equal? Put a slash through the equal sign for any equations that are not equal.

$8 \div 2 \neq 5$ $9 \div 3 = 3$ $15 \div 3 \neq 3$

Part 1

Put a slash through the equal sign (≠) if it is not balanced.

[illegible]	2) $45 \div 5 = 9$	3) $36 \div 4 = 8$
4) $48 \div 4$ [illegible]	[illegible] $\div 3 = 9$	6) $35 \div 7 = 5$
7) $55 \div 5 = 11$	8	9) $42 \div 7 = 6$
10) $110 \div 11 = 10$	11) $18 \div$ [illegible]	12) $24 \div 6 = 4$

Part 2

Fill in the missing number to balance [illegible]ual

1) $42 \div 6 =$ ☐	2) $49 \div 7 =$ ☐	3) $24 \div 4$ ☐
4) $28 \div$ ☐ $= 4$	5) $18 \div$ ☐ $= 3$	6) $32 \div$ ☐ $= 4$
7) ☐ $\div 5 = 8$	8) ☐ $\div 8 = 7$	9) ☐ $\div 4 = 4$
10) $63 \div 7 =$ ☐	11) $48 \div$ ☐ $= 4$	12) ☐ $\div 8 = 9$

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Put a slash through the equal sign if it is not balanced.

1) 144 ÷ 12 = 14

2) 210 ÷ 14 = 15

3) 96 ÷ 8 = 9

4) 192 ÷ 16 = 15

Name: _____

Put a slash through the equal sign if it is not balanced.

1) 144 ÷ 12 = 14

2) 210 ÷ 14 = 15

3) 96 ÷ 8 = 9

4) 192 ÷ 16 = 15

Name: _____

Put a slash through the equal sign if it is not balanced.

1) 144 ÷ 12 = 14

2) 210 ÷ 14 = 15

3) 96 ÷ 8 = 9

4) 192 ÷ 16 = 15

Name: _____

Put a slash through the equal sign if it is not balanced.

1) 144 ÷ 12 = 14

2) 210 ÷ 14 = 15

3) 96 ÷ 8 = 9

4) 192 ÷ 16 = 15

Name: _____ 114

Curriculum Connection 27.2

Division – Find the Variable

A **variable** is a letter that represents an unknown number. When we don't know a number, we can use a letter to take the place of the unknown number.

Example: $27 \div n = 3$

We can figure out the unknown number by balancing the equation: $n = 9$.

Part 1

Find out the value of the variable.

1) $0 \div n =$ $n =$	2) $n \div 8 = 3$ $n =$	3) $s \div 4 = 3$ $s =$
4) $32 \div$ $p =$	$28 \div p = 4$	6) $56 \div r = 8$ $r =$
7) $42 \div n = 6$ $n =$	8	9) $t \div 11 = 7$ $t =$
10) $81 \div n = 9$ $n =$	$8 = t$ $t =$	12) $63 \div 9 = p$ $p =$
13) $64 \div n = 8$ $n =$	14) $63 \div$ $n =$	$56 \div s = 7$
16) $28 \div s = 4$ $s =$	17) $12 \div 4 = s$ $s =$	

Part 2

Calculate the area using the variables for length a idth.

Servers at a restaurant share tips (t) equally at the end of the day. The number of people that share the tips depends on how many servers (s) were working. We can use a formula to find out how much money (m) each server takes home: $m = t \div s$

$t = 150$ $s = 5$	$m = 150 \div 5$	$m = 30$
$t = 80$ $s = 4$	$m =$ $\div$	$m =$
$t = 200$ $s = 5$	$m =$ $\div$	$m =$

$t = 180$ $s = 3$	$m =$ $\div$	$m =$
$t = 280$ $s = 7$	$m =$ $\div$	$m =$
$t = 440$ $s = 4$	$m =$ $\div$	$m =$

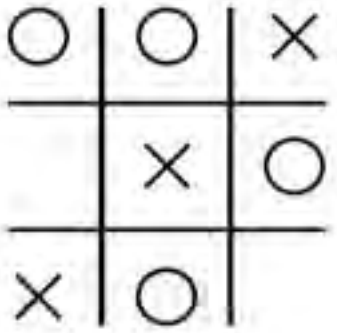
Name: _____ 115

Subtraction Exercise #7.2

Math Tic-Tac-Toe: Solving Variables

Objective What are we learning about?

To help students practice solving division equations involving variables in a fun and interactive way through a Tic-Tac-Toe game.



Materials You will need for the activity.

- Tic-Tac-Toe boards provided

Instructions How to complete the activity

1. Find a partner to play the game.
2. The goal is to solve and balance the algebraic equation in each square to place your marker (X or O).
3. One player will be "X" and the other will be "O".
4. Take turns choosing a square and solving the equation in that square to find the value of the variable.
5. Write down the solution below the equation and place your marker (X or O) in the square.
6. If a player chooses a square and solves the equation incorrectly, they do not get to place their marker in that square. The other player gets a chance to solve it correctly and place their marker.
7. The first player to get three markers in a row (horizontally, vertically, and diagonally) wins the game. Continue playing with different tic-tac-toe grids on the sheet.

Name: _____ 116

Curriculum Connection P7.2

Tic-Tac-Toe

Use the following tic-tac-toe grids for the game.

$96 \div t = 12$	$64 \div 8 = x$	$y \div 5 = 6$
$45 \div 9 = z$	$84 \div 12 = t$	$k \div 11 = 4$
$p \div 6 =$	$\div x = 9$	$30 \div y = 5$

$120 \div p = 15$	$56 \div 8 = x$	$y \div 4 = 8$
$32 \div 8 = z$	$99 \div 11 = t$	$k \div 12 = 3$
$144 \div t = 12$	$80 \div x = 10$	$p \div 5 = 8$

$81 \div k = 9$	10 x	
$50 \div 5 = z$	$33 \div 11 = t$	$k \div 8 =$
$72 \div t = 8$	$90 \div x = 9$	$p \div 10 = 4$

$144 \div p = 12$	$63 \div 7 = x$	$y \div 9 = 7$
36	$110 \div 10 = t$	$k \div 5 = 9$
150	$56 \div x$	$p \div 8 = 9$

$36 \div a \div 7 = 13$	$90 \div b - 5 = 4$	$c \div 3 \div 8 = 14$
$40 \div d \div 6 = 14$	$84 \div e - 2 = 5$	$f \div 12 \div 1 = 9$
$49 \div g - 4 = 3$	$75 \div h \div 3 = 10$	$i \div 5 - 2 = 4$

$60 \div j \div 4 = 10$	$108 \div k - 3$	$l \div 6 \div 5 = 13$
$45 \div m \div 7 = 14$	$64 \div n - 4 = 4$	$o \div 8 \div 2 = 10$
$81 \div p - 5 = 4$	$100 \div q \div 2 = 12$	$r \div 4 - 3 = 5$

Name: _____ 117

Curriculum Connection P7.2

Tic-Tac-Toe

Use the following tic-tac-toe grids for the game.

66 ÷ r + 5 = 11	100 ÷ s - 8 = 2	t + 25 + 2 = 6
42 ÷ u + 4 = 10	72 ÷ v - 6 = 3	w + 8 + 5 = 14
55 ÷ x - 3	y + 2 = 10	z + 6 - 2 = 5

81 ÷ j + 6 = 15	48 ÷ k - 2 = 6	y ÷ 4 + 7 = 16
54 ÷ l + 5 = 14	96 ÷ m - 3 = 9	n ÷ 12 + 1 = 7
60 ÷ o - 4 = 6	36 ÷ p + 2 = 8	q ÷ 9 - 3 = 2

72 ÷ a + 5 = 17	9 5	
56 ÷ d - 3 = 4	108 ÷ e + 2 = 11	f + 6 =
63 ÷ g - 4 = 5	90 ÷ h + 3 = 12	i + 5 - 1 = 5

104 ÷ k - 2 = 10	75 ÷ 5 + x = 20	y + 10 + 3 = 12
64 ÷	121 ÷ 11 - 2 = 9	k + 9 + 5 = 10
45	84 x	p + 6 + 2 = 13

135 ÷ s + 5 = 14	56 ÷ t - 2 = 5	u + 7 + 4 = 10
99 ÷ v - 3 = 6	48 ÷ w + 2 = 8	x + 4 - 1 = 7
63 ÷ y + 5 = 14	72 ÷ z - 4 = 2	a + 6 + 3 = 12

84 ÷ j + 4 = 11	120 ÷ k - 8	l + 8 + 5 = 15
108 ÷ m - 6 = 3	75 ÷ n + 2 = 17	o + 5 - 1 = 6
66 ÷ p + 3 = 12	96 ÷ q - 7 = 1	r + 16 + 3 = 7

Name: _____ 118

Curriculum Connection P7.2

Writing Division Equations - Sharing

Riley is the best boss! Every week, she brings in treats for her staff to share. Each week, there are different treats and a different number of staff members working at the office.

Questions Use a formula to find out how many treats (t) each person gets.

#		# of Staff	Formula	Answer
1	donu	8	$\frac{d}{s} = t$	$\frac{16}{8} = 2$
2	12 coo		$\frac{c}{s} = t$	$\frac{12}{6} = 2$
3	24 muffins (m)	4		
4	60 slices of pizza (p)	20		
5	42 bagels (b)	7		
6	36 donuts (d)	12		
7	40 cookies (c)	10		
8	56 muffins (m)	8		
9	27 pastries (p)	9		
10	54 cookies (c)	6		
11	55 slices of pizza (p)	11		
12	60 bagels (b)	15		
13	48 muffins (m)	12		

Name: _____ 119

Curriculum Connection P7.2

Division Equations – Flow Chart

Instructions Fill in the blank in the flow chart.

1) $\frac{t}{4} = 4$	t → ÷4 → 4 16 ← x 4 ← 4	7) $\frac{t}{11} = 7$	
2) $\frac{r}{6} = 8$		8) $\frac{r}{8} = 9$	
3) $\frac{c}{3} = 9$		9) $\frac{c}{7} =$	
4) $\frac{b}{8} = 7$		10) $\frac{b}{12} = 4$	
5) $\frac{p}{4} = 9$		11) $\frac{p}{6} = 8$	
6) $\frac{n}{7} = 3$		12) $\frac{n}{9} = 5$	

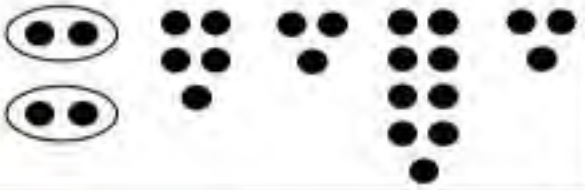
Name: _____ 121

Curriculum Connection P7.2

Equivalent Forms of an Equation

When we add or subtract the same amount from both sides of an equal sign, the equation does not change. This is called **preservation of equality.**

Instructions Draw circles to represent the equations.

#	Original Equation	Change	New Equation
1	$2n + 5 = 9$ 	Add 3	$2n + 5 + 3 = 9 + 3$ 
2	$7 + n$		
3	$13 - n = 6$	Add 3	
4	$2n + 6 = 14$	Subtract 5	
5	$5 + 3n = 17$	Add 7	

Name: _____ 122

Curriculum Connection P7.2

Equivalent Forms of an Equation

Instructions Write four equivalent forms of the equations below.

#	Original Equation
1	$5n = 20$
Add [illegible] each side	
Subtract [illegible] side	
Multiply each [illegible]	
Divide each [illegible] by 5	

#	Original Equation
2	[illegible] = 4
Add 6 to each side	
Subtract 11 from each side	
Multiply each side by 2	
Divide each side by 7	

#	Original Equation
3	$7n - 8 = 34$
Add 25 to each side	
Subtract 20 from each side	
Multiply each side by 4	
Divide each side by 2	

Name: _____ 124

Equivalent Forms of an Equation P7.2

Equivalent Forms of an Equation

When we change an equation by adding, subtracting, multiplying, and dividing the same amount from both sides, does the equation change? Investigate below!

Instructions Fill in the table below.

#	Original Equation	Change	New Equation
1	$5n = 20$	Add 8 to each side	$5n + 8 = 20 + 8$ $n = 4$
2	$18 =$	Add 6 to each side	
3	$15 + n =$ $n =$	Subt from each	
4	$6n = 18$ $n =$	Mult y each by 2	
5	$4n = 24$ $n =$	Divide each side	
6	$52 - n = 38$ $n =$	Subtract 15 from each side	
7	$68 + n = 93$ $n =$	Add 14 to each side	
8	$5n = 50$ $n =$	Multiply each side by 5	
9	$2n = 24$ $n =$	Divide each side by 2	

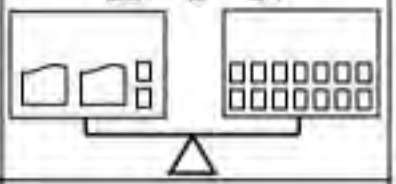
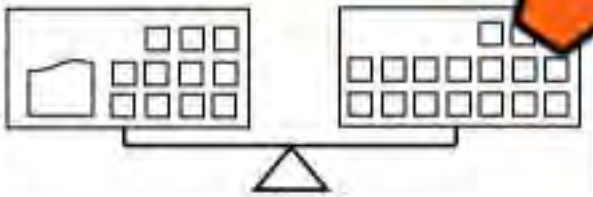
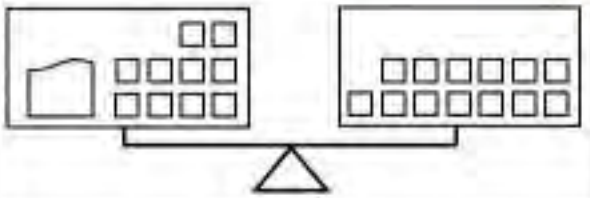
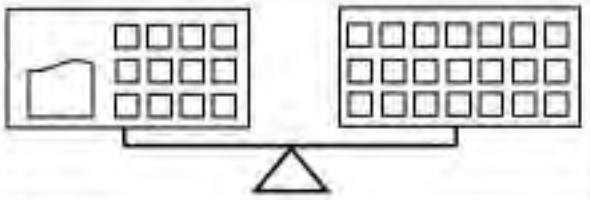
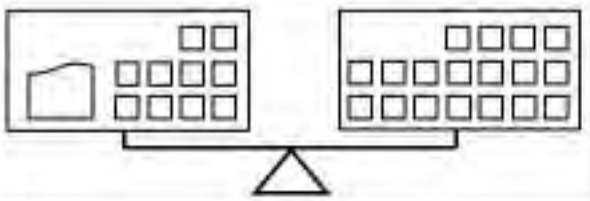
Name: _____ 125

Curriculum Connection P7.2

Representing Equivalent Equations – Balance Scale

Blocks are placed on a balance scale. Some of the blocks on the left side of the scale are put in a bag before being placed on the scale. Use *b* to represent 'bag' in your equation.

Instructions Write 2 different equations for each pictorial representation.

#	Pictorial Representation	Equation # 1	Equation # 2
Ex)		$b + 8 = 14$	$2b + 2 = 14$ 
1)			
2)			
3)			
4)			
5)			

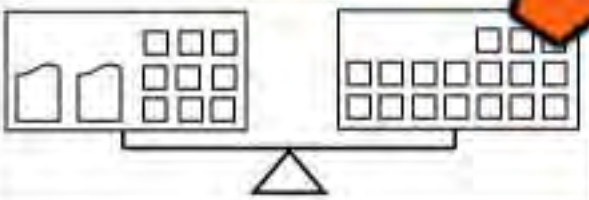
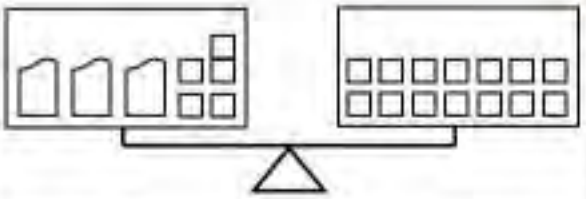
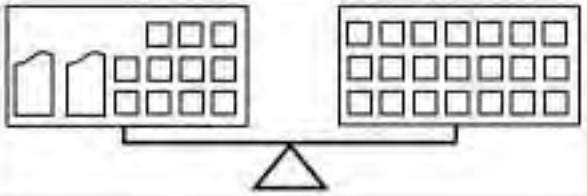
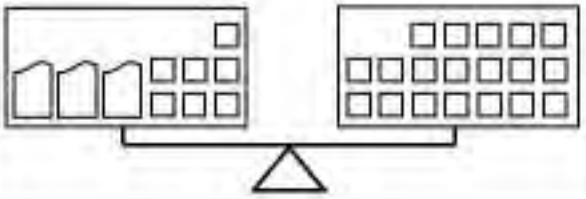
Name: _____ 126

Curriculum Connection
P7.2

Representing Equivalent Equations – Balance Scale

Blocks are placed on a balance scale. Some of the blocks on the left side of the scale are put in a bag before being placed on the scale. Use *b* to represent 'bag' in your equation.

Instructions Write 2 different equations for each pictorial representation.

#	Pictorial Representation	Equation # 1	Equation # 2
1)		$b + 8 = 14$	$2b + 2 = 14$
2)			
3)			
4)			
5)			
6)			

Matching Game: Do The Variables Match?

Objective What are we learning about?

To enhance students' understanding of equivalent variables. Students will identify and match pairs of equations where the variable yields the same value, fostering critical th and problem-solving skills in a collaborative group setting.

Mat will need for the activity.

- Pre-prepar re-c g cards
- Small bags or envel ld t ts for each group

Instructions How you will complete the

1. Before the class, the teacher will cut out the p ed m g game cards.
2. Divide the students into small groups and give each group elope containing a set of the matching cards.
3. In their groups, students will spread out the cards face down on their table.
4. Each person takes a turn to try to match two cards. They will need to solve both equations to see if they match (equal the same).
5. If they find a correct match, they keep the cards out and continue with their next turn. If the cards don't match, they turn them back over in the same place, and the next player takes a turn.
6. The activity continues until all pairs are correctly matched within each group.

Name: _____ 128

Curriculum Connection
P7.2

Cards | Matching Game Cards

$x + 3 = 7$	$2x - 1 = 7$
$4y - 1 = 15$	$2y + 1 = 11$
$2z + 1 = 11$	$3z - 2 = 13$
$3w - 2 = 16$	$5w - 7 = 23$
$x + 6 = 20$	$2x - 4 = 24$

Name: _____ 129

Curriculum Connection
P7.2

Cards | Matching Game Cards

$5y - 10 = 25$	$3y - 2 = 19$
$2z$ [illegible]	$4z - 10 = 18$
$4w - 6 = 22$	$2w$ [illegible] $8 = 22$
$x + 8 = 26$	$2x - 10$ [illegible] 26
$4y - 7 = 29$	$2y + 11 = 29$

Name: _____ 130

Curriculum Connection
P7.2

Cards | Matching Game Cards

$2z - 1 = 15$	$4z - 17 = 15$
$3w$ [illegible]	$4w + 5 = 37$
$x - 4 = 12$	$5x$ [illegible] $= 76$
$2y + 1 = 23$	$3y - 10$ [illegible] 23
$3z - 2 = 19$	$5z - 16 = 19$

Name: _____ 131

Curriculum Connection
P7.2

Cards | Matching Game Cards

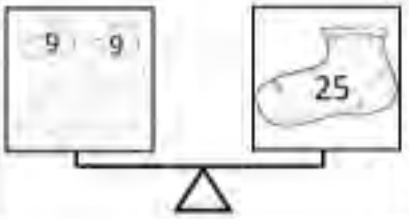
$4w + 1 = 37$	$3w + 10 = 37$
$x + 3 = 40$	$5x - 4 = 166$
$2y - 1 = 29$	$4y - 1 = 29$
$3z + 4 = 31$	$5z + 2 = 47$
$4w - 8 = 36$	$2w + 14 = 36$

Name: _____ 132

Curriculum Connection P7.2

Using Linear Equations and Pictorial Representations

Instructions Write a pictorial representation and linear equation of the example.

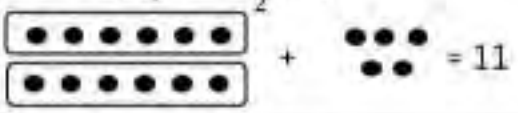
#	Real-World Example	Linear Equation	Pictorial Representation
Ex)	Kennedy has 25 socks. She has an equal number of black and white socks that she keeps in 2 piles. She randomly coloured some socks many socks are in	$2p + 7 = 25$ $p = 9$	
1)	brou es to school all She gave each to each of he ds, friends did she g o?		
2)	Harley earned $42 from b today after she worked for 2 hours. She received a $10 tip as part of the $42. What does Harley earn per hour at her job?		
3)	You paid $15 for admission to the movies. Snacks were $4 each. If you spent $27 in total, how many snacks did you buy?		
4)	In a basketball game, Henry scored 23 points. This was 5 more than double the points he scored last game. How many points did he score last game?		
5)	Katie and Sam went on an Easter egg hunt. Katie found 24 eggs. Katie found 3 times more eggs than Sam. How many eggs did Sam find?		

Name: _____ 133

Curriculum Connection P7.3

Representing Linear Equations – ax/b + c = d

Instructions Write a pictorial representation of the linear equations provided.

#	Linear Equation ($ax/b + c = d$)	Pictorial Representation
Ex)	$\frac{4 \times 3}{2} + 5 = d$	Step 1: 4 x 3  Step 2: $\frac{12}{2} + 5$  = 11
1)	$\frac{5 \times 2}{2} + 3 = d$	Step 1: 5 x 2 Step 2: $\frac{10}{2} + 3$ + =
2)	$\frac{3 \times 6}{2} + 4 = d$	Step 1: 3 x Step 2: $\frac{18}{2} + 4$ + =
3)	$\frac{4 \times 5}{4} + 6 = d$	Step 1: 4 x 5 Step 2: $\frac{20}{4} + 6$ + =

Name: _____ 134

Curriculum Connection
P7.3

Representing Linear Equations – ax/b + c = d

Instructions Write your own linear equation and represent it pictorially.

#	Linear Equation (*ax/b + c = d*)	Pictorial Representation
1)		Step 1: _____
		Step 2: _____
2)		Step 1: _____
		Step 2: _____
3)		Step 1: _____
		Step 2: _____
4)		Step 1: _____
		Step 2: _____

Name: _____ 135

Curriculum Connection
P7.3

Representing Linear Equations – ax/b + c = d

Instructions Represent the problems with linear equations (ax/b + c = d) and solve for d.

Ex)

Jake and 3 friends are going on a trip in a rental car. Jake said he would pay for the base cost of the rental car, which was $100. For every km they drive, they are charged $1. The 4 friends will split this cost. If they drive 100 km, how much will Jake owe?

a = km driven (100 km)
x = cost per km driven ($1)
ho will split the cost of km driven (4 people)
c = ra cost only Jake will pay ($100)

Equ	$\frac{100 \times 1}{4} + 100 = 125$

1)

Fiona and 3 friends are to . Fiona said she would pay the base entrance fee, which was $6 ery hey play, they are charged $10. The 4 friends will split this they how much will Fiona owe?

Linear Equation	

2)

Brian and 2 friends are going to a movie theatre that charges a group admission fee. Brian agreed to pay the group admission fee, which is $30. Each additional snack they purchase costs $6. The 3 friends will split this cost. If they decide to buy 9 snacks, how much will Brian owe?

Linear Equation	

Name: _____ 136

Curriculum Connection
P7.3

Representing Linear Equations – ax/b + c = d

Instructions	Represent the problems with linear equations ($ax/b + c = d$) and solve for d.

1) Carla and 4 friends are going to an amusement park. Carla said she would pay for the base entrance fee, which was $50. For every ride they go on, they are charged $2. The 5 friends will split this cost. If they go on 10 rides, how much will Carla ow

Equ	

2) David and 3 friends are to David agreed to pay the base cost for renting the lane, which is $4 ey play, they are charged $8. The 4 friends will split this cost. play much will David owe?

Linear Equation	

3) Emily and 2 friends are going to a karaoke night. Emily said she would pay the base reservation fee for the room, which was $15. For every song they sing, they are charged $5. The 3 friends will split this cost. If they sing 6 songs, how much will Emily owe?

Linear Equation	

Name: _____ 138

Curriculum Connection
P7.4

Representing Linear Equations (x + a = b)

Questions Write a pictorial representation of the linear equations provided.

#	Linear Equation ($x + a = b$)	Pictorial Representation
Ex)	$x + 8 = 15$ $x = 7$	 7 + 8 = 15
1)	$x +$	
2)	$x + 6 =$ $x =$	
3)	$x + 15 = 42$ $x =$	
4)	$x + 6 = 35$ $x =$	
5)	$x + 22 = 37$ $x =$	
6)	$x + 12 = 31$ $x =$	
7)	$x + 17 = 33$ $x =$	

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Write a pictorial representation of the linear equation provided. And calculate *n*.

$14 + n = 45$

Name: _____

Write a pictorial representation of the linear equation provided. And calculate *n*.

$14 + n = 45$

Name: _____

Write a pictorial representation of the linear equation provided. And calculate *n*.

$14 + n = 45$

Name: _____

Write a pictorial representation of the linear equation provided. And calculate *n*.

$14 + n = 45$

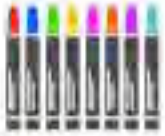
Name: _____ 141

Curriculum Connection P7.4

Representing Problems with Linear Equations (x + a = b)

Instructions Represent the problems with linear equations ($x + a = b$) and solve for x.

1) Camila had some markers and then bought 24 more. Now she has 56 markers. How many markers did she have before she bought more?



Linear equation: $x =$

2) Carter[illegible] bank [illegible] last year and has been adding to it. Today he added $1[illegible] how [illegible] ow much did he have before?

Linear equation: $x =$

3) Mia tracks how many steps she takes ea[illegible] had taken a lot of steps. From noon until the end of the [illegible] ook 7[illegible] eps. In total, she took 16,340 steps for the day. How ma[illegible] ps [illegible] efore noon?

Linear equation: $x =$

4) Caleb scored a bunch of points in the first half of a basketball game. In the second half, he only had 7 points. At the end of the game, he finished with 31 points. How many points did he score in the first half?

Linear equation: $x =$

Name: _____ 142

Curriculum Connection
P7.4

Representing Problems with Linear Equations (x + a = b)

Instructions Represent the problems with linear equations ($x + a = b$) and solve for x.

1) Nick's new business sold quite a few products in May. In June, they sold 572 products. In May and June combined, they sold 931 products. How many products did Nick's business sell in May?

Linear equation: $x =$

2) Daniel [illegible] a friend's house who lives far away. He drove for awhile this morning before stopping for gas. He then drove another 362km before arriving at his friend's house. The house was 710km away. How far did he drive before stopping?

Linear equation: $x =$

3) Jenny has a total of $75 in her wallet. She just received her allowance of $30. How much money did she have in her wallet before receiving her allowance?

Linear equation: $x =$

4) A bakery has 45 loaves of bread in stock. They just baked an additional batch of 12 loaves. How many loaves of bread did the bakery have in stock before baking the new batch?

Linear equation: $x =$

Name: _____ 143

Curriculum Connection
P7.4

Representing Problems with Linear Equations (x + a = b)

Instructions Represent the problems with linear equations ($x + a = b$) and solve for a.

1) Samantha has $50 in her wallet. She wants a total of $145 to buy a new pair of shoes. How much more money does she need to reach her goal?

Linear equation: _____ a = _____

2) A swim[illegible] curr[illegible]s 1952 litres of water. The pool needs to be filled to a [illegible]ty of [illegible]. How many more litres of water are required to fi[illegible]

Linear equation: _____ a = _____

3) A factory has produced 300 toys so far. [illegible]e 450 toys by the end of the day. How many more toys [illegible]eed t[illegible]uce to meet their target?

Linear equation: _____ a = _____

4) A charity has received 1750 cans of food during a food drive. Their goal is to collect 3500 cans. How many more cans do they need to reach their goal?

Linear equation: _____ a = _____

Name: _____ 144

Curriculum Connection P7.4

Representing Problems with Linear Equations (x + a = b)

Instructions Represent the problems with linear equations ($x + a = b$) and solve for b.

1) A movie theatre has 62 seats. They add 30 more seats to accommodate more viewers. How many seats will the movie theatre have in total after adding the new seats?

Linear equation: $b =$

2) A parking lot has 75 parking spaces. The management decides to expand the parking area and add more parking spaces. How many parking spaces will the parking lot have after adding the new spaces?

Linear equation: $b =$

3) A farmer has 88 apple trees in his orchard. He plants additional 40 apple trees to increase his production. How many apple trees will the farmer have afterwards?

Linear equation: $b =$

4) A public park has 113 benches for visitors to sit and relax. The park administration installs 25 more benches to accommodate more visitors. How many benches will the park have in total after installing the new benches?

Linear equation: $b =$

Name: _____ 147

Curriculum Connections
P7.4

Algebraic Bottle Flip Challenge

Objective What are we learning about?

To practice and reinforce understanding of representing and solving linear equations through an engaging and physically active bottle flip game.

Materials What you will need for the activity.

- [illegible] pair/group) filled to approximately [illegible] with water (or use cups)
- Set of pro[illegible] can b[illegible]ented with linear equations.

Instructions How you w[illegible]

1. Start with a short lesson on repres[illegible]ting an[illegible]ing [illegible] equations.
2. Arrange the students into pairs or small [illegible] and [illegible] bottle and a set of question cards to each.
3. Each pair or group receives an answer sheet to [illegible]eir an[illegible]
4. Explain the rules: One student draws a question c[illegible]ies [illegible]e t[illegible] subtraction algebra problem.
5. Once they believe they have the correct answer, they write i[illegible] answer sheet.
6. The student then gets to attempt a bottle flip. After answering eac[illegible]estion, the student gets only one flip. After they flip their bottle, they should keep track of successful flips and unsuccessful flips.
7. Alternate turns within each group or pair until they have completed all the question cards.
8. Groups or pairs tally their successful flips and compare with the rest of the class to determine the winning team (team with the most successful flips/correct answers). For incorrect answers, deduct a point from their successful bottle flips.
9. Go through the answer sheet with the class to ensure understanding and correct any misconceptions.
10. Discuss the strategies used to solve the linear equations and how this type of algebra is used in real-life situations.

Name: _____ 148

Curriculum Connection
P7.4

Directions Cut out the questions below and use for the game

x + 8 = 19	(5 * 6) / 2 + 3 = d
14 = 25	(3 * 6) / 2 + 4 = d
6 15	(6x) / 2 + 2 = 23
37 + a = 52	(4x + 6 = 17
63 + a = 107	(7x) / 5
85 + 31 = b	(5 * 8) / b + 8 = 18
121 + 157 = b	(10 * 6) / 20 + c = 15

Name: _____ 149

Curriculum Connection
P7.4

Directions Cut out the questions below and use for the game

x + 78 = 115	(2 * 5) / 2 + 6 = d
24 = 205	(4 * 8) / 4 + 14 = d
126 = 28	(7x) / 4 + 12 = 26
317 + a = 522	(5x) + 6 = 21
263 + a = 425	(4x) / 5 +
183 + 316 = b	(5 * 11) / b + 8 = 19
341 + 213 = b	(12 * 8) / 6 + c = 31

Name: _____ 150

Curriculum Connections P7.4

Directions Cut out the questions below and use for the game

A library has 45 fiction books. They receive more books, making the total 75 fiction books. How many new books did they receive?	Sarah and 5 friends are going to a trampoline park. Sarah agreed to pay the base entrance fee, which was $30. For every hour they jump, they are charged $3. The 6 friends will split this cost. If they jump for 3 hours, how much will Sarah owe?
A park has [illegible] benches. They add more benches, [illegible] the total 53 benches. How many be[illegible] added?	Kevin and 3 friends are going to a museum. Kevin said he would pay the base ticket price, which was $35. For every exhibit they view, they are charged $3. The 4 friends will split this cost. If they view 10 exhibits, how much will Kevin owe?
A classroom [illegible]. [illegible]ing in 15 more desks, [illegible] tot[illegible] How many desks w[illegible]	Alice and 5 friends are going to an ice skating rink. Alice agreed to pay the base entrance fee, which was $25. For every hour they skate, they are charged $2. The 6 friends will split this cost. If they skate for 5 hours, how much will Alice owe?
A bakery sells some cupcakes. [illegible] 121 more cupcakes, making the total 2[illegible] cupcakes. How many cupcakes did they bake?	[illegible]3 other friends are going to a theme [illegible] said he would pay the base entra[illegible] which was c dollars. For every ride [illegible] were charged $3. The [illegible] split [illegible] They went on 8 rides [illegible] is the value of c?
A garden has 74 flowers. They plant more flowers, making the total 132 flowers. How many flowers did they plant?	Lisa [illegible] are go[illegible] water park. Lisa agr[illegible] the [illegible]trance fee, which was $5[illegible] eve[illegible] they are charged $5. The [illegible] cost. If they ride 12 sl[illegible] will Lisa owe?
A sports team has 16 players. They recruit more players, making the total 31 players. How many players were recruited?	Tom and 3 friends are going to a laser tag arena. Tom said he would pay the base fee for the game, which was c dollars. For every match they played, they were charged $8. The 4 friends split this cost. They played 5 matches, and it cost Tom $42. What is the value of c?
A warehouse has some boxes. They receive 138 more boxes, making the total 333 boxes. How many boxes did they receive?	Grace and 4 friends are going to a paintball field. Grace agreed to pay the base entrance fee, which was $40. For every game they play, they are charged $6. The 5 friends will split this cost. If they play 7 games, how much will Grace owe?

Name: _____ 151

Algebra Quiz - Equations

Part 1 Is the example an expression or equation? Circle your answer.

	Sentence	Answer
1)	$8n$	Expression / Equation
2)		Expression / Equation
3)	$8 +$	Expression / Equation

	Sentence	Answer
4)	$11x + 12 = 26$	Expression / Equation
5)	$\frac{28}{x} + 12 = 16$	Expression / Equation
6)	$\frac{35}{x} + x$	Expression / Equation

Part 2 Evaluate the following expressions for x = 5

1) $x - 10$	2) $9 - x$	3)	4) $x - 14$
5) $44 + x$	6) $67 + x$	7) $65 +$	$+ 11$

Part 3 Evaluate the following expressions for y = 8

1) $5y$	2) $9y - 5$	3) $3y + 5$	4) $8y + 6$
5) $\frac{32}{y} + 8$	6) $\frac{64}{y} + y$	7) $\frac{24}{y} - 9$	8) $\frac{y}{y} \times y$

Part 4

Write the expressions using the values/operations below

6 8 2 *n* + *x* − ÷

1) Six times a number, add two	
2) Eight divided by two, subtract a number	
3) A number multiplied by eight, add six	
4) Eight m e than six divided by of a number	

Part 5

equations for each sentence.

	Equation	Answer
1) Seven less tha mbe		
2) Twelve more than a n 31		
3) Six times a number is 48		
4) Eighteen divided by a number is 3		

Part 6

Fill in the missing number to balanc ation

1) ☐ + 12 = 95	2) ☐ + 25 = 50	3) ☐ = 66
4) 58 − ☐ = 45	5) 48 − ☐ = 39	6) 65 − ☐ = 55
7) 4 x ☐ = 44	8) ☐ x 6 = 30	9) 8 x ☐ = 48
10) 63 ÷ 7 = ☐	11) 48 ÷ ☐ = 4	12) ☐ ÷ 8 = 9

Part 7 Whoops, some golfers forgot to fill in their scores. Help them out!

Player	Round 1	Round 2	Final Score
Ruby	-4	-1	
Iris	-2		-5
Emery		-1	-6
Ro	-1		5
	3		-3

Part 8 equ helps solve the problem.

1) Jayce walks at an a eed He walked a total of 3 hours. What distance (d) did he wal

2) It snowed 3.2cm every hour. In total, it sno H hours (h) did it snow?

3) Ayden earns $15.50 per hour working at a grocery store. He made $93 today. How many hours (h) did he work?

4) Zara bought a case with 4 cans of tomato soup. The case has 4.8L of soup in total. How many litres (l) are in each can?

Part 9 Write four equivalent forms of the equation below.

Original Equation	
$3n + 5 = 20$	
Add 4 to each side	
Subtract 8 from each side	
Multiply each side by 4	
Divide each side by 5	

Part 10 Represent problems with linear equations ($ax/b + c = d$) or $x + a = b$

1) Julia and [illegible] are [illegible] virtual reality gaming centre. Julia said she would pay the [illegible] headset rental, which was $20. For every hour they play, they are charged $15. The [illegible] friends will split this cost. If they play for 4 hours, how much will [illegible]?

Linear Equation	

2) Samuel had some books on his shelf and then received [illegible] more [illegible] He has 56 books on his shelf. How many books did he have before the gift?

Linear Equation	

3) Nina had a collection of stickers and then received 82 more as a gift. Now she has 156 stickers in total. How many stickers did she have in her collection before she received the gift?

Linear Equation	

Grade 7

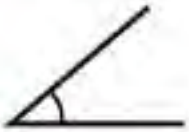
Shape and Space

	Curriculum Expectations	Pages
SS7.1	Demonstrate an understanding of circles including circumference and central angles.	5-51, 56-64
S	[illegible]	
S	[illegible] involving lines and angles.	
SS7.4	Demonstrate an understanding of the Cartesian plane and ordered pairs with integral coordinates.	117-125
SS7.5	Expand and demonstrate an understanding of transformations (translations, rotations, and reflections) of 2-D shapes in all four quadrants of the Cartesian plane.	126-166
TQ	Tests and Quizzes	67-69, 102-103, 167-170

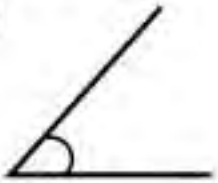
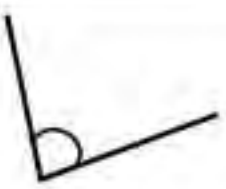
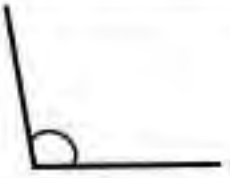
Name: _____ 5

Curriculum Connection
SS7.1

Naming Angles – Right, Obtuse, Acute, Straight, and Reflex

Right Angle - 90°	Acute Angle - smaller than 90°	Obtuse Angle - larger than 90°	Straight Angle - 180°	Reflex Angle - larger than 180°
				

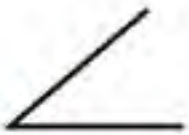
Instruction Label the angle – straight, acute, obtuse, right, or reflex

1) 		3) 	4) 
5) 	6) 	7) 	8) 
9) 	10) 	11) 	12) 
13) 	14) 	15) 	16) 

Name: _____ 7

Curriculum Connection
SS7.1

Drawing Angles – Right, Obtuse, Acute, and Reflex

Right Angle - 90°	**Acute Angle** - smaller than 90°	**Obtuse Angle** - larger than 90°	**Straight Angle** - 180°	**Reflex Angle** - larger than 180°
				

Instructio Draw acute, obtuse, right, and reflex angles below

1)		3)	4)
Acute	Obtuse		Reflex

5)	6)		
Reflex	Obtuse	Acute	Straight

9)	10)	11)	12)
Right	Acute	Obtuse	Reflex

Name: _____ 9

Curriculum Connection
SS7.1

Measuring Angles Up To 180°

Instructions Measure the angles and label them acute, right or obtuse

1) 

2) 

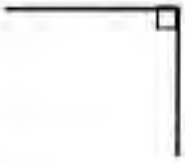
3) 

4) 

5) 

7) 

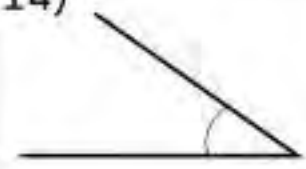
8) 

9) 

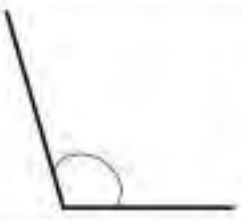
10) 

11) 

13) 

14) 

15) 

16) 

Curriculum Connection
5S7.1

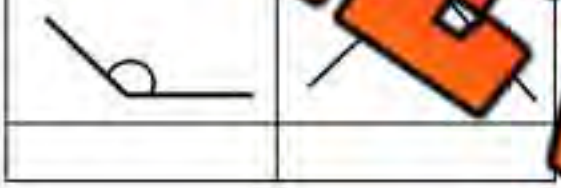
Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

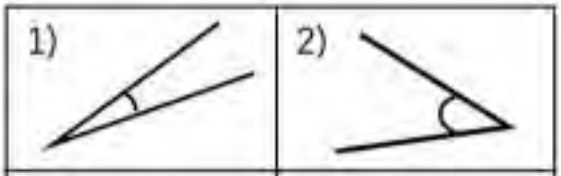
Label the angle – acute, obtuse or reflex.

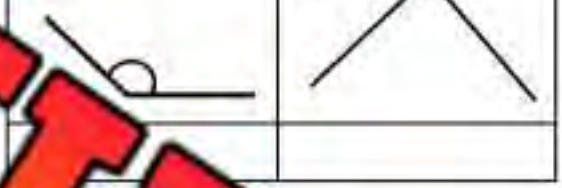
1) 

3) 

Name: _____

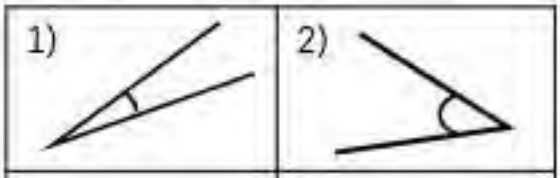
Label the angle – acute, obtuse or reflex.

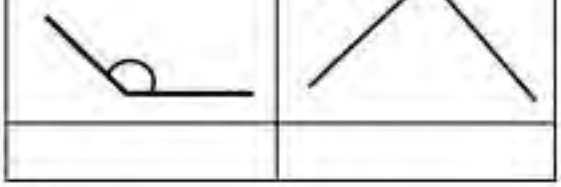
1) 

3) 

Name: _____

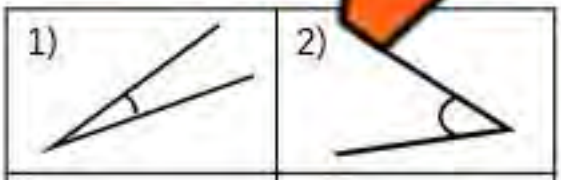
Label the angle – acute, obtuse or reflex.

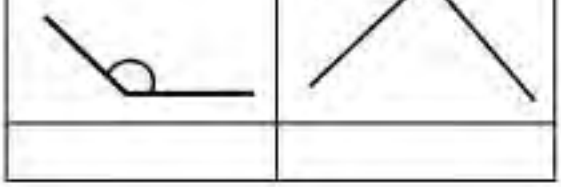
1) 

3) 

Name: _____

Label the angle – acute, obtuse or reflex.

1) 

3) 

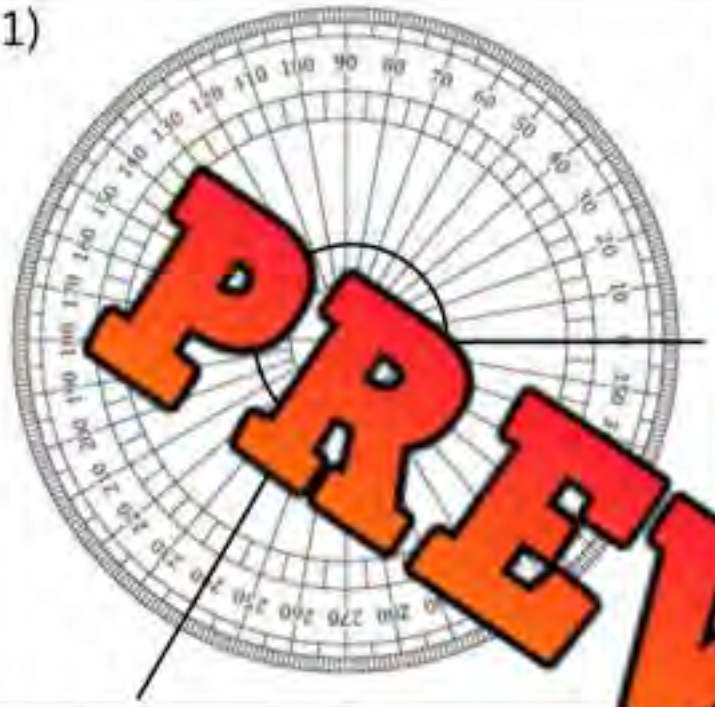
Name: _____ 11

Curriculum Connection
SS7.1

Using Printed Protractor – Angles Up To 360°

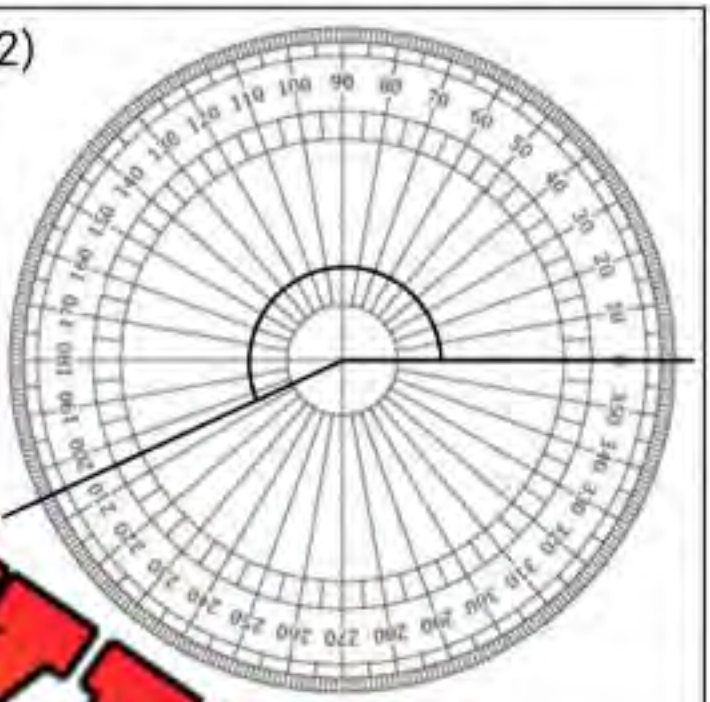
Instructions Measure the angles below using the circular protractor

1)



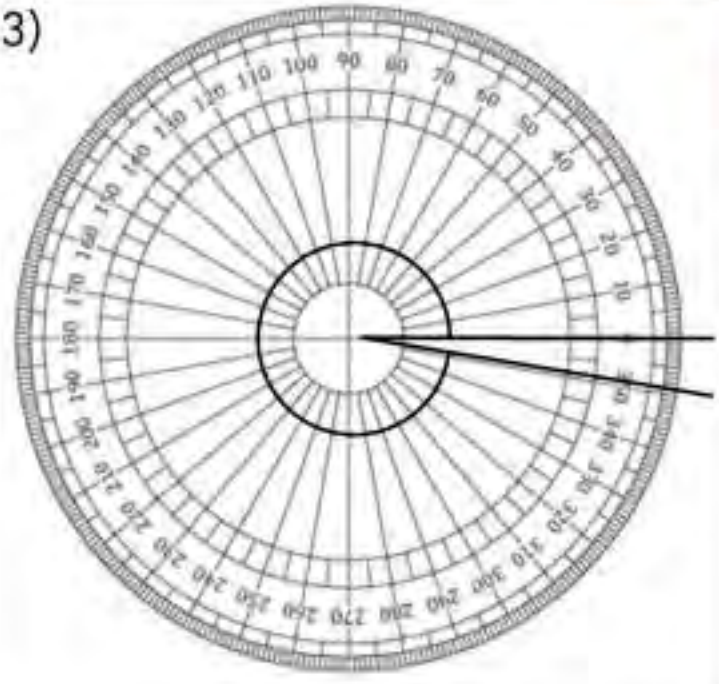
Angle = Type of Angle =

2)



Angle = Type of Angle =

3)



Angle = Type of Angle =

4)

Angle = Type of Angle =

Name: _____ 13

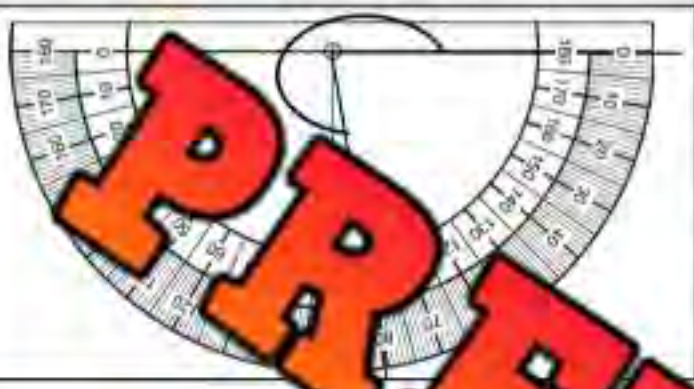
Curriculum Connection
SS7.1

Measuring Angles Up To 360°

We can measure reflex angles that are larger than 180° by using a circular protractor or a semi-circular protractor.

When using a semi-circular protractor, you can use one of two strategies:

1) Measure the angle starting with 180° and add 180°
2) Measure the remaining angle from 0° and subtract 360°



Solution

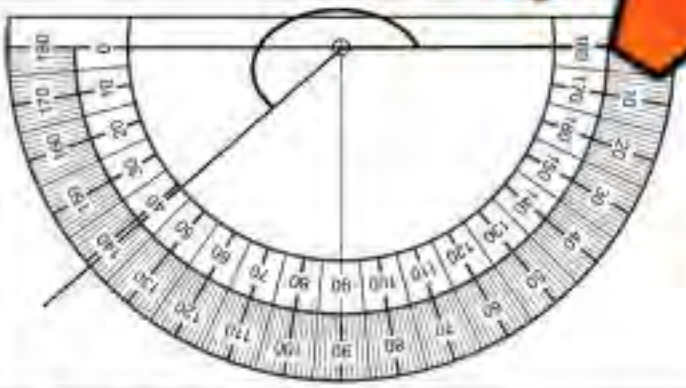
Strategy 1

180 + 100 = 280

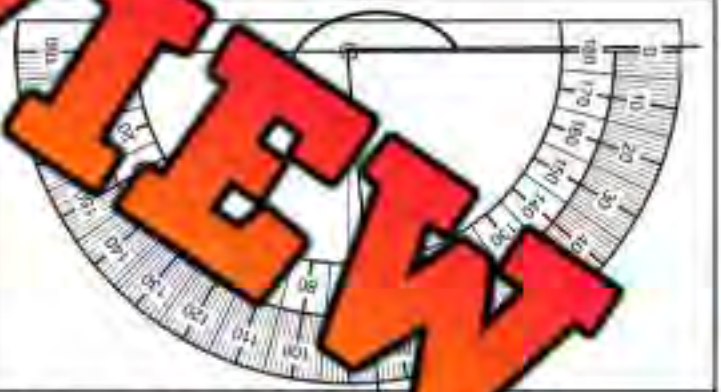
Strategy 2

360 - 80 = 280

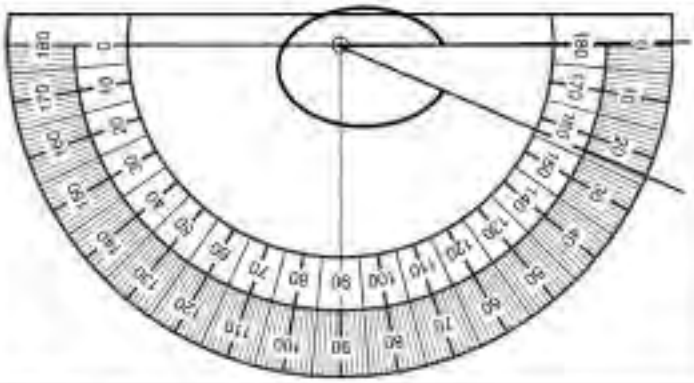
Instructions Meas... efl... ...low



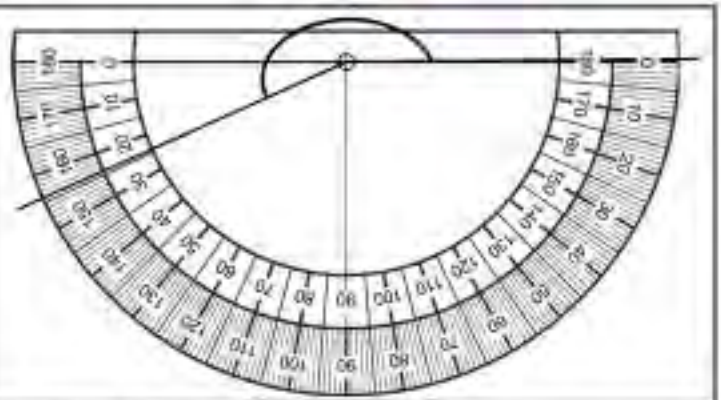
1) Angle Size =



2) Angle Size =



3) Angle Size =



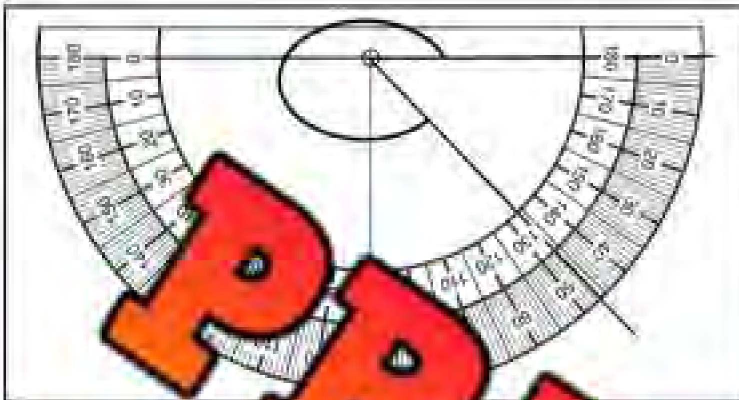
4) Angle Size =

Name: ____________________ 14

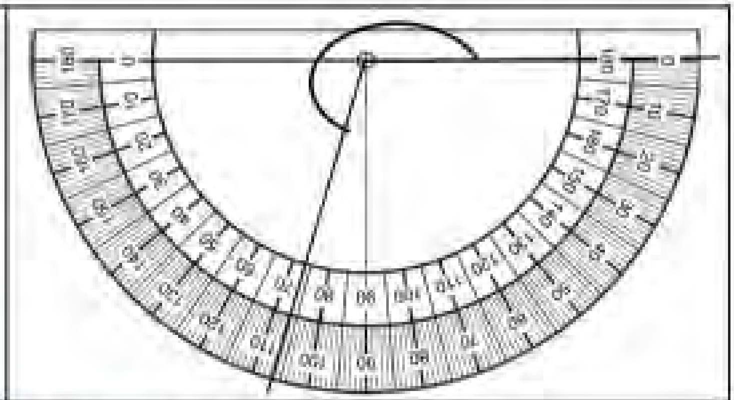
Curriculum Connection
SS7.1

Measuring Angles Up To 360°

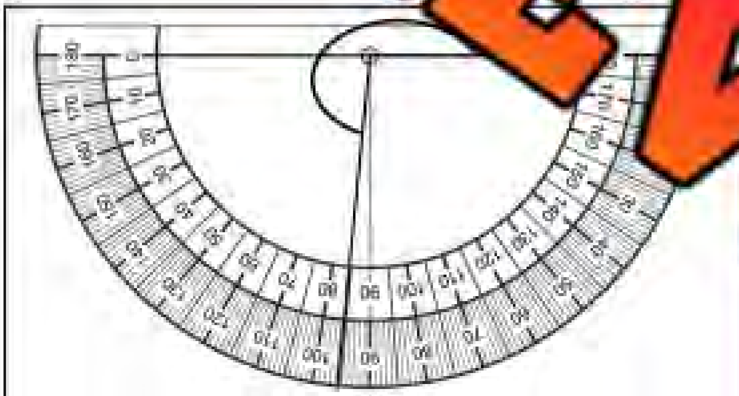
Instructions Measure the reflex angles below



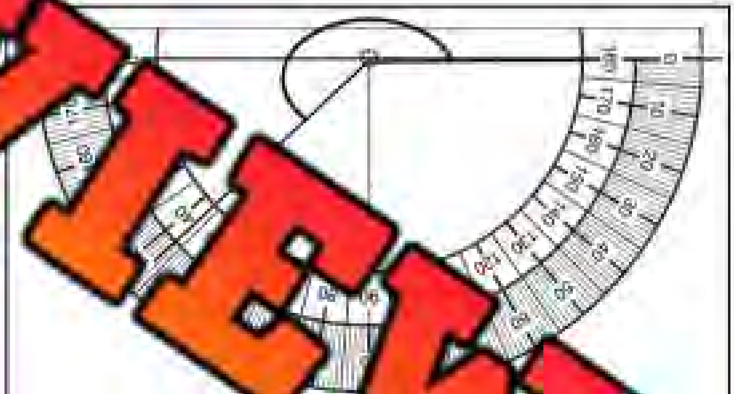
1) Angle Size =



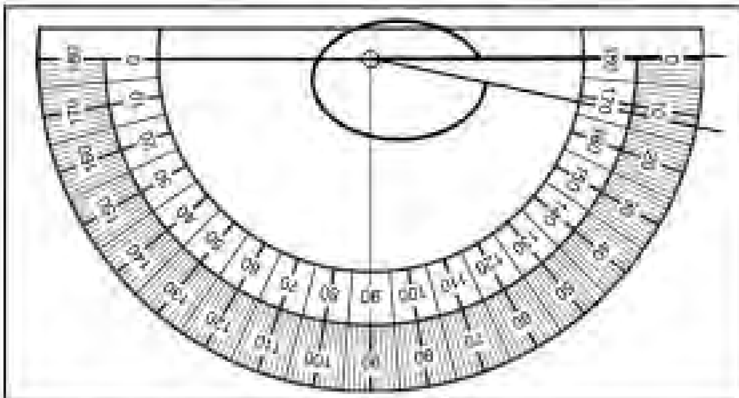
2) Angle Size =



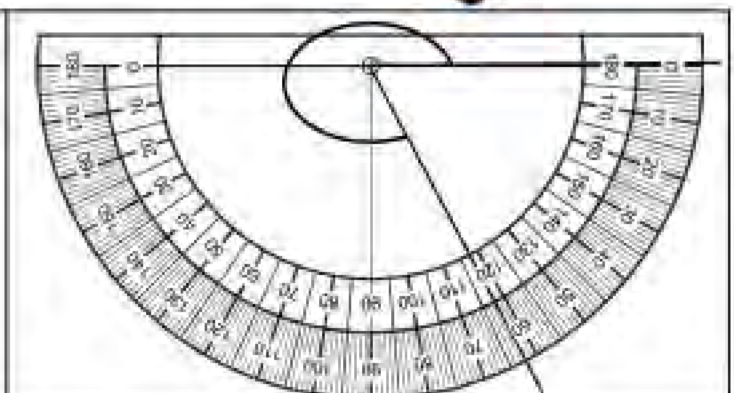
3) Angle Size =



4) Angle Size =



5) Angle Size =



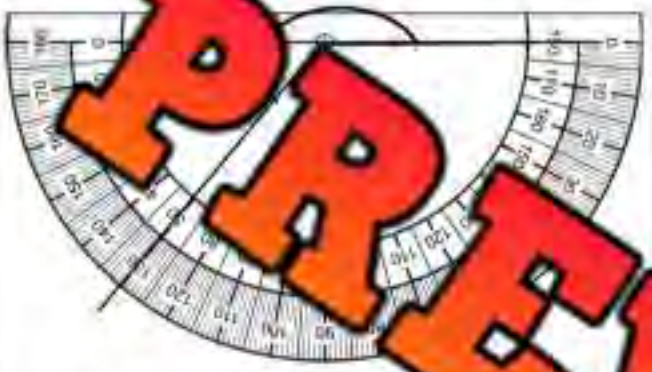
6) Angle Size =

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

Measure the reflex angle below.

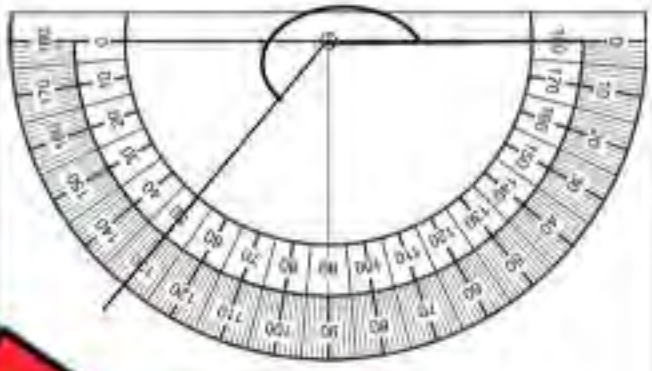


Angle Size = _____

Type of Angle = _____

Name: _____

Measure the reflex angle below.

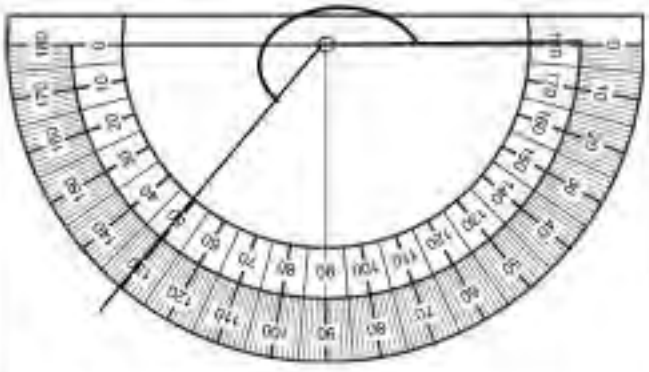


Angle Size = _____

Type of Angle = _____

Name: _____

Measure the reflex angle below.

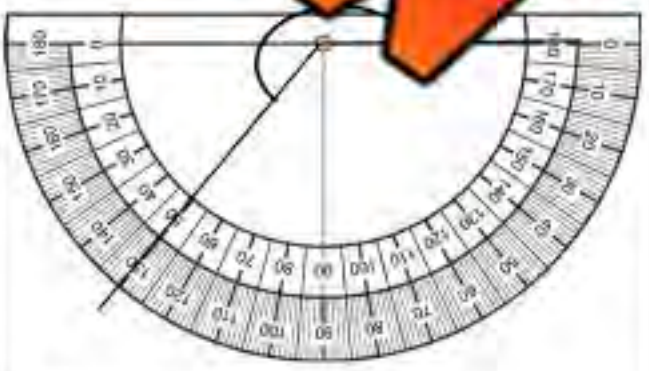


Angle Size = _____

Type of Angle = _____

Name: _____

Measure the reflex angle below.



Angle Size = _____

Type of Angle = _____

Name: _____ 16

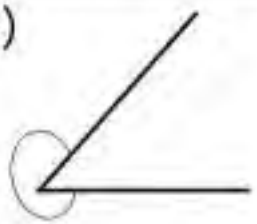
Curriculum Connection
SS7.1

Measuring Angles Up To 360°

Instructions Measure the angles below

1) 

2) 

3) 

4) 

5) 

7) 

8) 

9) 

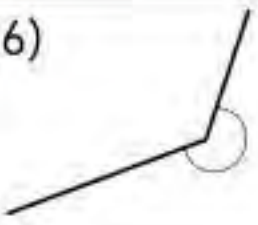
10) 

11) 

13) 

14) 

15) 

16) 

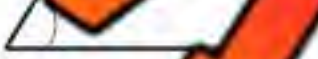
Name: _____ 17

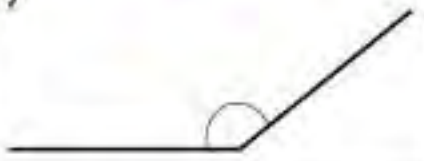
Curriculum Connection
SS7.1

Constructing Angles - Estimating – Multiple Choice

Instructions Circle which angle you think it is. Do not use a protractor

1) 	2) 	3) 
	a) ∠= 95°	a) ∠= 171°
b) ∠= 80°	b) ∠= 100°	b) ∠= 9°
c) ∠= 1	c) ∠= 225°	c) ∠= 50°
d) ∠= 1	) ∠= 290°	d) ∠= 85°

4) 		6) 
a) ∠= 168°	a) ∠= 60	∠= 90°
b) ∠= 50°	b) ∠= 120°	180°
c) ∠= 120°	c) ∠= 10°	
d) ∠= 10°	d) ∠= 160°	

7) 	8) 	9) 
a) ∠= 50°	a) ∠= 75°	a) ∠= 40°
b) ∠= 160°	b) ∠= 190°	b) ∠= 30°
c) ∠= 20°	c) ∠= 255°	c) ∠= 140°
d) ∠= 100°	d) ∠= 355°	d) ∠= 170°

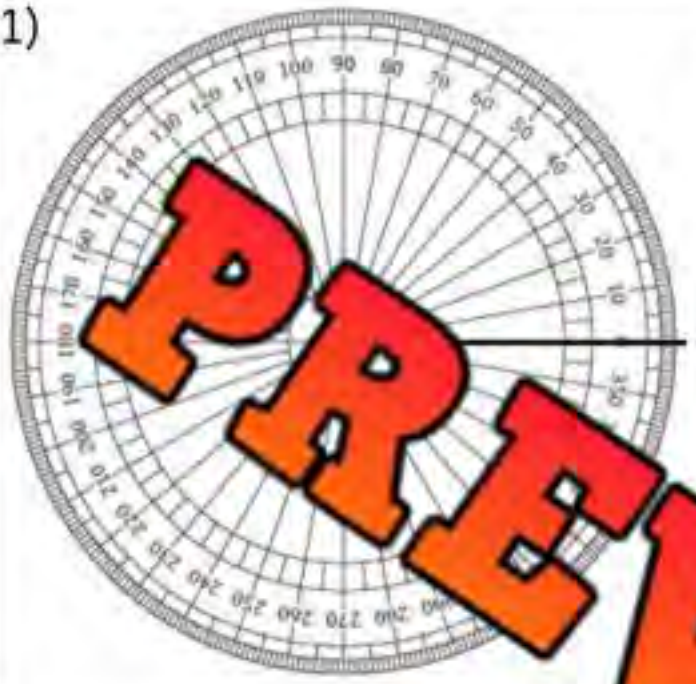
Name: _____ 22

Curriculum Connection
SS7.1

Constructing Angles Up To 360°

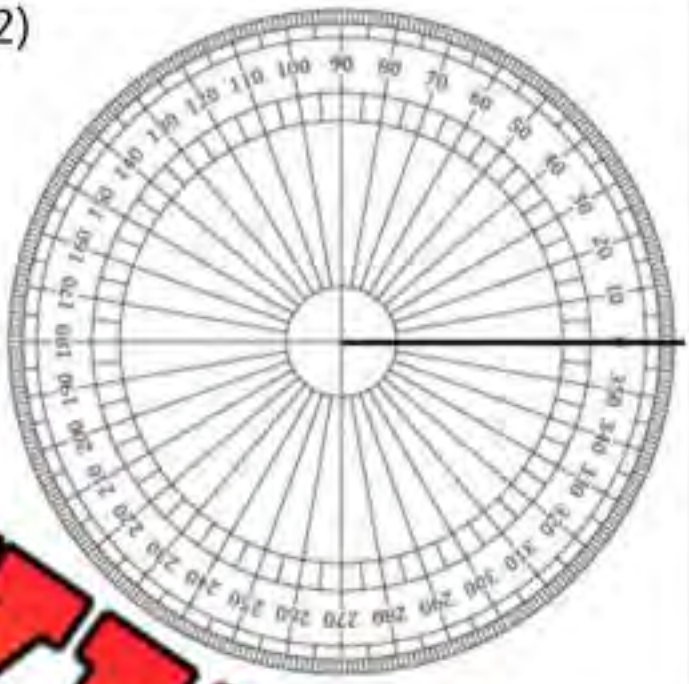
Instructions | Construct the angles below

1)



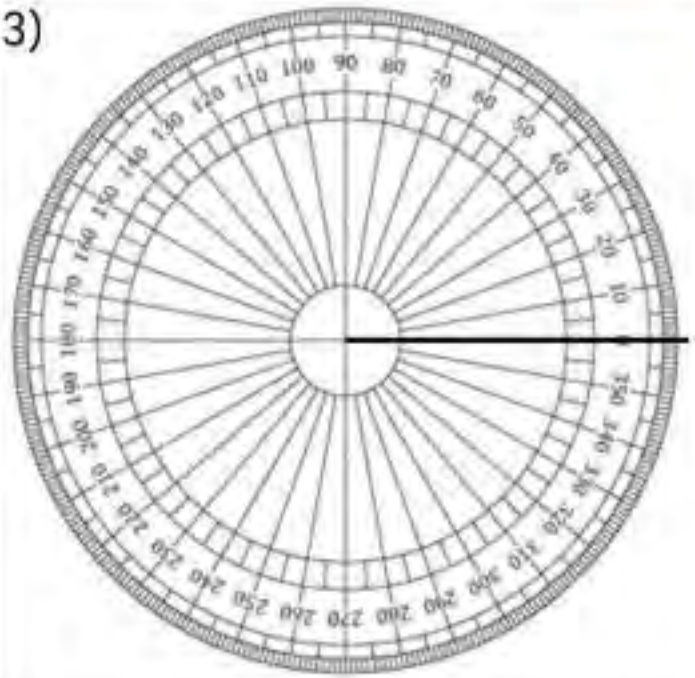
Angle = 195°

2)



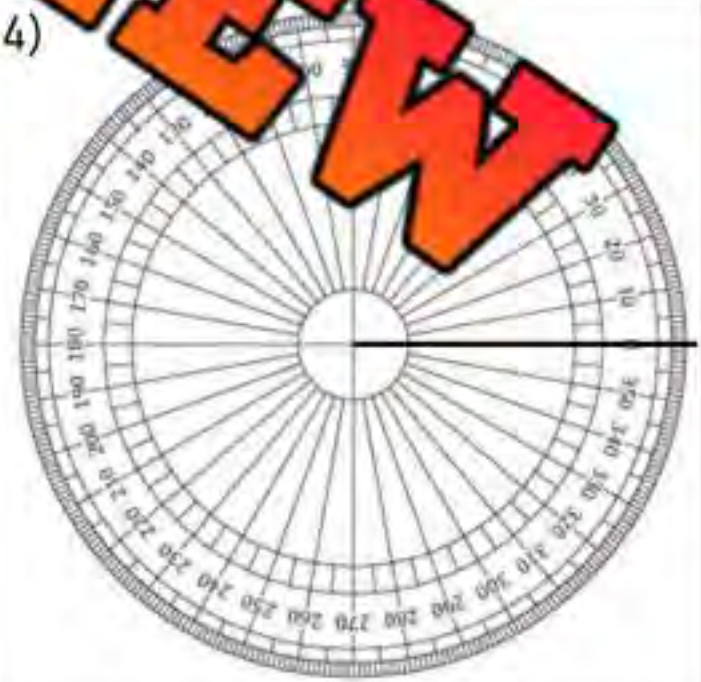
= 292°

3)



Angle = 347°

4)



Angle = 262°

Name: _____ 23

Curriculum Connection
SS7.1

Constructing Angles Up To 360°

Part 1 Use a protractor to draw the angles below using the line provided

1)	2)	3)
∠= 2	∠= 275°	∠= 350°

Part 2 Use a protra[illegible] th[illegible] below

1)	2)	3)
∠= 287°	∠= 322°	∠= [illegible]°

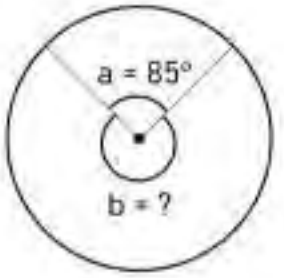
4)	5)	6)
∠= 248°	∠= 318°	∠= 264°

Name: _____ 25

Curriculum Connection
SS7.1

Introduction to Central Angles

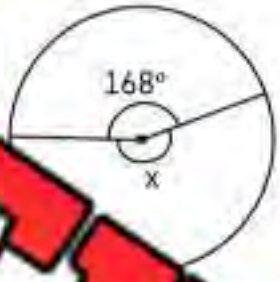
A **central angle** is an angle with a vertex at the centre of a circle. Both angles a and b in the example are central angles. The sum of all central angles need to equal 360°. Therefore, if angle a = 85°, then angle b would equal 275° (360 – 85).

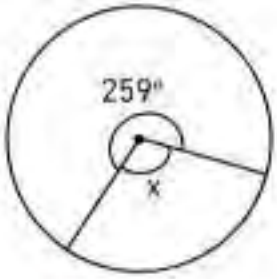


Practice Determine the value of angle x

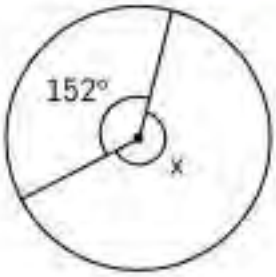
1) 

∠x =

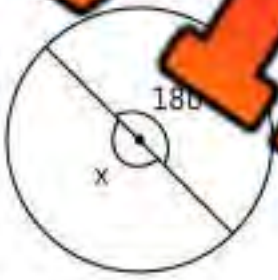
2) 

3) 

∠x =

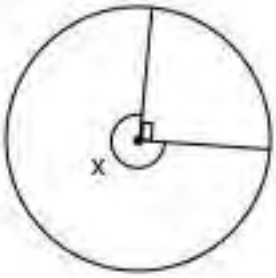
4) 

∠x =

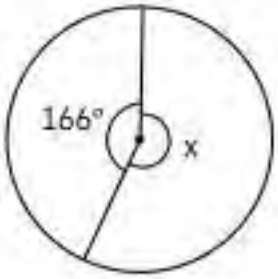
5) 

∠x =

=

7) 

∠x =

8) 

∠x =

9) 

∠x =

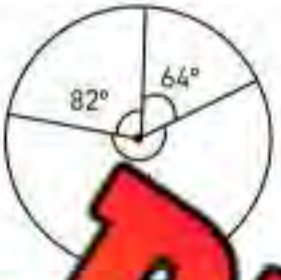
Name: _____ 29

Curriculum Connection
SS7.1

Finding the Missing Angle – Central Angles

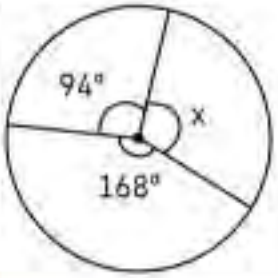
Practice Determine the value of angle x

1)



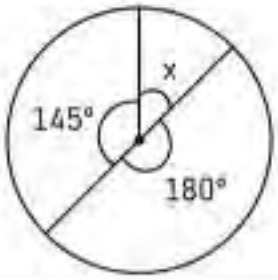
∠x =

2)



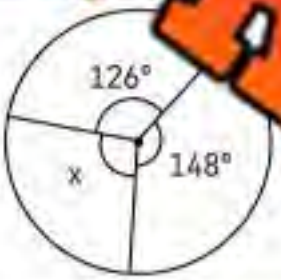
∠x =

3)



∠x =

4)

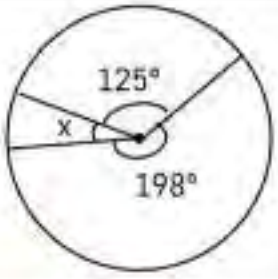


∠x =

5)

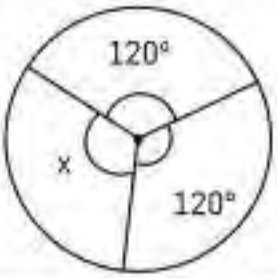
∠x =

6)



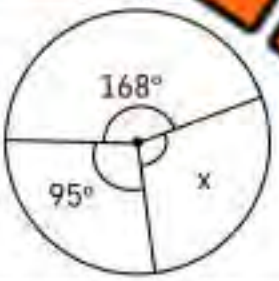
∠x =

7)



∠x =

8)

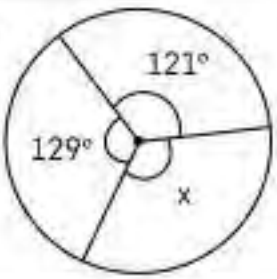


∠x =

9)

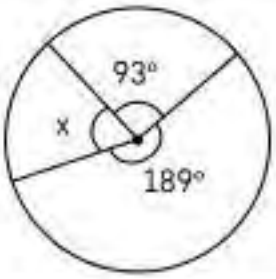
∠x =

10)



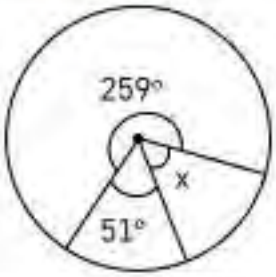
∠x =

11)



∠x =

12)



∠x =

Name: _____ 30

Curriculum Connection
SS7.1

Central Angles – Word Problems

Questions | Answer the questions below

1) At a pizza party, a large pizza is sliced into 8 equal pieces. What is the measure of the central angle formed by each slice?

2) A [illegible] hands form a central angle of 120 degrees at 4:00 PM. What would b[illegible]e cent[illegible] the hour and minute hands when it is 8:00 PM?

3) A circular pie chart shows the percen[illegible] eopl[illegible] prefer different types of ice cream. The central angle for chocolate [illegible]am is 1[illegible]. If the pie chart forms a full circle, what is the measure of the central angle [illegible]esen[illegible] preference for all other ice cream flavors combined?

4) At a science fair, a circular table is divided into two sections to di[illegible] projects. The central angle for project A is 160 degrees. What is the m[illegible]e central angle for project B if the table forms a full circle?

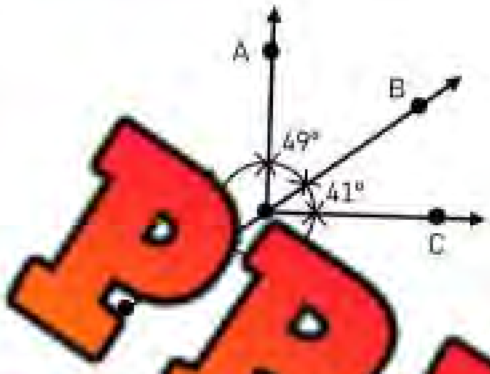
5) On a round clock, the angle between the 4 and 7-hour marks is 90 degrees. If the central angle for the 4-hour mark is 120 degrees, what is the measure of the central angle for the 7-hour mark?

Name: ____________________ 31

Finding the Missing Angle – Central Angles

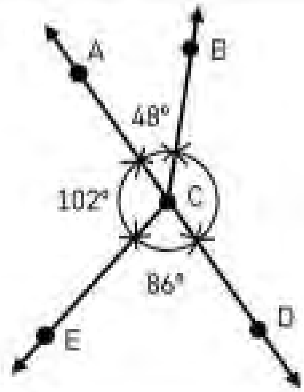
Practice Find the missing angles below

1)



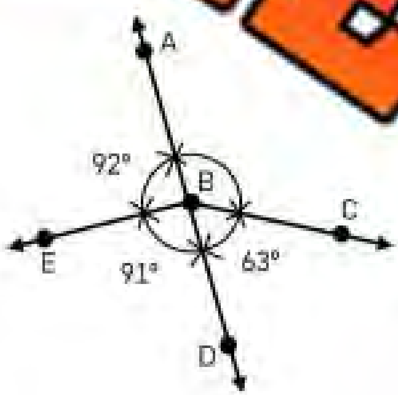
∠[illegible] =

2)



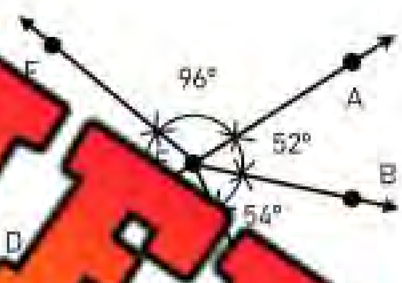
∠BCD =

3)



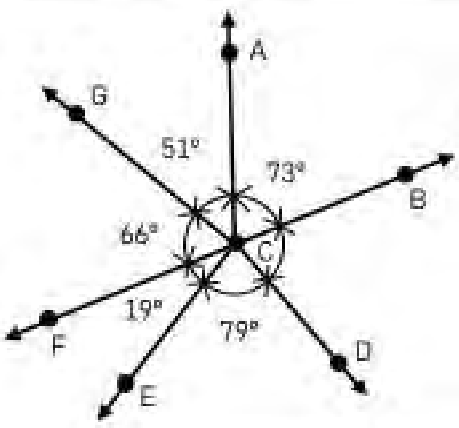
∠ABC =

4)



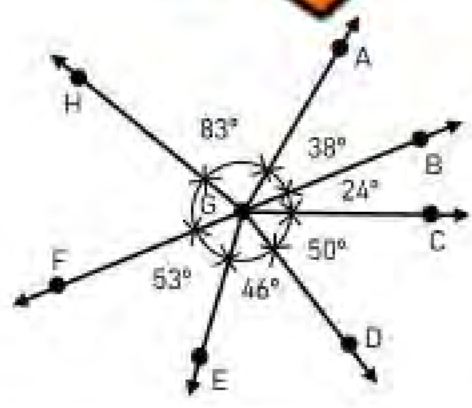
∠F[illegible] =

5)



∠BCD =

6)



∠FGH =

Name: _____ 32

Curriculum Connection
SS7.1

Central Angles – Word Problems

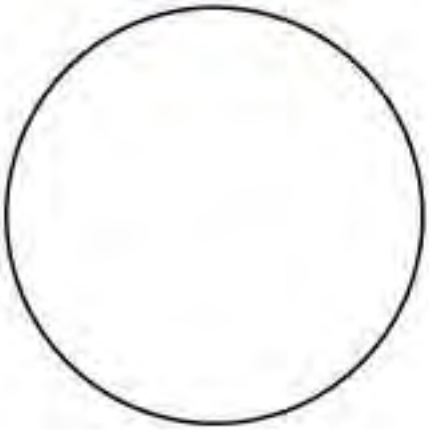
Questions | Answer the questions below

1) A circular pizza is divided into 3 sections with different toppings: pepperoni, cheese, and veggie. The central angles for the pepperoni and cheese sections are 130 degrees and 110 degrees, respectively. What is the measure of the central angle for the veggie section if the pizza forms a full circle?

2) A round play[illegible] different play areas for children. The central angles for the first three [illegible] 60 [illegible]0 degrees, and 120 degrees. If the playground forms a full circle, [illegible] central angle for the fourth play area?

3) a) A pie chart displays the market share of 4 sm[illegible]tral angles for brands A, B, and C are 85 degrees, 135 degrees, and 5[illegible] respe[illegible] If the pie chart forms a full circle, what is the measure of the centra[illegible]ep[illegible] market share for brand D?

b) Draw the pie chart below by either estimating or using a protractor.



Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: ______________________

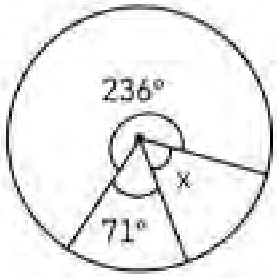
1) Determ[illegible]e the value of angle x.

2) An apple pie is c[illegible]es. Five pieces have angles [illegible]0, 60 70, and 80 degrees. What is [illegible]ngl of the remaining piece?

____

Name: ______________________

1) Determine the value of angle x.



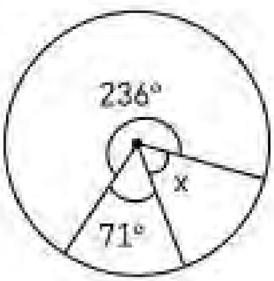
∠x = ________

2) An apple pie is cut into 6 pieces. [illegible]e pieces have angles of 40, 50, 60, [illegible]d 80 degrees. What is the angle [illegible]f th[illegible]aining piece?

____

Name: ______________________

1) Determine the value of angle x.



∠x = ________

2) An apple pie is cut into 6 pieces. Five pieces have angles of 40, 50, 60, 70, and 80 degrees. What is the angle of the remaining piece?

____

Name: ______________________

1) Determine the [illegible]

∠x = ________

2) An apple pie is cut into 6 pieces. Five pieces have angles of 40, 50, 60, 70, and 80 degrees. What is the angle of the remaining piece?

____

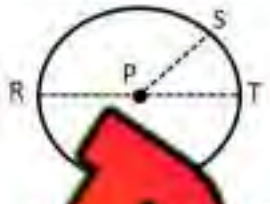
Name: _____ 34

Curriculum Connections
SS7.1

Intro – Radius and Diameter

Instructions Identify the elements for each question. The first one is done for you

1)

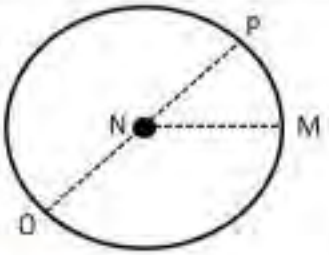


Centre = P

Radius = PS

Diameter = _____

2)

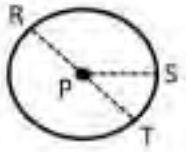


Centre = _____

Radius = _____

Diameter = _____

3)

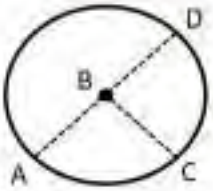


Centre = _____

Radius = _____

Diameter = _____

4)



Centre = _____

Radius = _____

Diameter = _____

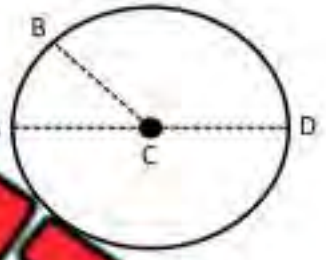
5)

Centre = _____

Radius = _____

Diameter = _____

6)

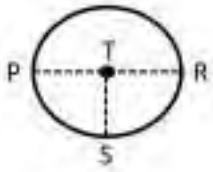


Centre = _____

Radius = _____

Diameter = _____

7)

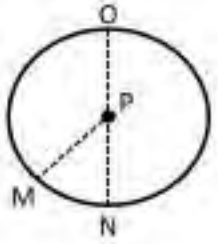


Centre = _____

Radius = _____

Diameter = _____

8)

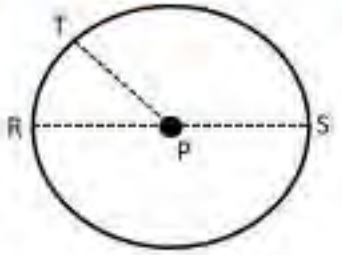


Centre = _____

Radius = _____

Diameter = _____

9)



Centre = _____

Radius = _____

Diameter = _____

Name: _____ 35

Curriculum Connection
SS7.1

Relationship Between Radius and Diameter

The distance from any point on the outside of a circle to its centre is always the same. This distance is a circle's radius (*r*).

Part 1 Use a ruler to measure the line segments. Is the radius related to the diameter?

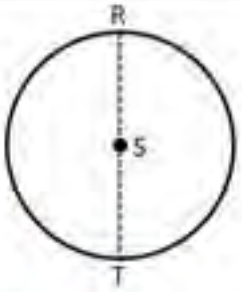
1)

a) SR = _____

b) ST = _____

c) RT = _____ (diameter)

2)

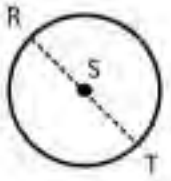


a) SR = _____ (radius)

b) ST = _____ (radius)

c) RT = _____ (diameter)

3)

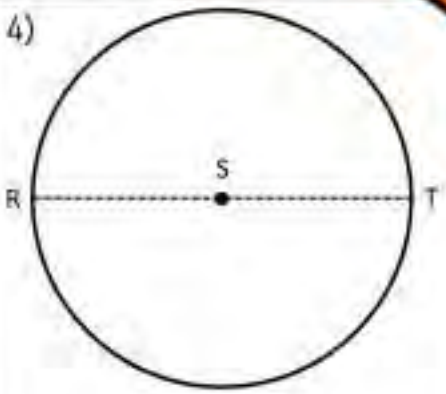


a) SR = _____ (radius)

b) ST = _____ (radius)

c) RT = _____ (diameter)

4)

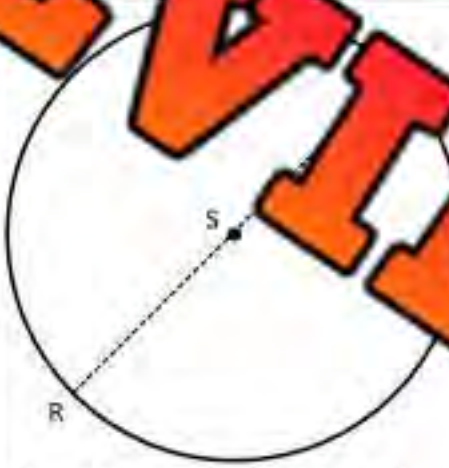


a) SR = _____ (radius)

b) ST = _____ (radius)

c) RT = _____ (diameter)

5)

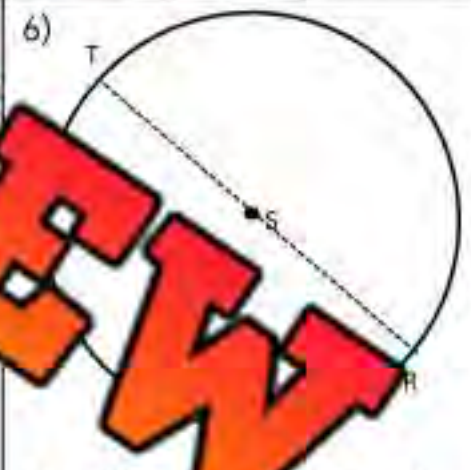


a) SR = _____ (radius)

b) ST = _____ (radius)

c) RT = _____ (diameter)

6)



a) SR = _____ (radius)

b) ST = _____ (radius)

c) RT = _____ (diameter)

Part 2 Answer the questions below

Question	Formula
1) If you know the length of the radius, how could you use it to determine the length of the diameter? Write a formula for calculating diameter.	
2) Write a formula for calculating the radius of a circle if you have the diameter.	

Name: _____ 36

Curriculum Connection
SS7.1

Calculating Radius and Diameter

Calculating Radius Formula

$r = \frac{d}{2}$ or $r = d \div 2$

Calculating Diameter Formula

$d = 2r$ or $d = r \times 2$

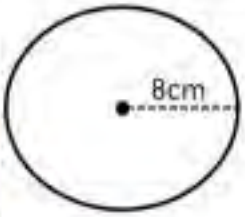
Instructions Find the radius and diameter of each circle below

1)

Radius = _____

Diameter = _____

2)



Radius = _____

Diameter = _____

3)

Radius = _____

Diameter = _____

4)

Radius = _____

Diameter = _____

5)

Radius = _____

Diameter = _____

6)

Radius = _____

Diameter = _____

7)

Radius = _____

Diameter = _____

8)

Radius = _____

Diameter = _____

9)

Radius = _____

Diameter = _____

10)

Radius = _____

Diameter = _____

11)

Radius = _____

Diameter = _____

12)

Radius = _____

Diameter = _____

Name: _____ 37

Curriculum Connection
SS7.1

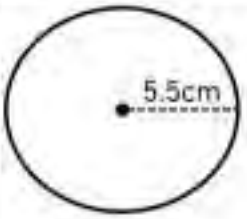
Calculating Radius and Diameter

Part 1 Find the radius and diameter of each circle below

1) 

Radius = _____

Diam_____

2) 

Radius = _____

Diameter = _____

3) 

Radius = _____

Diameter = _____

4) 

Radius = _____

Diameter = _____

5) 

_____ =

Radius _____

6) 

Radius = _____

Diameter = _____

Part 2 Fill in the blanks below

	Radius	Diameter
1)	7cm	
2)		28mm
3)		35m
4)	19cm	
5)		53mm

		Diameter
6)	5.5m	
7)	13.5m	
8)		77cm
9)		85mm
10)	62.2cm	

Part 3 Answer the word problems below

1)	A pizza slice is 12cm long. What is the width of the entire pizza?	
2)	A circular pool is 13m long across the middle of the pool. How far is the middle of the pool from the side?	

Name: _____ 38

Curriculum Connection
SS7.1

Radius and Diameter – Word Problems

Questions | Answer the questions below

1) Emily found a round stone in her backyard and decided to make a necklace pendant out of it. She measured the diameter of the stone as 3 cm. She needs to drill a hole in the middle of the rock. How many cm from the outside of the rock is the middle?

2) A ch pizza h eter of 31 cm. The chef wants to know where the middle of the pizza is so they ca ver . How many cm is the middle of the pizza from the outside?

3) A circular pond in a park has a radius ters. manager wants to install a decorative bridge straight across the po hat sh gth of the bridge?

4) A circular ice rink has a radius of 15 meters. The rink owner plans porary divider straight across the rink to create separate sections for beginners a anced skaters. How long should the divider be?

5) In a botanical garden, there is a circular flower bed with a diameter of 16 meters. The gardener plans to place a wooden plank halfway across the flower bed for maintenance purposes. How long should the plank be?

Curriculum Connection
5SP.1

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: ______________________

1) Find the radius and diameter of the circle.

Radius = ____________

Diameter = ____________

2) A garden fountain has a radius of 5 meters. How long is a pipe that goes straight across it?

____

Name: ______________________

1) Find the radius and diameter of the circle.

Radius = ____________

Diameter = ____________

2) A garden fountain has a radius of 5 meters. How long is a pipe that goes straight across it?

____

Name: ______________________

1) Find the radius and diameter of the circle.

Radius = ____________

Diameter = ____________

2) A garden fountain has a radius of 5 meters. How long is a pipe that goes straight across it?

____

Name: ______________________

1) Find the radius and diameter of the circle.

Radius = ____________

Diameter = ____________

2) A garden fountain has a radius of 5 meters. How long is a pipe that goes straight across it?

____

Name: _____ 40

Curriculum Connection
SS7.1

Estimating Circumferences

The perimeter of a circle is called its circumference (c). The circumference is a little more than 3 times the length of the diameter. When we do not need a precise calculation of circumference, we can estimate by multiplying the diameter by 3. We may estimate the circumference of a pizza to know how large a box we need.

Part 1 Estimate the circumference of the circles below

1) Radius = _____ Diameter = _____ Circumference = _____	2)  Radius = _____ Diameter = _____ Circumference = _____	3)  Radius = _____ Diameter = _____ Circumference = _____
4)  Radius = _____ Diameter = _____ Circumference = _____	5)  Radius = _____ Diameter = _____ Circumference = _____	 Radius = _____ Diameter = _____ Circumference = _____

Part 2 Answer the word problems below

1)	Chase is drawing a circular logo. He needs the logo to be approximately 18cm in circumference. What will the radius of the logo be?	
2)	Leon is building a deck around his pool. He needs an estimate of the circumference of his pool, so he knows how much wood to buy. The radius of the pool is 3.3m. What is an estimate of the circumference?	

Name: _____ 41

Curriculum Connection
6.G.1

Math Race: Circumference, Radius, and Diameter

Objective What are we learning about?

Students will practice calculating the circumference, radius, and diameter of circles by quickly answering related questions in a competitive and engaging game format.

Materials What you will need for the activity.

- List[illegible]out circumference, radius, and
- Op[illegible]l: Tim[illegible]atch
- Chairs ar[illegible]cle

Instructions How [illegible] activity

1. Setup: Arrange chairs in a [illegible]le, [illegible] seated in a chair. One student stands behind a seated student to [illegible]e ga[illegible]
2. Explain the Game: Explain to the students th[illegible]ey w[illegible]rticipating in a race around the circle by answering questions [illegible]circ[illegible]radius, and diameter. The goal is to move around the en[illegible]ci[illegible]r[illegible]their original position. Students should use mental math and [illegible]s (pi
3. Start the Game: The teacher reads out a question (e.g., "What [illegible]nce of a circle with a radius of 3 cm?"
4. Answering the Question: The standing student and the seated stud[illegible]front of them compete to answer the question first. The student who answe[illegible]correctly first moves to stand behind the next seated student, while the other student remains seated.
5. Continue the Race: The teacher continues reading out questions, and the process repeats. The standing student continues to move around the circle, answering questions at each stop.
6. Winning the Game: The first student to make it around the entire circle and return to their original position wins the race.
7. Review: After the game, review some of the questions and answers with the class to reinforce the concepts and ensure understanding.

Name: _____ 42

Curriculum Connection
SS7.1

Questions | Use the questions below for the game

Questions
A donut has a circumference of 12 cm. What is the radius?
A pizza has a circumference of 3 m. What is the radius of the pizza in centimeters?
You need to wrap a label around a can. If the diameter of the can is 10 cm, what length does the label need to be?
Chase is a circular logo. He needs the logo to be approximately 18 cm in circum ill the radius of the logo be?
What f circu of a circle with a radius of 4 cm?
A circular ga diam 10 m. What is its circumference?
The diameter of a What is its circumference?
What is the radius of a ci ce of 30 cm?
A clock face has a diameter o cm mference?
If a circle has a circumference of 45 What is ?
A round table has a radius of 1.1 m. What is cumf
The circumference of a circular park is 300 m. W dius?
What is the circumference of a circle with a diameter n?
A hula hoop has a radius of 45 cm. What is its circumference?
What is the radius of a circle with a circumference of 60 cm?
The diameter of a round mirror is 20 cm. What is its circumference?
If a circle has a circumference of 90 cm, what is its radius?
A circular pond has a diameter of 8 m. What is its circumference?
What is the diameter of a circle with a circumference of 45 cm?
The circumference of a wheel is 90 cm. What is its diameter?
A circular plate has a diameter of 25 cm. What is its circumference?
What is the radius of a circle with a circumference of 12 cm?

Name: _____ 43

Curriculum Connection
SS7.1

Questions | Use the questions below for the game

Questions
A frisbee has a diameter of 30 cm. What is its circumference?
If a circle has a circumference of 96 cm, what is its radius?
The diameter of a circular rug is 50 cm. What is its circumference?
What is the circumference of a circle with a radius of 7 cm?
A circular garden has a radius of 100 m. What is its circumference?
The circumference of a circle is 42 cm. What is its radius?
A round pool has a diameter of 8 m. What is its circumference?
What is the radius of a circle with a circumference of 15 cm?
The diameter of a circular fountain is 12 m. What is its circumference?
If a circle has a circumference of 33 cm, what is its diameter?
A circular pizza has a radius of 20 cm. What is its circumference?
What is the diameter of a circle with a circumference of 25 cm?
The circumference of a circular field is 150 m. What is its diameter?
A round cake has a diameter of 40 cm. What is its circumference?
What is the radius of a circle with a circumference of 54 cm?
The diameter of a circular fountain is 10 m. What is its circumference?
If a circle has a circumference of 63 cm, what is its diameter?
A circular track has a diameter of 500 m. What is its circumference?
What is the diameter of a circle with a circumference of 39 cm?
The circumference of a circular playground is 306 m. What is its diameter?
A roundabout has a diameter of 30 m. What is its circumference?
What is the radius of a circle with a circumference of 48 cm?

Name: _____ 44

Curriculum Connection
SS7.1

Calculating Circumferences

The circumference of a circle is slightly more than 3 times the length of the diameter, or a little more than 6 times the length of the radius. When we need to calculate the circumference of a circle more precisely, we use pi (π). Pi is equal to approximately 3.14, but it is an irrational number, meaning it never ends!

Calculating Circumference (Diameter)
$c = \pi d$ or $c = \pi \times d$

Calculating Circumference (Radius)
$c = 2\pi r$ or $c = 2 \times \pi \times r$

Practice Calculate the circumference of the circles below

1)

Radius = _____
Diameter = _____
Circumference = _____

2)

Radius = _____
Diameter = _____
Circumference = _____

3)

Radius = _____
Diameter = _____
Circumference = _____

4)

Radius = _____
Diameter = _____
Circumference = _____

5)

Radius = _____
Diameter = _____
Circumference = _____

Radius = _____
Diameter = _____
Circumference = _____

7)

Radius = _____
Diameter = _____
Circumference = _____

8)

Radius = _____
Diameter = _____
Circumference = _____

9)

Radius = _____
Diameter = _____
Circumference = _____

Name: _____ 45

Curriculum Connections
SS7.1

Calculating Circumferences

Calculating Circumference (Diameter)
$c = \pi d$ or $c = \pi \times d$

Calculating Circumference (Radius)
$c = 2\pi r$ or $c = 2 \times \pi \times r$

Part 1 Fill in the table with the missing information

	Radius	Diameter	Circumference
1)	cm		
2)			
3)		22m	
4)		46cm	
5)	16m		
6)			
7)	2.5km		
8)	6.8m		
9)			
10)		48.6mm	

Part 2 Answer the word problems below

1)	Harrison is deciding which pizza to buy. He has two options. Option A: Pizza with the radius of 18cm Option B: Pizza with a circumference of 106cm Which pizza is larger? 	
2)	You need to wrap a label around a can. If the diameter of the can is 9.5cm, what length does the label need to be? 	
3)	Alexa needs to wrap a cake she made with a ribbon. The cake has a radius of 12.5cm. How long does the ribbon need to be? 	

Name: _____ 46

Curriculum Connections
SS7.1

Circumferences Word Problems

Questions | Answer the word problems below

1) An asteroid hit the moon and created a massive round crater. Scientists measured the diameter of the crater as 31.2km. What is the circumference of the crater?

2) Ge[illegible] a fence around his circular yard. His house is in the centre of [illegible] from his house to the edge of the yard is 15.5 metres.

a) [illegible]hat is [illegible]ter of his yard?

b) If 1 metre [illegible] how much will his fence cost him?

3) Mark can run 100m in 14 secon[illegible] is at a [illegible]ar track and is trying to figure out how long it will take him to ru[illegible]s. Th[illegible] has a diameter of 16m.

a) What distance is the track?

b) Approximately how long will it take him to run aroun[illegible] four times?

4) The radius of your bicycle wheel is 40cm.

a) How far will your bike move in one turn of your wheel?

b) Neill thinks it will take around 3 rotations of the wheel to move 1m. Dane thinks it will take around 4. Who is correct?

Name: _____ 47

Curriculum Connections
SS7.1

Circumferences, Radius and Diameter

We can calculate the diameter and radius of a circle by using the circumference. Use the formulas below to find the missing information.

Calculating Diameter (Circumference)

$d = \frac{c}{\pi}$ or $d = c \div \pi$

Calculating Radius (Circumference)

$r = \frac{c}{\pi} \div 2$

Part 1 Calculate the diameter and radius. Round to the nearest tenth

	Circumference	Diameter	Radius
1)	28 mm	8.9 mm	4.5 mm
2)			
3)	36		
4)	47 cm		
5)	55 m		
6)	32 mm		
7)	59 km		
8)	64 m		
9)	71 cm		
10)	68 mm		

Part 2 Answer the word problems below

	Questions	Answer
1)	The circumference of a bicycle wheel is 44cm. What is the diameter?	
2)	A donut has a circumference of 12cm. What is the radius?	
3)	A 20cm wire is bent into a circle. What is the diameter of the circle?	
4)	A pizza has a circumference of 1m. What is the radius of the pizza in centimeters?	

Curriculum Connection
SS7.1

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

1) Fill in the table with the missing information.

Radius	Diameter	Circumference
	8 mm	
26cm		
11 m		

2) A circular pond in a city park has a diameter of 12 meters. What is the circumference of the pond?

_____

Name: _____

1) Fill in the table with the missing information.

Radius	Diameter	Circumference
	8 mm	
26cm		
11 m		

2) A circular pond in a city park has a diameter of 12 meters. What is the circumference of the pond?

_____

Name: _____

1) Fill in the table with the missing information.

Radius	Diameter	Circumference
	8 mm	
26cm		
11 m		

2) A circular pond in a city park has a diameter of 12 meters. What is the circumference of the pond?

_____

Name: _____

1) Fill in the table with the missing information.

Radius	Diameter	Circumference
	8 mm	
26cm		
11 m		

2) A circular pond in a city park has a diameter of 12 meters. What is the circumference of the pond?

_____

Name: _____ 49

Curriculum Connection
SS7.1

Drawing Circles Using Radius and Diameter

A circle is a shape that has all points in a plane that are equal distance from the centre point. Therefore, an oval is not a circle. We can draw a circle by using a tool called a compass.

Draw Use a compass and a ruler to draw the circles below

1) Radius = 2cm Diameter = _____	2) Radius = _____ meter = 3cm
3) Radius = _____ Diameter = 6cm	4) Radius = 2.5cm Diameter = _____
5) Radius = _____ Diameter = 40mm	6) Radius = 1cm Diameter = _____

Name: _____ 50

Curriculum Connection
SS7.1

Drawing Circles Using Radius and Diameter

Draw Draw a target using the measurements below

1) Outside circle – radius = 9cm
2) Next circle – diameter = 14cm
3) Next circle – radius = 5cm

5) Next circle – radius = 3cm
6) Smallest circle – diameter = 2cm

Name: _____ 51

Curriculum Connections
SS7.1

Drawing Circles Using Circumferences

We can draw a circle if we know the radius, diameter, or circumference. Use the formula for calculating radius so you can set your compass to the right length.

Calculating Radius

$$r = \frac{C}{\pi} \div 2$$

Draw Use a compass and a ruler to draw circles below. Round to the nearest tenth

1) Circumference = 1	2) Circumference = 62.8mm
3) Circumference = 19cm	Circumference = 15.
5) Circumference = 20.4cm	6) Circumference = 14.1cm

Name: _____ 52

Curriculum Connections
SS7.2

Area of a Circle - Radius

The area of a circle is the region inside the circle. We can calculate the area of a circle by using its radius. For most calculations, we can use 3.14 for pi. The formula is pi x radius^2. We can write this as $a = \pi r^2$

Calculating Area Using Radius

$a = \pi r^2$
$a = \pi \times 8 \times 8$
$a = 200.96\ m^2$

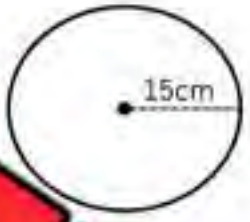
Practice Calculate the area of the circles using the radius

1)

Radius = _____

Area = _____

2)



Radius = _____

Area = _____

3)

Radius = _____

Area = _____

4)

Radius = _____

Area = _____

5)

Radius = _____

Area = _____

Radius = _____

Area = _____

7)

Radius = _____

Area = _____

8)

Radius = _____

Area = _____

9)

Radius = _____

Area = _____

Name: _____ 53

Curriculum Connection
SS7.2

Area of a Circle - Diameter

When we know the diameter of a circle, we can divide it by two to get the radius. Once we have the radius, we can use it to calculate the area of a circle using the formula: $a = \pi r^2$

Calculating Area Using Diameter

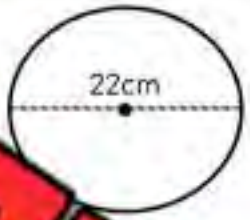
$a = \pi r^2$
diameter = 18, radius = 9
$a = \pi \times 9 \times 9$
$a = 254.34\ m^2$

Practice Calculate the area of the circles using the diameter

1)

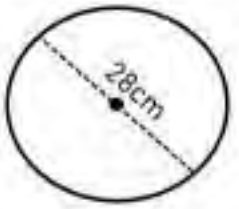
Diameter = _____
Radius = _____
Area = _____

2)



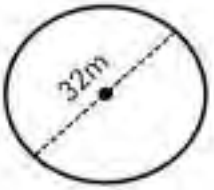
Diameter = _____
Radius = _____
Area = _____

3)



Diameter = _____
Radius = _____
Area = _____

4)



Diameter = _____
Radius = _____
Area = _____

5)

Diameter = _____
Radius = _____
Area = _____

Diam_____
Radius = _____
Area = _____

Word Problems Solve the problems below

	Questions	Answer
1)	A dinner plate has a diameter of 14cm. What is the area of the plate?	
2)	A circular table is 1.2 metres wide. What is the area of the table in centimetres?	

Name: _____ 54

Curriculum Connection
SS7.2

Calculating Area of a Circle - Circumference

We can calculate the radius of a circle by using the circumference. Once we have the radius of a circle, we can figure out its area.

Calculating Radius From Circumference

$$r = \frac{c}{\pi} \div 2$$

Calculating Area Using Radius

$$a = \pi r^2$$

Practice Calculate the area and radius. Round to the nearest tenth

	...ce	Radius	Area
1)	1...	1.9 mm	11.3 mm^2
2)			
3)	22		
4)	42 cm		
5)	36 m		
6)	58 mm		
7)	55 km		
8)	17 m		
9)	63 cm		
10)	76 mm		

Part 2 Answer the word problems below

	Questions	Answer
1)	A pool has a perimeter of 15m. What is the area inside the pool?	
2)	A ribbon that wraps around a circular present is 42cm. What is the area of the present?	
3)	The city of Williamsport is building a circular track. The track is 400m long. What will the area inside the track be?	

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

1) Calculate the area and radius.

Circu	Radius	Area
mm		
34 km		

2) A circular swimming pool is 5 meters wide. What is the area of the pool in square meters?

_____

Name: _____

1) Calculate the area and radius.

Circumference	Radius	Area
25 m		
550 mm		
34 km		

2) A circular swimming pool is 5 ers wide. What is the area of the square meters?

_____

Name: _____

1) Calculate the area and radius.

Circumference	Radius	Area
25 m		
550 mm		
34 km		

2) A circular swimming pool is 5 meters wide. What is the area of the pool in square meters?

_____

Name: _____

1) Calculate the

Circumference	Ra	Area
25 m		
550 mm		
34 km		

2) A circular swimming pool is 5 meters wide. What is the area of the pool in square meters?

_____

Name: _____ 56

Curriculum Connection
SS7.1, SS7.2

Circle – Mixed Review

Practice | Fill in the blanks below

1)

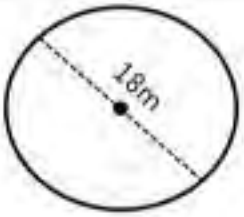
Radius = _____

Diameter = _____

Circumference = _____

Area = _____

2)



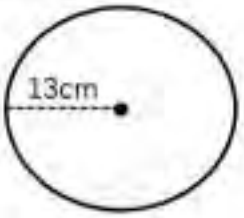
Radius = _____

Diameter = _____

Circumference = _____

Area = _____

3)



Radius = _____

Diameter = _____

Circumference = _____

Area = _____

4)

Radius = _____

Diameter = _____

Circumference = _____

Area = _____

5)

Radius = _____

Diameter = _____

Circumference = _____

Area = _____

6)

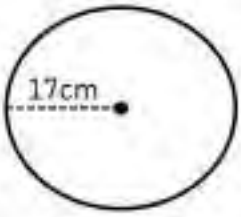
Radius = _____

Diameter = _____

Circumference = _____

Area = _____

7)



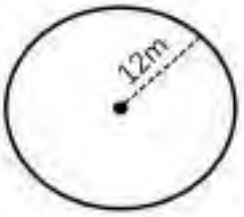
Radius = _____

Diameter = _____

Circumference = _____

Area = _____

8)



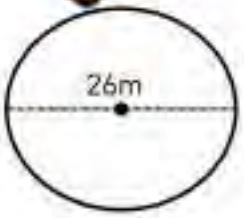
Radius = _____

Diameter = _____

Circumference = _____

Area = _____

9)



Radius = _____

Diameter = _____

Circumference = _____

Area = _____

Name: _____ 61

Curriculum Connections
SS7.1, SS7.2

Circle – Word Problems

Questions	Answer the word problems below

1)	A dinner plate has a diameter of 18cm. What is the area of the dinner plate?
2)	A circular golf green has an area of $15m^2$. What is the diameter of the green? 
3)	A dog is put on a leash in the middle of its yard. It goes to the end of its leash and runs in a circle. What is the area the dog can play in?
4)	The largest living tree in the world has a circumference of 36m. What is the diameter of the tree? 
5)	A hula hoop has a diameter of 1.2m. What is the circumference of a hula hoop in centimetres?
6)	A steel rod is bent into a circle. The circle now has a circumference of 19cm. What is the area inside the circle?
7)	A storm is expected to hit 8km in every direction from the center of a town. What is the area that the storm will affect? 

Name: _____ 62

Curriculum Connection
SS7.1, SS7.2

Circle – Basketball Word Problems

Questions | Answer the word problems below

A basketball hoop has a circumference of 145cm. A standard NBA basketball has a circumference of 75cm.

a) Can 2 NBA basketballs fit through the hoop at the same time?

b) A WNBA basketball has a circumference of [illegible]cm. W[illegible]NBA basketballs fit through the hoop at the same time?

Name: _____ 63

Curriculum Connection
SS7.1, SS7.2

Circle – Putting Word Problems

Questions | Answer the word problems below

A golf hole has a diameter of 11cm.

a) Draw a golf hole below using a compass and the proper measurements.

b) A golf ball has a circumference of 13.4cm. Draw a golf ball below using the proper measurements.

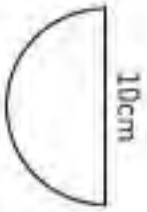
c) Will 2 or 3 golf balls fit in a line across the middle of a golf hole? Explain.

Name: _____ 64

Curriculum Connections
SS7.1, SS7.2

Semi - Circle

A semi-circle is half of a circle. If we can find the area of a full-circle, we can divide it by two to find the area of a semi-circle.



Calculating Area of Semi-Circle

$a = \pi r^2 \div 2$

diameter = 10, radius = 5

$a = 3.14 \times 5 \times 5 \div 2$

$a = 78.5 \text{ cm}^2 \div 2$

area of semi-circle = 39.25 cm^2

Part 1

the table below

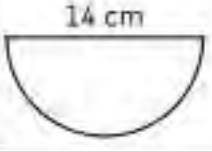
	Diameter	Radius	Area of Full Circle	Area of Semi-Circle
1)	6 cm			
2)	4 km			
3)	24 m			
4)	10 mm			
5)	16 m			
6)	30 cm			

Part 2

Calculate the area of the semi-circles

1)

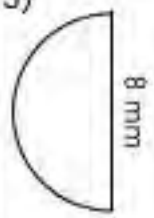
2)



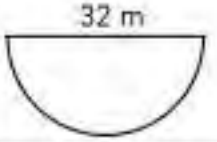
3)

4)

5)



6)



Name: _____ 65

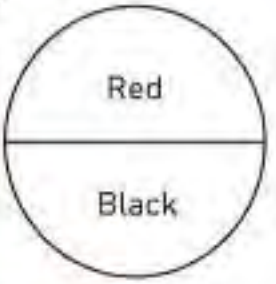
Curriculum Connection
SS7.2

Semi - Circle – Word Problems

Questions | Answer the word problems below

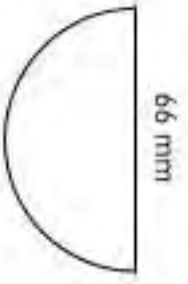
1) A semi-circle shaped rug has a diameter of 44cm. What is the area of the rug?

2) A circul[illegible] has 2[illegible]s, half red and half green. The spinner has a radius of 8[illegible]at is [illegible] the red side of the spinner?



3) A circular spinner has 6 sections. Half are [illegible] [illegible] If the diameter of the spinner is 18cm, what is the a[illegible] sec[illegible] the spinner?

4) A semi-circle window has a diameter of 66cm. What is the area of the window?



Curriculum Connection
SS7.2

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

1) Calcu[illegible]e area of the semi-circle.

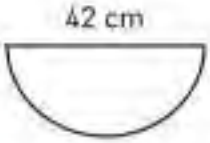
Area = _____

2) A semi-circle playg[illegible] a radius of 10 meters. What [illegible] area of the playground?

_____

Name: _____

1) Calculate the area of the semi-circle.



Area = _____

2) A semi-circle playground has a [illegible] of 10 meters. What is the area of t[illegible]ground?

_____

Name: _____

1) Calculate the area of the semi-circle.

Area = _____

2) A semi-circle playground has a radius of 10 meters. What is the area of the playground?

_____

Name: _____

1) Calculate the a[illegible] circle.

Area = _____

2) A semi-circle playground has a radius of 10 meters. What is the area of the playground?

_____

Name: _____ 67

Curriculum Connection
TBD

Quiz - Circles

Part 1 Fill in the table below

	Radius	Diameter
1)	12 cm	
2)		17 mm
3)		45 m

	Radius	Diameter
4)	7.5 km	
5)	22.5 m	
6)		88 cm

Part 2 Fill in the blanks

1)

Radius = _____

Diameter = _____

Circumference = _____

3)

Radius = _____

Diameter = _____

Circumference = _____

Part 3 Calculate the diameter and radius. Round to the nearest t

	Radius	Diameter	Circumference
1)	5 mm		
2)		16 m	
3)			22 cm
4)	32 mm		
5)			55 m

Part 4 Use a compass and a ruler to draw circles below

1)	2)
Radius = 2 Diameter =	Radius = _____ Diameter = 3cm

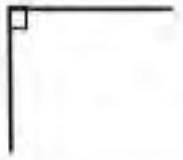
Part 5 Calc rea of the circles

1)	2)	3)
		
Diameter = _____ Radius = _____ Area = _____	Diameter = _____ Radius = _____ Area = _____	eter = _____ ea = _____

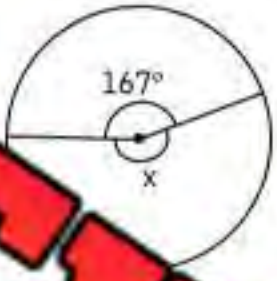
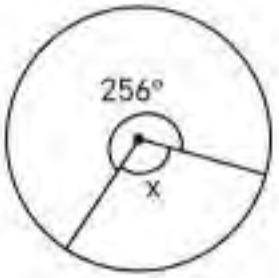
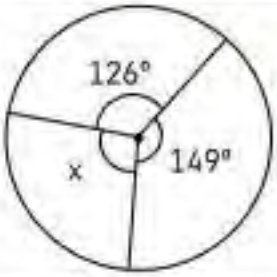
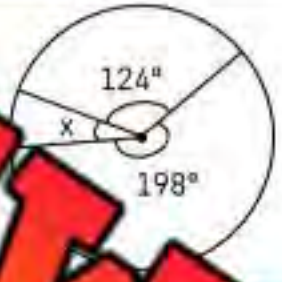
Part 6 Solve the problems below

	Questions	Answer
1)	The distance around a carousel is 18m. What is its radius? 	
2)	A dog has its leash tied to a stake in a backyard. The dog's leash is 6.5 metres long. How much area can the dog play in?	
3)	The diameter of a wheel on a car is 25 centimetres. How far does the car move with one rotation of the wheel? 	

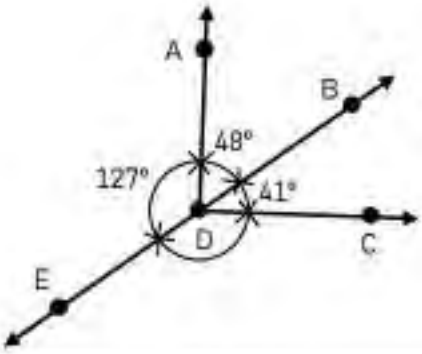
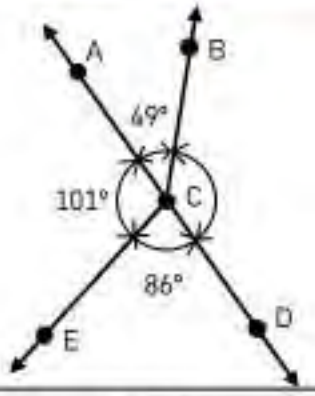
Part 7 Measure the angles and label them acute, right, obtuse, or reflex

1)	2)	3)	4)
			

Part 8 Determine the value of angle x

1)	2)	3)
		
∠x =		∠x =
4)	**5)**	**6)**
		
∠x =	∠x =	

Part 9 Find the missing angles below

1)	2)
	
∠CDE =	∠BCD =

Name: _____ 70

Curriculum Connection
SS7.2

Finding the Area of Rectangles

Instructions | Find the area (A= b x h) | *Not to Scale

1)

Area = _____

2)

Area = _____

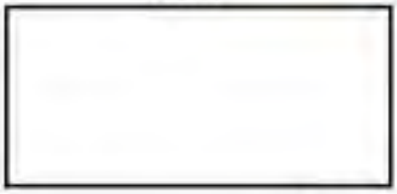
3)

Area = _____

4)

Area = _____

5)



Area = _____

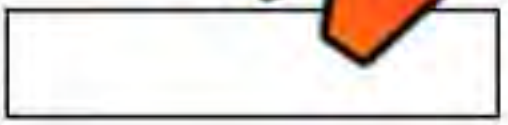
6)

Area = _____

7)

Area = _____

8)



Area = _____

9)

Area = _____

10)

Area = _____

Name: _____ 72

Curriculum Connection
SS7.2

Area Word Problems

Questions | Draw a picture of the problem and then find the area

1) A phone is 11cm by 60mm. What is the area of the phone?

2) A p… 12m b… What is the area of the pool?

4) A candy wrapper is 40mm wide an… long… is the area of the wrapper in cm?

4) The front of a square box is 12cm wide. What is the area of t… box?

5) A door is 3m by 150cm. What is the area of the door?

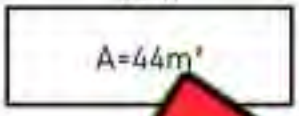
Name: _____ 73

Curriculum Connection
SS7.2

Finding the Missing Information

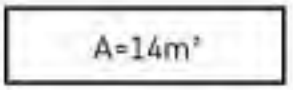
Instructions Find the missing value (A= b x h)

1)



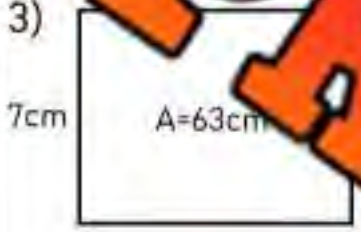
Base = _____
Height = _____
Area = _____

2)



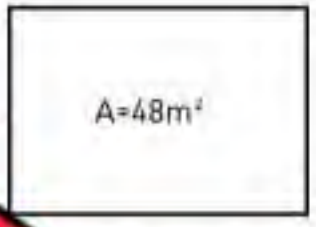
Base = _____
Height = _____
Area = _____

3)



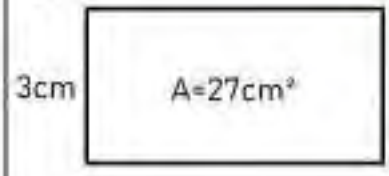
Base = _____
Height = _____
Area = _____

4)



Base = _____
Height = _____
Area = _____

5)

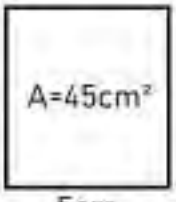


Base = _____
Height = _____
Area = _____

6)

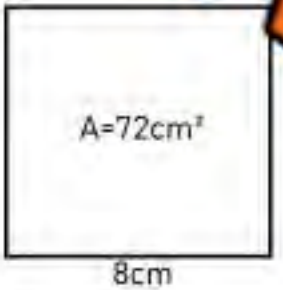
Base = _____
Height = _____
Area = _____

7)



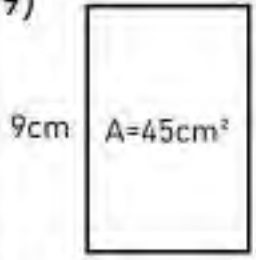
Base = _____
Height = _____
Area = _____

8)



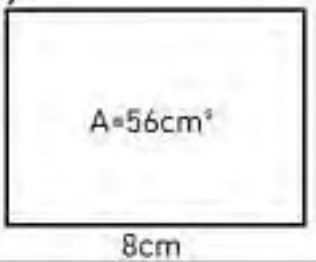
Base = _____
Height = _____
Area = _____

9)



Base = _____
Height = _____
Area = _____

10)



Base = _____
Height = _____
Area = _____

Name: _____ 75

Curriculum Connection
SS7.2

Finding the Missing Information – Word Problems

Questions Use the information you have to find the missing height or base

1) A piece of paper has an area of 88cm². The base of the paper is 8cm. What is the height of the paper?

2) Jac rd has f 56m². The height of the yard is 8m. What is the base?

3) A bus has an area of 24m². The hei he bu . What is the base?

4) A square poster has an area of 36cm². What is the base and

5) A cookie sheet has an area of 72cm². The base of the sheet is 9cm. What is the height of the cookie sheet?

Name: _____ 76

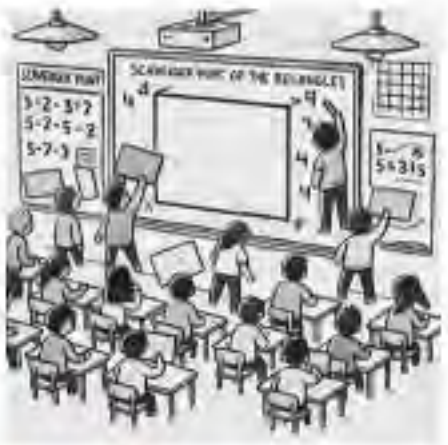
Scavenger Hunt: Area of Rectangles

Objective What are we learning about?

Students will practice calculating the area of rectangles, enhancing their understanding of this geometric concept through a fun and engaging scavenger hunt.

Materials What you will need for the activity.

- S[illegible] area questions (provided)
- Sm[illegible]ags o[illegible] for each team to collect their card[illegible]
- Tape to hid[illegible]ound [illegible]oom or in a designated saf[illegible]oor



Instructions How you wi[illegible]ple[illegible]

1) **Prepare the Cards**: Write different [illegible]ea ques[illegible] abo[illegible]tangles on index cards. Use the questions generated above.
2) **Hide the Cards**: Hide the cards around the cla[illegible] a des[illegible]d safe outdoor area. Tape them under chairs, desks, or [illegible]Into[illegible]bvious spots.
3) **Divide into Teams**: Divide the class into small teams and give [illegible] bag or envelope to collect their cards.
4) **Explain the Game**: Explain the game to the students. Each team wi[illegible]t for a card, solve the problem on it as quickly as they can, and return to you for verification.
5) **Start the Game**: Say "Go!" and each team rushes to find their first card.
6) **Verify Answers**: When a team thinks they have the correct answer, they come back to you. If correct, they receive a checkmark and move on to find the next card.
7) **Continue Playing**: The game continues until all cards are found or you call time. The team with the most correct answers wins.
8) **Discuss**: After the game, discuss the problems and solutions each team encountered, focusing on the methods used to calculate the area and perimeter.

Name: _____ 77

Curriculum Connection
SS7.2

Index cards | Cut out the cards below

A garden has an area of 45 m². The base of the garden is 900 cm. What is the height of the garden?

A computer screen is 22 cm by 120 mm. What is the perimeter of the screen?

A piece of pa… s an… 8 cm². The base o… m. What is the height… ape…

A rectangle has a length of 0.3 m and a width of 25 cm. What is the area in square centimetres?

A phone is 12 cm by 0.06 m. What is the area of the phone?

A squa… si… gth of 100 mm. What i… he … are in cen…

A square has a side length of 50 mm. What is the area of the square in centimetres?

A picture frame is 18 cm by 0.09 m. What is the area of the picture frame?

Name: _____ 78

Curriculum Connection
SS7.2

Index cards | Cut out the cards below

A rectangular garden has a length of 12 m and a width of 800 cm. What is the area of the garden?

A square has a side length of 200 mm. What is the area of the square in centimetres?

A square pl... has ...a of 81 m². What i... len... side of the pla... in centimetres

A rug has an area of 24 m². The base of the rug is 600 cm. What is the height of the rug?

A book cover is 25 cm by 180 mm. What is the perimeter of the book cover?

A squa... si...gth of 120 mm. What i... e ...are in cent...

A table is 1.2 m by 70 cm. What is the area of the table in square centimetres?

A garden has an area of 90 m². The base of the garden is 3000 cm. What is the height of the garden?

Name: _____ 80

Curriculum Connection: SS7.2

Index cards | Cut out the cards below

A rectangular piece of wood has an area of 32 cm². If the height is 4 cm, what is the base in millimetres?

A rectangular field has a width of 10 m and a length of 2500 cm. What is the area of the field?

A rectang[illegible] perimeter of 50[illegible] m, what is the [illegible] millimetres?

A garden has an area of 35 m². The base of the garden is 700 cm. What is the height of the garden?

A garden plot measures 7.5 m by 4 m. If you divide the plot into 5 equal sections lengthwise, what is the area of each section?

A rec[illegible] ban[illegible] as an area of 2.5 m². [illegible] wi[illegible] nner is 50 cm, what [illegible] meters?

A square painting has an area of 1.44 m². What is the length of one side in centimeters?

A piece of rectangular cloth is 120 cm by 0.75 m. What is the area in square centimeters?

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: ____________________

1) Find th missing value (A= b x h)

Base = __________

= __________

= __________

2) A garden has an
base of the garden is 9 hat is
the height of the garden?

____

Name: ____________________

1) Find the missing value (A= b x h)

Base = __________

Height = __________

Area = __________

2) A garden has an area of 45m². The base of the garden is 900 cm. What is the height of the garden?

____

Name: ____________________

1) Find the missing value (A= b x h)

Base = __________

Height = __________

Area = __________

2) A garden has an area of 45m². The base of the garden is 900 cm. What is the height of the garden?

____

Name: ____________________

1) Find the missin

B __________

Height = __________

Area = __________

2) A garden has an area of 45m². The base of the garden is 900 cm. What is the height of the garden?

____

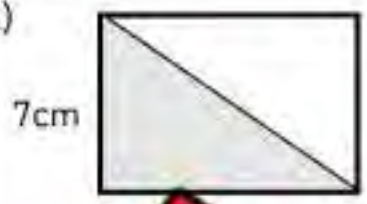
Name: _____ 82

Curriculum Connection
SS7.2

Introduction – Area of a Triangle

Instructions Find the area of the rectangles and triangles below

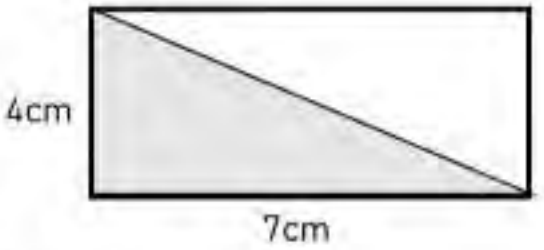
1)



Area of a rectangle = _____

Area of a triangle = _____

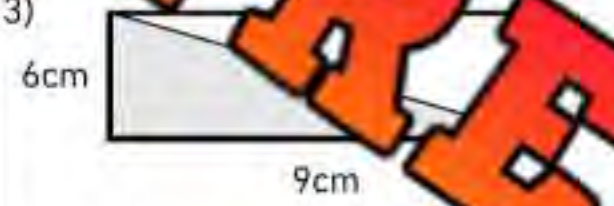
2)



Area of a rectangle = _____

Area of a triangle = _____

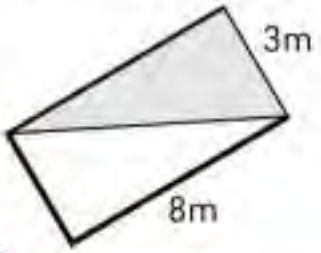
3)



Area of a rectangle = _____

Area of a triangle = _____

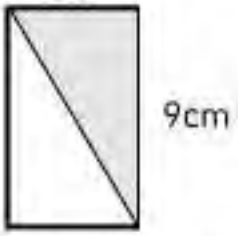
4)



Area of a rectangle = _____

Area of a triangle = _____

5)



Area of a rectangle = _____

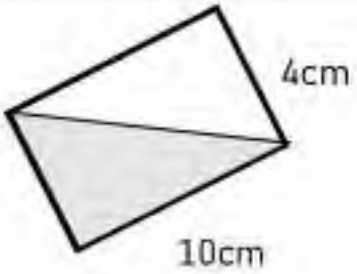
Area of a triangle = _____

6)

Area of a square = _____

Area of a square = _____

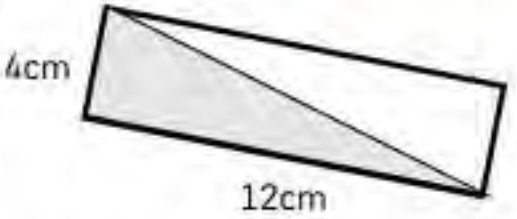
7)



Area of a rectangle = _____

Area of a triangle = _____

8)



Area of a rectangle = _____

Area of a triangle = _____

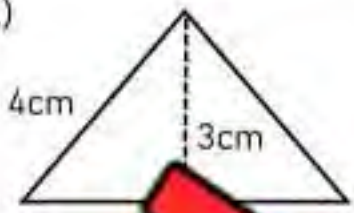
Name: _____ 83

Curriculum Connection
SS7.2

Area of a Triangle

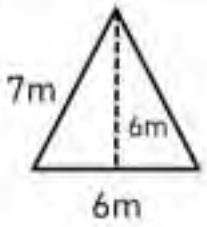
Instructions Find the area of the triangles below (A= b x h ÷ 2)

1)



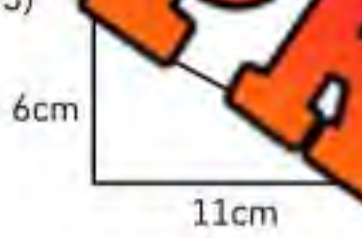
Area = _____

2)



Area = _____

3)

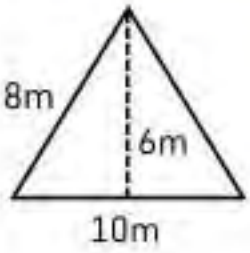


Area = _____

4)

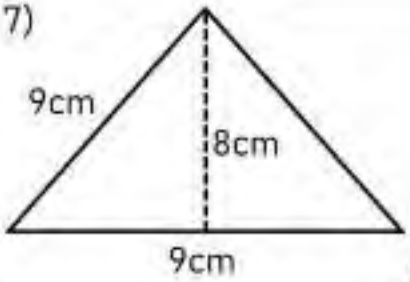
Area = _____

5)



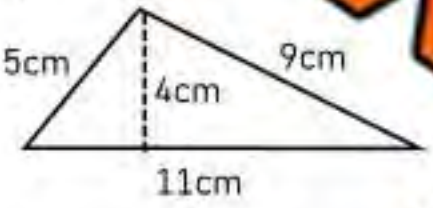
Area = _____

7)



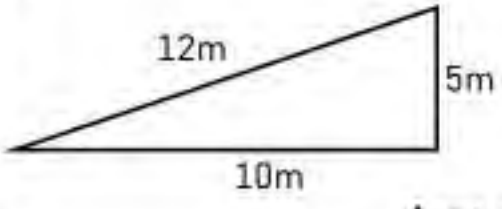
Area = _____

8)



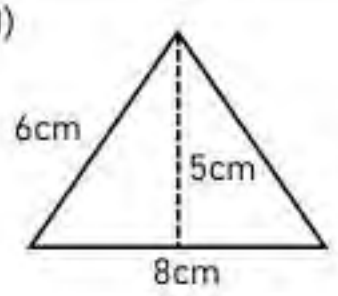
Area = _____

9)



Area = _____

10)



Area = _____

Name: _____ 84

Curriculum Connection
SS7.2

Area of a Triangle - Word Problems

Questions	Answer the questions below

1) The school is organizing a triangular kite-making competition. Emma's kite has a base of 12 meters and a height of 7 meters. What is the area of Emma's kite?

2) A [illegible]ular pa[illegible]ase of 25 meters and a height of 15 meters. How much area doe[illegible] the pa[illegible]

3) In an architecture project, student[illegible]ked [illegible]n a triangular window. Nathan's window design has a base o[illegible] centim[illegible] an[illegible]eight of 50 centimeters. What is the area of his window [illegible]

4) Olivia wants to create a triangular painting for her art class. [illegible] painting is 1.5 meters and the height is 1 meter. What is the area of [illegible] painting?

5) At the beach, a group of friends built a large triangular sandcastle. When looking at the front, the base of the sandcastle is 2 meters and the height is 1.2 meters. What is the area of the front of the triangular sandcastle?

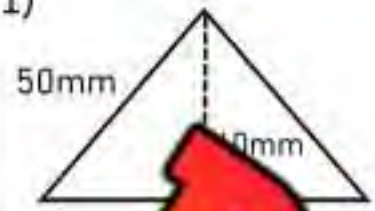
Name: _____ 85

Curriculum Connections
SS7.2

Area of a Triangle

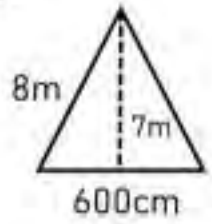
Part 1 Find the area of the triangles below (A= b x h ÷ 2)

1)



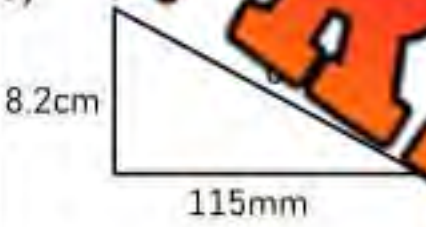
Area = _____

2)



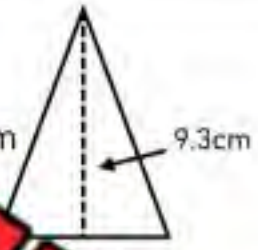
Area = _____

3)



Area = _____

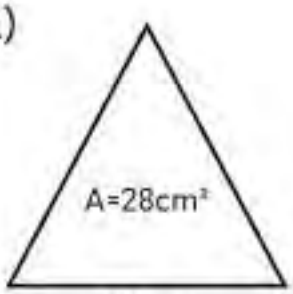
4)



Area = _____

Part 2 Find the missing value

1)

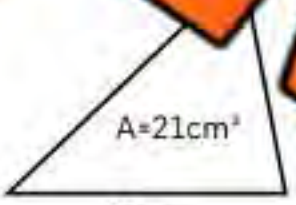


Base = _____

Height = _____

Area = _____

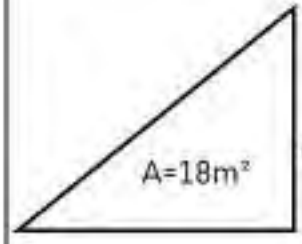
2)



H = _____

Area = _____

3)

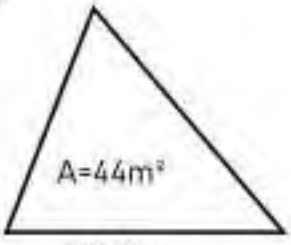


Base = _____

Height = _____

Area = _____

4)



Base = _____

Height = _____

Area = _____

Name: _____ 86

Curriculum Connection
SS7.2

Area of a Triangle - Word Problems

Questions | Answer the questions below

1) Liam wants to build a triangular treehouse platform. The platform will have a base of 3 meters and a height of 2.5 meters. After calculating the area of the platform, he plans to cover it with wooden planks. If each wooden plank covers 0.5 square meters, how many wooden planks will he need to cover the entire floor?

2) A triangular stage for [illegible] play[illegible]se of 6 meters and a height of 4 meters. After finding the ar[illegible]e s[illegible]dents plan to cover it with a carpet. The carpet is sold by the squa[illegible] ar[illegible]sts $25 per square meter. How much will the students need to [illegible]on the[illegible] cover the entire stage?

3) Ella plans to make a triangular banner for her school's sports event. The base of the banner is 3 meters, and the height is 2 meters. After calculating the area of the banner, Ella wants to paint it using two colours, with each colour covering half of the area. If a can of paint covers 1.5 square meters, how many cans of each color will she need?

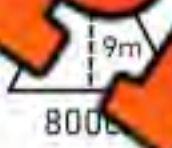
Curriculum Connection
SS7.2

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

1) Find the area of the triangles below (A= b x h ÷ 2).



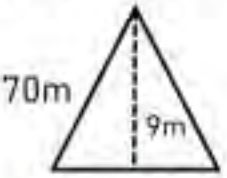
800cm Area = _____

2) A triangular banner has a base of 10 meters and a height of 600cm. What is the area of the banner?

_____

Name: _____

1) Find the area of the triangles below (A= b x h ÷ 2)



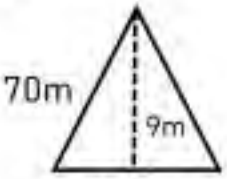
800cm Area = _____

2) A triangular banner has a base of meters and a height of 600cm. the area of the banner?

_____

Name: _____

1) Find the area of the triangles below (A= b x h ÷ 2)



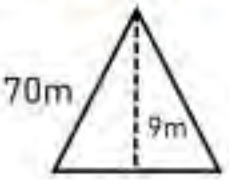
800cm Area = _____

2) A triangular banner has a base of 10 meters and a height of 600cm. What is the area of the banner?

_____

Name: _____

1) Find the area o below (A= b x h ÷



800cm Area = _____

2) A triangular banner has a base of 10 meters and a height of 600cm. What is the area of the banner?

_____

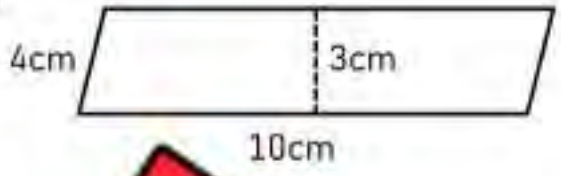
Name: _____ 88

Curriculum Connection
SS7.2

Perimeter and Area of Parallelograms

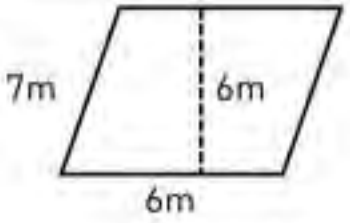
Instructions Find the perimeter and area of the parallelograms below (A= b x h)

1)



Perimeter = _____ Area = _____

2)

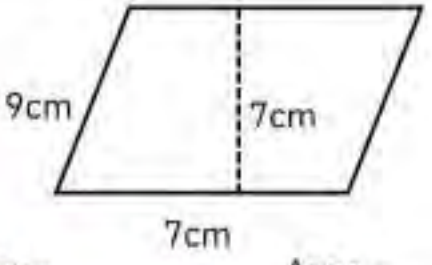


Perimeter = _____ Area = _____

3)

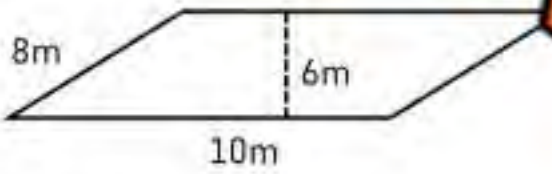
Perimeter = _____ Area = _____

4)



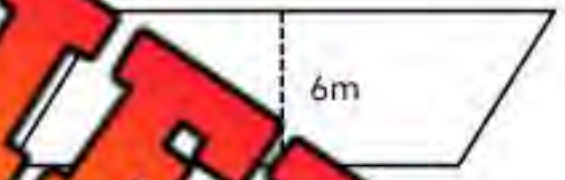
Perimeter = _____ Area = _____

5)



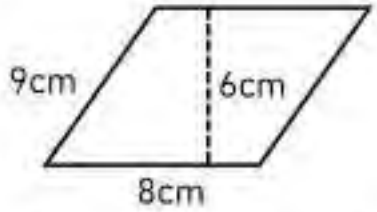
Perimeter = _____ Area = _____

6)



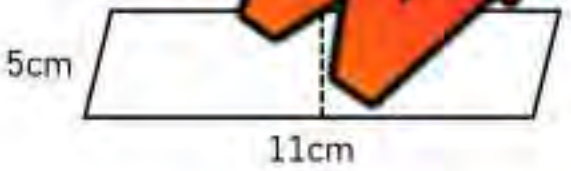
Perimeter = _____ Area = _____

7)



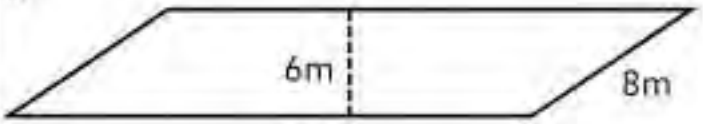
Perimeter = _____ Area = _____

8)



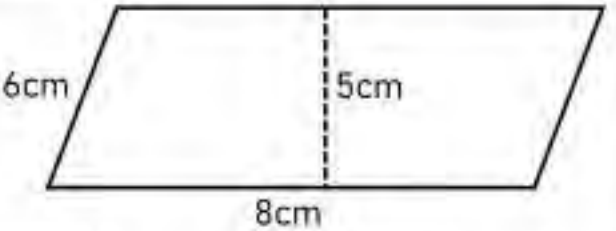
Perimeter = _____ Area = _____

9)



Perimeter = _____ Area = _____

10)



Perimeter = _____ Area = _____

Name: _____ 90

Curriculum Connections
SS7.2

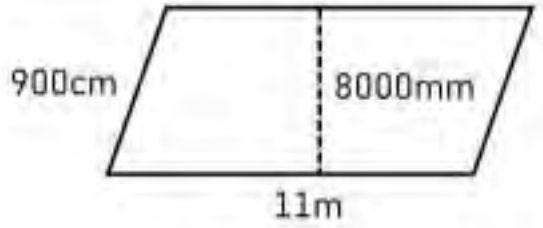
Perimeter and Area of Parallelograms

Part 1 Find the perimeter and area of the parallelograms below (A= b x h)

1)

Perim ___ ea = _____

2)

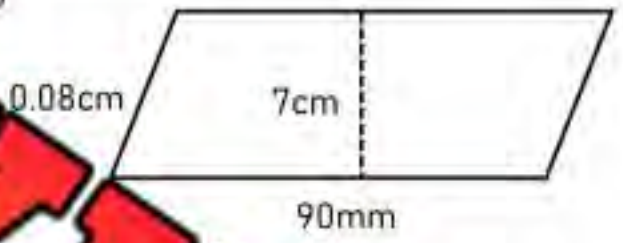


Perimeter = _____ Area = _____

3)

Perimeter = _____ Area = _____

4)



P er = Area = _____

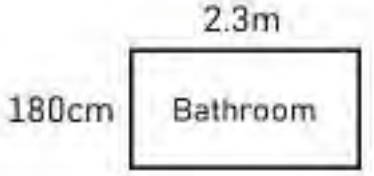
Part 2 Answer the word problems below

A bathroom is being tiled with parallelogram shaped tiles. The e tiles are below.

1) What is the area of the parallelogram?

2) The dimensions of the bathroom are displayed below.

a) What is the area of the bathroom?



b) How many tiles will fit in the bathroom?

Name: _____ 91

Curriculum Connection
SS7.2

Area of a Parallelograms - Word Problems

Questions | Answer the questions below

1) a) A parallelogram-shaped garden has a base of 9 meters and a height of 6 meters. One pair of the fence's opposite sides is 12 meters long each. If the gardener wants to put a fence around the garden, how much fence will they need?

b) If the [illegible] per metre, how much will the fence cost?

2) A parallelogra[illegible]d gre[illegible]s a base of 6 meters and a height of 4 meters. The other two sides [illegible] lo[illegible] each. How much room do they have inside the greenhouse to plant [illegible]?

3) a) A parallelogram-shaped rooftop has a base of 14 [illegible]d a he[illegible] 10 meters. The other pair of opposite sides of the rooftop are 18 me[illegible] each [illegible]wner wants to know how much room there is on top of the roof so they c[illegible]stal[illegible]w much room is there?

b) If one solar panel takes up 7 square metres, how many will they be able to fit on the roof?

c) If one solar panel is $2450, how much will they spend on solar panels?

Name: _____ 92

Curriculum Connection
SS7.2

Area of a Triangle/Parallelogram - Word Problems

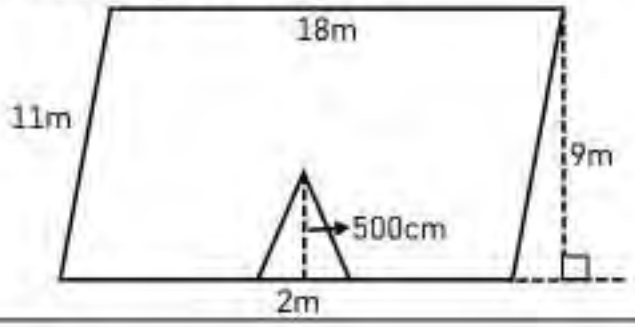
Questions | Draw a picture of the problem and then find the area

1) Jake is building a triangular garden. He needs to know how much fertilizer he needs to cover the space. If the garden has a base of 500cm and a height of 4m, what is the area of the garden in metres?

2) A farmer is [illegible] land. His land is shaped like a parallelogram. It has a base of 5000cm [illegible] sides of the garden are 2000cm. What is the area of his farmland [illegible]

3) Christina is painting her triangular artwork. The [illegible] and a height of 80mm. What is the area of her artwork in millimetres[illegible]

4) Harold is building a unique house. The shape of the front of the house is a parallelogram. It will have a triangular door cut out of it. What is the area of the front of his house without the door?



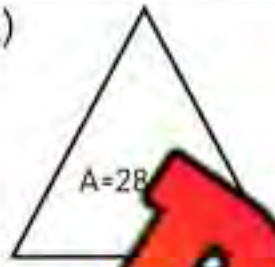
Name: _____ 93

Curriculum Connection
SS7.2

Finding the Missing Information

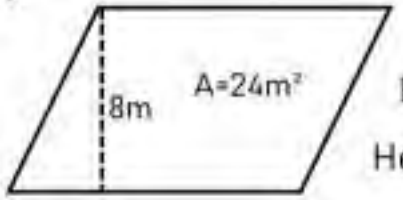
Instructions Find the missing value (A= b x h)

1)



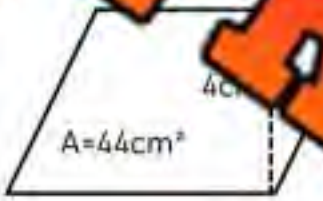
Base = _____
Height = _____
Area = _____

2)



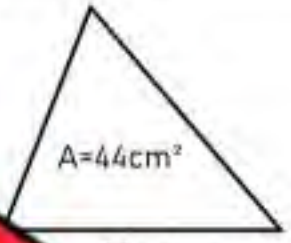
Base = _____
Height = _____
Area = _____

3)



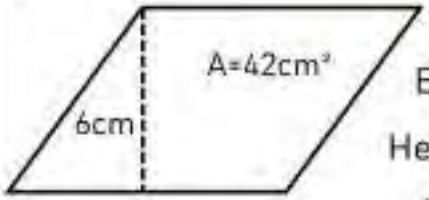
Base
Ar

4)



Base = _____
Height = _____
Area = _____

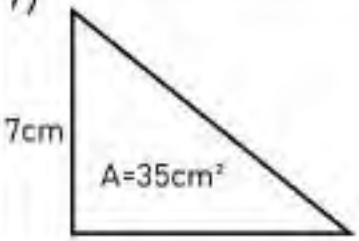
5)



Base = _____
Height = _____
Area = _____

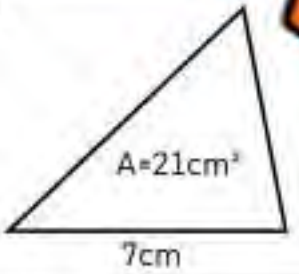
Base = _____
t = _____

7)



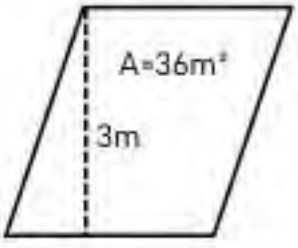
Base = _____
Height = _____
Area = _____

8)



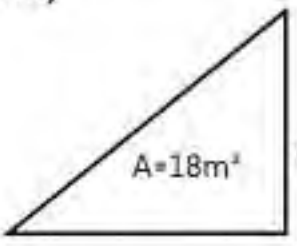
Base = _____
Height = _____
Area = _____

9)



Base = _____
Height = _____
Area = _____

10)



Base = _____
Height = _____
Area = _____

Activity: "Triangle and Parallelogram Toss Challenge"

Objective | What are we learning about?

Students will reinforce their understanding of finding the area of triangles and parallelograms through a fun, team-based activity that involves answering questions and shooting a paper ball into a bin.

Materials | What you will need for the activity.

- I... ith ...ms
- Re...ng sh... ...h team
- Paper ball... ...n)
- Bins or ba... ...er te...
- Desks (one pe...

Instructions | How you ... ...pl... ...ity

1. Arrange the classroom so that the... ...nough ... ...ultiple teams to work simultaneously. Place a desk about 6 feet aw... ...m a ... ...sket.
2. Place a stack of index cards with area pro... ...n ea...
3. Provide each team with a recording sheet and a p...
4. Divide the students into teams of about five membe...
5. Each team stands in a line behind their respective desk.
6. The first student in line flips over an index card and solves the ... ...o the area of a triangle or parallelogram on the recording sheet.
7. Once the answer is recorded, the student attempts to shoot the pape... ...ll into the bin.
8. If the student makes the shot, they place a tally mark on the team's tally sheet for a point. If they miss, no tally is given.
9. The student then goes to the end of the line, and the next student steps up to the desk to repeat the process.
10. The activity continues until all index cards have been solved.
11. Once all index cards are completed, the teacher collects the recording sheets and reviews the answers with the class.
12. For each incorrect answer, the team loses one point.
13. The team with the highest number of points after deductions is declared the winner.

Name: _____ 95

Index Cards | Cut out the cards below

Jake is building a triangular garden. He needs to know how much fertilizer he needs to cover the space. If the garden has a base of 500cm and a height of 4m, what is th[illegible]a of the garden in metres?

A triangular banner has a base of 10 meters and a height of 600cm. What is the area of the banner?

Christina is pa[illegible] trian[illegible] artwork. The artw[illegible]s a[illegible] and a height of 80mm[illegible]e are[illegible] her artwork in millimetres[illegible]

The school is organizing a triangular kite-making competition. Emma's kite has a [illegible]e of 12 meters and a height of 7 [illegible]. What is the area of Emma's kite?

A farmer is buying seed for his farmland. His land is shaped like a parallelogram. It has a base of 5000cm and a height of 10m. The sides of the garden are 2000cm. What is the area of his farmland in metres?

The sch[illegible]anizi[illegible]angular kite-making com[illegible]n. [illegible]s a base of 2 meter[illegible]s an[illegible] What is the height o[illegible]

A parallelogram-shaped garden has a base of 9 meters and a height of 6 meters. One pair of the fence's opposite sides is 12 meters long each. If the gardener wants to put a fence around the garden, how much fence will they need?

A parallelogram has a base of 15 cm and a height of 20 cm. What is its area?

Name: _____ 96

Curriculum Connection
SS7.2

Index Cards | Cut out the cards below

Calculate the area of a triangle with a base of 10 cm and a height of 20 cm.	A parallelogram has an area of 48 cm² and a base of 12 cm. What is its height?
A triangular piece of fabric has a base of 30 cm and an area of 450 cm². What is its height?	Calculate the area of a triangle with a base of 50 cm and a height of 1 meter.
A parallelogram has a base of 8 meters and a height of 4 meters. What is its area?	A parallelogram has a base of 15 cm and a height of 10 cm. What is its area?
The base of a triangle is 7 meters and its area is 21 m². What is the height of the triangle?	The base of a triangle is 5 cm and its height is 8 cm. What is the area of the triangle?

Name: _____ 97

Curriculum Connection
SS7.2

Index Cards | Cut out the cards below

A parallelogram has an area of 36 m² and a height of 6 meters. What is its base?

A parallelogram has a base of 25 cm and a height of 10 cm. What is its area?

Calculate the ar… trian… base of 4 meters an… meters.

The area of a triangle is 56 cm² and the height is 8 cm. What is the base of the …gle?

The height of a parallelogram is 9 inches and its area is 81 in². What is the base?

Calculate … of … …ram with a base of … me… … of 500 cm.

A triangular plot of land has a base of 30 meters and a height of 20 meters. What is the area of the plot?

A triangle has an area of 40 cm² and a base of 10 cm. What is its height?

Name: _____ 98

Curriculum Connection
SS7.2

Triangle and Parallelogram Toss Challenge

Answers | Record your answers below

Question	Answer
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

Question	Answer
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	

Tally Chart | Record your makes in the tally chart below

Tallies – Made Shots	Total

Wrong Answers	Final Score

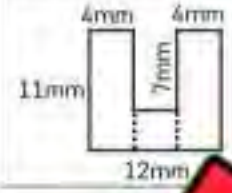
Name: _____ 99

Curriculum Connection
SS7.2

Area of Composite Polygons

Find the area of the polygons below by splitting them into separate shapes.

Example



Area = area of rectangle 1 + area of rectangle 2 + area of rectangle 3

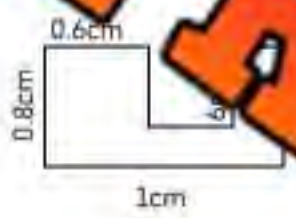
Rectangle 1:	Rectangle 2:	Rectangle 3:
A = 11 x 4	A = 4 x 4	A = 4 x 11
A = 44 mm²	A = 16mm²	A = 44mm²

Area = 44 + 44 + 16
A = 104mm²

Instructio

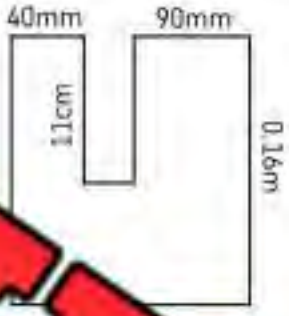
Find the area of the composite polygons below

1)



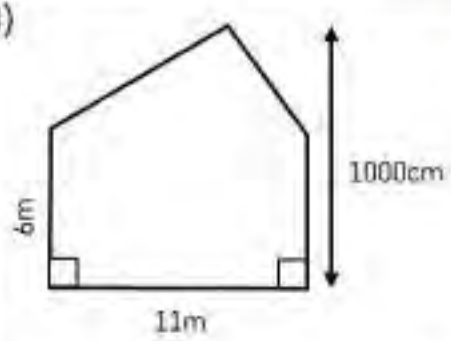
Area = _____

2)

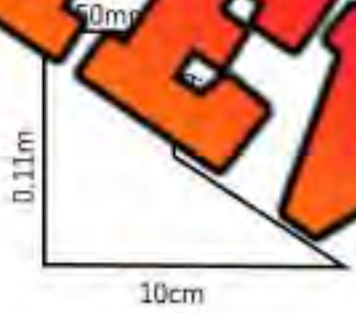


Area = _____

3)

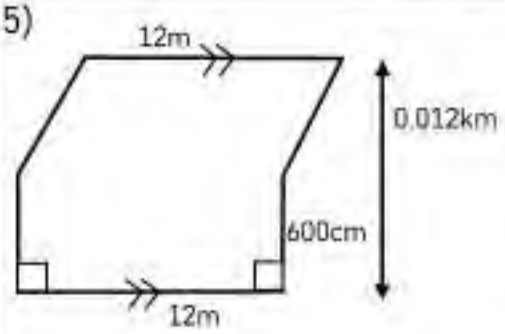


Area = _____



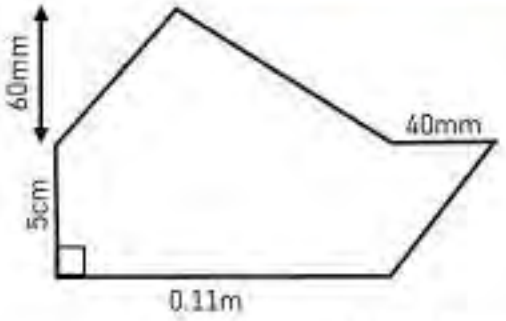
Area = _____

5)



Area = _____

6)



Area = _____

Curriculum Connection
SS7.2

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

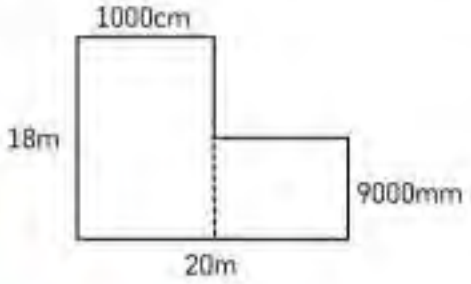
Name: _____

Find the area of composite shape

Area = _____

Name: _____

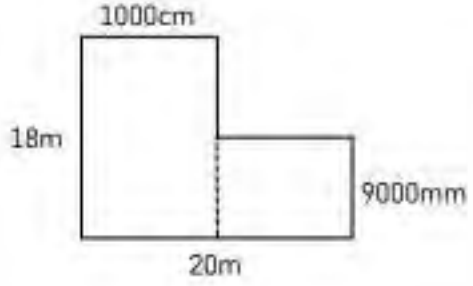
Find the area of composite shape



Area = _____

Name: _____

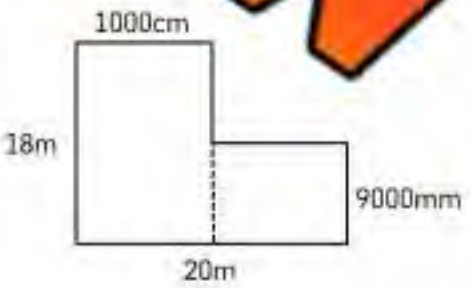
Find the area of composite shape



Area = _____

Name: _____

Find the area of composite shape



Area = _____

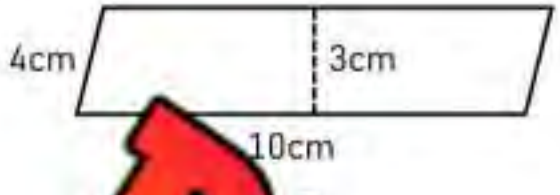
Name: _____ 102

Curriculum Connection
7G

Area Quiz – Triangles and Parallelograms

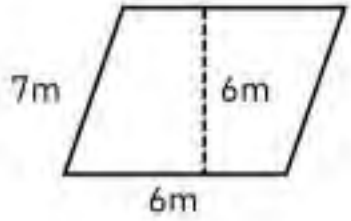
Part 1 Find the area of the parallelograms below

1)



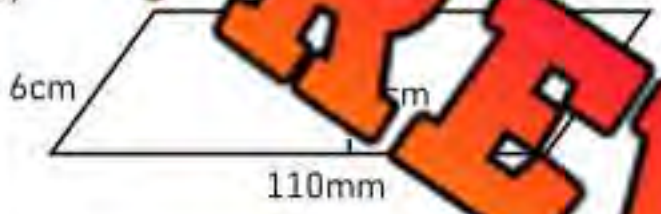
Area = _____

2)



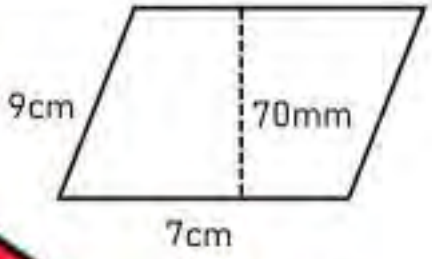
Area = _____

3)



Area = _____

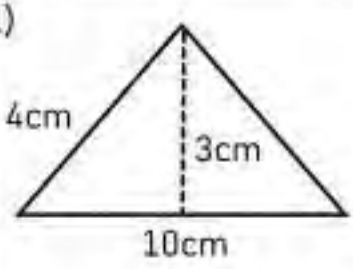
4)



Area = _____

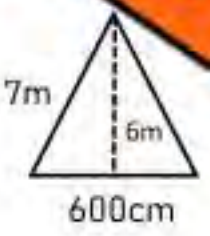
Part 2 Find the area of the triangles be

1)



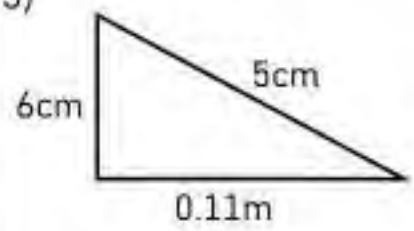
Area = _____

2)



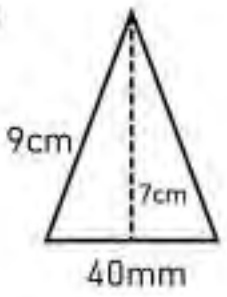
Area = _____

3)



Area = _____

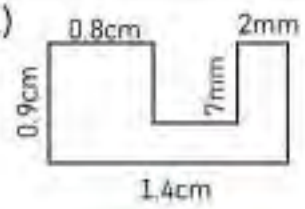
4)



Area = _____

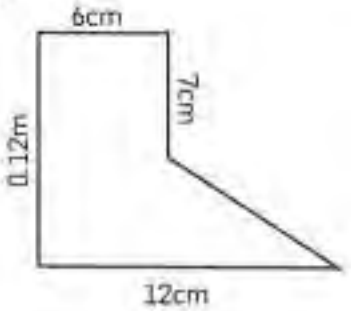
Part 3 Find the area of the composite polygons below

1)



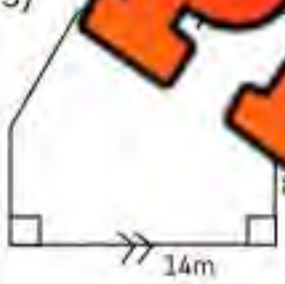
Area = _____

2)



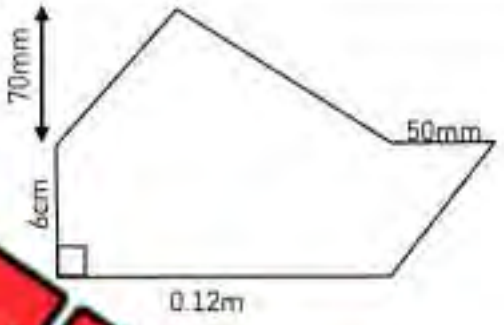
Area = _____

3)



Area = _____

4)

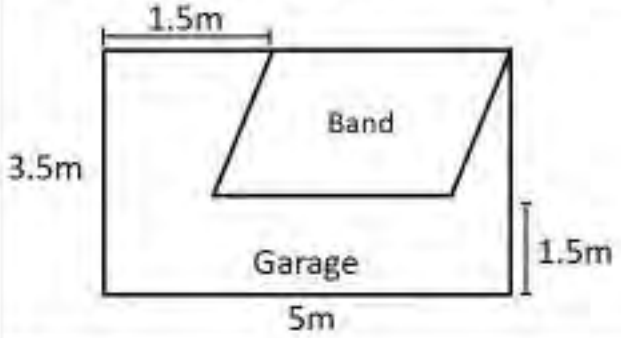


Area = _____

Part 4 Solve the word problems below. M re t work

1) Jeremy's triangular picture frame has a base of 10cm ght m. What is the area of the triangular frame?

2) Brian and his garage band practice playing in his garage. He has a lot of stuff in his garage, so he taped off some area for them to play. The dimensions of his garage and area they play in is displayed in the diagram. What is the area of the space the band plays in?



Name: _____ 104

Curriculum Connection
SS7.3

Lines, Rays, and Line Segments

Point

A

A **point** is a dot. We often name points with a capital letter

Line

A B

A **line** is straight and goes on forever in both directions (arrows). Lines can have points on them (AB or BA)

Ray

D E

A **ray** is a straight path that goes on forever in one direction (1 arrow). The ray above is $\overrightarrow{DE}$

Line Segment

D E

A **line segment** is a straight line between two points. The line segment above is $\overline{DE}$ or $\overline{ED}$

Part 1

el whether the example is a point, line, ray or line segment

1) 		3) 	4) 
Line JK or KJ JK or KJ			
5) 	6) 		8) 
9) 	10) 	11) 	

Part 2

Construct a ray, line, point, and line segment. Label each.

1)	2)	3)	4)
Line Segment – AB	Point C	Line – QR	Ray – MN

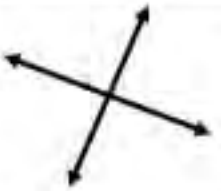
Name: _____ 105

Curriculum Connection
SS7.3

Parallel, Perpendicular and Intersecting Lines

 = Parallel Lines  = Perpendicular Lines  = Intersecting Lines

Part 1 Label the lines parallel, perpendicular, or intersecting

1) 	2) 	3) 	4) 
5) 	7) 	8) 	

Part 2 Draw a second line that is intersecting, perpen[illegible] par[illegible] the other line

1) 	2)	3) 	
Perpendicular	Parallel	Intersecting	Parallel
5) 	6) 	7) 	8) 
Intersecting	Perpendicular	Intersecting	Parallel

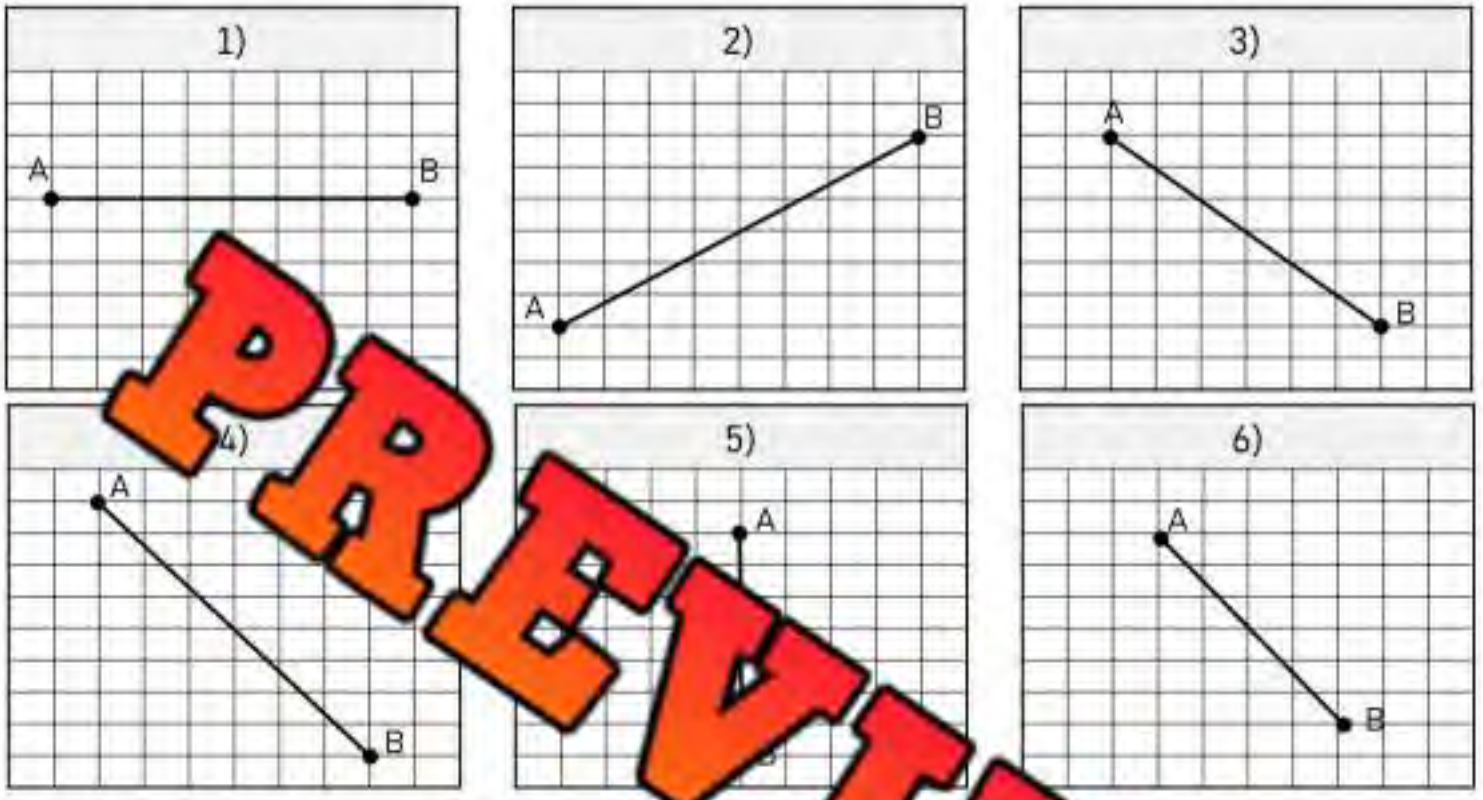
Name: _____ 106

Curriculum Connection
SS? 3

Perpendicular and Parallel Line Segments

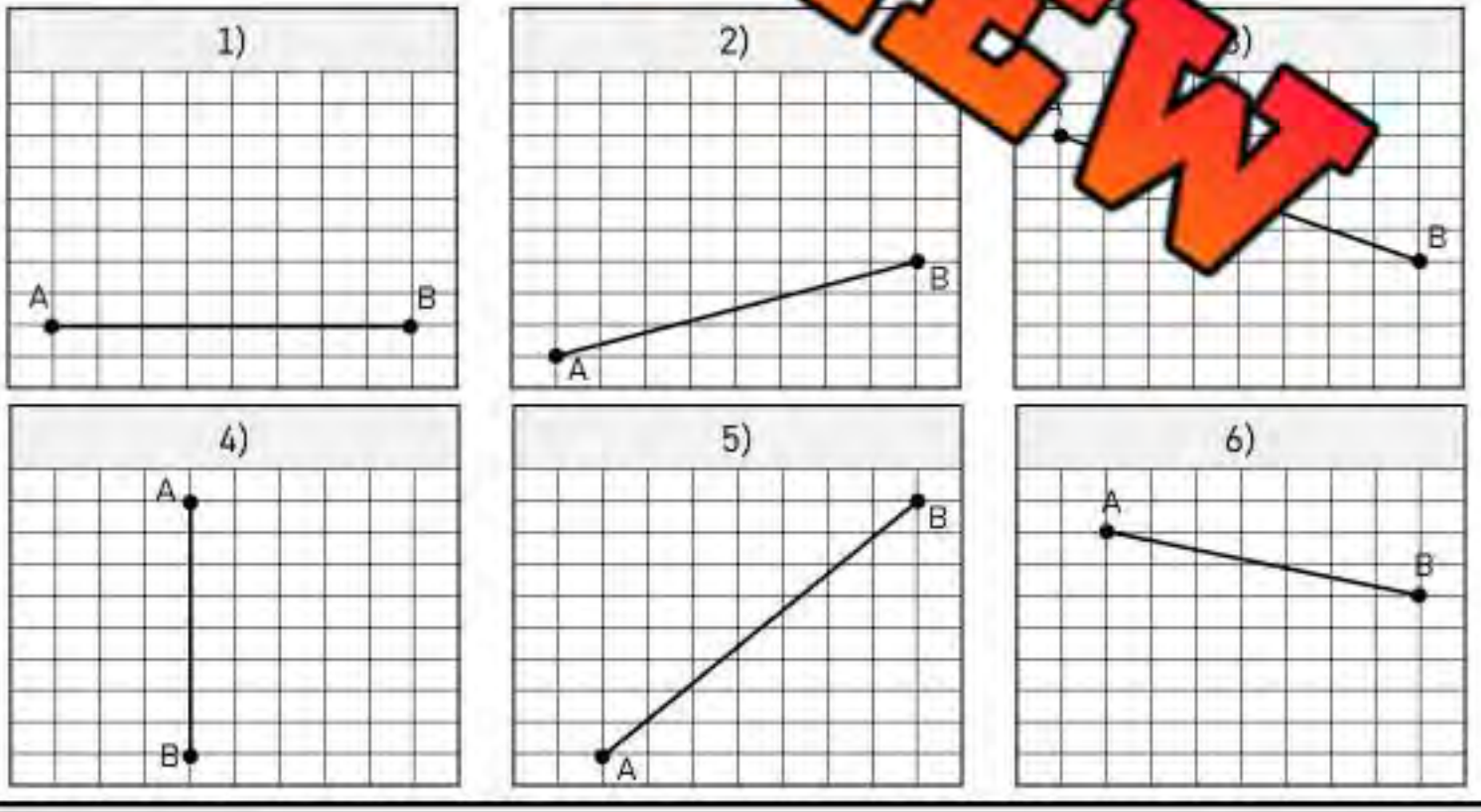
Part 1

Construct perpendicular lines of the line segments $\overline{AB}$



Part 2

Construct parallel lines of the li ments

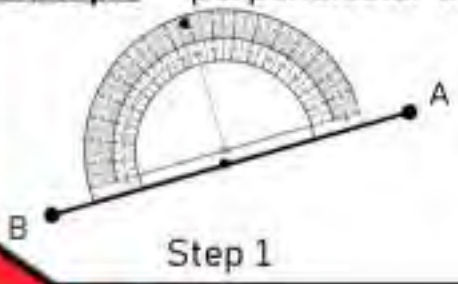


Name: _____ 107

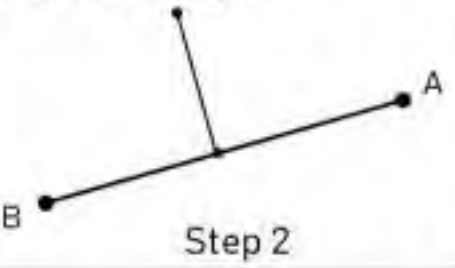
Curriculum Connection
SS7.3

Perpendicular Line Segments

Example - perpendicular line of the line segment $\overline{AB}$



Step 1



Step 2

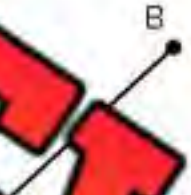
Instructi... ...ct perpendicular lines of the line segments $\overline{AB}$

1)

2)

3)

4)



5)

6)

7)

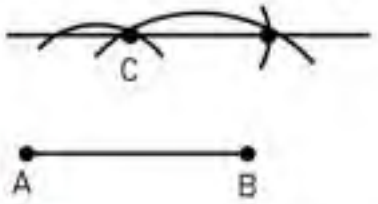
8)

Name: _____ 108

Curriculum Connection
SS? 3

Parallel Line Segments

Use a compass to draw an arc from points A, B, and C.



Instruction: Construct parallel lines of the line segments $\overline{AB}$

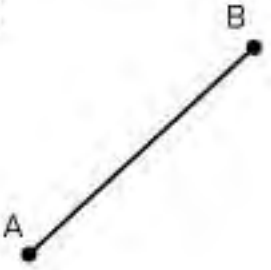
1)

2)

3)

5)

6)



Name: _____ 109

Curriculum Connection
SS? 3

Constructing Quadrilaterals – Parallel and Perpendicular Lines

Instructions Construct the quadrilaterals below using parallel and perpendicular lines

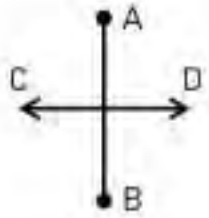
1)	2)
	Rectangle
3)	
Parallelogram (2 sets of parallel lines)	Trapezoid (bases have [illegible] lines)
5)	6)
Rhombus (parallel opposite sides)	Kite (diagonal lines are perpendicular)

Name: _____ 110

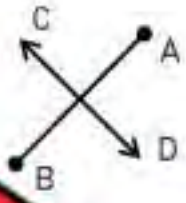
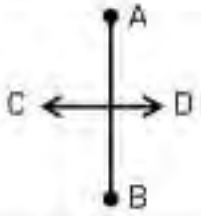
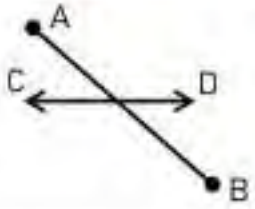
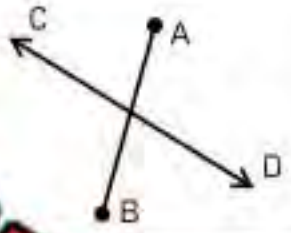
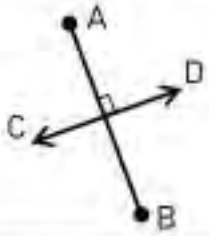
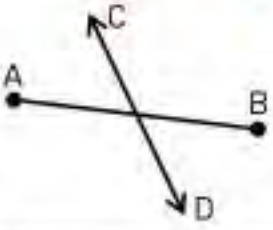
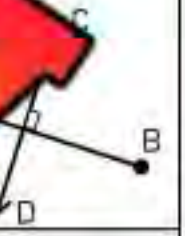
Curriculum Connection
SS7.3

Perpendicular Bisector

A **perpendicular bisector** is a line that cuts a line segment into two equal parts at 90°. This means the new line is **perpendicular** to the other line and it passes through the **middle** of the other line.



Part 1 Is the line $\overleftrightarrow{CD}$ a perpendicular bisector of the line segment?

1)  Yes No	2)  No	3)  Yes No
4)  Yes No	5)  Yes No	6)  No
7)  Yes No	8)  Yes No	 Yes No

Part 2 Write what the terms below mean in your own words

Term	Definition
Perpendicular	
Midpoint	

Name: _____ 111

Curriculum Connection
SS7.3

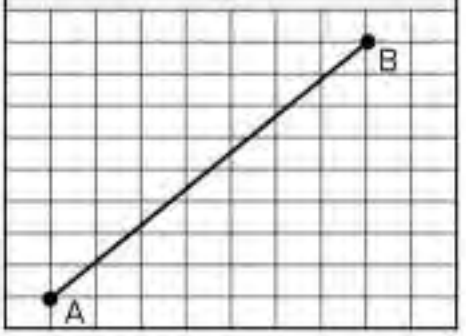
Perpendicular Bisector

Directions Construct a perpendicular bisector of the line segment $\overline{AB}$

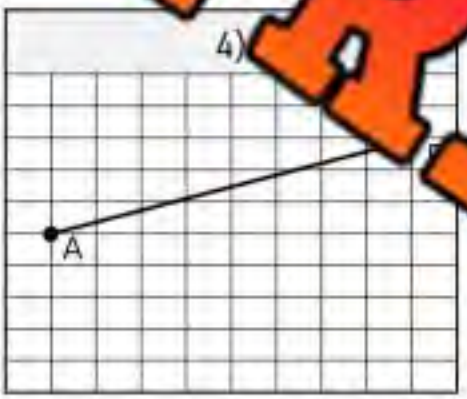
1)

2)

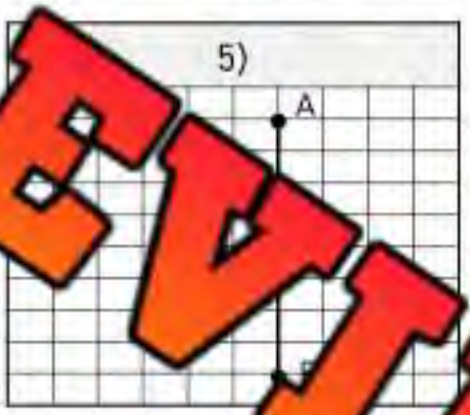
3)



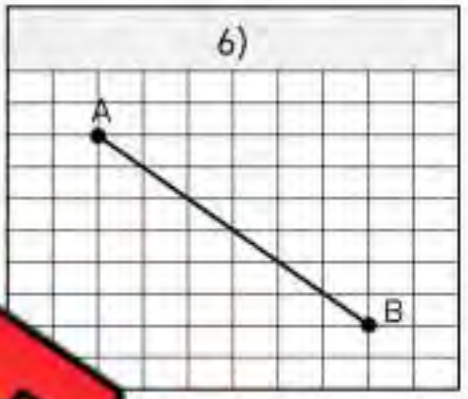
4)



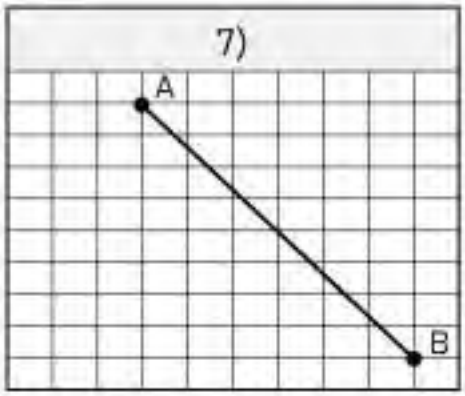
5)



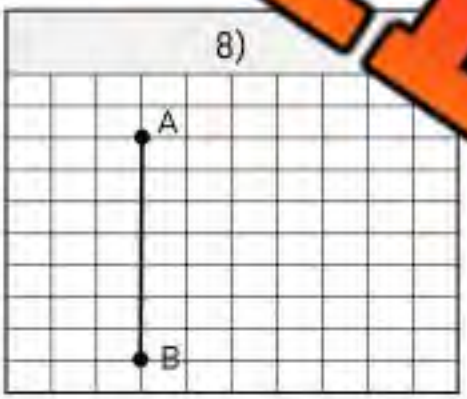
6)



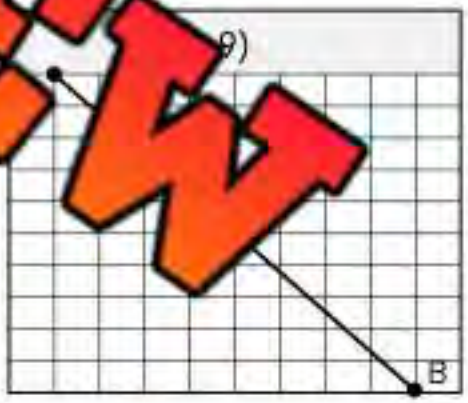
7)



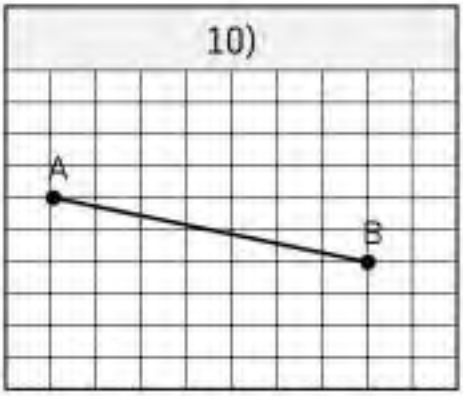
8)



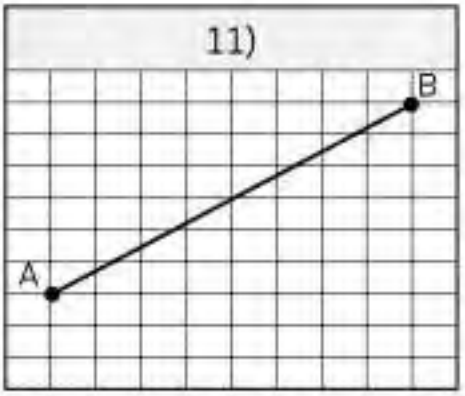
9)



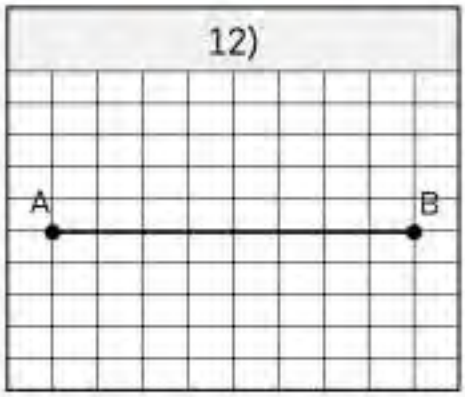
10)



11)



12)



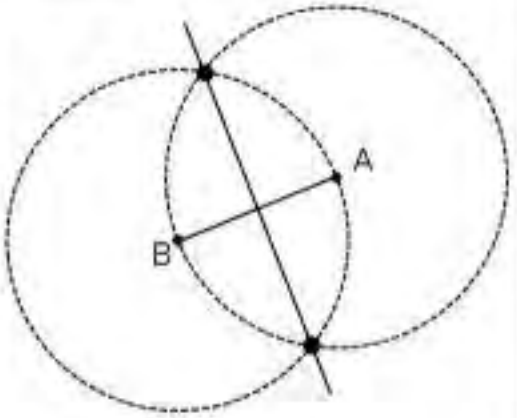
Name: _____ 112

Curriculum Connection
SS? 3

Perpendicular Bisector

Example – Perpendicular line bisector of the line segment AB

- Use a compass to sketch a circle around point A
- Use a compass to sketch a circle around point B
- Where the circles intersect, place a point
- Conne[illegible] two points to finish constructing your p[illegible]cular bisector



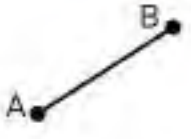
Instruc[illegible] C[illegible]erpendicular bisectors of the line segment $\overline{AB}$

1)

2)

3)

4)

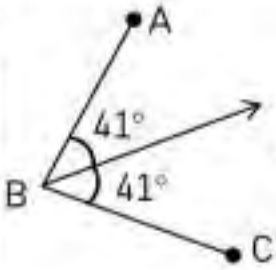


Name: _____ 114

Curriculum Connection
SS7.3

Angle Bisector

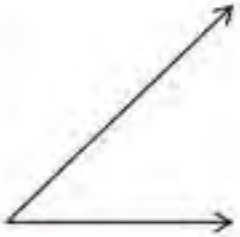
An **angle bisector** is a line that cuts an angle into two identical (congruent) parts. For example, if we construct an angle bisector on a 90° angle, we will have two 45° angles.



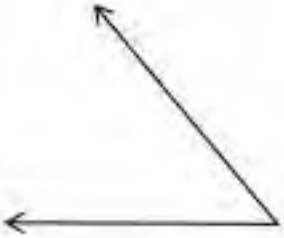
Directions Construct an angle bisector of the angles below using a protractor

2)

3)



4)

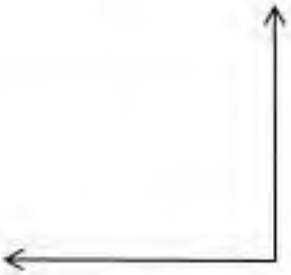


5)

6)

7)

8)



9)

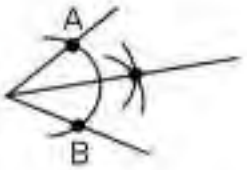
Name: _____ 115

Curriculum Connection
SS7.3

Angle Bisector

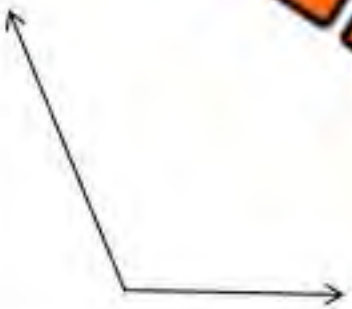
We can also use a compass to find an angle bisector.

- Draw an arc using point A as the anchor point
- Draw an arc using point B as the anchor point
- Place a point where your two arcs intersect
- Draw a line from the vertex to your new point



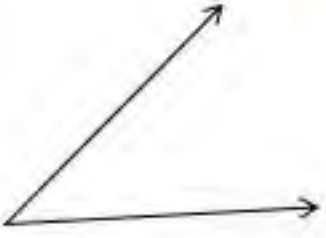
Directions Construct an angle bisector of the angles below using a compass

1)



2)

3)

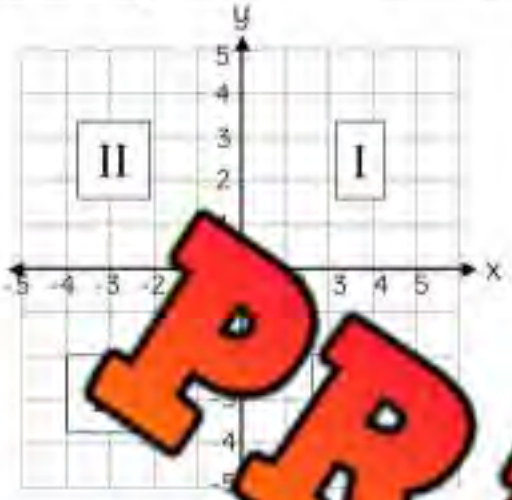


Name: _____ 117

Curriculum Connection
SS7 4

Four Quadrants – Cartesian Plane

Part 1 Write which quadrant the points would be found



Coordinates (x, y)	**Quadrant**
(2, -4)	
(5, 4)	
(-4, -5)	
(-2, 3)	
(5, 2)	

Part 2 Write your [illegible] point that could be found in the quadrant

Quadrant	**[illegible]dinates** (x, y)
Quadrant I	
Quadrant II	
Quadrant III	
Quadrant IV	
Quadrant III	
Quadrant II	
Quadrant IV	
Quadrant I	

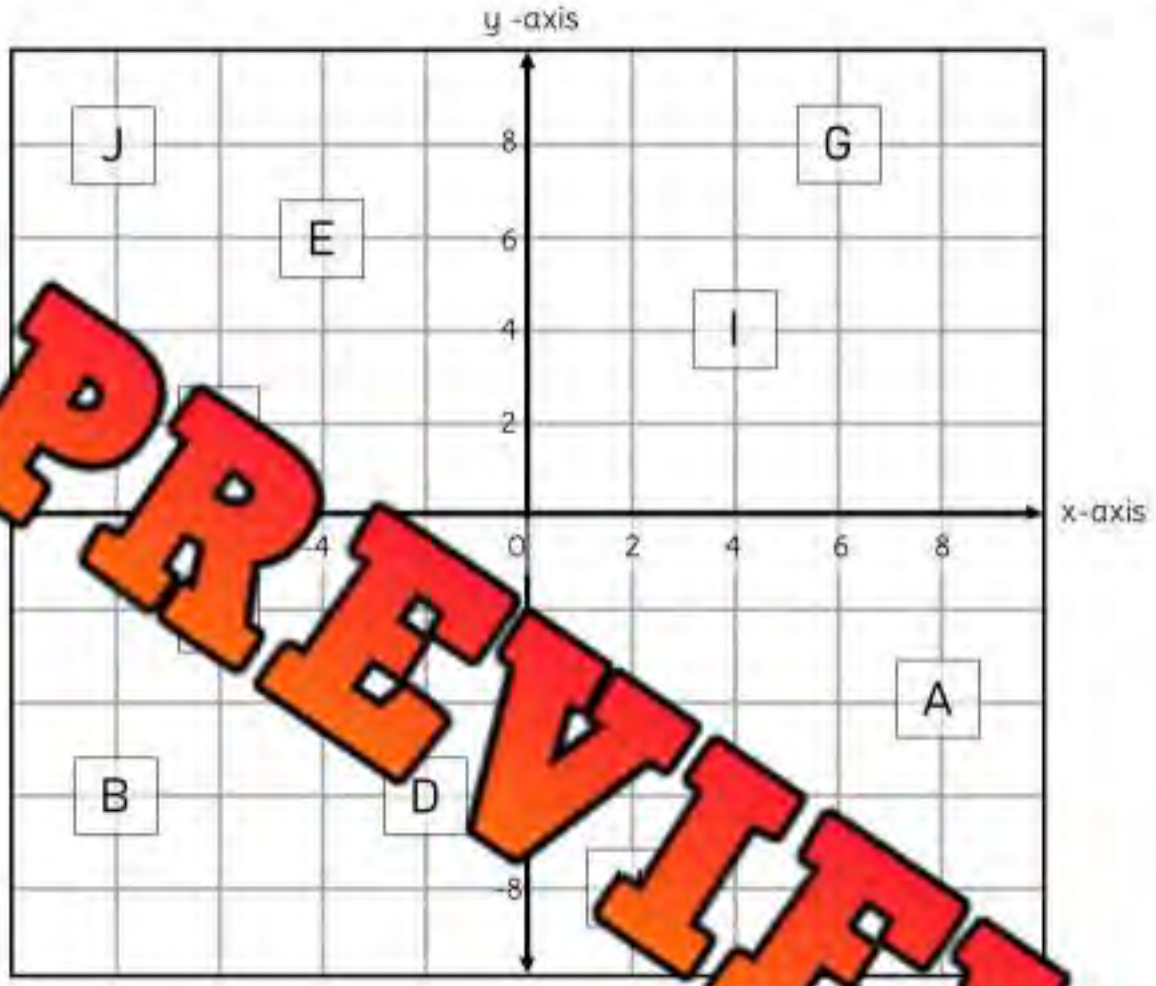
Part 3 Which quadrant number is associated with the descriptions below

	Description	**Quadrant**
1)	Both positive values	
2)	Both negative values	
3)	An x positive value and y negative value	
4)	An x negative value and y positive value	

Name: _____ 118

Curriculum Connection
SS7.4

Using 4 Quadrants on a Cartesian Plane



Instructions Write the coordinates for each object on the ca

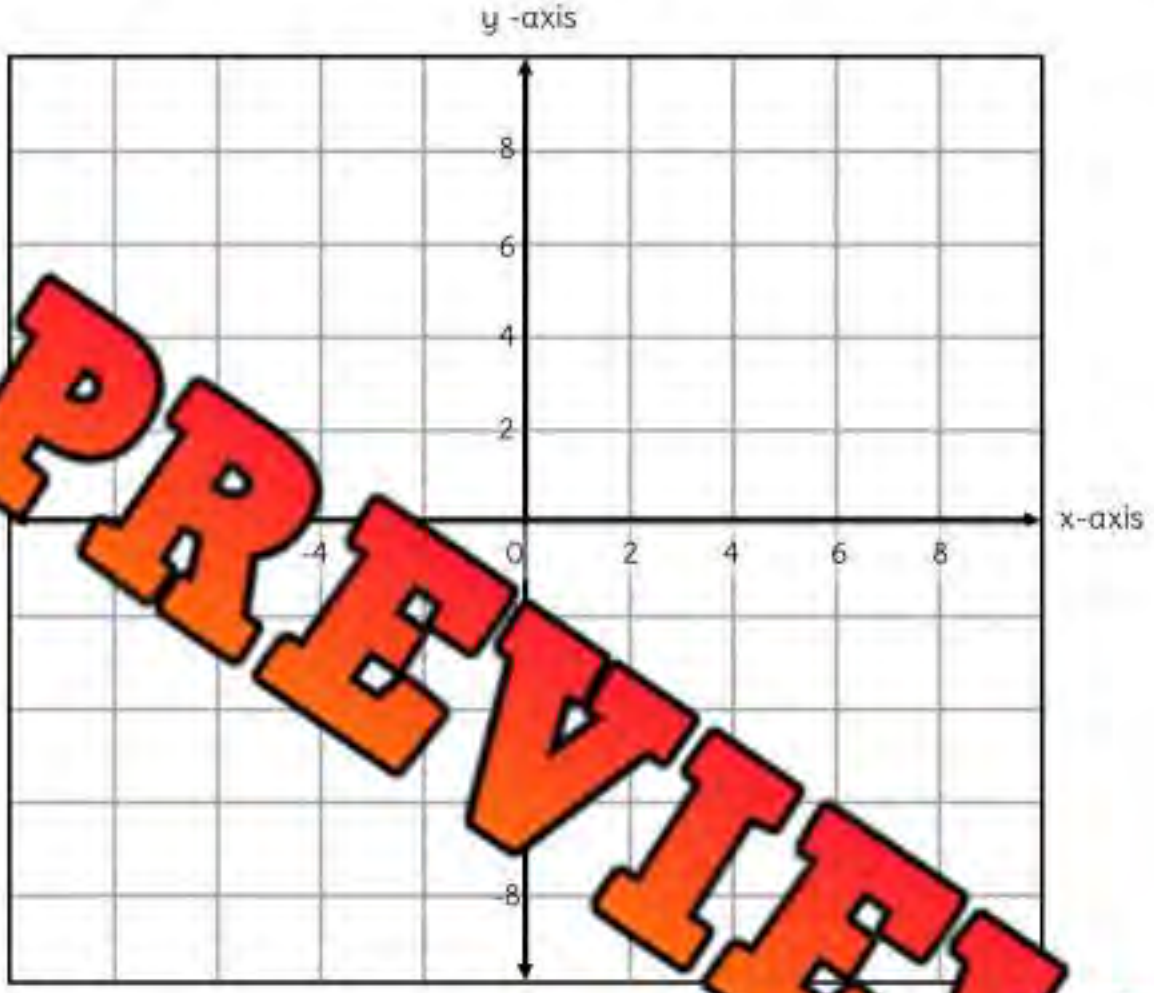
Symbol	Coordinates (x, y)
A	(8, -4)
B	(_____, _____)
C	(_____, _____)
D	(_____, _____)
E	(_____, _____)

Symbol	Coordinates (x, y)
F	(_____, _____)
G	(_____, _____)
H	(_____, _____)
I	(_____, _____)
J	(_____, _____)

Name: _____ 119

Curriculum Connection
SS7.4

Using 4 Quadrants on a Cartesian Plane



Instructions Write the letters on the grid according to the

Letter	Coordinates (x, y)
A	(-2, 4)
B	(-6, 6)
C	(8, -4)
D	(7, 4)
E	(-2, -2)

Letter	Coordinates (x, y)
F	(-5, 3)
G	(8, 8)
H	(-6, 1)
I	(3, -8)
J	(0, -7)

Name: _____ 120

Curriculum Connection
SS7.4

Plotting Ordered Pairs on Cartesian Plane

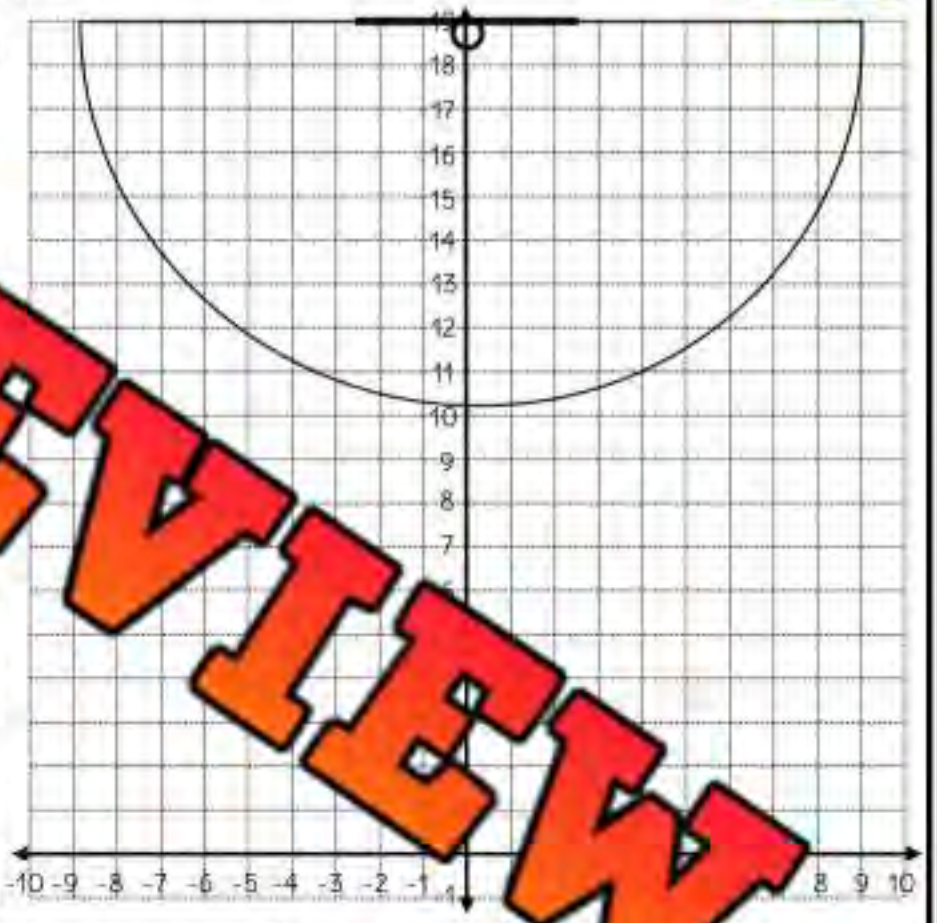
Directions Plot the ordered pairs on the cartesian plane

Steph Curry is a tremendous shooter. His shot attempts and shot makes from his last game have been displayed in the table below. The coordinates for each shot show where Curry made or missed from.

If the shot is made, plot a green dot using the co ates.

If the shot plot a red dot using t

Shot M e	
(3, 9)	2)
(-5, 10)	13)
(1, 8)	(3,
(-10, 18)	(-8, 17)
(-1,18)	(6, 10)
(4,1)	(-8, 12)
(2, 15)	(9, 15)
(-6, 11)	(6, 14)
(-2, 15)	
(1, 18)	



Questions Answer the questions below

Questions	Answers
1) What was Curry's field goal percentage? (#Makes/#Total Shots)	
2) What was Curry's 3-point percentage? (#3-Point Makes/#Total 3-Point Shots)	
3) How many points did Curry have?	
4) Curry has asked you where he should shoot from. Use the coordinates you plotted to give him at least 2 tips.	

Name: _____ 121

Curriculum Connection
SS7.A

Plotting Ordered Pairs on Cartesian Plane

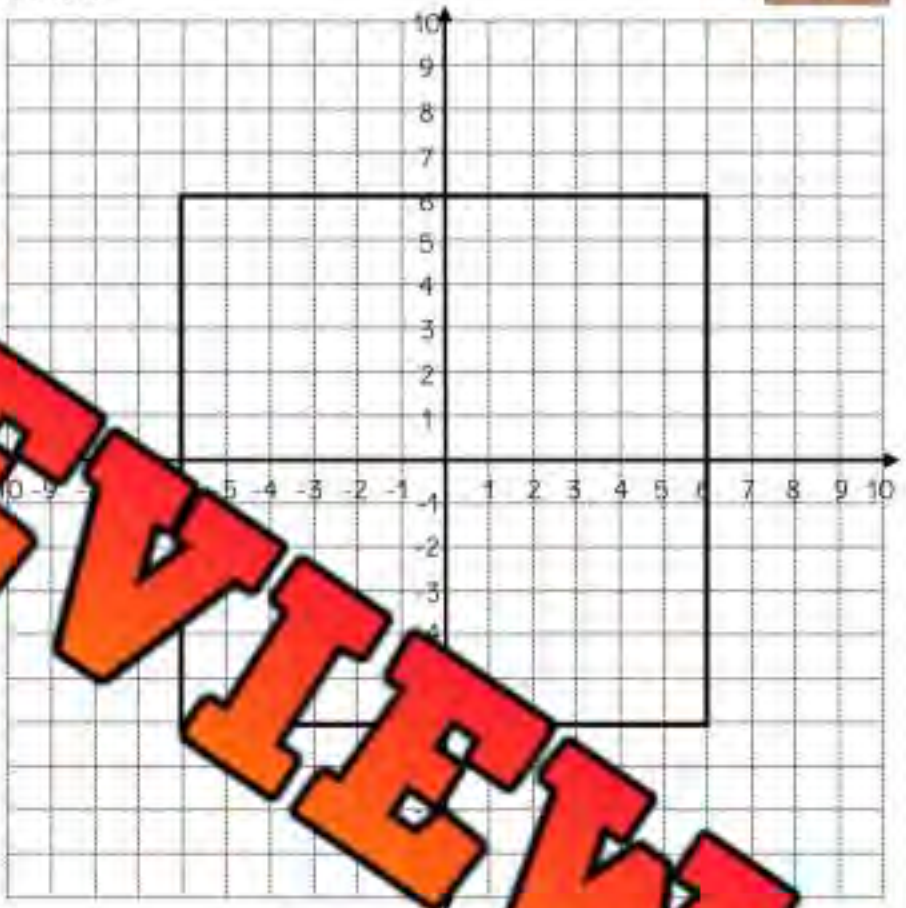
Directions Plot the ordered pairs on the cartesian plane

Robbie Ray pitches for the Blue Jays. He only pitched 3 innings last game. His strikes and pitches that resulted in a hit are recorded in the table. Where he threw each pitch has been displayed using coordinates.

If the pitch is a strike, plot a green dot using the coordinates

If the pitch [illegible] plot a red dot using the co[illegible]s.

S	
(-3, [illegible]	
(-6, -6)	
(5, -5)	-1)
(3, 6)	(-2,
(-7, 6)	(2, -1)
(6, 6)	(-3, -2)
(-5, -4)	(3, -2)
(-8, -4)	(-2, -3)
(5, 5)	(2, -2)
(-3, 5)	



Questions Answer the questions below

Questions	Answers
1) How many strikes did Ray throw?	
2) How many hits did he give up?	
3) How many pitches did he make in the upper part of the strike zone?	
4) How many strikes did Ray throw out of the strike zone?	
5) Ray has asked you where he should throw his pitches. Use the coordinates you plotted to give him at least 2 tips.	

Name: _____ 122

Curriculum Connection
SS7.4

Title: Cartesian Coordinate Toss Challenge

Objective

What are we learning about?

Students will learn to plot and identify points on the four quadrants of the Cartesian plane by tossing an object onto a large grid and recording the coordinates.

Materials

What you will need for the activity.

- L[illegible]per with a Cartesian coordinate g[illegible]n be dr[illegible]e floor or taped on a table)
- Sma[illegible]bject[illegible]r d[illegible]e
- Pencils
- Notebooks o[illegible]ng sh[illegible]

Instructions

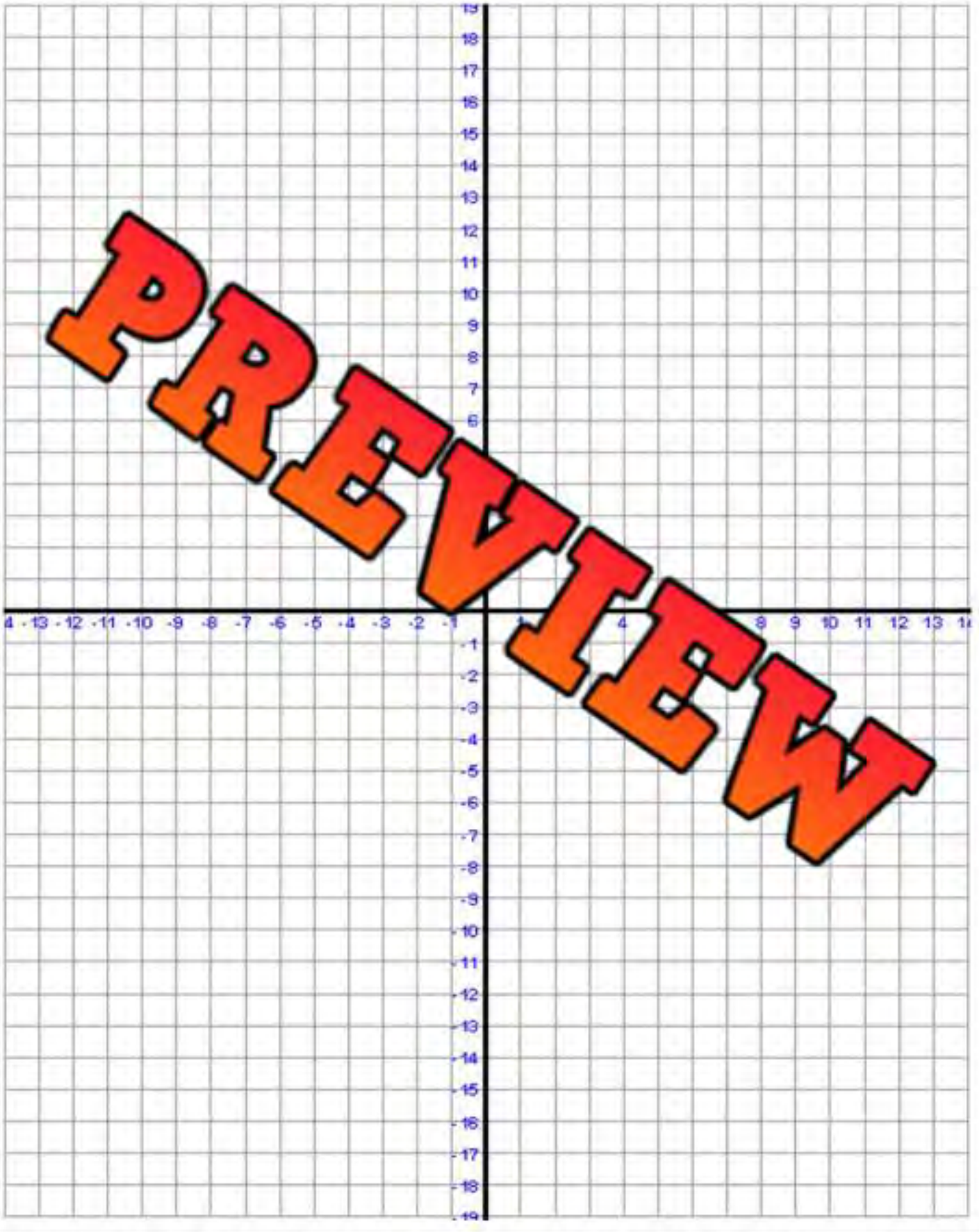
How you[illegible]pl[illegible]ity

1) Begin by explaining the Cartesian [illegible] includ[illegible]s, y-axis, and the four quadrants. Demonstrate how to identify and [illegible]oints [illegible]ordinates (x, y).
2) Place the large grid paper with the Cartesia[illegible]rdin[illegible] floor or on a table where all students can access it. Alternati[illegible]n draw[illegible]ordinate plane on the floor inside the classroom using mask[illegible] ou[illegible]sin[illegible]sidewalk chalk. (You could also use small objects and have each g[illegible]p u[illegible] next page to throw their objects).
3) Divide the class into small groups. Each group will take turns tossin[illegible]ll object, like a coin or a dice, onto the grid.
4) When an object lands on the grid, the student who tossed the object must identify the coordinates (x, y) where the object landed and record them in their notebook or on a recording sheet.
5) Each group takes turns until all students have had multiple opportunities to toss the object and record coordinates.
6) After a few rounds, gather the students and ask them to share some of the coordinates they recorded. Discuss any patterns or interesting findings.
7) Optionally, use coloured markers to plot the recorded coordinates on the grid paper to create a visual representation of the points where the objects landed.

Name: _____ 123

Curriculum Connection
SS7.A

Grid Paper | Grid paper with x-axis and y-axis (Optional)



Name: _____ 124

Curriculum Connection
5S7.A

Cartesian Coordinate Toss Challenge

Answers | Record the coordinates below

Toss Number	Coordinates (x, y)	Quadrant
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Name: _____ 128

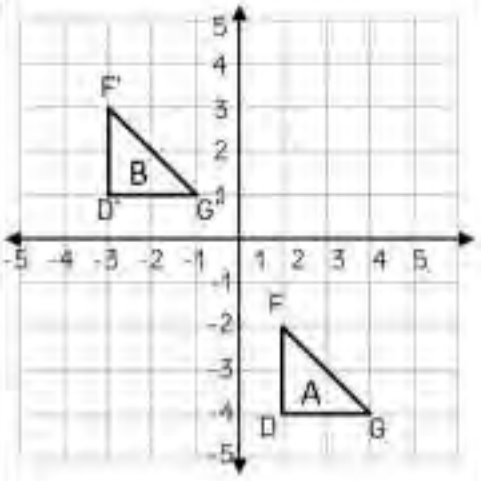
Curriculum Connections
8G7.5

Translations – Mapping Rules

Mapping Rules for Translations

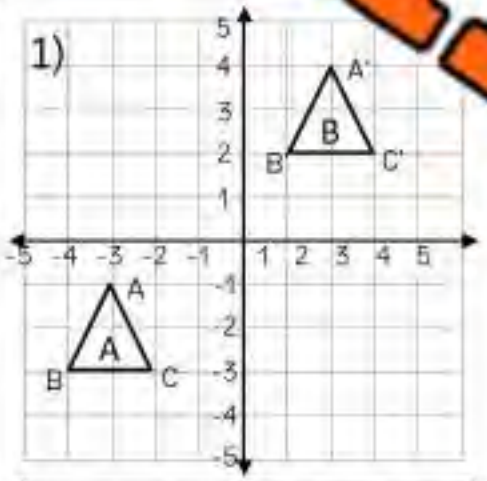
Each point on a shape slides according to the mapping rule.
The rule is (x, y) → (x + a, y + b)

1) Choose 1 coordinate from the shape to translate
2) We need to move the x coordinate -4 spaces to the left. This means we subtract 4.
3) We need to move the y coordinate +5 spaces up. This means add 5.
4) The **mapping rule** is: (x, y) → (x – 4, y + 5)
5) Remember, if we move to the left or down, we are adding a negative number (subtracting) and if we move up, we are adding a positive number.

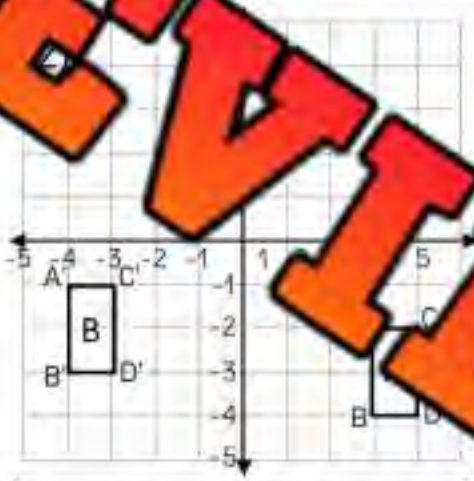


Instructions Find the mapping rule that translates figure A to figure B

1)

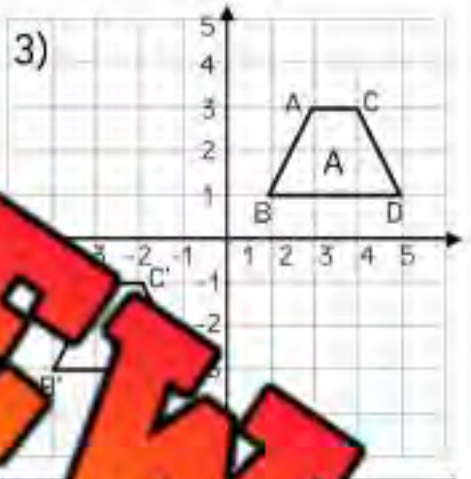


Mapping Rule	(x☐__, y☐__)



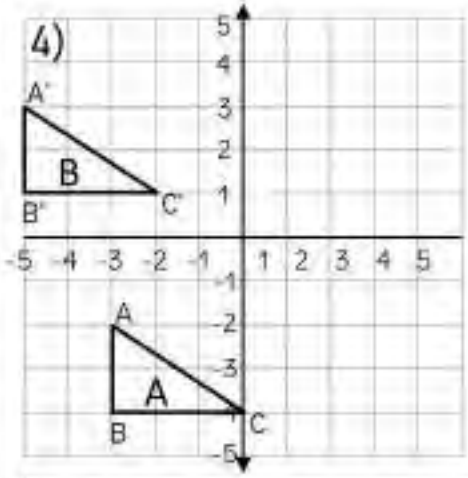
Mapping Rule	(x☐__, y☐__)

3)



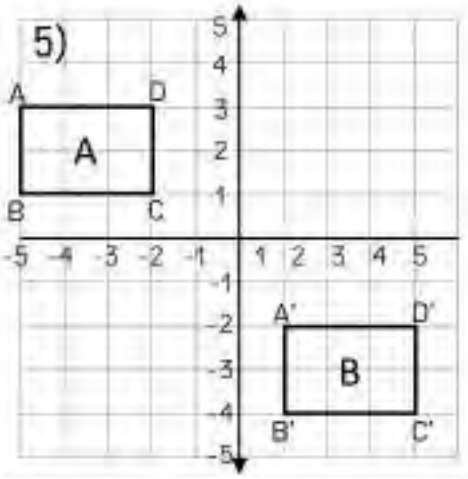
Mapping Rule	(x☐__, y☐__)

4)



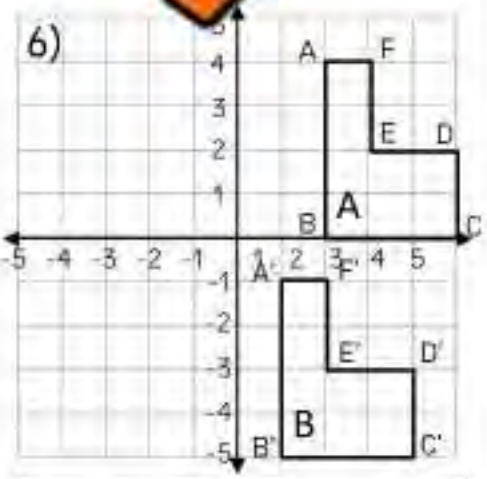
Mapping Rule	(x☐__, y☐__)

5)



Mapping Rule	(x☐__, y☐__)

6)



Mapping Rule	(x☐__, y☐__)

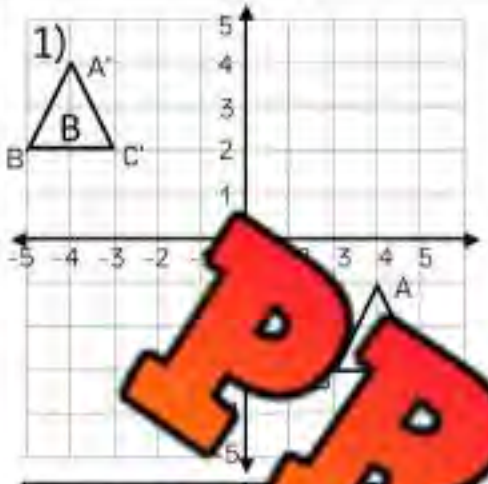
Name: _____ 129

Curriculum Connections
SS7.5

Translations – Mapping Rules

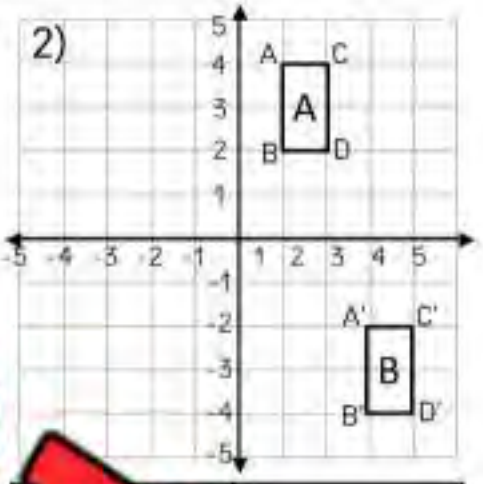
Instructions | Fill in the mapping rule

1)



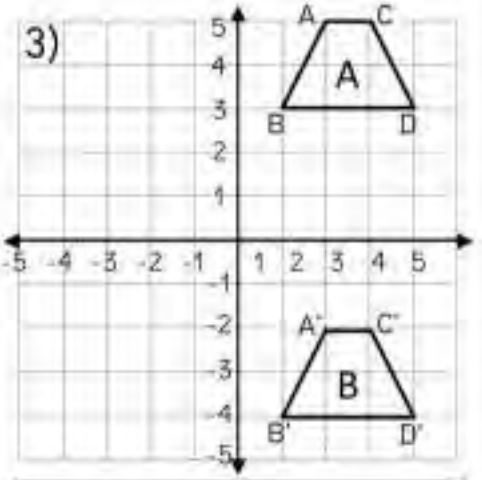
Mapping Rule	

2)



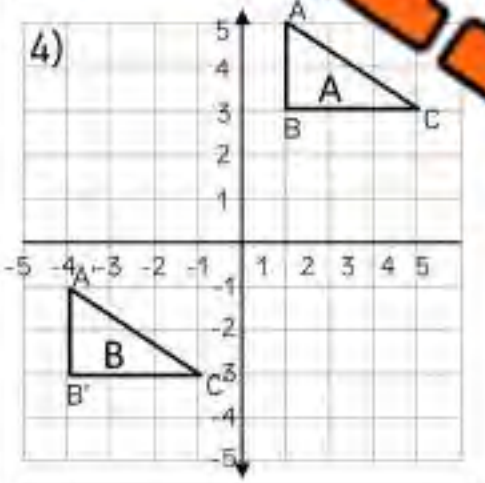
Mapping Rule	

3)



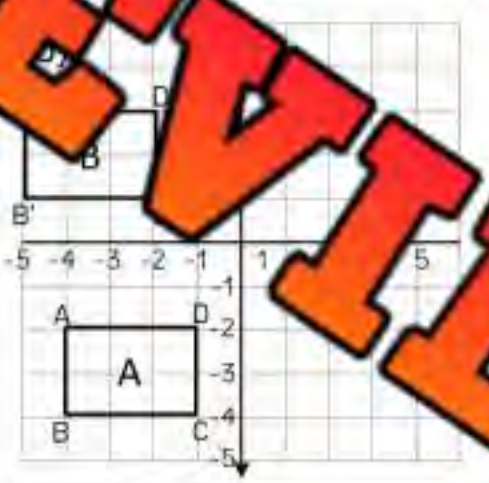
Mapping Rule	

4)



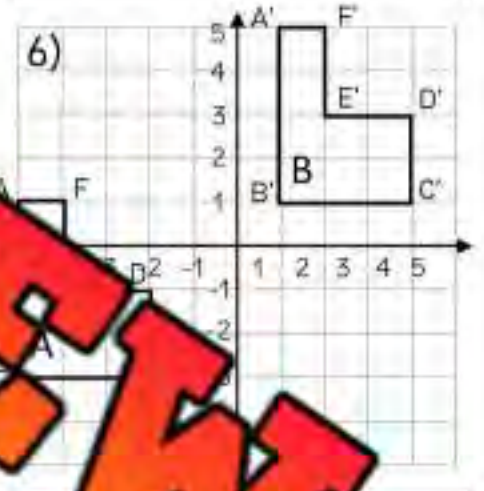
Mapping Rule	

5)



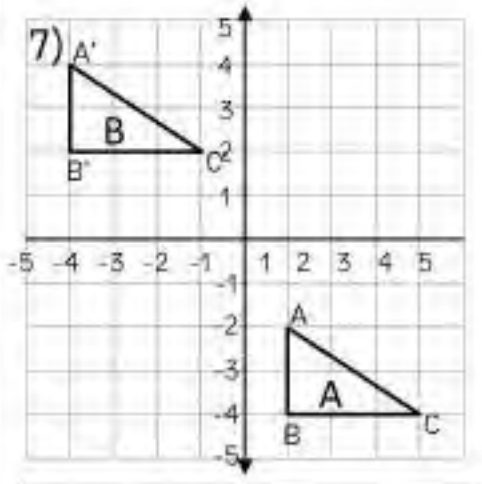
Mapping Rule	

6)



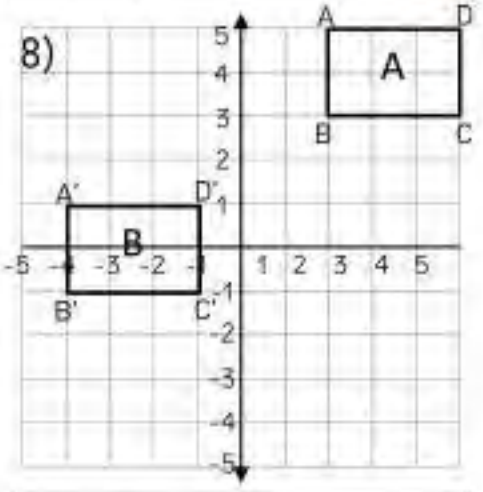
Mapping Rule	

7)



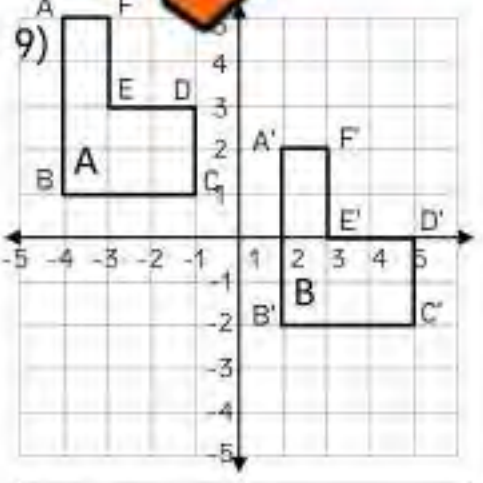
Mapping Rule	

8)



Mapping Rule	

9)



Mapping Rule	

Name: _____ 131

Curriculum Connection
5.G.1

Math Activity: Translation Relay Race

Objective

What are we learning about?

To help students understand and describe translations using mapping rules on a Cartesian plane through a fun and engaging relay race activity.

Materials

What you will need for the activity.

- Grap
- R
- ed penc ers
- Pen and
- Translatio

Instructions

How y plete tivity

1. Explain Translations: Start Expla ions on the Cartesian plane involve moving shapes without rot resiz n. Introduce the concept of mapping rules (e.g., (x, y) → (x+3, y).
2. Distribute Materials: Provide each team w draw er and a set of translation task cards with mapping rules.
3. Form Teams: Divide the class into small teams, each be desk with their graph paper and task cards.
4. Translation Task: The first student in each team picks a transla nd then plots the point on the grid at the given coordinates - e.g., (2, 3).
5. Perform Translation: The student then applies the mapping rule from the task card to the point's coordinates and draws the new position on the grid.
6. Pass to Next Student: The student then goes to the end of the line, and the next student steps up.
7. Repeat Process: The next student repeats the process.
8. Continue Relay: Continue the relay until all team members have had a turn or all task cards are used.
9. Verification and Discussion: The teacher verifies the translations, and the class discusses the different translations and observations.

Name: _____ 132

Curriculum Connection
3S7.5

Task Cards | Cut out the cards below

Card 1:

Start: (-2, 3)
Mapping Rule: (x, y) → (x+7, y+3)

Card 6:

Start: (-10, -3)
Mapping Rule: (x, y) → (x+3, y-1)

Card 7:

Start: (2, 4)
Mapping Rule: (x, y) → (x-1, y+4)

Card 3:

Start: (9, -1)
Mapping Rule: (x, y) → (x-1, y+6)

Card 8:

(-1, 2)
→ (x+5, y+3)

Card 4:

Start: (0, 0)
Mapping Rule: (x, y) → (x+7, y+7)

Ca

Start: (3, -
Mapping Rule: (x, y) → (x+6, y-3)

Card 5:

Start: (-4, 2)
Mapping Rule: (x, y) → (x-3, y+5)

Card 10:

Start: (4, -1)
Mapping Rule: (x, y) → (x-12, y+6)

Name: _____ 133

Curriculum Connection
3S7.5

Task Cards | Cut out the task cards below

Card 11:

Start: (0, -4)
Mapping Rule: (x, y) → (x+5, y+2)

Card 16:

Start: (4, 4)
Mapping Rule: (x, y) → (x+3, y+1)

Card 17:

Start: (0, -3)
Mapping Rule: (x, y) → (x+5, y+4)

Card 13:

Start: (-5, 1)
Mapping Rule: (x, y) → (x+2, y+5)

Card 18:

(2, 2)
→ (x-8, y-8)

Card 14:

Start: (-2, -5)
Mapping Rule: (x, y) → (x+7, y+4)

Start: (5, 1)
Mapping Rule: (x, y) → (x+3, y+3)

Card 15:

Start: (-4, 1)
Mapping Rule: (x, y) → (x+6, y+4)

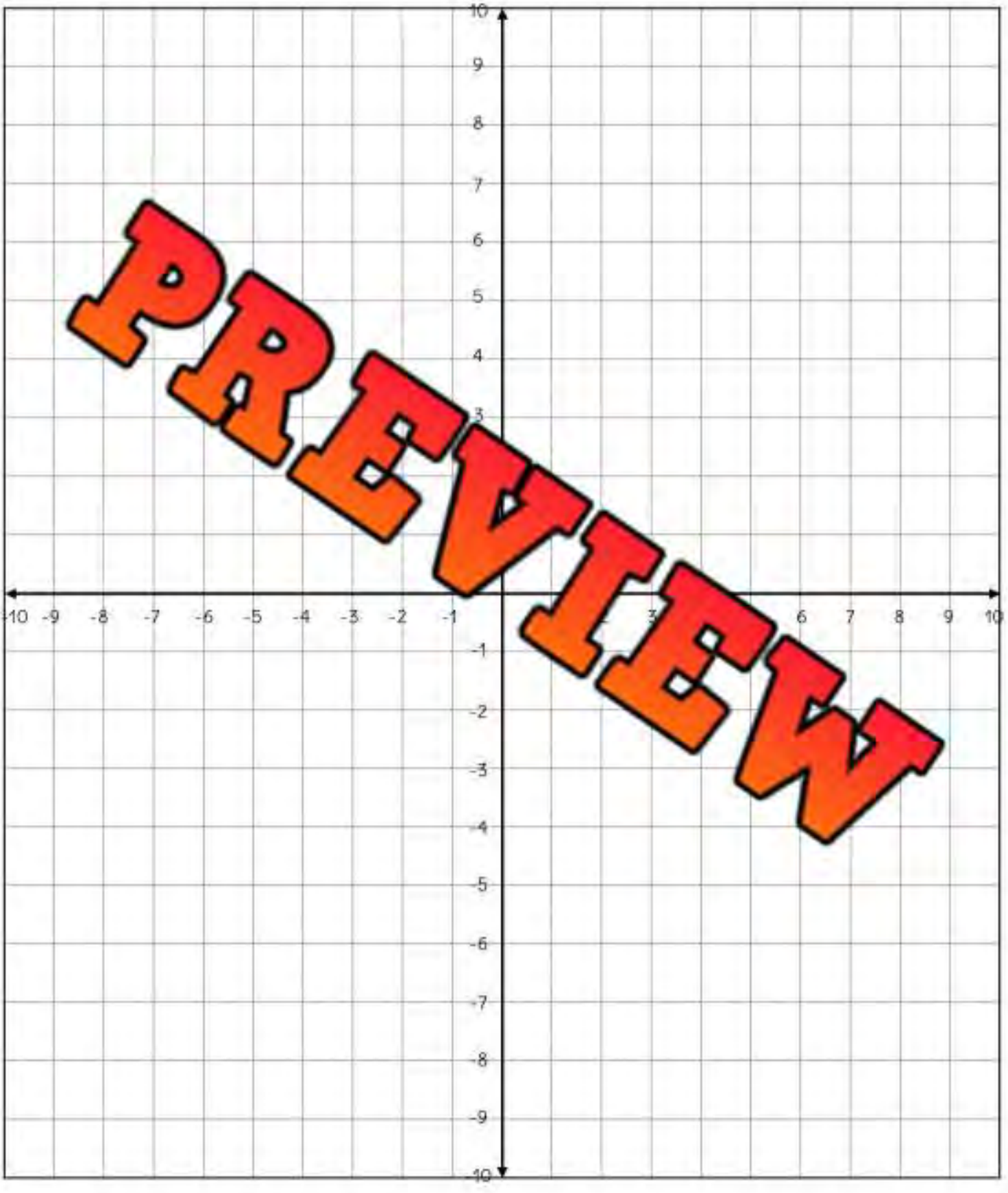
Card 20:

Start: (-3, 0)
Mapping Rule: (x, y) → (x+4, y+4)

Name: _____ 134

Curriculum Connection
SS7.5

Grid Paper Use the cartesian plane to perform the translations

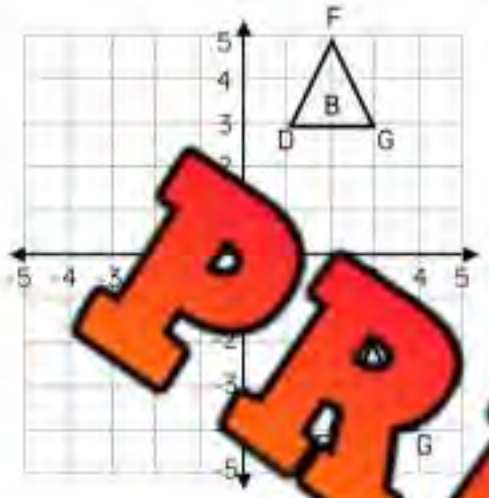


Name: _____ 135

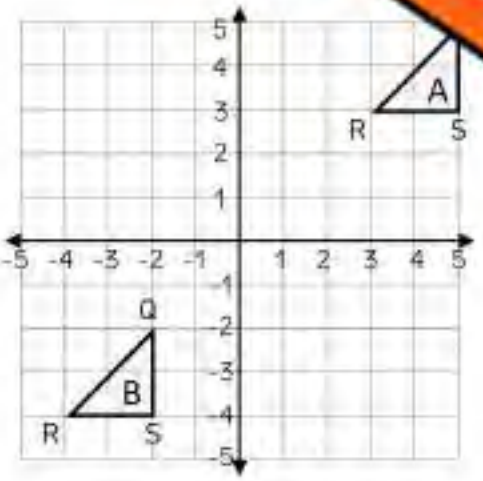
Curriculum Connections
SS7.5

Transformations -Translations

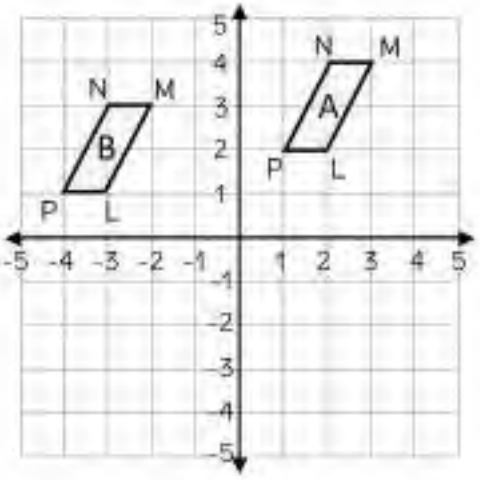
Instructions 1) Fill in the coordinates 2) Describe the translation 3) Translate shape C



Coordinates A	Coordinates B
D(__, __) F(__, __) G(__, __)	D(__, __) F(__, __) G(__, __)
Mapping Rule (x, y) → (x, y) → (x + a, y + b)	
Translate Shape B to Shape C (x – 4, y – 5)	**Coordinates C**



Coordinates A	Coordinates B
Mapping Rule (x, y) → (x, y) → (x + a, y + b)	
Translate Shape B to Shape C (x, y + 6)	**Coordinates C**



Coordinates A	Coordinates B
Mapping Rule (x, y) → (x, y) → (x + a, y + b)	
Translate Shape B to Shape C (x + 4, y – 5)	**Coordinates C**

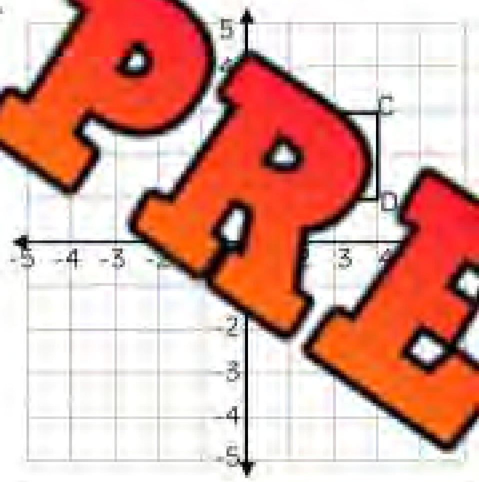
Curriculum Connection
SS7.5

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: ______________________

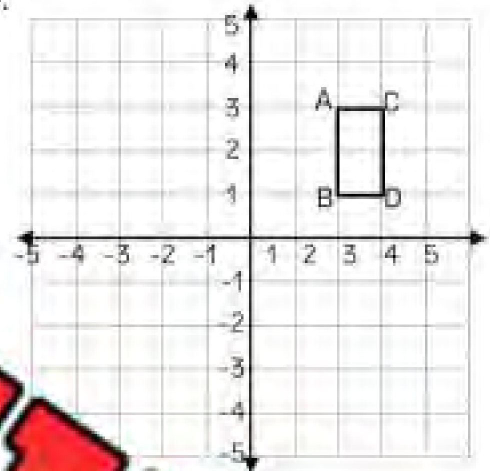
Translate the shape using the mapping rule.



Mapping Rule	(x + 3, y - 5)

Name: ______________________

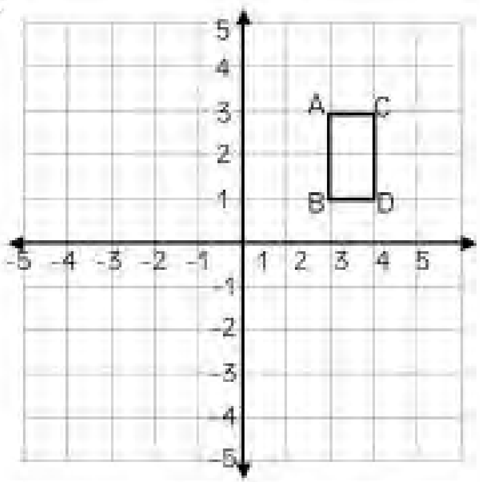
Translate the shape using the mapping rule.



Mapping Rule	(x + 3, y - 5)

Name: ______________________

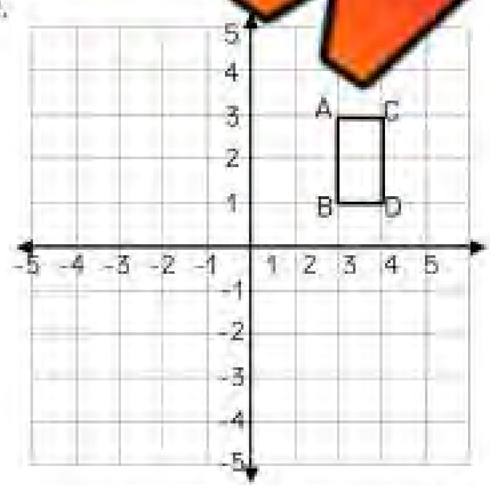
Translate the shape using the mapping rule.



Mapping Rule	(x + 3, y - 5)

Name: ______________________

Translate the shape using the mapping rule.



Mapping Rule	(x + 3, y - 5)

Name: _____ 137

Curriculum Connection
SS7.5

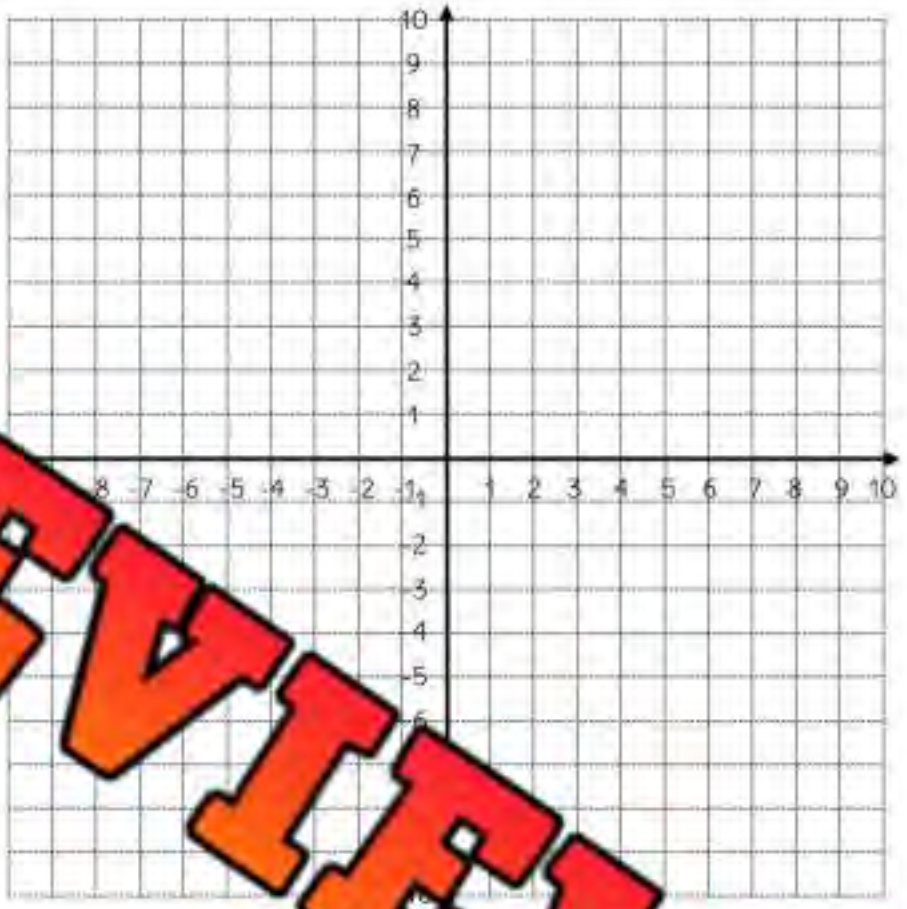
Translations – New Coordinates

Part 1 Draw the shapes using the coordinates provided. Then translate the shape

Shape A
P(2,5), Q(2,1), R(8,3), S(9,5)
Translate Shape A
(– 5)

F(-9, G(-6
Translate
(x + 4, y – 8)

Shape C
J(-7,-8), K(-4,-8), L(-3,-5)
Translate Shape C
(x + 6, y – 2)



Part 2 Give the coordinates of each point after the [illegible]

	Original Coordinate	Translation – Mapping Rule	New C[illegible]ates
1)	P(3, -4)	(x - 6, y + 4)	P(-3, 0)
2)	S(-5, 8)	(x + 3, y - 5)	
3)	Q(-9, -5)	(x + 2, y - 7)	
4)	L(10, 5) P(-3, -8)	(x – 5, y + 8)	
5)	T(-8, 7) Y(-9, -5)	(x + 8, y + 5)	
6)	S(-14, -16) R(15, 12)	(x - 11, y - 6)	
7)	N(-21, 11) K(20, -14)	(x – 9, y + 13)	
8)	P(28, -21) E(-25, 20)	(x + 17, y + 22)	

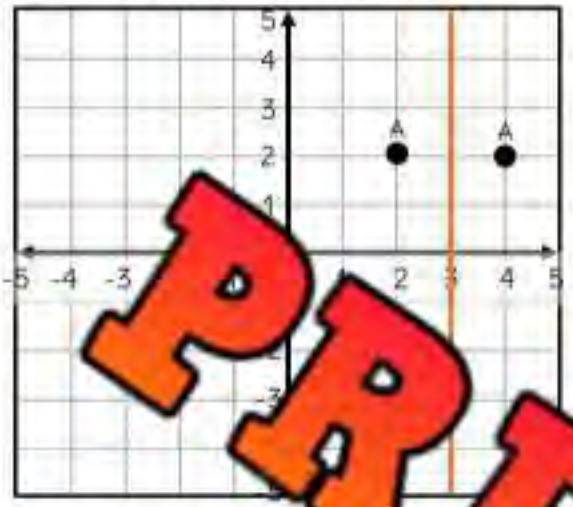
Name: _____ 139

Curriculum Connection
SS7.5

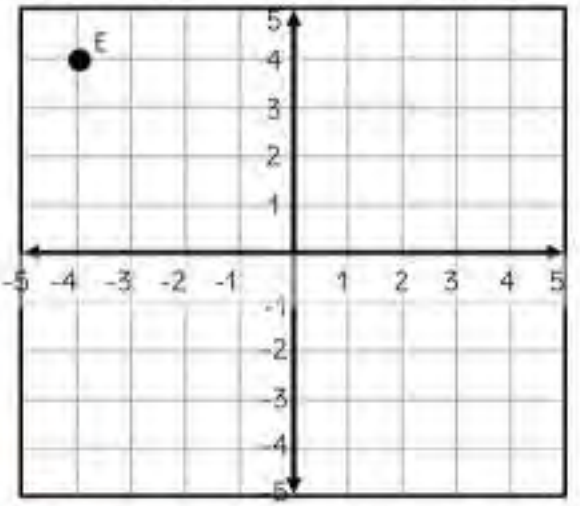
Reflecting a Point Using a Mirror Line

Instructions Graph the new position of each point. The first one is done for you

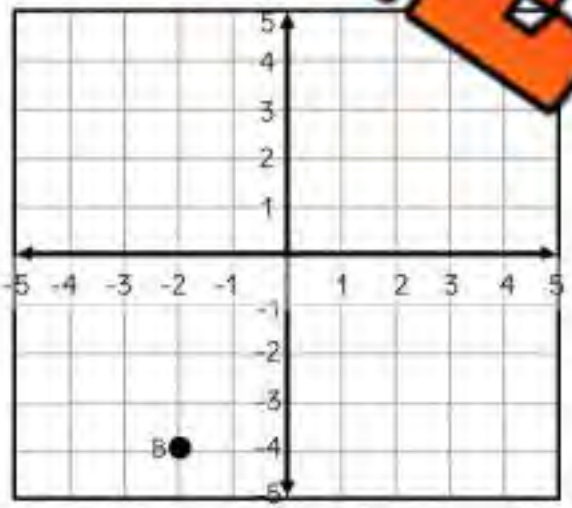
1) Reflection across the line x = 3



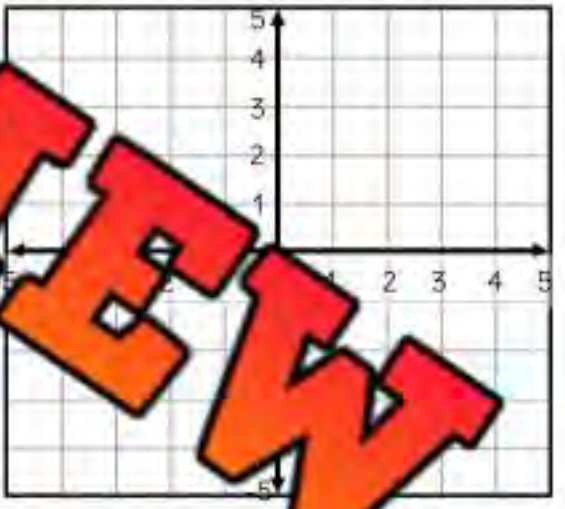
2) Reflection across the line y = 2



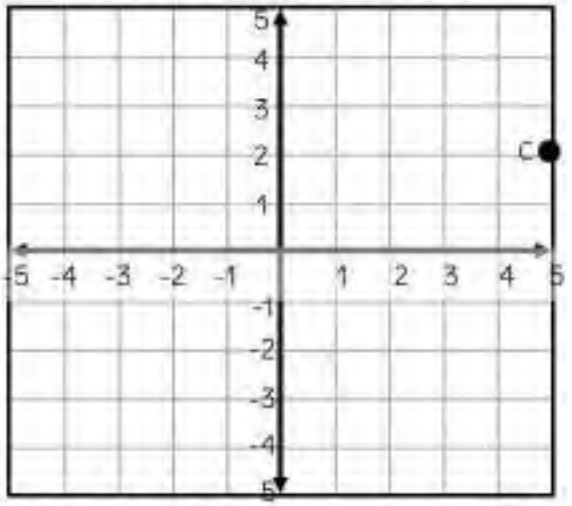
3) Reflection across the line x = -2



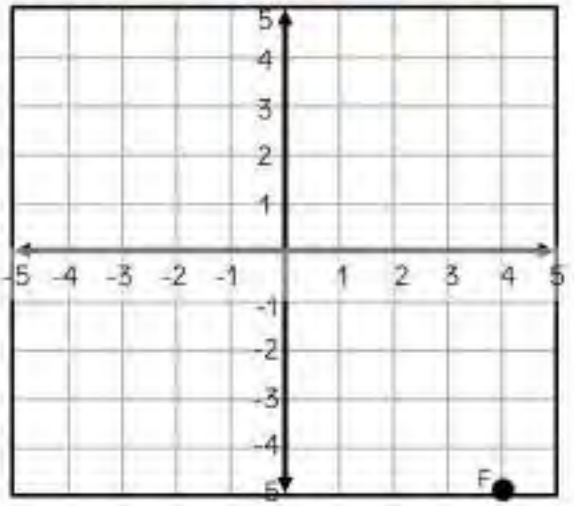
4) Reflection across the line x = -1



5) Reflection across the line x = 2



6) Reflection across the line y = -3



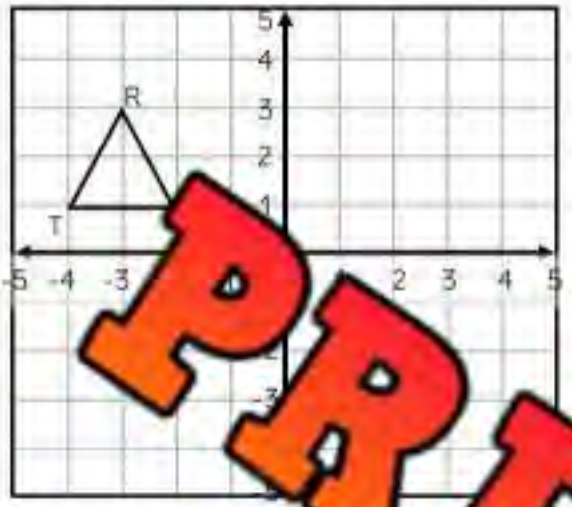
Name: _____ 141

Curriculum Connection
SS7.5

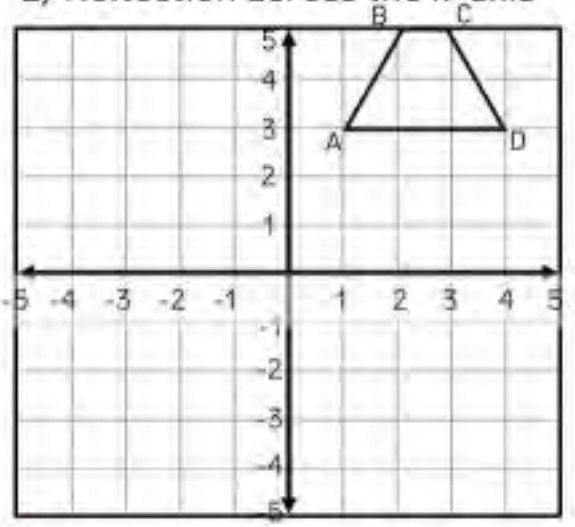
Reflecting a Shape Using a Mirror Line

Instructions Graph the new position of each shape after the given reflection

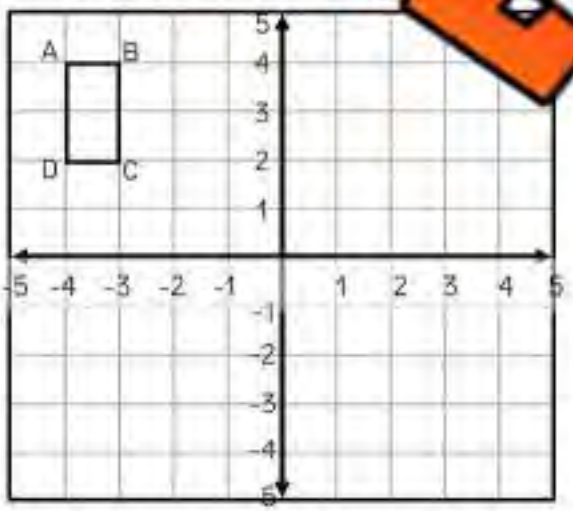
1) Reflection across the y-axis



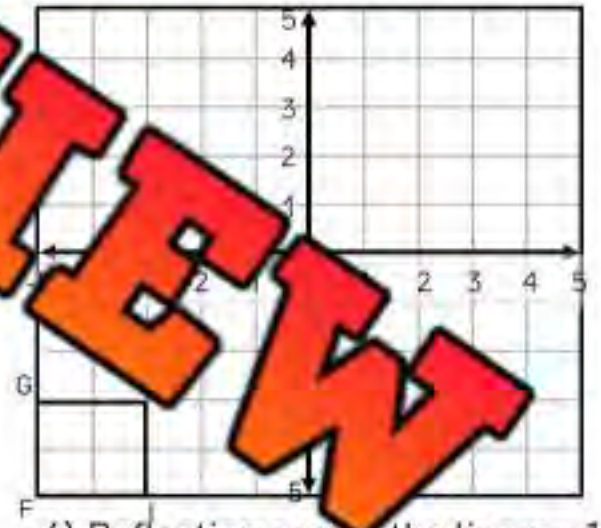
2) Reflection across the x-axis



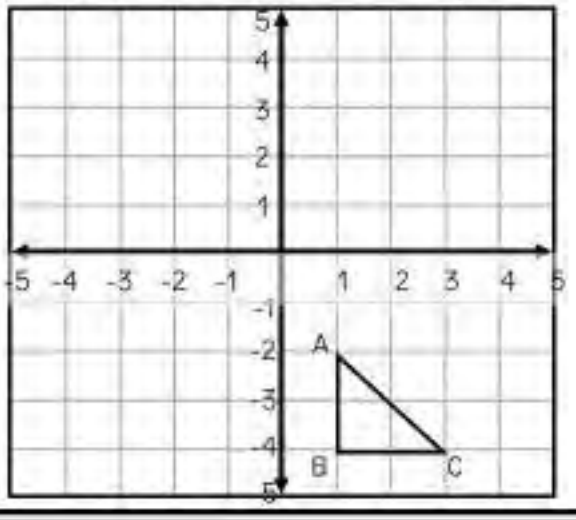
3) Reflection across th



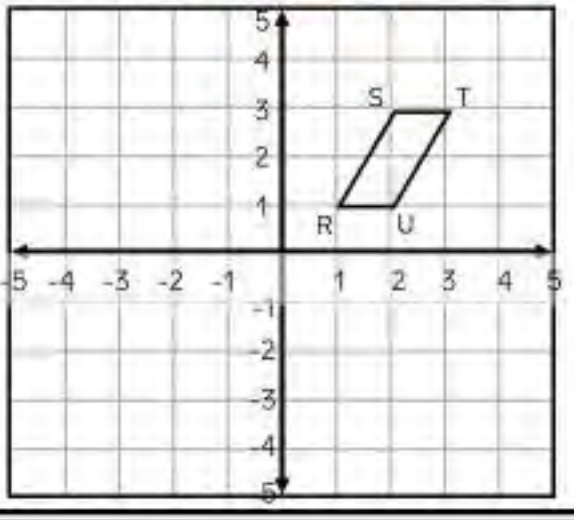
4) Reflection across the line x = -1



5) Reflection across the line y = -1



6) Reflection across the line x = 1



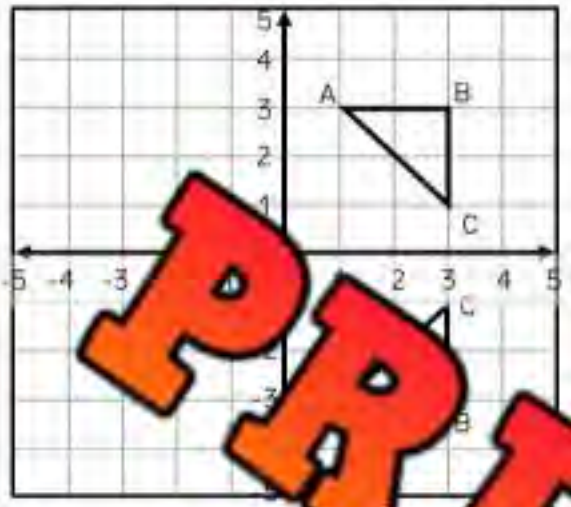
Name: _____ 142

Curriculum Connection
SS7.5

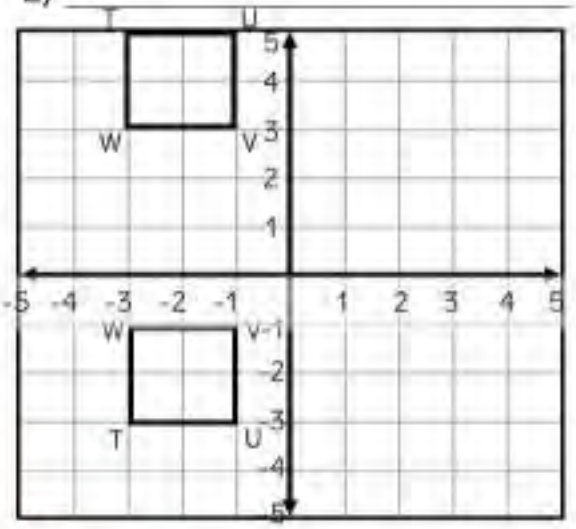
Reflections – Determine the Rule

Instructions Describe the rule for the reflection line – Ex. Reflection across the line x = 2

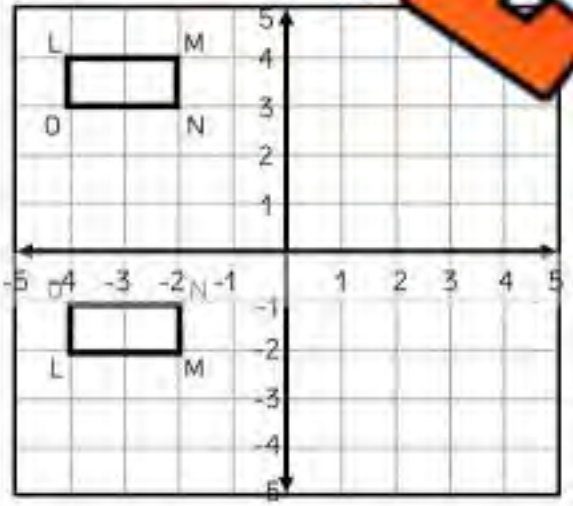
1) _____



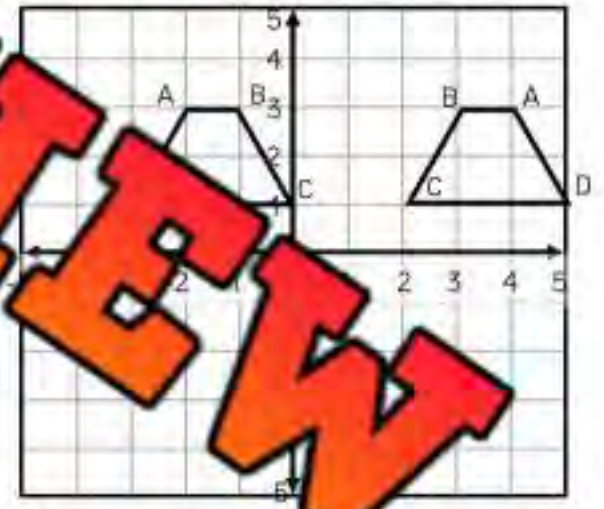
2) _____



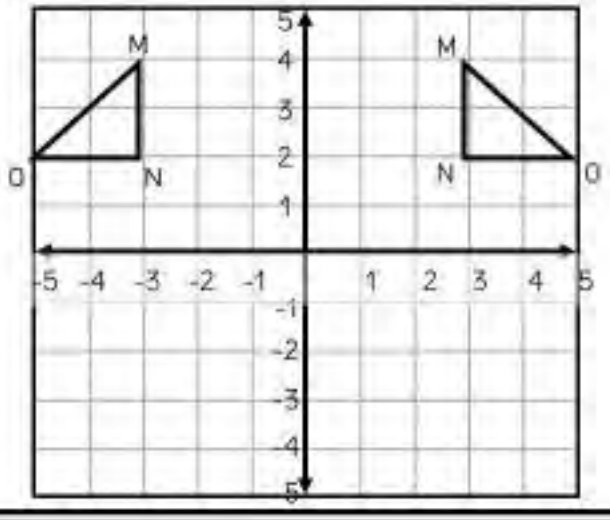
3) _____



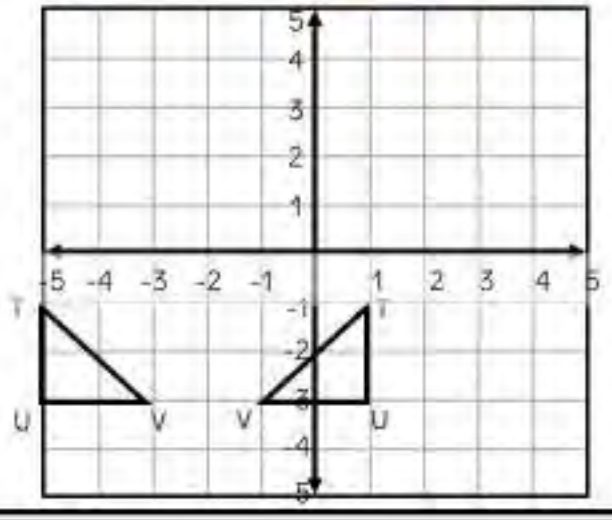
4) _____



5) _____



6) _____



Name: _____ 143

Curriculum Connections
SS7.5

Reflections – Mapping Rules

Mapping Rules for Reflections

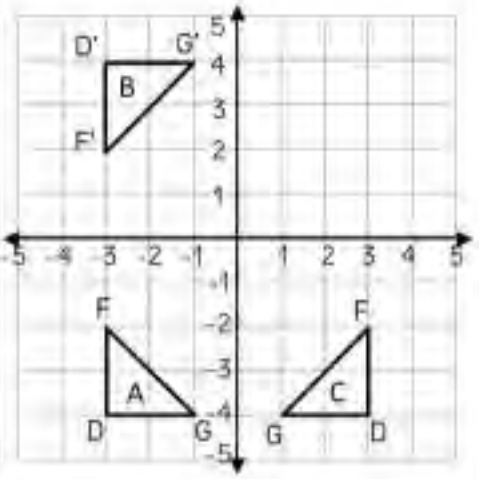
Each point on a shape moves according to the mapping rule.

The rule for a reflected shape in the x-axis is (x, y) → (x, -y)

The rule for a reflected shape in the y-axis is (x, y) → (-x, y)

In the example of Shape A being reflected to Shape B, point F (-3, -2) has been reflected across the x-axis, which means the new coordinates for F are (-3, 2).

If Shape A is reflected across the Y axis to Shape C, point F becomes



Instructions Use the mapping rules to write the new coordinates

	Original Coordinates	Reflected across the	New Coordinates
1)	P(5, 4)		P(-5, 4)
2)	S(8, -3)	x-axis	
3)	Q(-6, 7)	y-axis	
4)	P(-4, -2)	y-axis	
5)	T(-5, 9) Y(-11, -15)	x-axis	
6)	S(-12, -3) R(7, 13)	x-axis	
7)	N(-4, 9) K(8, -17)	y-axis	
8)	P(13, -5) E(-6, 15)	x-axis	
9)	S(-18, -13) R(9, 14)	y-axis	
10)	N(-6, 11) K(7, -23)	x-axis	

Name: ______________________ 144

Curriculum Connection
SS7.5

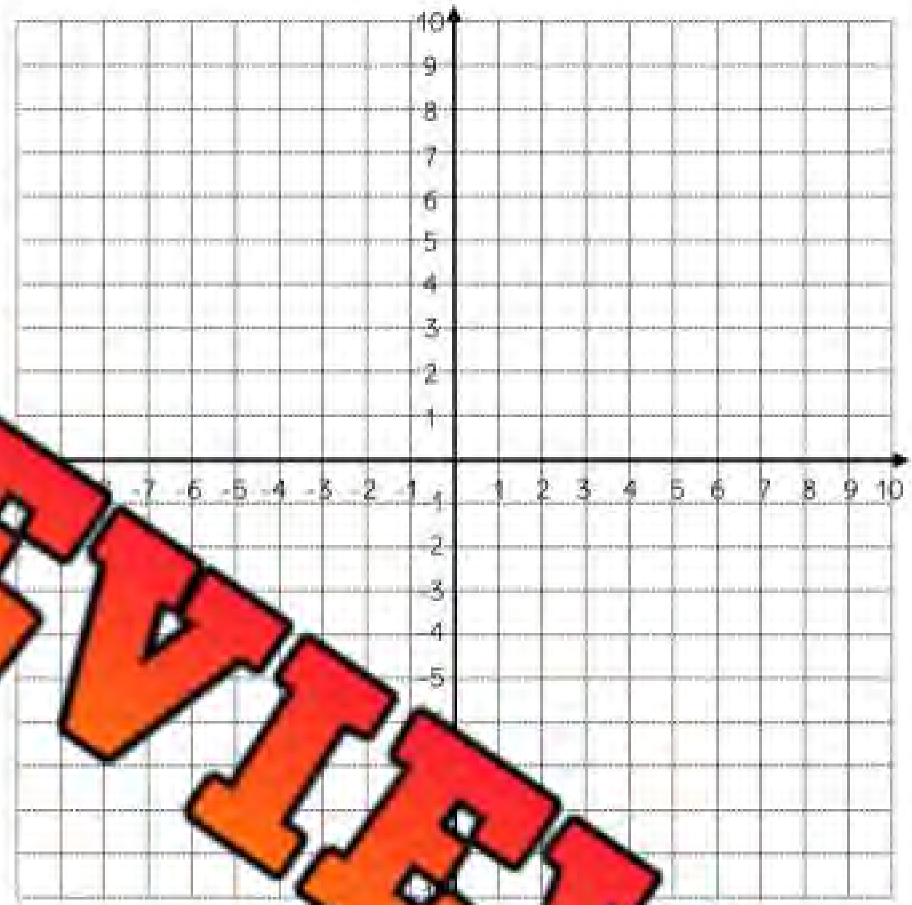
Reflections – Coordinates

Part 1 Draw the shapes using the coordinates provided. Then reflect the shapes

Shape A
P(5,4), Q(3,7), R(3,3)
Reflect over the x-axis
New Coordinates
P(,), Q(,), R(,)

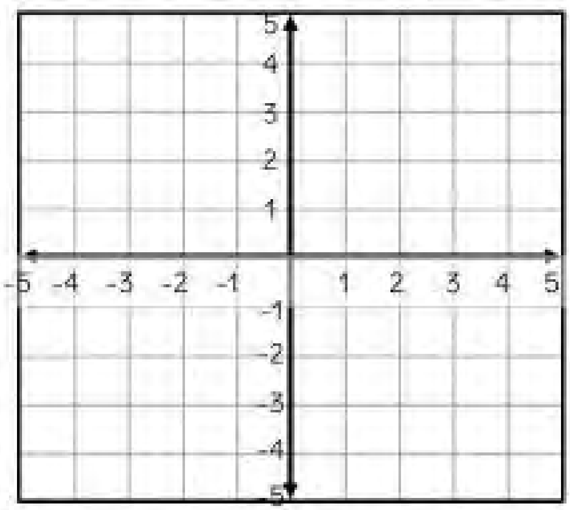
Shape B
F([illegible]), G(-4[illegible]
Reflect o[illegible]
New Coordi[illegible]
F(,), G(,), H([illegible]

Shape C
J(-7,-4), K(-4,-9), L(-3,-3)
Reflect over the y-axis
New Coordinates
J(,), K(,), L(,)

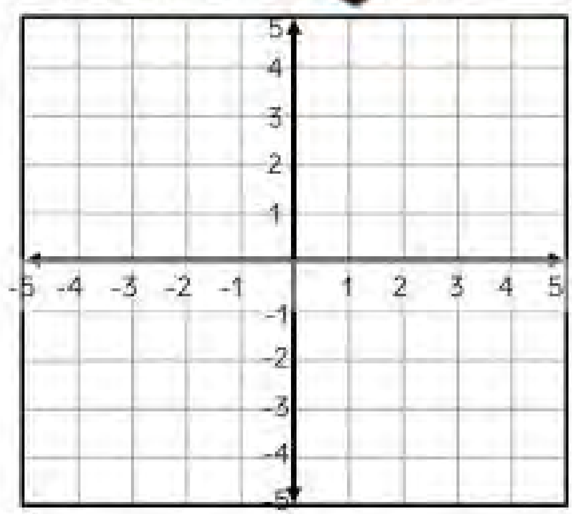


Part 2 Draw your own shape and then perform the reflecti[illegible]

1) Reflection across the y-axis



2) Reflection acros[illegible] line x = -1



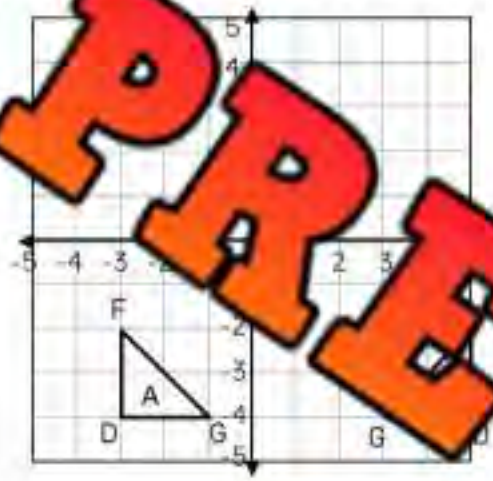
Curriculum Connection
SS7.5

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

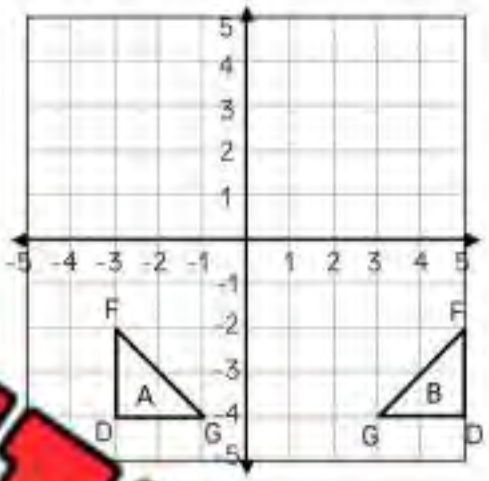
Name: _____

Describe the rule for the reflection line



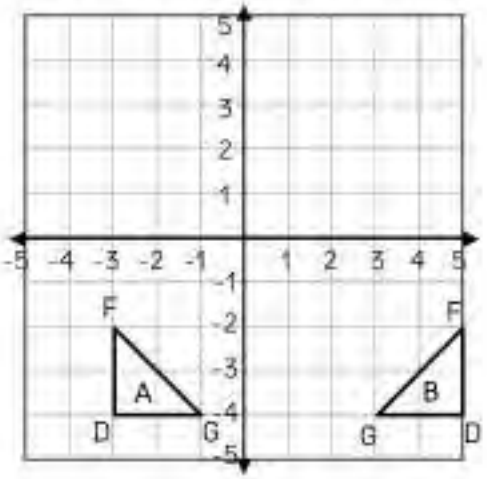
Name: _____

Describe the rule for the reflection line



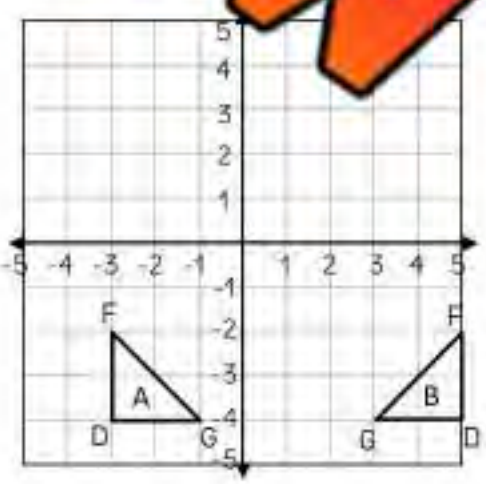
Name: _____

Describe the rule for the reflection line



Name: _____

Describe the rule for the reflection line



Name: _____ 151

Curriculum Connections
8G7.5

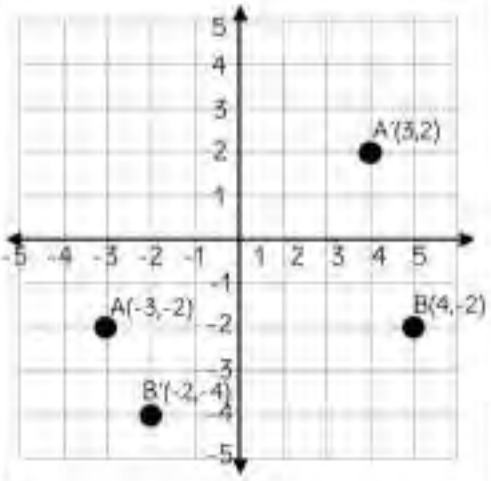
Rotating a Point

Mapping Rules for Rotations

Each point on a shape moves according to the mapping rule.

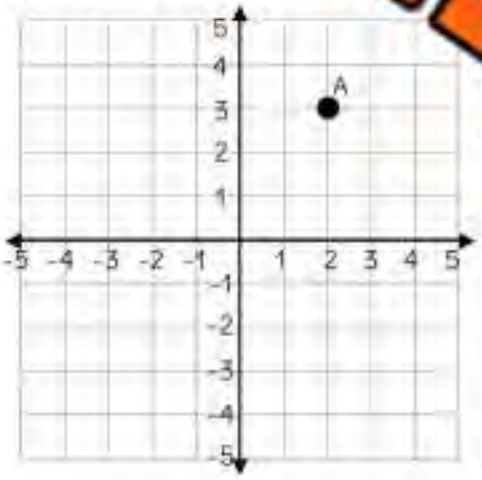
- a shape rotated 90° counterclockwise has a mapping rule of: $(x, y) \rightarrow (-y, x)$.
- a shape rotated 180° counterclockwise has a mapping rule of: $(x, y) \rightarrow (-x, -y)$.
- a shape rotated 270° counterclockwise has a mapping rule of: $(x, y) \rightarrow (y, -x)$.

In the example, A was rotated 180° counter-clockwise
In the example, B was rotated 90° clockwise.



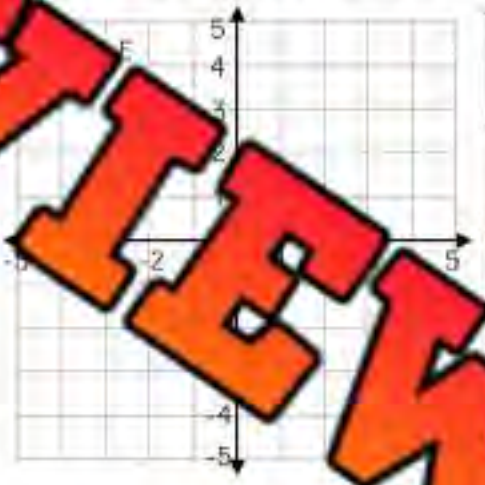
Instructions Plot the new position after rotating around the origin

1) 180° rotation



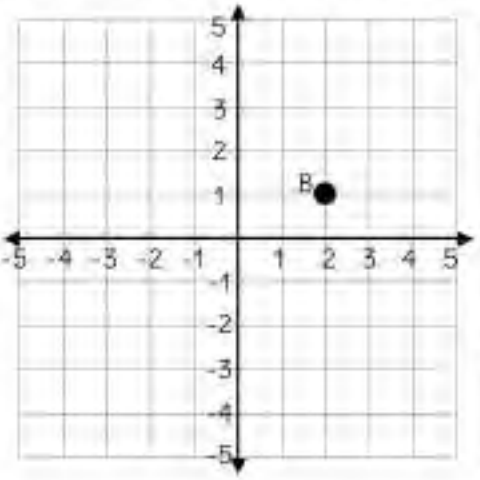
Original Coordinates
A(,)
Rotated Coordinates
A(,)

2) 90° clockwise rotation



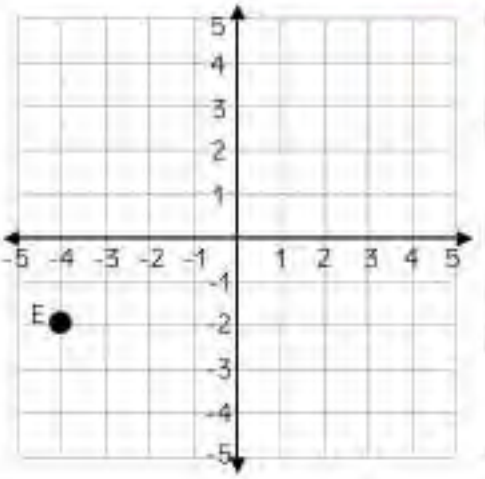
Original Coordinates
E(,)
Rotated Coordinates
(,)

3) 90° counterclockwise rotation



Original Coordinates
B(,)
Rotated Coordinates
B(,)

4) 90° clockwise rotation



Original Coordinates
E(,)
Rotated Coordinates
E(,)

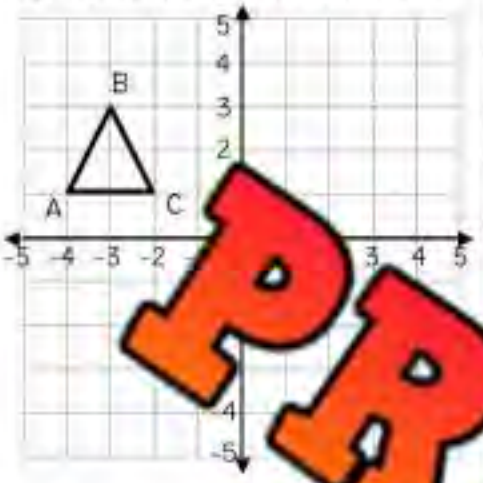
Name: _____ 153

Curriculum Connections
SS7.5

Rotating Shapes

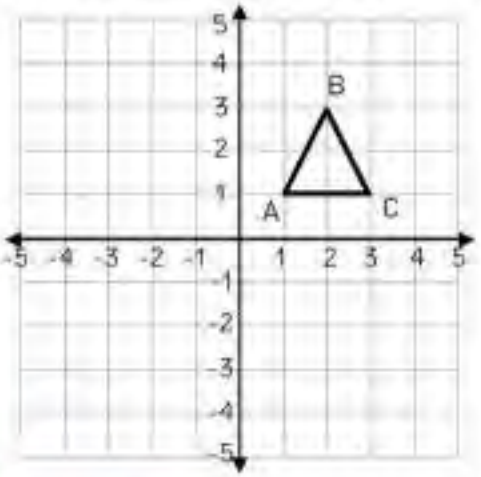
Instructions Graph the new position of each shape after the given rotation

1) 90° clockwise rotation



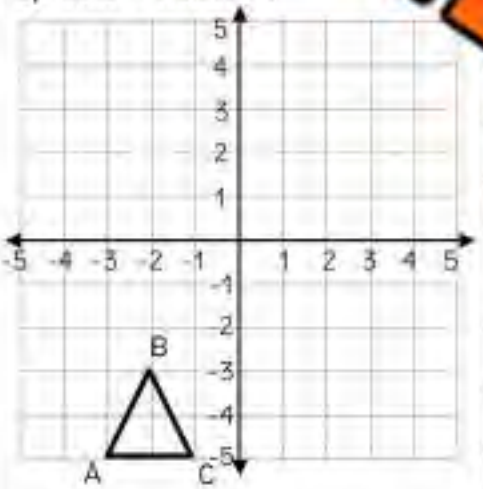
Original Coordinates
A(,)
B(,)
C(,)
Rotated Coordinates
A(,)
B(,)
C(,)

2) 90° counterclockwise rotation



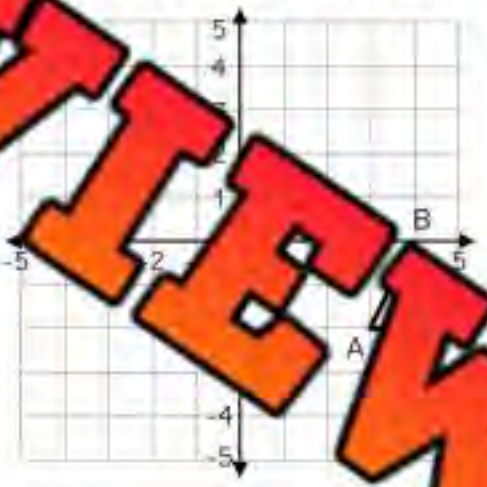
Original Coordinates
A(,)
B(,)
C(,)
Rotated Coordinates
A(,)
B(,)
C(,)

3) 180° rotation



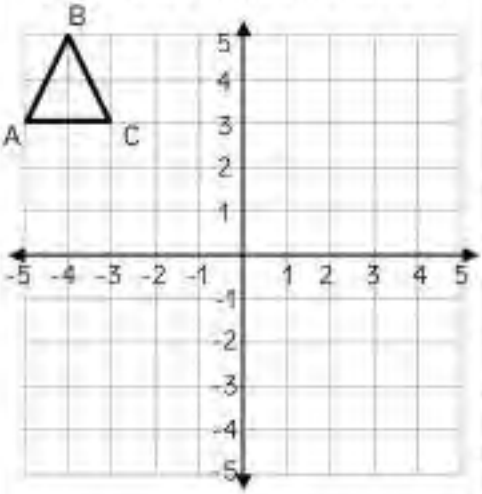
Original Coordinates
A(,)
B(,)
C(,)
Rotated Coordinates
A(,)
B(,)
C(,)

270° clockwise rotation



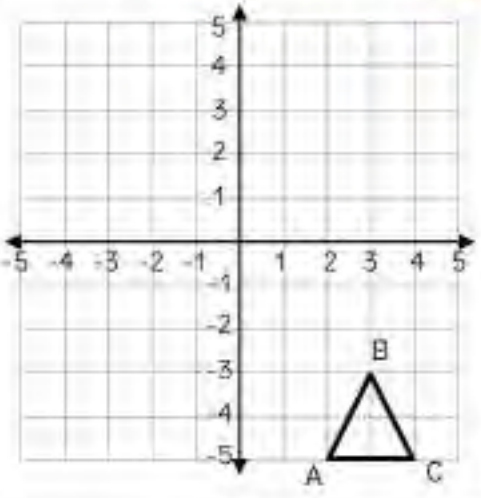
Original Coordinates
A(,)
B(,)
C(,)
Rotated Coordinates
A(,)
B(,)
C(,)

5) 90° clockwise rotation



Original Coordinates
A(,)
B(,)
C(,)
Rotated Coordinates
A(,)
B(,)
C(,)

6) 90° counterclockwise rotation



Original Coordinates
A(,)
B(,)
C(,)
Rotated Coordinates
A(,)
B(,)
C(,)

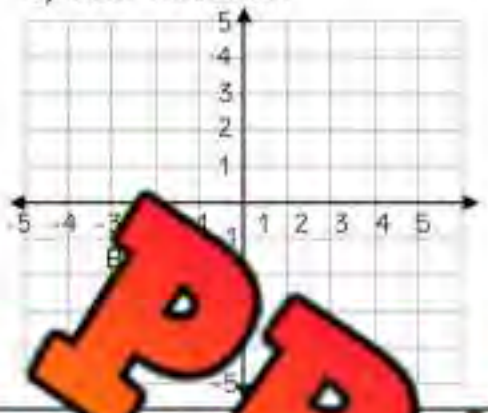
Name: _____ 154

Curriculum Connection: SS7.5

Rotating Shapes

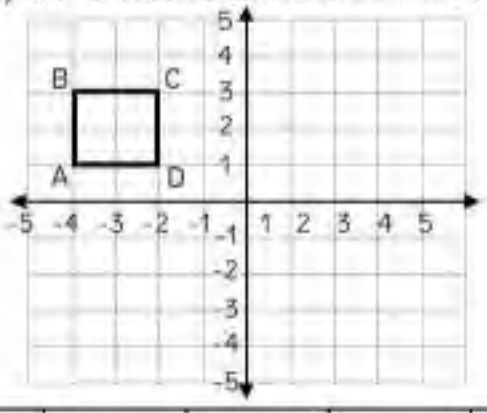
Instructions Graph the new position of each shape after the given rotation

1) 180° rotation



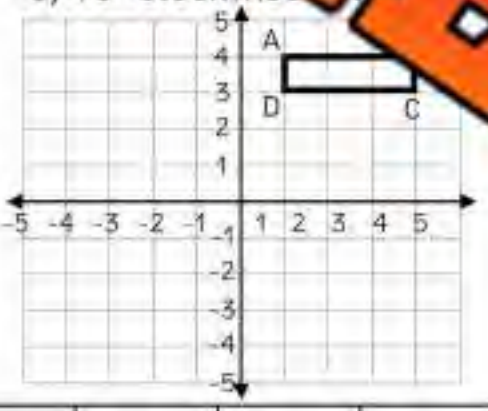
Original	A(,)	B(,)	C(,)	D(,)
Rotated	A(,)	B(,)	C(,)	D(,)

2) 90° counterclockwise rotation



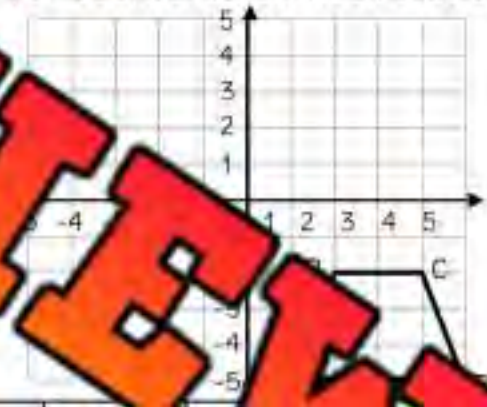
Original	A(,)	B(,)	C(,)	D(,)
Rotated	A(,)	B(,)	C(,)	D(,)

3) 90° clockwise rotation



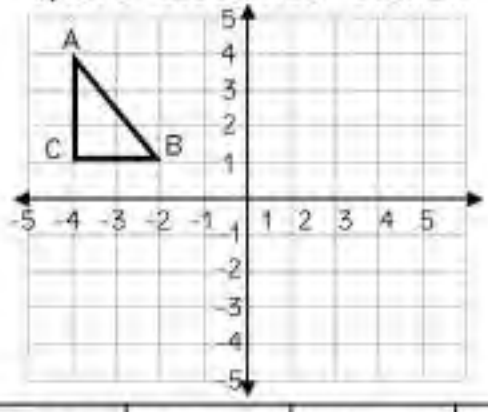
Original	A(,)	B(,)	C(,)	D(,)
Rotated	A(,)	B(,)	C(,)	D(,)

4) 90° counterclockwise rotation



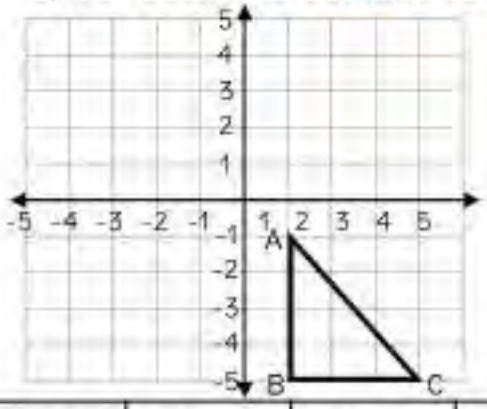
Original	A(,)	B(,)	C(,)	D(,)
Rotated	A(,)	B(,)	C(,)	D(,)

5) 270° clockwise rotation



Original	A(,)	B(,)	C(,)
Rotated	A(,)	B(,)	C(,)

6) 90° counterclockwise rotation



Original	A(,)	B(,)	C(,)
Rotated	A(,)	B(,)	C(,)

Name: _____ 155

Curriculum Connections
SS7.5

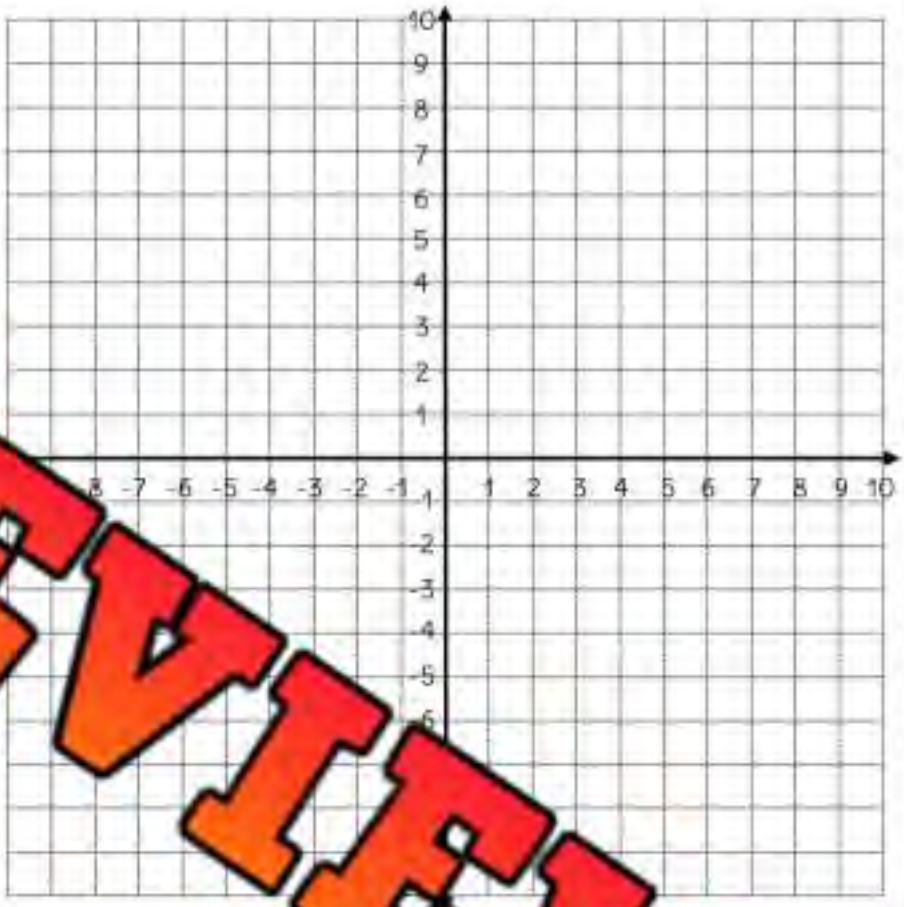
Rotations – Coordinates

Part 1 Draw the shapes using the coordinates provided. Then rotate the shape about the origin

Shape A
P(8,4), Q(5,7), R(4,3)
90° counterclockwise rotation
New Coordinates
P(,),), R(,)

F(G(-9,5
180°
New Coor
F(,), G(,), H(

Shape C
J(-1,-8), K(-4,-6), L(-1,-3)
270° counterclockwise rotation
New Coordinates
J(,), K(,), L(,)



Part 2 Provide the coordinates of each point after the rota

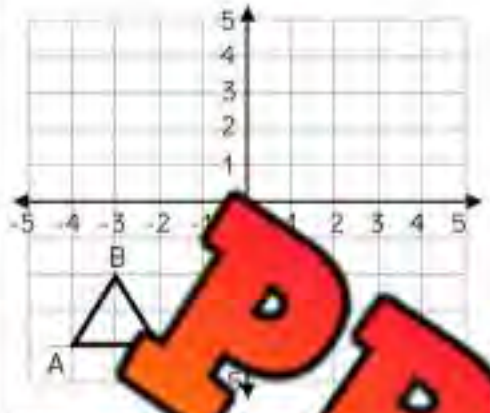
	Original Coordinate	Rotations Across The Line...	New dinates
1)	P(5, 4)	90° counterclockwise rotation	P(-4, 5)
2)	S(3, -6)	180° rotation	
3)	Q(-4, 9)	360° rotation	
4)	P(-7, -11)	270° counterclockwise rotation	
5)	T(-5, 1) Y(-4, -7)	90° clockwise rotation	
6)	S(-7, -5) R(8, 2)	180° rotation	
7)	N(-5, 8) K(4, -9)	270° clockwise rotation	
8)	P(3, -5) E(-6, 2)	180° rotation	

Name: _____ 161

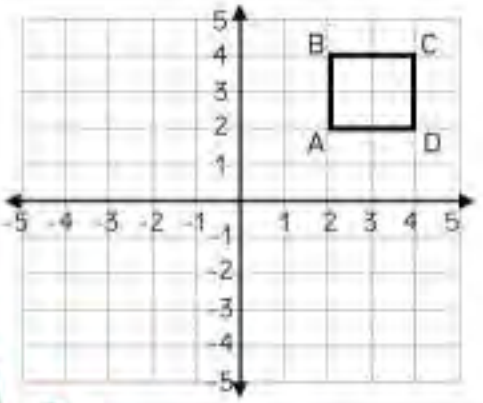
Curriculum Connections
SS7.5

Performing Multiple Transformations

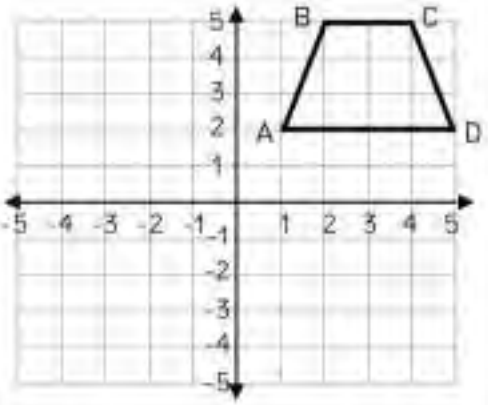
Instructions Complete the following combination of transformations



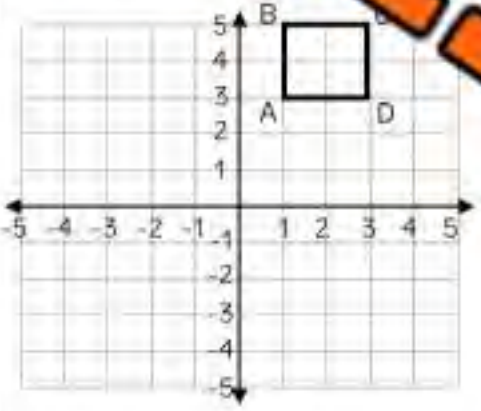
1) 180° rotation, down 3



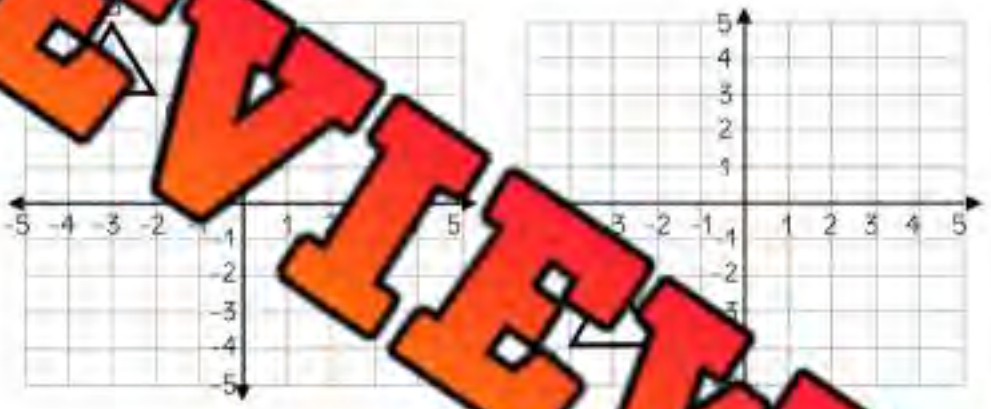
2) ct across the x-axis te left 4



3) Rotate 90° clockwise and reflect across the y-axis

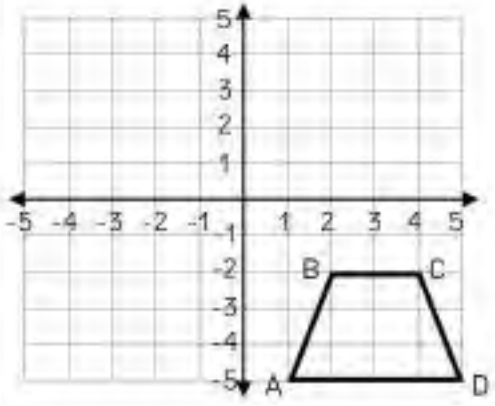


4) 90° counterclockwise rotation, translate right 3

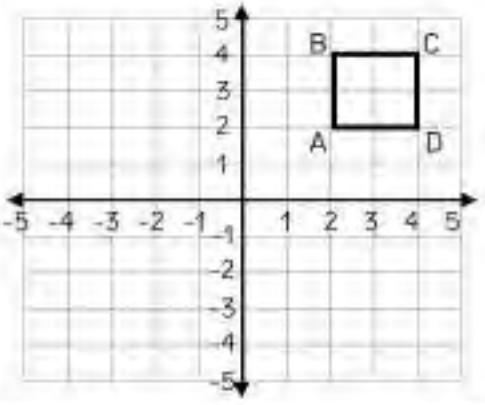


5) Translate down 3 and reflect across the y-axis

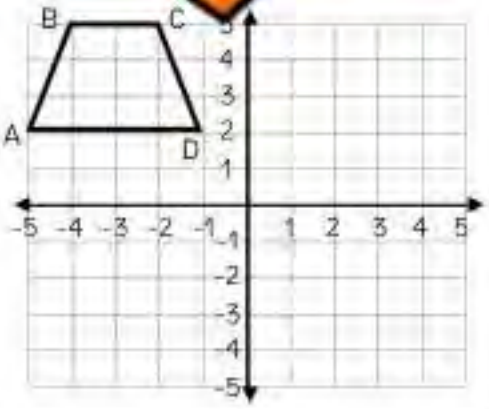
6) -axis up 4



7) 180° rotation, translate down 5



8) Reflect across the x-axis and translate left 6



9) Rotate 90° clockwise and reflect across the x-axis

Name: _____ 162

Math Activity: Transformation Battleship

Objective — What are we learning about?

Students will apply their knowledge of coordinate planes and geometric transformations (translations, reflections, and rotations) in a strategic game of battleship.

Materials — What you will need for the activity.

- Graph
- Pen
- P
- Co ed pen ers

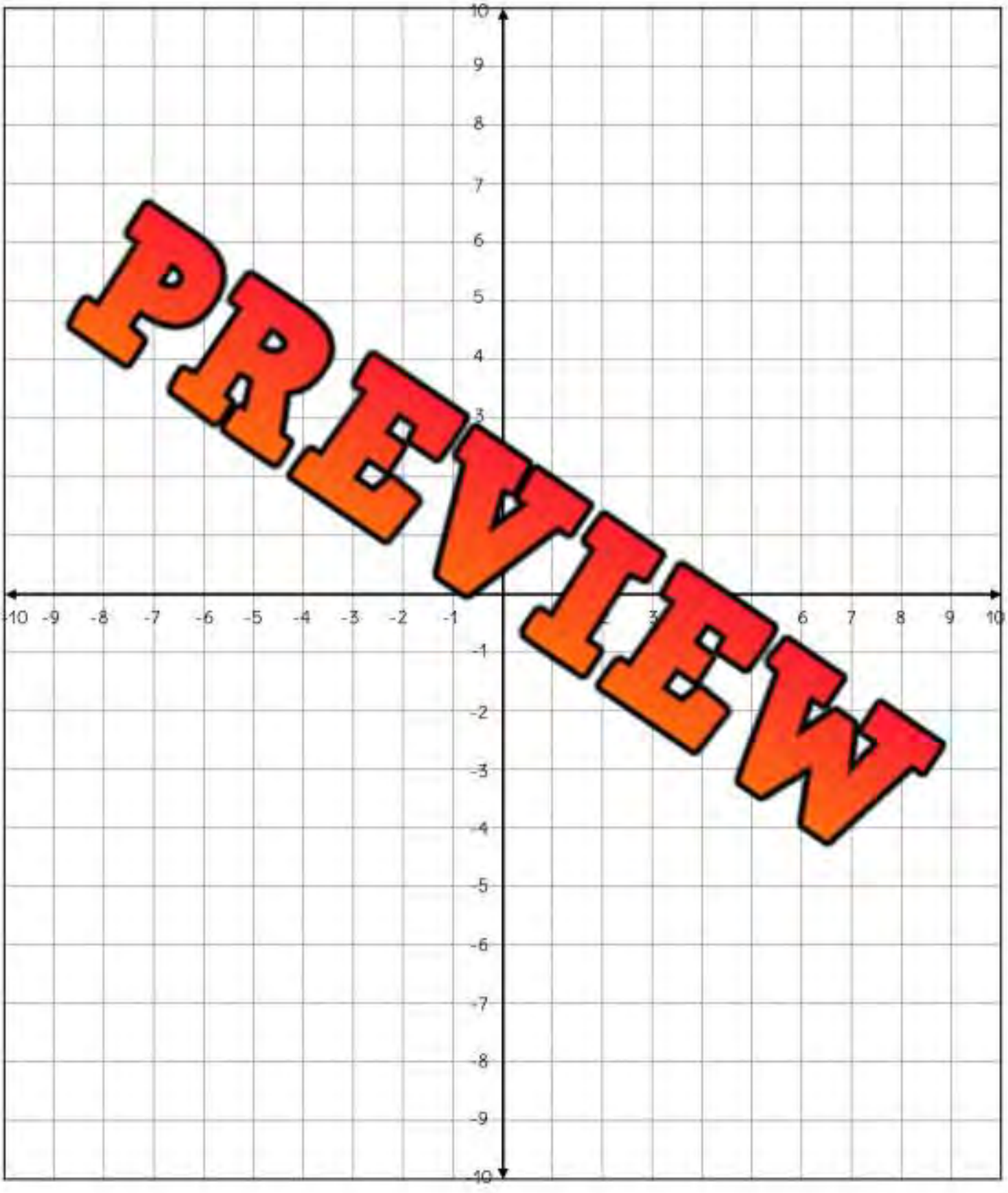
Instructions — wil he activity

1. Divide the students i ach s two pieces of graph paper. One will be used for their own ship th sed to track their opponent's ships. Have students draw a coord e o piece of graph paper, labeling the x-axis and y-axis from -10 to
2. Each student draws 3 ships on their coordi ne. S uld be rectangles. In the end, students should create 3 ships th 15
3. Before starting the game, each student must app of tra ations to each of their 3 ships so that they have 6 in total. Th cho least one translation, one reflection, and one rotation for each sh
4. Students take turns calling out coordinates to "fire" at their op example, a student might call out (3, -2). Their opponent checks thei an plane to see if any part of a ship occupies that coordinate. If a ship is hit, t ponent says "hit" and marks the hit on their tracking graph paper. If there is no ship at that coordinate, the opponent says "miss." To sink a ship, you must call out all four corners (vertexes).
5. Each student tracks their hits and misses on their opponent's ships using the second piece of graph paper. They can use different coloured pencils or markers to indicate hits and misses.
6. The game continues until one student has successfully hit all the points of their opponent's ships. That student is declared the winner.
7. After the game, have a discussion about the transformations used. Ask students to share how they transformed their ships and what strategies they used to place and find the ships.

Name: _____ 163

Curriculum Connection
S57.5

Grid Paper | Cartesian Plane



Name: _____ 167

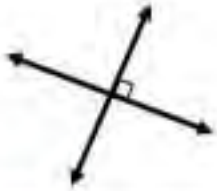
Curriculum Connection TQ

Unit Test - Geometric Constructions & Transformations

Part 1 Construct a ray, line, point, and line segment. Label each.

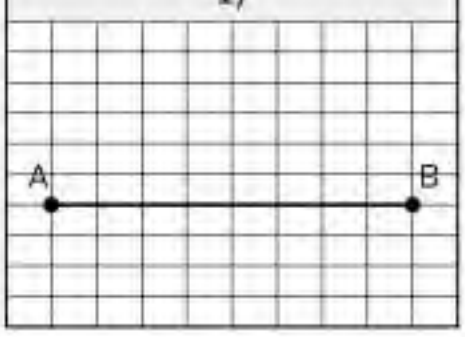
1)	2)	3)	4)
Line Seg	Point C	Line – QR	Ray - MN

Part 2 Lab s parallel, perpendicular, or intersecting

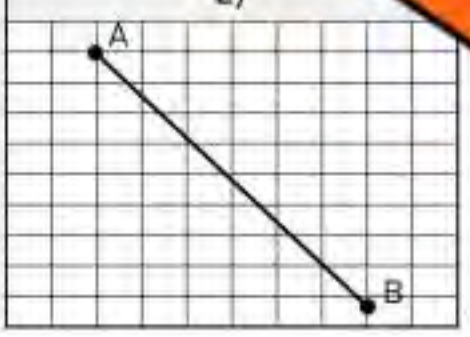
1)	3)	4)
		

Part 3 Construct perpendicular lines ine $\overline{AB}$

1)



2)



3)

Part 4 Construct perpendicular lines of the line segments $\overline{AB}$

1)

2)

Curriculum Connection
TQ

Part 5 Construct parallel lines of the line segment $\overline{AB}$

1)

2)

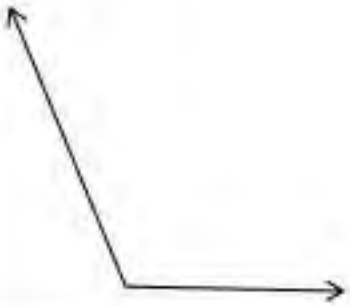
Part 6 Use a compass to construct a perpendicular bisector of the line segment $\overline{AB}$

1)

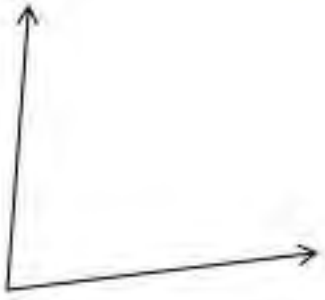
2)

Part 7 Construct an angle bisector of the angle below using a compass

1)



2)



Curriculum Connection
TQ

Part 8 Write which quadrant the points would be found in

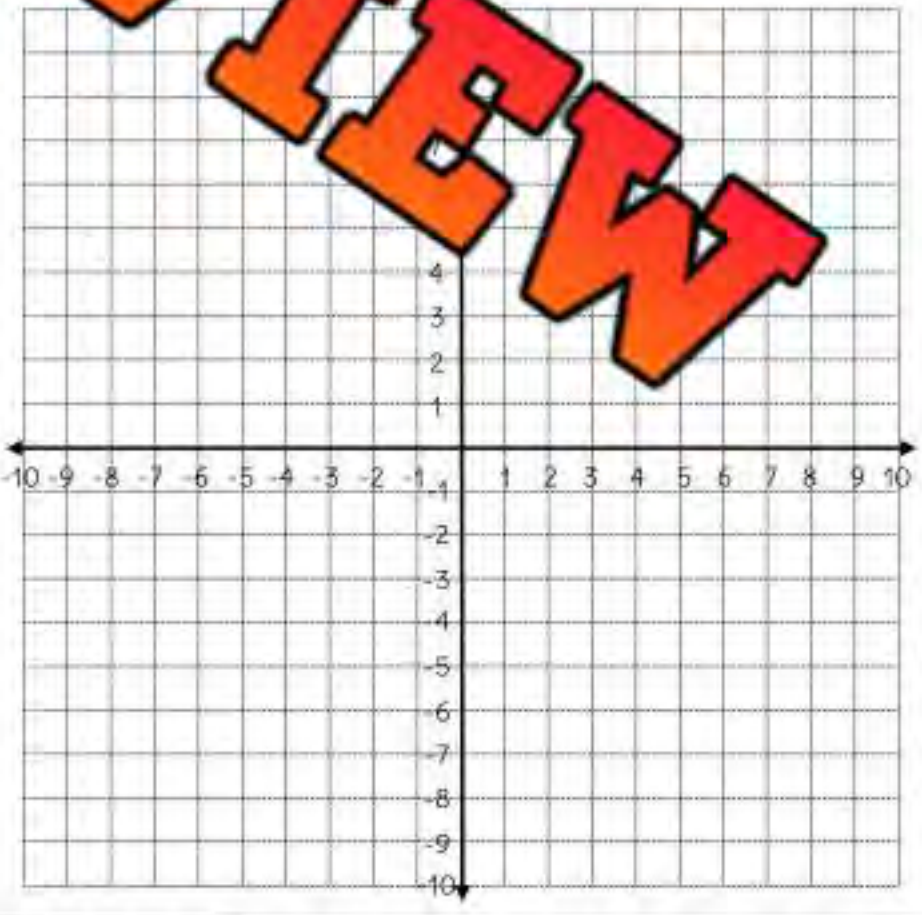
Coordinates (x, y)	**Quadrant (I, II, III, IV)**
(4, -3)	
(-5, -4)	
(2, 5)	
(-2, 3)	

Part 9 ich quadrant number is associated with the descriptions below

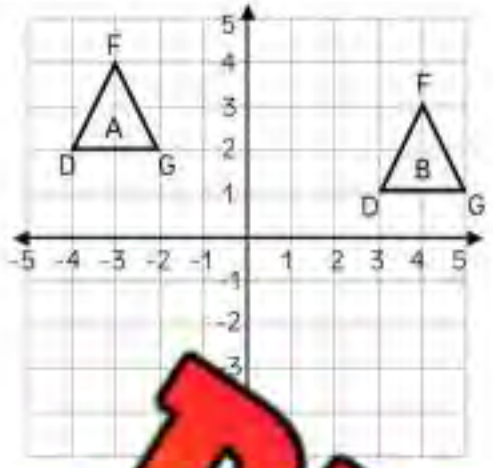
	Description	**Quadrant**
1)	ositive	
2)	Both neg	
3)	An x positive and	
4)	An x negative value tive v	

Part 10 Plot the points on the cartesian plane

Letter	**Coordinates** (x, y)
A	(-3, 5)
B	(-8, 6)
C	(9, -4)
D	(7, -3)
E	(-2, -1)
F	(-7, 3)
G	(8, 10)
H	(-4, 1)
I	(2, -6)
J	(0, -5)



Part 11 — 1) Fill in the coordinates 2) Describe the translation 3) Translate shape C



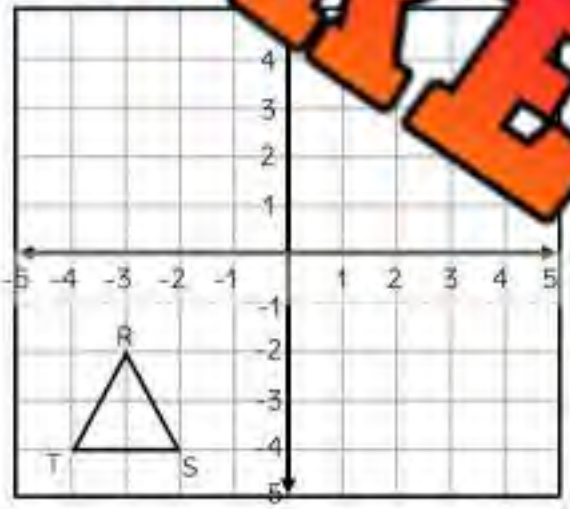
Coordinates A	Coordinates B

Describe the translation

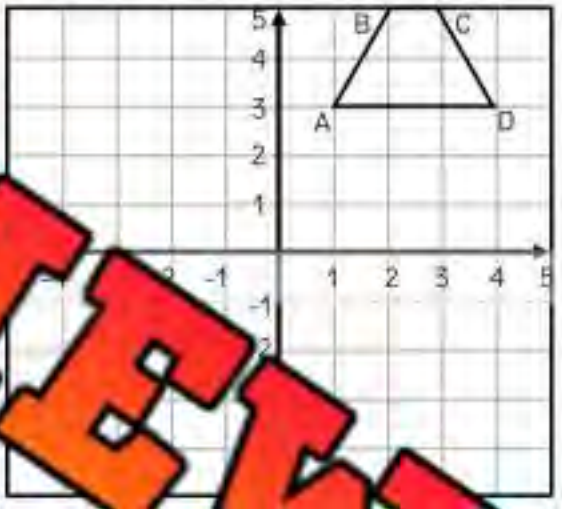
Translate Shape C from Shape B Left 3 units and down 4 units	Coordinates C

Part 12 — Graph the new position of each shape after the given reflection

1) Reflection across the line y =

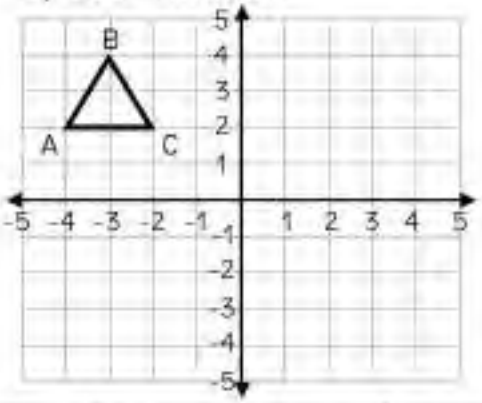


2) Reflection across the line x = 1



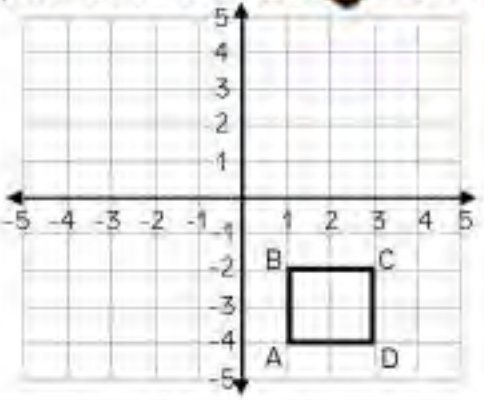
Part 13 — Graph the new position of each shape after the given

1) 180° rotation



Original	A(,)	B(,)	C(,)
Rotated	A(,)	B(,)	C(,)

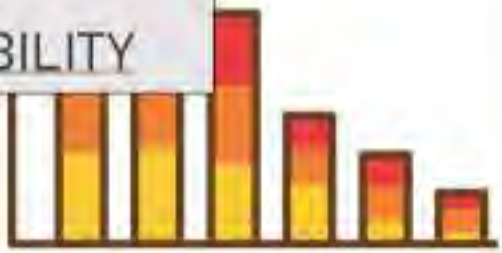
2) 90° counterclockwise rotation



Original	A(,)	B(,)	C(,)	D(,)
Rotated	A(,)	B(,)	C(,)	D(,)

Grade 7

STATISTICS AND PROBABILITY



	Curriculum Expectations	Pages
S	Demonstrate an understanding of the	
SP7.2	Demonstrate an understanding of circle graphs.	29 – 103
SP7.3	Demonstrate an understanding of theoretical and experimental probabilities for two independent events where the combined sample space has 36 or fewer elements.	108 – 131

Name: _____ 5

Curriculum Connection SP7.1

MEAN

When we calculate the mean, we are finding the average of a set of numbers.

Example: Three brothers named Josh, Cameron, and Morgan went 'trick or treating' on Halloween. Josh got 13 candies, Cameron got 11, and Morgan got 9. At the end of the night, their mother told them to split the candy equally. So, they decided to put all the candy in the middle and then divide them equally amongst themselves.

- They had 13 + 11 + 9 = 33 candies and divided 33 ÷ 3 kids = 11 candies each.

Josh	Cameron	Morgan		Total		Josh	Cameron	Morgan
13 Candy Bag		9 Candy Bag	=	33 Candy Bag	=	11 Candy Bag	11 Candy Bag	11 Candy Bag

Mean = 11

Questions Its [illegible] total up the candy and then fair share it

Claire	Katie	Ashley		Total		Claire	Katie	Ashley
12 Candy Bag	25 Candy Bag	Candy		Ca	=	____ Candy Bag	____ Candy Bag	____ Candy Bag

Mean

Emma	Olivia	Ava		Total		Em		Ava
67 Candy Bag	58 Candy Bag	25 Candy Bag	=	____ Candy Bag	=		Ca	____ Candy Bag

Mean = _____

Mia	Harper	Charlotte		Total		Mia	Harpe	Charlotte
91 Candy Bag	68 Candy Bag	66 Candy Bag	=	____ Candy Bag	=	____ Candy Bag	____ Candy Bag	____ Candy Bag

Mean = _____

Liam	Noah	William		Total		Liam	Noah	William
42 Candy Bag	98 Candy Bag	106 Candy Bag	=	____ Candy Bag	=	____ Candy Bag	____ Candy Bag	____ Candy Bag

Mean = _____

Name: _____ 6

Curriculum Connection SP7.1

MEAN

Mean = the average in a set of data

Step 1: Add up the numbers in the data set

Step 2: Divide the sum by the amount of numbers in the set.

Example:

Data set: 5, 3, 8, 5

Step 1: 5 + 6 + 8 + 5 = 24

Step 2: 24 ÷ 4 = (6)

Part 1 — mean for each data set below

	Data	Total – Add Numbers	Mean
1)	13, 18, 23		
2)	49, 75, 35		
3)	17, 26, 13, 44		
4)	3.5, 4.8, 5.2		
5)	15, 84, 53, 48, 40, 48		
6)	53, 67, 45, 19		
7)	71, 84, 98, 103		
8)	117, 125, 132, 154		
9)	35, 45, 27, 33		
10)	11.6, 18.2, 23.8, 44.4		

Part 2 — Answer the word problems below

1) Jason has completed 5 math tests this year. His marks as percents are: 81%, 72%, 93%, 68%, and 86%. What was his average mark?

2) Logan bought 6 hockey cards for the following prices: $13, $18, $32, $9, $44 and $52. What was the average price for one hockey card?

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

Find the mean of the data sets below.

Data Set	Add Numbers	Mean
192.5, 20 218.7, 21		
221, 23 239		

Answer th ord pr

Ben's scores in h deo g over 5 sessions we 375, 1450, and 1325. What i ver per session?

Name: _____

Find the mean of the data sets below.

Data Set	Add Numbers	Mean
192.5, 204.3, 218.7, 210.8		
221, 234, 248, 239, 255, 261		

Answer the word problem below.

Ben's scores in his favourite video game over 5 sessions were: 1250, 1375, 1100, 1450, and 1325. What is his average score per session?

Name: _____

Find the mean of the data sets below.

Data Set	Add Numbers	Mean
192.5, 204.3, 218.7, 210.8		
221, 234, 248, 239, 255, 261		

Answer the word problem below.

Ben's scores in his favourite video game over 5 sessions were: 1250, 1375, 1100, 1450, and 1325. What is his average score per session?

N

Find the e da below.

Data Set	Ad
192.5, 204.3, 218.7, 210.8	
221, 234, 248, 239, 255, 261	

Answer the word problem below.

Ben's scores in his favourite video game over 5 sessions were: 1250, 1375, 1100, 1450, and 1325. What is his average score per session?

Name: _____ 8

Curriculum Connection SP2.1

MODE

Mode: The number that occurs the most in a data set. The mode is used to calculate data in nominal data sets.

Step 1: Order the numbers from least to greatest
Step 2: Find the number or numbers that show up the most – You can have zero mode or more than one mode.

Example: 5, 3, 7, 3, 9, 11
3, 3, 5, 7, 9, 11 **Answer:** 3

		Ordered List	Mode
1)	13, 11, 16,		
2)	22, 25, 23, 2		
3)	37, 49, 35, 37, 49, 35,		
4)	65, 54, 58, 58, 54, 65, 54, 58		
5)	79, 72, 75, 76, 72, 79, 75, 79		
6)	91, 95, 94, 90, 91, 94, 95, 97		
7)	121, 102, 112, 114, 104, 117		

1) Justin tracks what time he goes to bed at for 15 days. His bedtimes are ...en below:

7, 11, 8, 8, 7, 9, 10, 10, 7, 8, 9, 9, 8, 11, 9

What time did Justin go to bed at most often in the 15 days? _____

2) Adults were asked to choose a number from the food menu. The results are represented in the data set. What is the mode?

4, 1, 2, 4, 2, 2, 4, 1, 2, 1, 4, 2, 3, 1, 2, 2, 3, 2, 3, 4, 1, 2, 3, 1, 2, 2, 1, 3, 3, 4, 1

1	Fish
2	Chicken
3	Steak
4	Vegetables

Which food choice was most popular? _____

Name: _____ 9

Curriculum Connection SP7.1

MEDIAN

Median: The median is the middle number in a data set.

Step 1: put numbers in order from smallest to largest
Step 2: circle the number in the middle.

*** If there is an even amount of numbers in the data set, add the two numbers in the middle together and divide by 2. This is the median.

Part 1 Find the median of the data sets below

		Ordered List	Median
1)	8, 12	4, 7, (8, 8) 12, 15	8 + 8 = 16 16 ÷ 2 = 8
2)	15, 17, , 16		
3)	27, 20, 24, 28, 26,		
4)	58, 64, 42, 57, 68, 48		
5)	84, 95, 54, 68, 92, 75, 86, 95		
6)	105, 125, 108, 152, 128, 135, 133		
7)	10.2, 10.8, 12.3, 11.8, 12.5		

Part 2 Answer the word problems below

1) The average temperatures across all 13 provinces and territories are listed below:
11°C, 9°C, 8°C, 9°C, 5°C, 7°C, 2°C, 3°C, 9°C, 10°C, 8°C, 8°C, 6°C

What is the median temperature in Canada? _____

2) Ten students are asked how many hours a day they spend on their phones. The results are as follows: 4, 6, 5, 3, 1, 7, 5, 4, 6, 8

What is the median number of hours the students spend on their phones? _____

Name: _____ 10

Curriculum Connection SP7.1

RANGE

Range: The range is the difference between the biggest and smallest number in a data set.

Step 1: Find the largest number and the smallest number.
Step 2: Subtract the smallest number from the largest number

Example: 13, 74, 37, 18, 32
Step 1: 13 = smallest 74 = largest
Step 2: 74 – 13 = 61

Part 1

Find the range of the data sets below

	Data	Calculations	Range
1)	8, 1[illegible]	15 – 4 = 11	11
2)	61, 75, 81, 9[illegible] 62		
3)	85, 95, 81, 106, 132,		
4)	205, 135, 178, 171, 164, 199		
5)	234, 241, 258, 226, 231, 247		
6)	318, 365, 343, 352, 368, 376		
7)	433, 418, 427, 406, 448, 439		
8)	518, 475, 428, 596, 604, 410		

Part 2

Find the range in the word problems below

1. Robin collects strawberries for her summer job. She records how many strawberries she collects each day for a week. What is the range of strawberries she collects?

471, 528, 374, 486, 598, 446, 641

2. Steven records how many minutes of screen time he uses on his phone each week. His results for 6 weeks are listed below. What is the range?

247, 311, 485, 375, 201, 399

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

Find the range of the data sets below.

Data Set	Calculations	Range
235, 298, 1 276, 310, 2		
725, 643 698,		

Find the ra e in th em b low.

Emma weighs th she p from her garden ove . She the weight in grams eac

450, 520, 480, 490, 510,

Name: _____

Find the range of the data sets below.

Data Set	Calculations	Range
235, 298, 190, 276, 310, 289		
725, 643, 812, 698, 756, 670		

Find the range in the word problem below.

Emma weighs the vegetables she picks from her garden over 6 days. She records the weight in grams each day as follows:

450, 520, 480, 490, 510, 470

Name: _____

Find the range of the data sets below.

Data Set	Calculations	Range
235, 298, 190, 276, 310, 289		
725, 643, 812, 698, 756, 670		

Find the range in the word problem below.

Emma weighs the vegetables she picks from her garden over 6 days. She records the weight in grams each day as follows:

450, 520, 480, 490, 510, 470

Na _____

Find the da below.

Data Set	Calc	
235, 298, 190, 276, 310, 289		
725, 643, 812, 698, 756, 670		

Find the range in the word problem below.

Emma weighs the vegetables she picks from her garden over 6 days. She records the weight in grams each day as follows:

450, 520, 480, 490, 510, 470

Name: _____ 13

Curriculum Connection: SP1.1

Estimating the Mean

The mean is the average number in a data set. When we understand what the mean of a data set is, we can estimate the mean easily without doing any calculations.

For example, in the data set: 22, 18, 16, 25, 20, we can estimate that the mean will be approximately 20, without doing any calculations. This is because the mean has to be between 16 and 25. We can also see that there are two numbers above 20, and two numbers below 20.

Part 1

1. ...mate the mean by circling one of the options
2. ...your answer by calculating the mean

	Data Set	Options			
		1	2	3	4
1)	5, 5, 7, 7, 6	4	5	6	7
2)	22, 25, 24, 23, 26	22	23	24	25
3)	13, 18, 16, 14, 19	14	16	18	19
4)	22, 19, 25, 15, 14	16	25	23	19
5)	64, 68, 57, 59, 62		66	67	62
6)	74, 88, 65, 81, 62			82	64
7)	83, 99, 72, 76, 85			78	89
8)	93, 95, 85, 105, 87				93
9)	121, 102, 133, 125, 144				
10)	152, 168, 158, 148, 134	152			139

Part 2 Answer the word problems below by estimating

1) Meredith bought lunch every day from Monday to Friday last week. She spent: $9, $5, $11, $12, and $8. Approximately how much did lunch cost her per day?

2) Michelle sells popcorn at a festival. She worked for 6 hours, selling the following dollar amounts each hour: $22, $32, $45, $27, $38, and $46. Approximately how much did she earn each hour?

Name: _____ 14

Curriculum Connection SP7.1

Finding Missing Data Point Using Mean

We can determine the missing number in a series if we know the mean by using the following formula:

$$Mean = \frac{Sum\ of\ given\ numbers + x\ (unknown\ number)}{total\ numbers}$$

Example: 25, 27, ?, 30 Mean = 26

Steps

1) Multiply the number of total numbers you have by the mean (26 x 4 = 104)
2) Add the numbers you know (25 + 27 + 30 = 82)
3) Find the difference (subtract) between 104 and 82 (104 – 82 = 22) – Answer = 22

Question: Fill in the table below to find the missing data point

	Data Set	Mean	Calculations	Missing Data Point
Ex)	9, 16, ?, 22, 12, 19	15	1) 2) + 19 = 78 3) = 12	12
1)	12, 18, 6, ?, 15	17		
2)	48, ?, 32, 45, 30, 21	32		
3)	61, 35, 51, 23, ?	45		
4)	72, 41, 32, ?, 68, 65	57		
5)	91, 85, 60, 57, ?, 52	75		

Name: _____ 15

Curriculum Connection
SP7.1

Finding Missing Data Point Using Mean

Questions | Answer the word problems below

1) Leah has completed 5 assignments in math this year. She has the following marks (written as percentages) – 79%, 89%, 68%, 77%, and 78%.

In order to get an A- on her report card, she needs an 80 average or more. She has one more a[illegible]nment left. What mark does she need to achieve an 80% average?

2) Tyler slept an avera[illegible] [illegible]st week. He slept for 5.5 hours on both Monday and Tuesday. [illegible] for [illegible] Thursday and 8.5 hours on Friday and Saturday. On Sunda[illegible] sle[illegible] 9 hours! How long did he sleep on Wednesday?

3) Andre De Grasse was practicing his 100m race. He ran 10 full spee[illegible]es last week. His average time was 10.2 seconds. His times have been presented in the table, but he is missing his time for race 7.

Race	1	2	3	4	5	6	7	8	9	10
Time	10.1	9.7	9.8	10.3	10.9	9.8		9.9	10.8	10.9

What was his time for race number 7?

Name: _____ 16

Curriculum Connection SP7.1

Task Cards: Mean Detective

Objective What are we learning about?

To help students understand and solve for a missing data point in a set by using the mean (average).

Materials What you will need for the activity.

- 24 tas
- Se for answers
- Pen

Instructions He will the activity

1. Introduce the concepts c the
2. Organize the students into pairs and each h their sets of task cards.
3. Give each pair an answer recording sheet to wn th nses.
4. Encourage teamwork by having students collab r p finding solutions.
5. Allow students to select any task card to begin with, emphasizing complete the cards in any order they prefer.
6. Instruct students to record the letter of their chosen answer (A, B, or C) on their answer sheet beside the task card's number.
7. Consider using a timer to create a dynamic challenge, adjusting the duration to fit the lesson's objectives and complexity.
8. After the activity, review the answers collectively, discussing any challenging questions and strategies used to solve them.
9. Have students reflect on the activity, sharing the methods they applied and obstacles they overcame.

Name: _____ 17

Curriculum Connection: SP7.1

Task Cards | Cut out the task cards below

Card 1:
Determine the missing number in the series: 72, ?, 68, 75, 70, 69, if the mean is 71.

a) 73
b) 67
c) 72

Card 2:
The following test scores are missing one score: 85, 92, ?, 77, 81. If the mean is 84, what is the missing score?

a) 86
b) 82
c) 85

Card 3:
Aaro[illegible] following in ba[illegible] 16. If his aver[illegible] score [illegible] did he score in [illegible] ga[illegible]

a)
b) 18
c) 15

Card 4:
A group of students spent the following hours studying: 4.5, 5, 6, 7, ?, 5.5. The average time is 5.8 hours. What is the missing time?

a) 6
b) 5
c) 7

Card 5:
A bakery sold 45, 38, 30, 41, ?, 50 pastries over six days, and the mean number of pastries sold was 42. Find the missing sales.

a) 48
b) 40
c) 43

Card 6:
A st[illegible]res in percentiles w[illegible]%, [illegible]%, ?, 88%. If the [illegible]s 90[illegible] the missing [illegible]ore?

[illegible]8%
b) 90
c) 92

Card 7:
A factory produces an average of 8.4 tonnes of steel per day. On Monday, it produced 8.9 tonnes, on Tuesday 8.3 tonnes, on Wednesday 8.5 tonnes, and on Thursday 7.9 tonnes. How much steel was produced on Friday?

a) 8.6 tonnes
b) 9.0 tonnes
c) 8.4 tonnes

Card 8:
Find the missing number in the series: 4.5, ?, 6.0, 7.2, 4.8, 5.6, if the mean is 5.5.

a) 4.7
b) 6.3
c) 4.9

Task Cards | Cut out the task cards below

Card 17:
77%, 80%, 84%, 82%, ?, 75%. If the average is 80%, what is the missing percentage?

a) 78%
b) 79%
c) 82%

Card 18:
A student studied for 6.5, 5, 7, ?, and 6 hours in a week. If the average time studied was 6 hours, how many hours did the student study on the missing day?

a) 5.5
b) 7
c) 6.5

Card 19:
5.5, 6.8, 7.4, 6 [illegible] f 6.5. Find the [illegible] numb

a) [illegible]
b) 5.7
c) 6.2

Card 20:
The mean age of a group of 6 people is 25 years. Their ages are 22, 28, 23, 27, ?, and 24. What is the missing age?

a) 26
b) 25
c) 24

Card 21:
A family spent $350, $420, $410, and $? on groceries over four weeks. If the average weekly spending was $400, how much did they spend on the missing week?

a) $370
b) $380
c) $420

Card 22:
[illegible] need[illegible] age of 78% to pass [illegible] 79%, 80%, 77%, an[illegible] ave[illegible] exactly 78%, what [illegible]?

a) 7[illegible]
b) 76%
c) 77%

Card 23:
A soccer team won their games by 3, 5, ?, 2, and 4 points. If their average points won is 3.5, how many points did they win by in the missing game?

a) 4 points
b) 3.5 points
c) 5 points

Card 24:
In a race, 5 runners had the following times in minutes: 12.5, 11.8, ?, 12.9, 11.5, with an average time of 12.1 minutes. What was the missing time?

a) 12.0 min
b) 11.8 min
c) 12.4 min

Name: _____ 22

Curriculum Connection SP1.1

Outliers in Data Sets

An **outlier** in a data set are values that are significantly different from other measures. They may mean that something has gone wrong in the data collection, or they may represent a valid measure that needs further explanation.

Part 1 Circle any outliers in the data sets below

1)	7, 8, 9, 5, 8, 5, 10, 42, 9	5)	1524, 1531, 1585, 1563, 1284
2)	12, 15, [illegible] 84, 25, 72	6)	102.2, 10.5, 103.9, 104.6, 102.5, 62.1
3)	85, 10[illegible] 105	7)	2751, 2853, 2623, 3547, 2345, 1258
4)	6[illegible]	8)	421, 521, 605, 2021, 4452, 506, 572

Part 2 [illegible] below

1) Jonah practiced his [illegible] to the stop watches that automatically record his times on a comp[illegible] were: 55, 49, 51, 52, 132, and 48.

a) Which of his scores was an [illegible]?

b) What might have caused the outlier

2) Alex looked at how many steps he took last we[illegible] nu[illegible] he took over the last 7 days is recorded below:

10425, 12325, 8542, 9875, 2012, 19[illegible]

a) Which of the values are outliers?

b) Explain why he may have an outlier of 2012 steps?

c) Why might Alex have an outlier of 19252 steps?

3) Kylie has a business where she sells cakes. She recorded her last 15 days of cake sales.

8, 7, 9, 12, 6, 25, 7, 9, 8, 6, 10, 0, 11, 12, 8

a) Which of the values are outliers?

b) Explain what could have led to her selling 25 cakes on day 6.

c) Explain what could have led to her selling 0 cakes on day 11.

Name: _____ 23

Curriculum Connection SP7.1

Calculating Mean - Outliers

Outliers have a big impact on the mean of a data set. For example, if John records his last 5 long jumps and jumps the following distances:

6.5m, 6.8m, 1.5m, 6.2m, 6.1m

John explains after that on his third jump, he slipped and didn't perform a full jump. The data set has an outlier that doesn't reflect John's ability to jump. We can see the difference when we use an outlier in our calculation of the mean

Mean With O 42m
Mean With m

Part 1 — Cal ean using the outlier and without the outlier

	Data S	ith Outlier(s)	Mean Without Outlier(s)
1)	9, 7, 5, 25, 8, 6		
2)	21, 48, 24, 20, 26, 22		
3)	12.2, 15.6, 14.3, 28.4, 16.1		
4)	53, 105, 61, 11, 65, 58, 59		
5)	51, 81, 84, 83, 82, 84, 113		

Part 2 — Answer the word problem below

1) Explain what happened in questions 4 and 5. Why was the mean sim e the outliers?

2) Marla's teacher is deciding between an A- and B+. An A- is between 80-84 and a B+ is between 77-79. Marla received the following marks:

78, 85, 81, 82, 77, 88, 52, 84

Should the teacher give Marla an A- or B+? Explain using outliers – do calculations!

Name: _____ 24

Curriculum Connection SP7.1

Calculating Mode and Median - Outliers

Part 1 Calculate the mode using the outlier(s) and without the outlier(s)

	Data Set	Mode With Outlier(s)	Mode Without Outlier(s)
1)	11, 15, 12, 16, 45, 15, 12, 15, 12, 15		
2)	45, 41, 46, 21, 45, 46, 88, 47, 46		
3)	77, 132, 42, 81, 77		
4)	08, 48, 112		
5)	254, 265,		

Do the outliers in[fluence] the m[edian] why or why not.

_____

_____

_____

Part 2 Calculate the median using the o[utlier]s) an[d] [wi]thout the outlier(s)

	Data Set	Median With Outlier[(s)]	[Median Without] Outlier(s)
1)	15, 19, 16, 2, 47, 18, 17		
2)	45, 40, 99, 48, 43, 46, 45		
3)	75, 79, 125, 21, 72, 76, 75, 81		
4)	94, 88, 156, 92, 95, 96, 97, 41		
5)	8.5, 8.4, 8.8, 7.9, 8.3, 2.5, 21.5		

Do the outliers influence the median? Explain why or why not.

_____

_____

_____

Name: _____ 25

Curriculum Connection
SP2.1

When To Use – Mean, Median, Mode

In general, we can use the following rules when deciding which measure of central tendency to use.

Mean

- Data without outliers or data sets with many data points to "wash out" outliers
- Provides accurate average of a data set and works well with all sizes of data sets

Mode

- Working with qualitative or nominal data
- Very easy to determine the mode and is not impacted by outliers
- Does not always give an accurate average of a data set

Median

- Works with data that has outliers and with large data sets
- In general, provides a more accurate average than mode, but less than mean

Questions

Which measure of central tendency will you choose to use? Explain

1)	The average points per game of players on your team. You have a large data set with no outliers.
2)	People vote on their favourite number from 1-10. Data: 5, 7, 5, 6, 4, 2, 5, 7, 5
3)	The average salaries for Canadians. Your data set has many outliers.
4)	The average amount of medicine that is effective. The data set is small with no outliers.
5)	People choose which meal number (1-6) they order from a fast-food restaurant.

Name: _____ 26

Curriculum Connection SP2.1

Mean, Median, Mode – Hourly Rate

Questions Answer the questions below

You are deciding between 3 jobs to take based on their hourly rates. You have the following data, which shows how much 5 of the employees at each business earn per hour.

	Employee 1	Employee 2	Employee 3	Employee 4	Employee 5
Business	$45	$16	$17	$45	$15
Business	$25	$30	$112	$24	$25
Busi		$20	$21	$54	$56

a) Rank[illegible] 3 bus[illegible] their mean hourly rate. Which one would you choose?

b) Instead of using the [illegible] rate, [illegible] mode. Which business would you join?

c) You want to make sure you select the best busi[illegible] so y[illegible] the median hourly rate. Which business would you choose?

d) You notice an outlier in business 2's data. What could be an explan[illegible]?

e) If you omit the outlier, what is the mean rate of business 2? Does this change your choice? Explain.

f) If you were the business owner, would you include the outliers in your data? Explain.

Name: _____ 27

Curriculum Connection
SP2.1

Mean, Median, Mode – Dinner Out

Questions Answer the questions below

You and your friends are comparing how many times you have been out for dinner in the past year. The following table shows how many dinners each friend has gone out for by month.

	Ja	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ben			2	1	4	3	2	4	1	2	1	1
Jill				3	2	5	4	3	1	2	2	1
Ava		2		2	3	2	3	2	2	1	1	2
Max	2			1	2	4	2	1	4	8	2	3

a) Calculate the me ea er of times out for dinner. Who went out for dinner the most p

b) Compare the medians of each friend. Who went r di e most per month?

c) Compare the mode of each friend. Who went out for dinner e m h

d) Using the mean, which month was most popular for going out for dinner?

e) What is the mean of the medians for each friend's number of visits out for dinner?

Curriculum Connection
SP7.1

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

The table below shows the number of hours you and your friends have studied each week.

	Week 1	Week 2	Week 3	Week 4
	10	8	12	9
	7	11	10	13
		15	11	14
va		6	7	8

1) Calculate th each umber of study hours. Who studied the most on average per we

2) Identify which week was t op ng among all friends? On average, how much did the friends stu at

Name: _____

The table below shows the number of hours you and your f e s each week.

	Week 1	Week 2	Week 3	
Bob	10	8	12	9
Jack	7	11	10	13
Leo	12	15	11	14
Ava	9	6	7	8

1) Calculate the mean for each friend's number of study hours. Who studied the most on average per week?

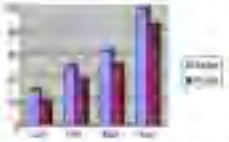
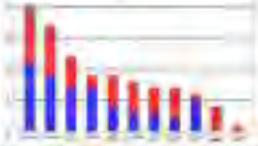
2) Identify which week was the most popular for studying among all friends? On average, how much did the friends study that week?

Name: _____ 29

Curriculum Connection
SP1.2

Types of Graphs - Information

There are many different types of graphs. Each graph has features that make it better for certain data sets. Read about the different graphs below and when we use each one.

Types of Graph	Explanation	When We Use Them
Circle Graph 	- A graph that is made by dividing a circle into sections hat represent parts of a whole. ch part adds up to 100%.	- When we are displaying the relative frequency of variables - Used with one set of data - Clear representation of data showing comparisons even at first glance
Bar 	pl data using bar lumns	- When we want to compare categories between different groups - Used to display 1 data set - Used with discrete data
Line Plot 	- A graph ays da points or sy eck x's) above a nu ine - The dots are not conn	Used to show the frequency of data ick and simple way to organize smaller values
Multiple-Bar Graph 	- A graph that shows the relationship between different sets of data - The bars are presented beside each other for clear comparisons	disp ship between le – gender diffe dults th
Stacked-Bar Graph 	- A graph that shows the relationship between different sets of data - The bars are presented on top of each other for clear comparisons	- Used to display t el p between two sets of dat - Shows the relationship on the same bar, which will make the graph taller, not wider
Histogram 	- A graph similar to a bar-graph that shows frequencies for different intervals	- Used when the x-axis uses numbers (intervals). For example - age ranges
Broken-Line Graph 	- A graph that displays data as points that are connected with a line	- Used to track changes over periods of time - Used with continuous data

Name: _____ 30

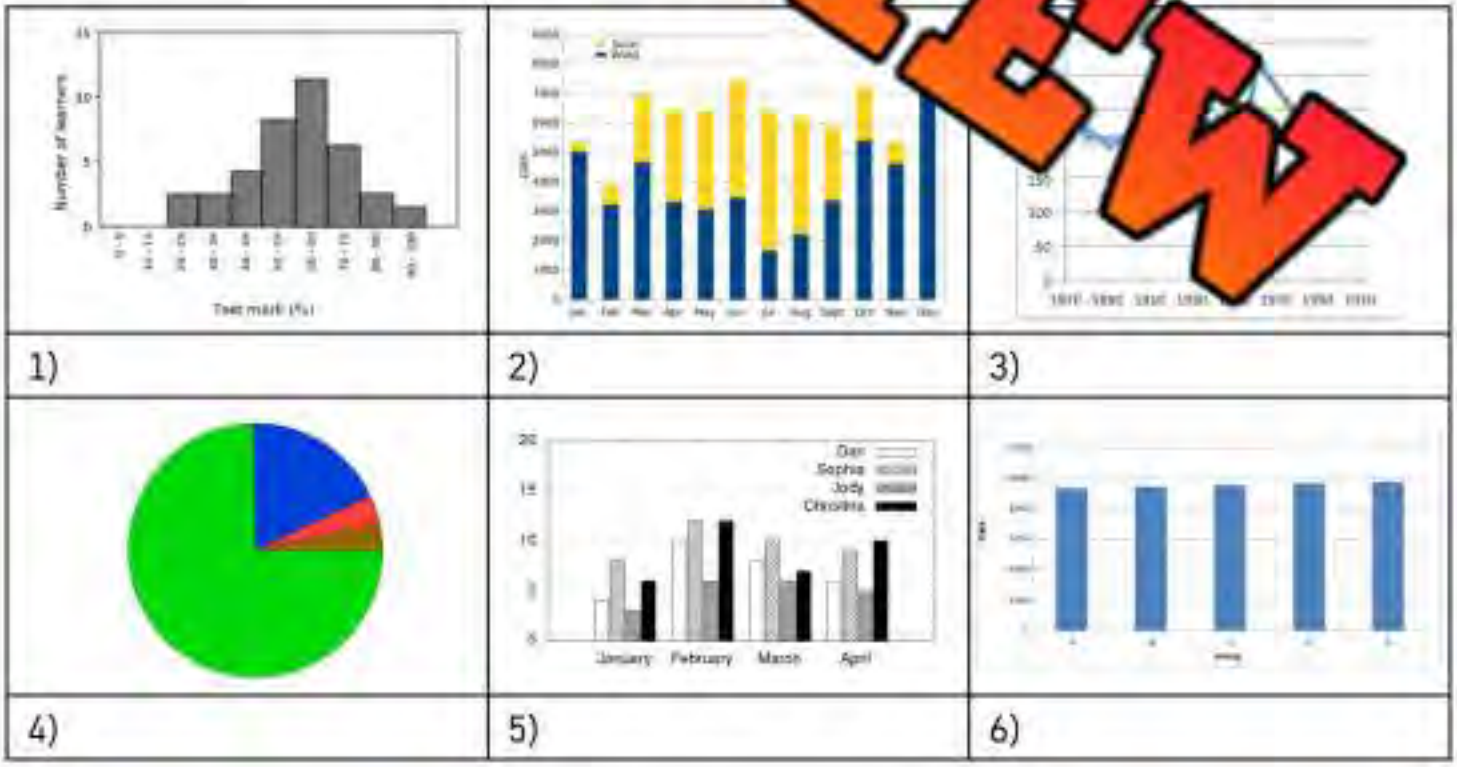
Curriculum Connection
SP1.2

Types of Graphs - Questions

Part 1 Circle the graph you would use to represent the data

	Description	Graph A	Graph B
1)	You want a simple graph that displays one data set visually	Multiple Bar Graph	Bar Graph
2)	You want to show the relationship between two differe[illegible] of data	Bar Graph	Stacked-Bar Graph
3)	You w[illegible]e graph that has smaller values	Line Plot	Bar Graph
4)	Yo[illegible] ets of data from grade 7s an[illegible]e 8s	Bar Graph	Multiple Bar Graph
5)	You want to [illegible]dou[illegible]	Broken-Line	Circle Graph
6)	You want to dis[illegible]e dat[illegible]ows the relative frequency	Broken Line Graph	Circle Graph
7)	You have data with time [illegible]This[illegible]r data has numbers on the x a[illegible]axis	Broken-Line Graph	Histogram

Part 2 Label the names of the gr[illegible]hs belo[illegible]



1) 2) 3)

4) 5) 6)

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

Circle the graph you would use to represent the data

Description	Graph A	Graph B
1) You want to compare the frequency of categories using 2 data sets with different colours to make them easy to distinguish.	Multiple Bar Graph	Bar Graph
2) You want to show how different variables affect each other, and both variables are continuous.	Broken-Line Graph	Histogram
3) You want to show how many people ran for 0-1 hours, 1-2 hours, 2-3 hours, or 4+ hours last week.	Line Plot	Histogram
4) You are interested in showing how a part-to-whole relationship changes over time.	Stacked-Bar Graph	Circle Graph

Name: _____

Circle the graph you would use to represent the data

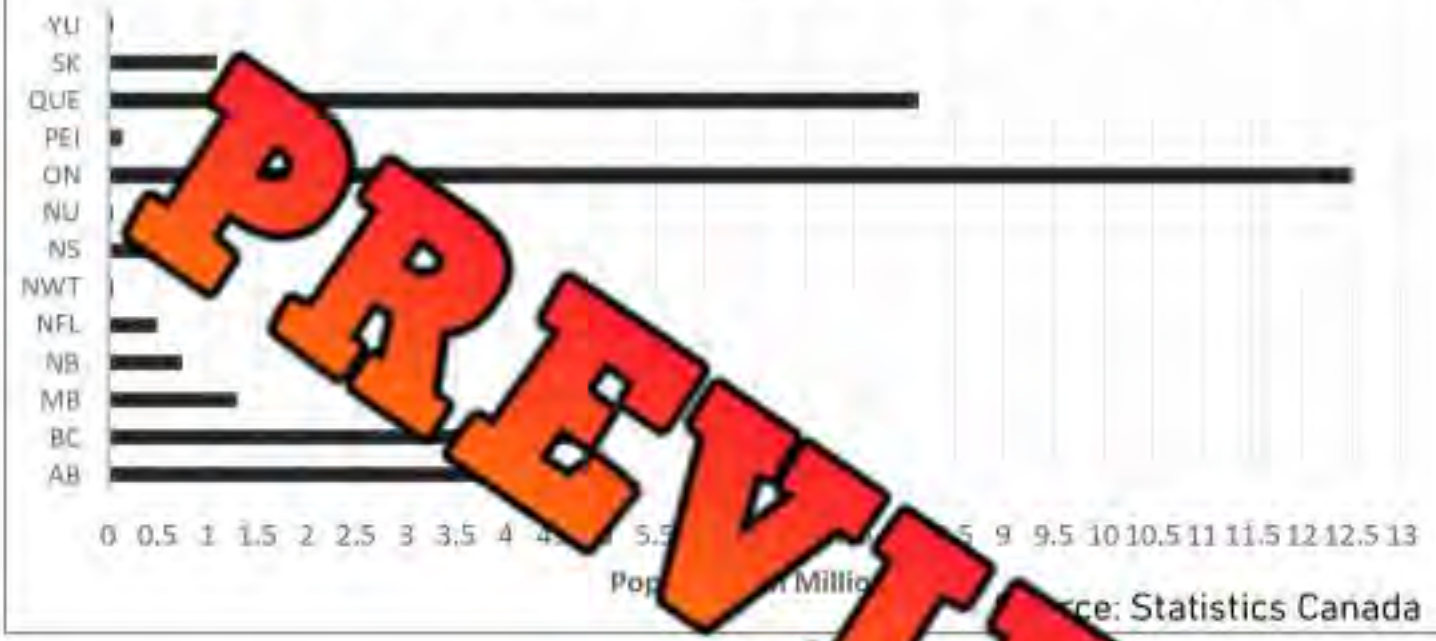
Description	Graph A	Graph B
1) You want to compare the frequency of categories using 2 data sets with different colours to make them easy to distinguish.	Multiple Bar Graph	Bar Graph
2) You want to show how different variables affect each other, and both variables are continuous.	Broken-Line Graph	Histogram
3) You want to show how many people ran for 0-1 hours, 1-2 hours, 2-3 hours, or 4+ hours last week.	Line Plot	Histogram
4) You are interested in showing how a part-to-whole relationship changes over time.	Stacked-Bar Graph	Circle Graph

Name: _____ 32

Curriculum Connection
SP1.2

Horizontal Bar Graph - Population

Joel displayed the population of the 13 provinces/territories in Canada in a horizontal bar graph.



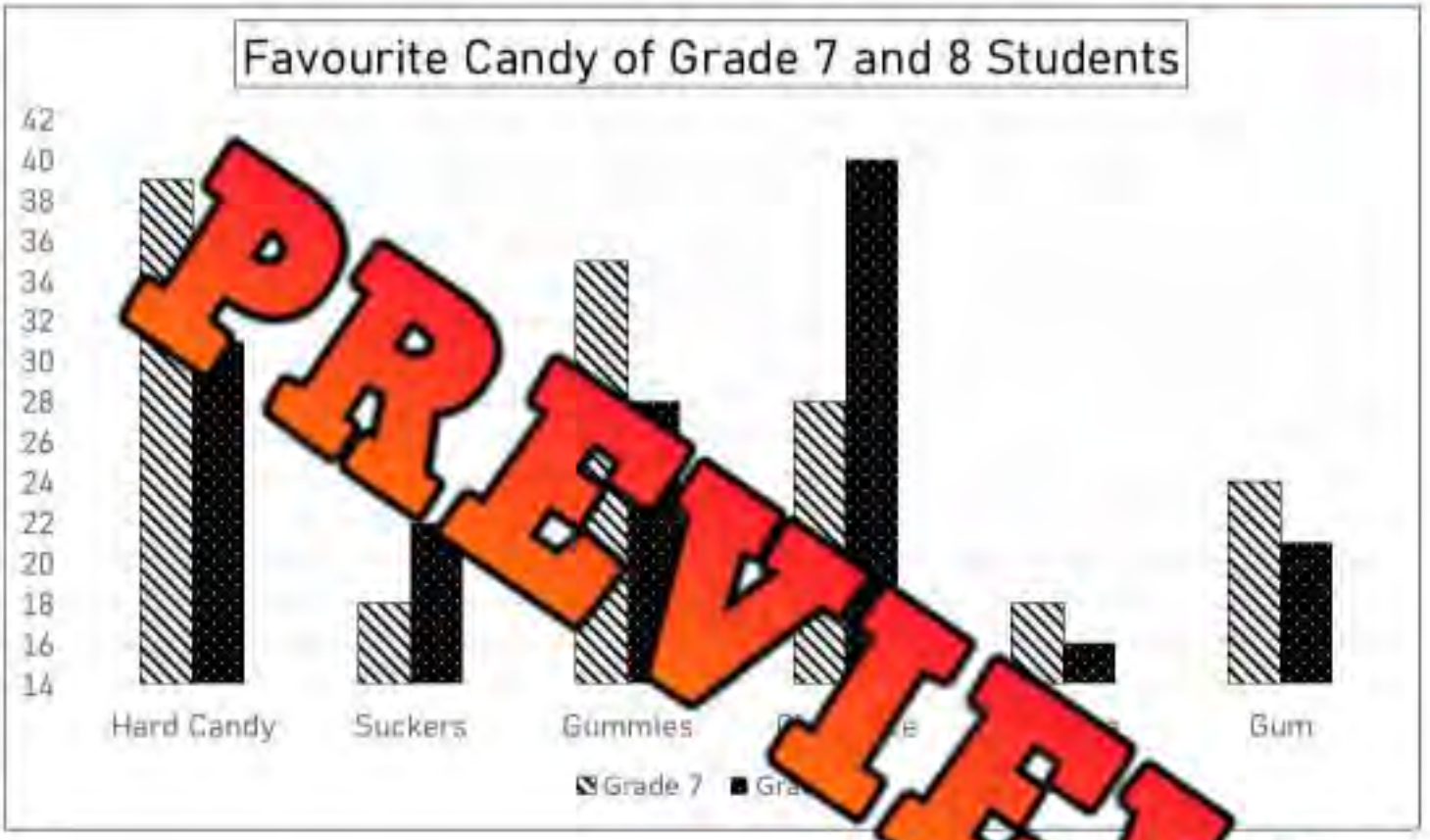
a) Which province/territory has the greatest popula	
b) Which provinces/territories have the lowest populations?	
c) Did Joel collect primary or secondary data?	
d) Is the data quantitative or qualitative?	
e) Approximately how many more people live in Ontario than New Brunswick?	
f) Approximately how many more people live in Quebec than Newfoundland and Labrador?	
g) Do more or less people live in Ontario than Manitoba, Saskatchewan, BC, and Alberta put together?	

Name: _____ 44

Curriculum Connection SP1.2

Interpreting a Double Bar Graph

The students in grades 7 and 8 were asked which candy was their favourite. The results have been sorted by grade in the double bar graph below.



a) Which candy did the grade 7's like the most?			
b) Which candy did the grade 8's like the most?			
c) Which candy got the most votes combined?			
d) How many more votes did gummies get in total over licorice?			
e) How many students participated in the survey?	Gr 7	Gr 8	Total
f) What percentage of students chose gum as their favourite?			
g) What percentage of grade 7s chose hard candy?			
h) What percentage of grade 8s chose chocolate?			

Curriculum Connection
SP? 2

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

1) Which material showed the greatest increase in the amount collected from Week 1 to Week 2?

2) What is the total amount of paper recycled over both weeks combined?

Name: _____

1) Which material showed the greatest increase in the amount collected from Week 1 to Week 2?

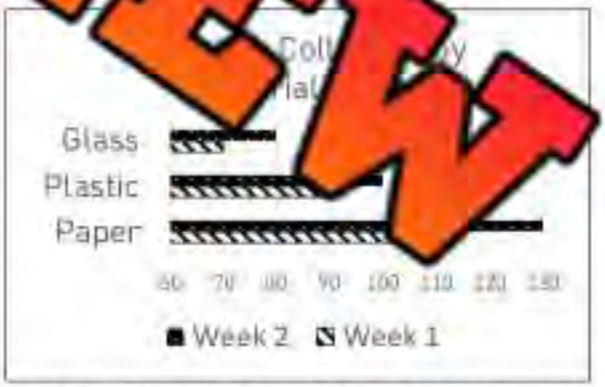
2) What is the total amount of paper recycled over both weeks combined?

Name: _____

1) Which material showed the greatest increase in the amount collected from Week 1 to Week 2?

2) What is the total amount of paper recycled over both weeks combined?

Name: _____



1) Which material showed the greatest increase in the amount collected from Week 1 to Week 2?

2) What is the total amount of paper recycled over both weeks combined?

Name: _____ 46

Curriculum Connection
SP1.2

Activity Title: Flip the Data

Objective

What are we learning about?

Students will engage in a fun and active game where they read data from a bar graph and answer questions to earn the opportunity to flip a bottle or cup. This activity combines data interpretation skills with a physical challenge, adding excitement and a competitive element to learning.

Materials

What you will need for the activity.

- Bot[illegible]
- A s[illegible]ard or [illegible]to display bar graphs
- Timer ([illegible]opwat[illegible]ho[illegible]app)
- Question ca[illegible] the b[illegible]h data
- Scoreboard to k[illegible]ck of

Instructions

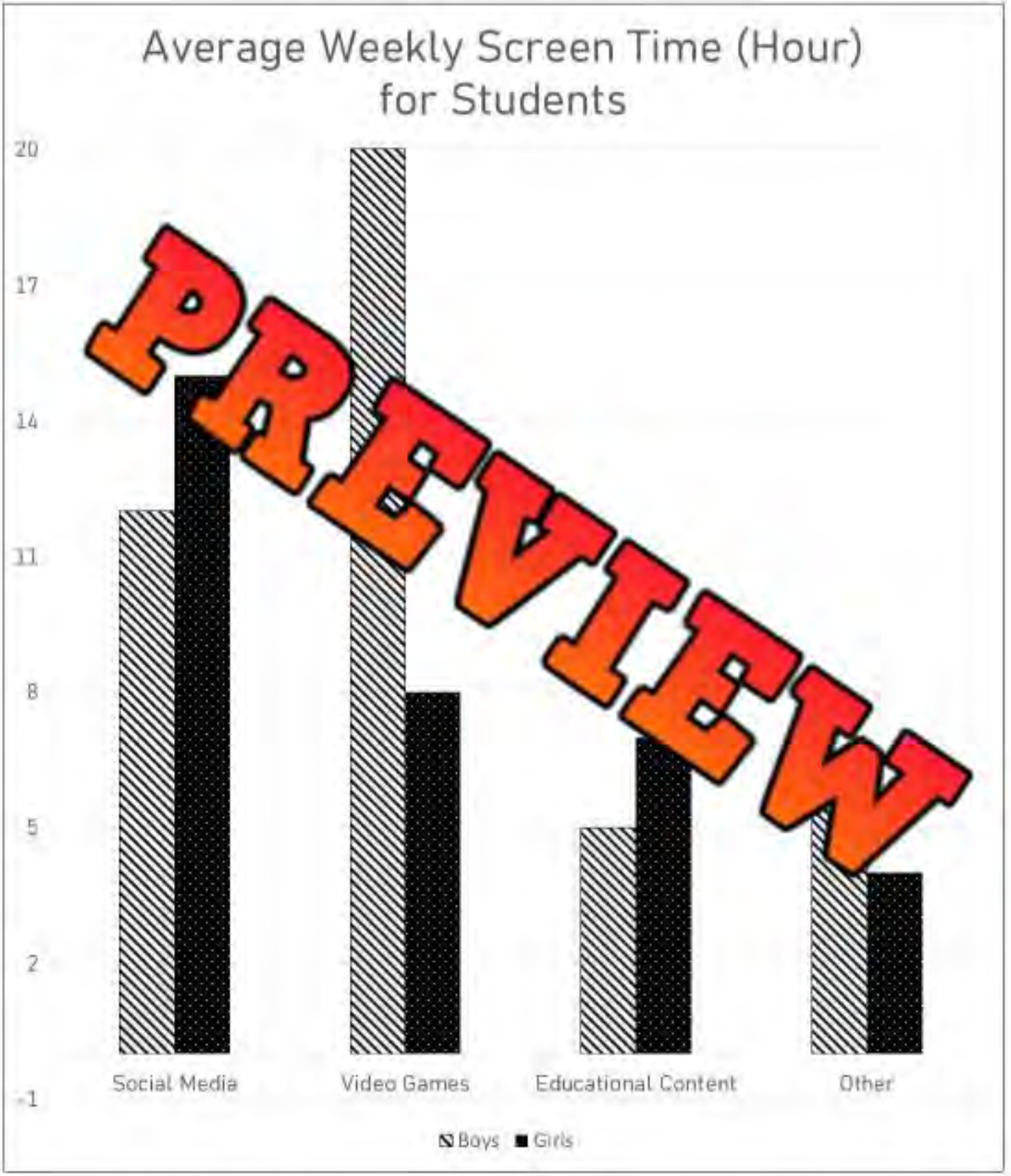
How you [illegible]let[illegible]y

1. Divide the class into small teams, id[illegible]5 or 6[illegible]s each.
2. Prepare a series of bar graphs to display on th[illegible]rtboa[illegible] with corresponding question cards that ask about[illegible]ta in[illegible]
3. One team at a time comes to the front where the g[illegible]layed.
4. Display the first bar graph on the smartboard.
5. The first student from the active team reads the graph and select[illegible] Start the timer when the question is first shown.
6. The student answers the question based on the data presented in the g[illegible] The teacher checks the answer.
7. If the student answers correctly, they flip their bottle or cup repeatedly until they land it upright. When they do, the next teammate can take their turn.
8. If the student's answer is incorrect, they must try another question card before they can attempt to flip.
9. The team's turn ends either when all members have successfully flipped their bottle/cup or when the timer reaches a set limit (e.g., 3 minutes).
10. Record the team's time or number of successful flips on the scoreboard.
11. Repeat steps 4-10 for each team. The team with the fastest time wins.

Name: _____ 47

Curriculum Connection
SP1.2

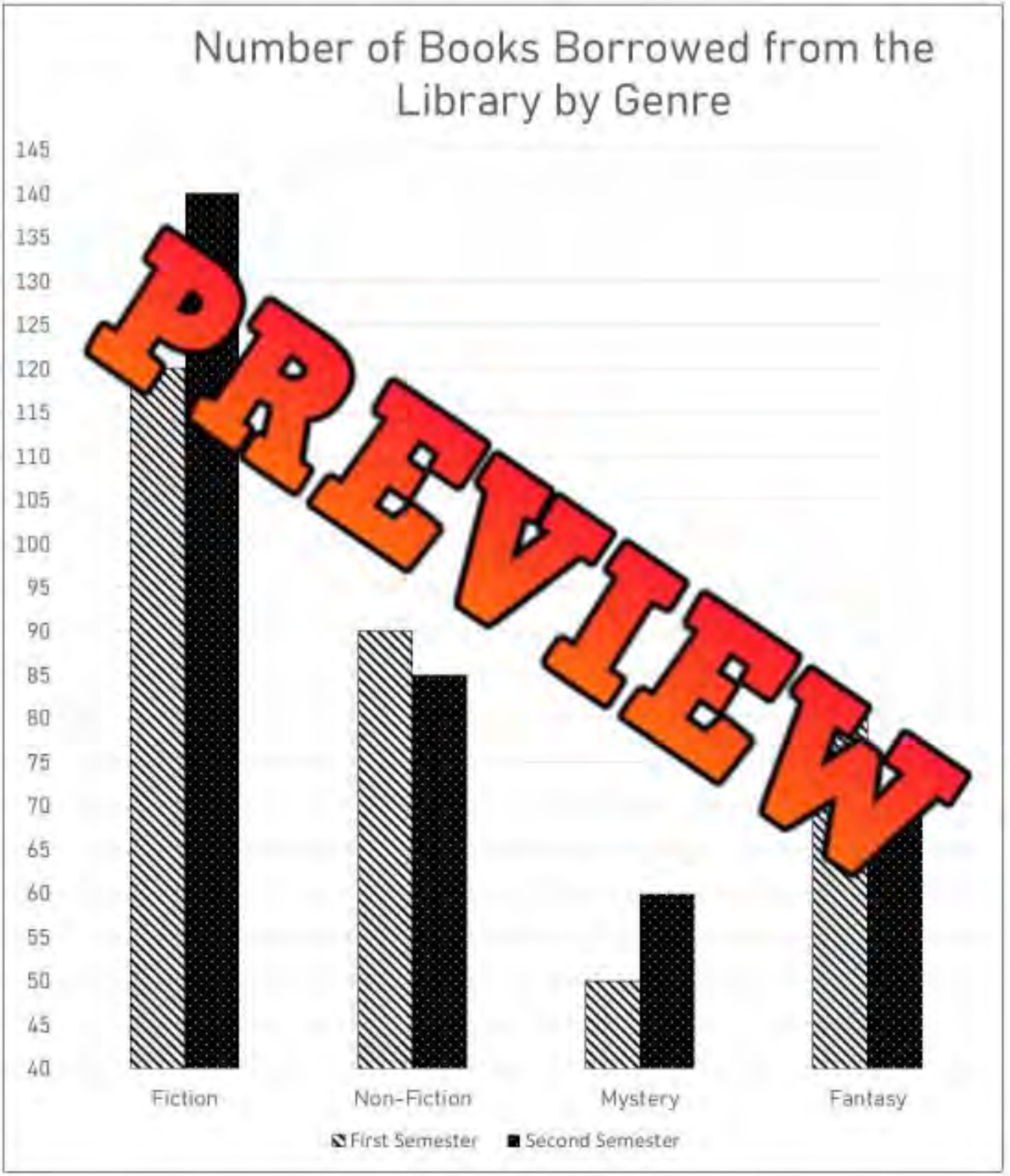
Graph 1 | What did you learn from the graph?



Name: _____ 48

Curriculum Connection
SP1.2

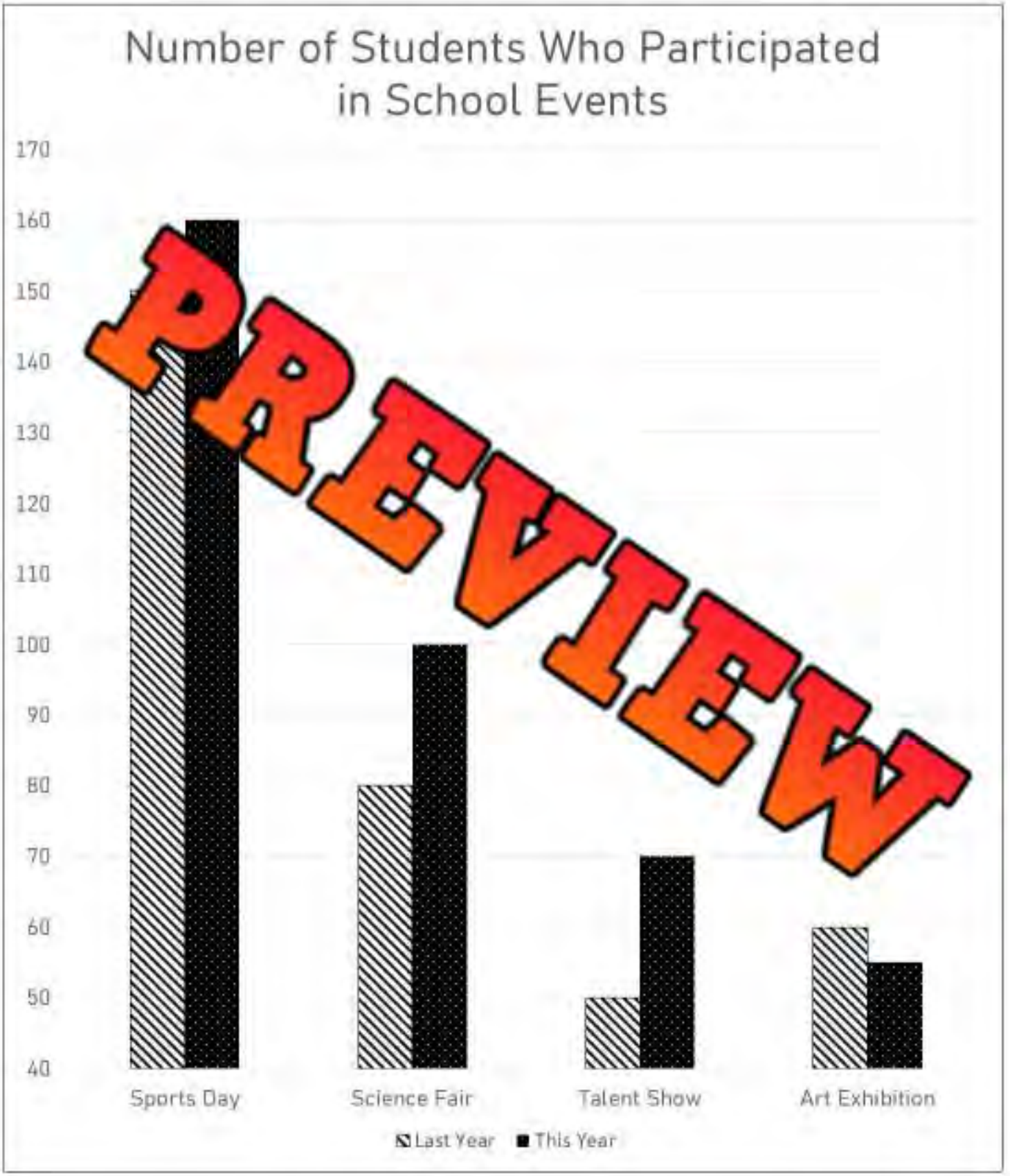
Graph 2 | What did you learn from the graph?



Name: _____ 52

Curriculum Connection
SP1.2

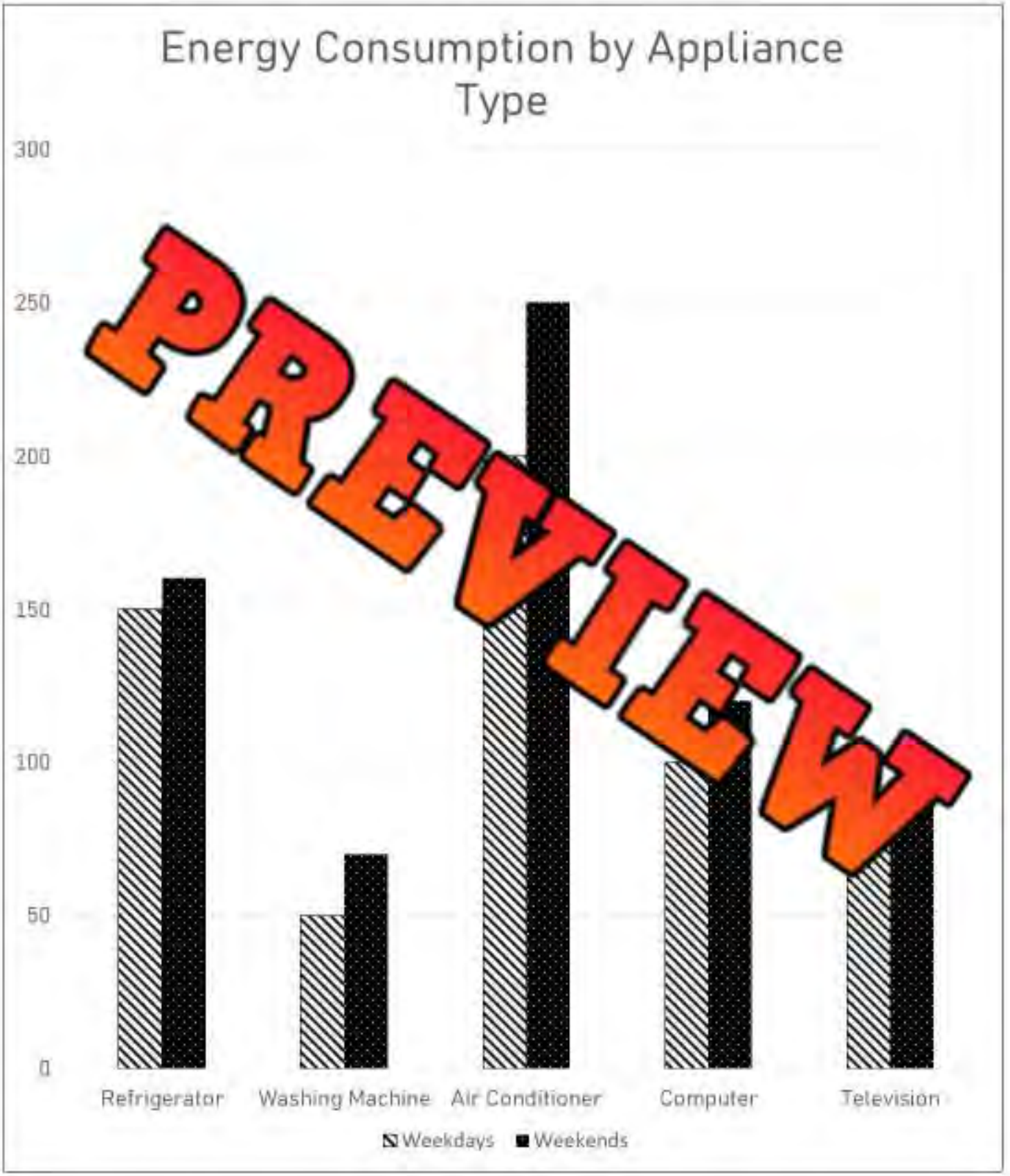
Graph 6 | What did you learn from the graph?



Name: _____ 53

Curriculum Connection
SP1.2

Graph 7 | What did you learn from the graph?



Name: _____ 54

Curriculum Connection
SP1.2

Questions Choose a question to ask the student who is about to flip their bottle

What is the title of the graph?
What is the title of the Y-axis?
What is the title of the X-axis?
What does each bar on the graph represent?
Which category shows the highest values for both bars?
Which cat shows the lowest values for both bars?
How ma are displayed on the graph?
What rang es shown on the Y-axis?
What is the t of represented by all bars?
What is the differ in en the highest and lowest categories for both ba
Are there any categories ave es? Which ones?
How does the value of one specif gory are to others?
What could be a possible reason for the hi st va
What could be a possible reason for the lo st v
What trends can you observe from the graph?
How might this data be useful?
If you could add another category to this graph, what would i
How would you describe the overall distribution of data?
What insights or conclusions can you draw from this graph?
How might the information on the graph impact decisions or opinions?
If you used a line break for this graph, what would it be?
How does the line break in this graph help show the data?
What is the scale of the graph?
What other scale do you think would work?

Name: _____ 60

Curriculum Connection
SP1.2

Interpreting a Broken-Line Graph

Precipitation is the amount of water falling from the sky. It can be in the form of rain, snow, drizzle, sleet, or hail. The data for total precipitation in Saskatoon for 2021 has been represented in the broken-line graph below. Numbers have been rounded to the nearest 5.

Source: weatherstats.ca

Part 1 — Fill in the frequency table by reading the broken-line graph

	J	F	M	A	M	J	J	A	S	O	N	D
mm												
%												

Part 2 — Solve an argument

1) What percentage of precipitation falls in July and August?	
2) What 4 months of the year are the driest?	
3) Carlos thinks more precipitation falls in August, July, April and November than all the other months put together. Is he correct? Explain.	

Curriculum Connection
SP7.2

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

Weekly Sales of a Bookstore

1) How much did sales decrease from Week 3 to Week 4?

2) What is the average weekly sales over the 5 weeks?

Name: _____

Weekly Sales of a Bookstore

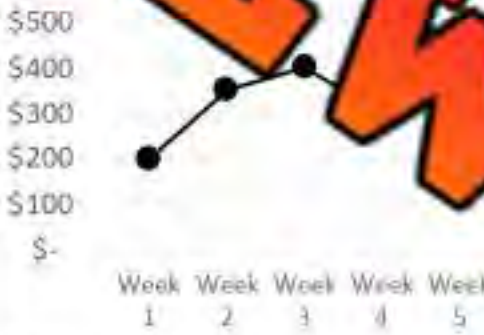
1) How much did sales decrease from Week 3 to Week 4?

Name: _____

Weekly Sales of a Bookstore

1) How much did sales decrease from Week 3 to Week 4?

2) What is the average weekly sales over the 5 weeks?



1) How much did sales decrease from Week 3 to Week 4?

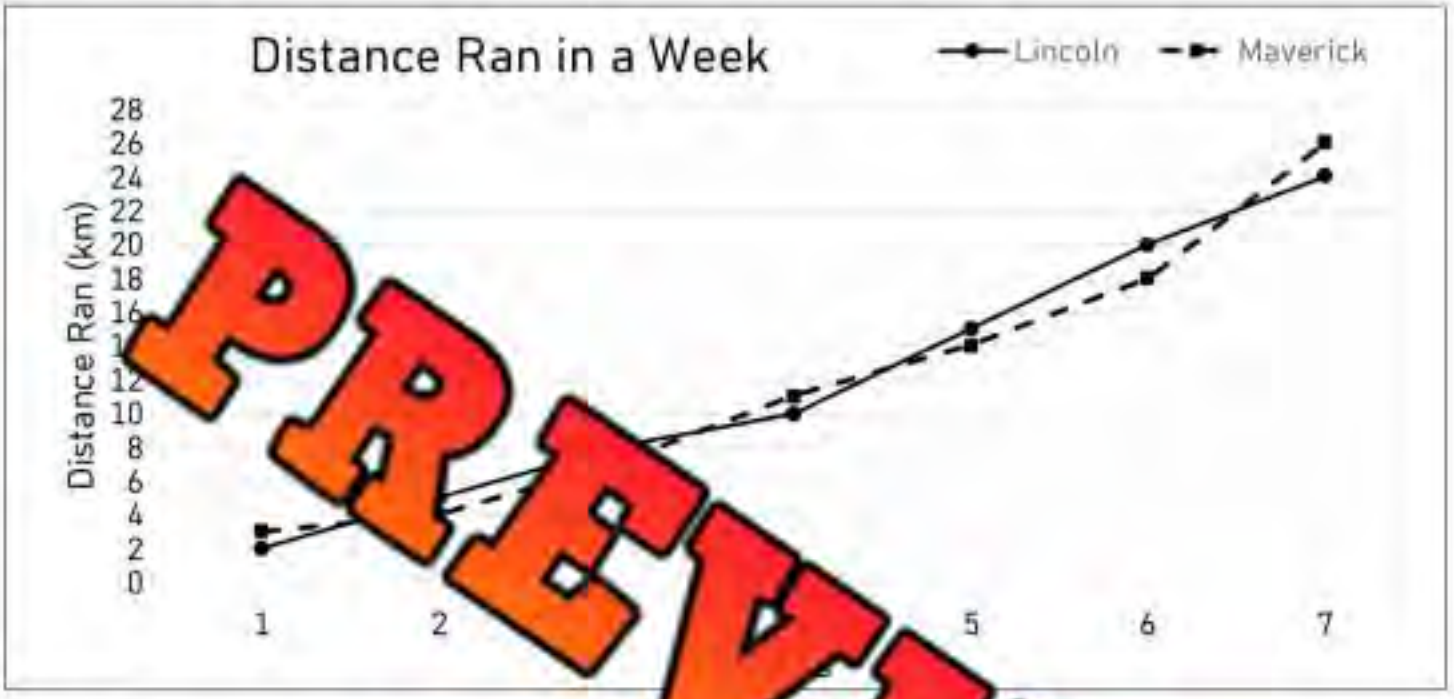
2) What is the average weekly sales over the 5 weeks?

Name: _____ 62

Curriculum Connection
SP1.2

Interpreting Double Broken-Line Graph

Lincoln and Maverick had a contest to see who could run the most kilometres in a week. Their results are displayed in the broken-line graph below.



Part 1 Fill in the frequency table by re… the … line graph

	Day 1	Day 2	Day 3	D…	…5	…	Day 7
Lincoln's KM							
Maverick's KM							

Part 2 Answer the questions below

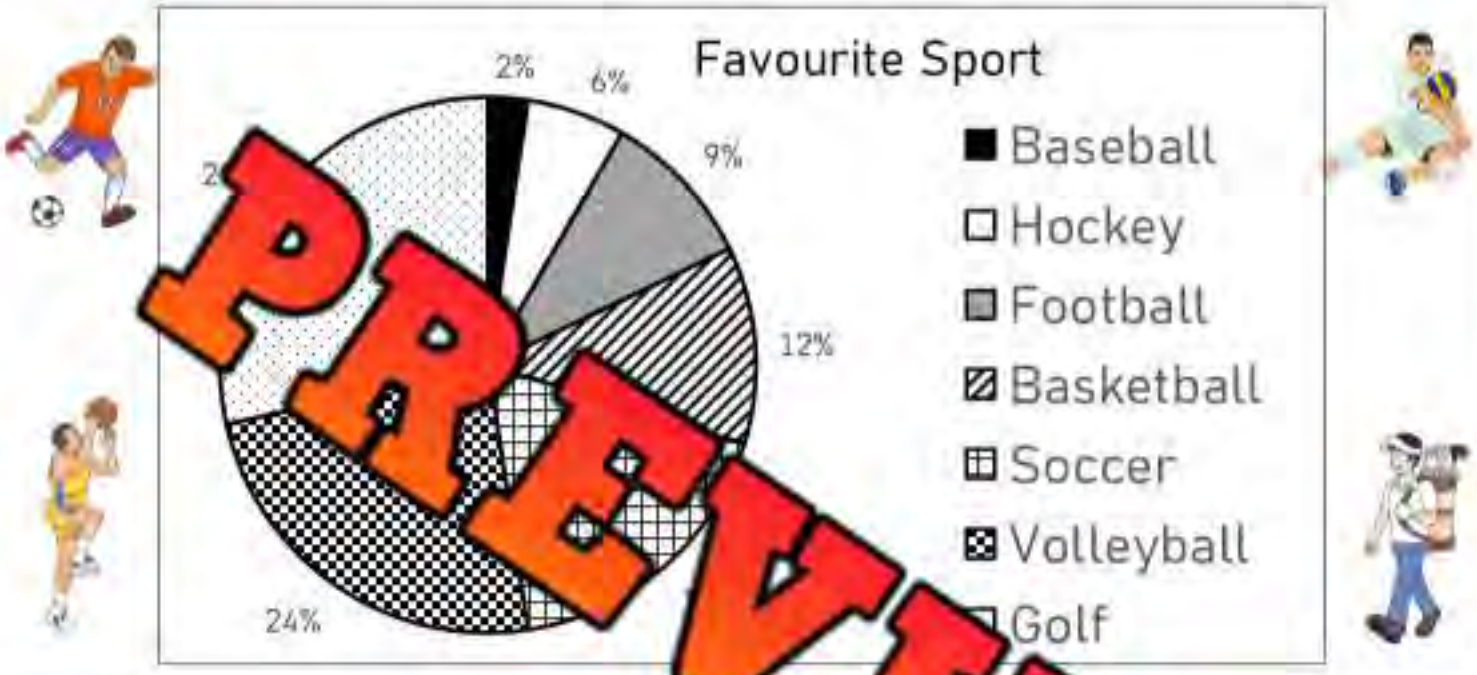
1) Who ran more km in the week?				
2) Is the data <u>continuous</u> or <u>discrete</u>?				
3) Which day did Maverick run the most? What percent of his total distance did he run on this day?				
4) Who was winning the contest after the fifth day?				
5) Which day did Lincoln run the most? What percent of his total distance did he run on this day?	Day		%	

Name: _____ 65

Curriculum Connection SP7.2

Interpreting a Circle Graph – Favourite Sport

Ken completed a random sample of the students in his school. He randomly asked 10 students from 10 different classes what their favourite sport is. He used a circle graph to represent his data.



Part 1 Fill in the frequency table ding graph

	Baseball	Hockey	Football	Basketball		Vo	Golf
Votes							
%							

Part 2 Answer the questions below

1) Which sport is the most popular out of the 100 people surveyed?	
2) Which two sports received over 50% of the votes?	
3) How many people chose baseball as their favourite sport?	
4) What percentage do all 7 sports add up to?	
5) Is golf more popular than baseball, hockey, football, and basketball combined?	

Name: _____ 66

Curriculum Connection
SP1.2

Interpreting a Circle Graph – Oscar Awards

The winning movies from the Oscar awards have been displayed by genre in the circle graph below.

Part 1 Fill in the frequency table using the information provided

	Drama	Documentary	Horror	Action	Science Fiction	Comedy
Votes	9/29	4/29				/29
%			7%	17%	10	

Source: Movie Database

Part 2 Answer the questions below

1) Which movie genre won the most awards?	
2) Which two genres received over half of the awards?	
3) Did comedy, horror, and action get over half of the awards?	
4) Which movie genre scored 14% of the Oscar awards?	
5) What percentage of awards went to movies other than dramas?	

Name: _____ 67

Curriculum Connection
SP1.2

Interpreting a Circle Graph - Shopping

Jordyn went shopping today. How much she spent at each store has been represented in the circle graph below.

Part 1 Fill in the frequency table by writing the percent of each segment

	Jewelry	Shoes	Clothing	Sporting Goods	Groceries	Total
$ Spent						
%						

Part 2 Answer the questions below

1) Which store did Jordyn spend most of her money?	
2) Which 2 stores did she spend over half of her money?	
3) How much did she spend in total on groceries, jewelry and shoes?	
4) What percent of her money did she spend on everything except jewelry?	
5) If she went back for more groceries and spent $100 more dollars, what percent of the money on that day would she have spent on groceries?	

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

Michael allocates his monthly budget across different categories.

1) How much less does Michael spend on rent than on groceries and utilities combined?	
2) What percentage of his budget does Michael spend on souvenirs and rent combined?	
3) If Michael decides to spend an additional $50 on entertainment, what will be the new total, and what percent of his budget would that represent?	

Name: _____

Michael allocates his monthly budget across different categories.

1) How much less does Michael spend on rent than on groceries and utilities combined?	
2) What percentage of his budget does Michael spend on souvenirs and rent combined?	
3) If Michael decides to spend an additional $50 on entertainment, what will be the new total, and what percent of his budget would that represent?	

Name: _____ 69

Curriculum Connection
SP1.2

Drawing a Circle Graph - Sales

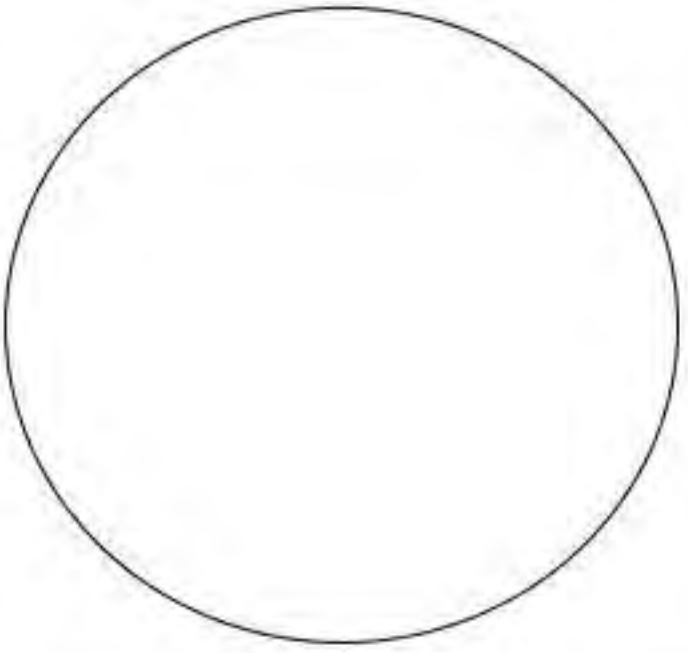
Selena has a business selling her artwork. She kept track of her sales each day last week.

Part 1 Fill in the table below to determine the angle measurements for the circle graph

	Number of Sales	Fraction	Decimal	Relative Frequency (as a percentage)	Angle Measure
Monday		4/50	0.08	8%	0.08 x 360 = 29°
Tuesday		6/50	0.12	12%	0.12 x 360 = 43°
Wednesday	5				
Thursday					
Friday	8				
Saturday	11				
Sunday	10				
Total	50				

Part 2 Use a protractor to draw the angl... your ...ph

_____



1) ...days were ... best-sell... day?

2) Why do you t... more on those days?

3) What conclusions can you draw from this data?

Name: _____ 70

Curriculum Connection SP7.2

Drawing a Circle Graph - Languages

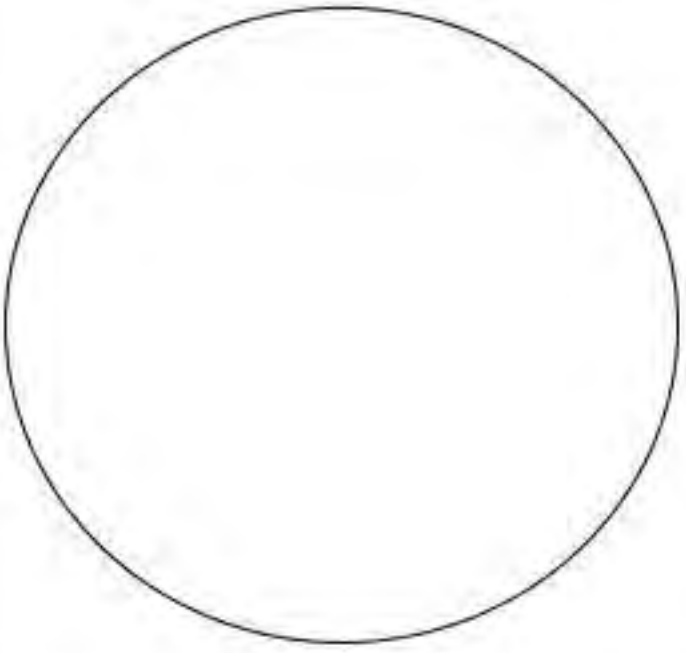
The top 7 most popular languages have been recorded in the table below. The data shows what percentage of the world speaks each language. Use the percent to find the angle measurement so you can represent the data in a circle graph.

Part 1 Fill in the table below to determine the angle measurements for the circle graph

	Relative Frequency (as a percentage)	Fraction	Decimal	Angle Measure
Englis	14%	14/100	0.14	0.14 x 360 = 50°
Ma		13/100	0.13	0.13 x 360 = 47°
Hindi				
Spanish	7%			
French	4%			
Russian	4			
Other	50%			
Total	100%			

Part 2 Use a protractor to draw the a for y ph

_____



1) Wh an are the m sp the world?	
2) What percentage o the world speaks languages other than English and Mandarin?	
3) What conclusions can you draw from this data?	
_____ _____ _____ _____	

Name: _____ 71

Curriculum Connection
SP1.2

Drawing a Circle Graph - Basketball

Nick has been keeping track of his basketball playoff scoring for the last 5 seasons. He played 5 playoff games in each of the last 5 seasons. How many points he scored has been recorded in the table below.

Part 1 Fill in the table below to determine Nick's average playoff scoring each season

	Game 1	Game 2	Game 3	Game 4	Game 5	Mean Scores
Season 1		4	5	4	6	
Season 2		4	6	7	10	
Season 3		7	12	9	12	
Season 4		10	11	13	16	
Season 5	22			25	22	

Part 2 Use the mean scores we t measures of each season

	Angle Measure
Season 1	
Season 2	
Season 3	
Season 4	
Season 5	

Name: _____ 72

Curriculum Connection
SP1.2

Collecting Qualitative Data – Circle Graph

Data Collection	Collect categorical data that you can plot using a circle graph

Question of Interest (Ex. Favourite _____ or which app you use most)	

Draw a tabl[illegible]will help you collect and organize your data.

Interpreting The Data

1) Was your data collected from a primary or s[illegible]dar[illegible]

2) What conclusions can you draw from your data? Li[illegible]s yo[illegible]ned

3) How will graphing this data as a circle graph help readers understand the data?

Name: _____ 73

Curriculum Connection
SP7.2

Creating a Circle Graph

Use the data you collected to plot your graph. Remember the following labels:

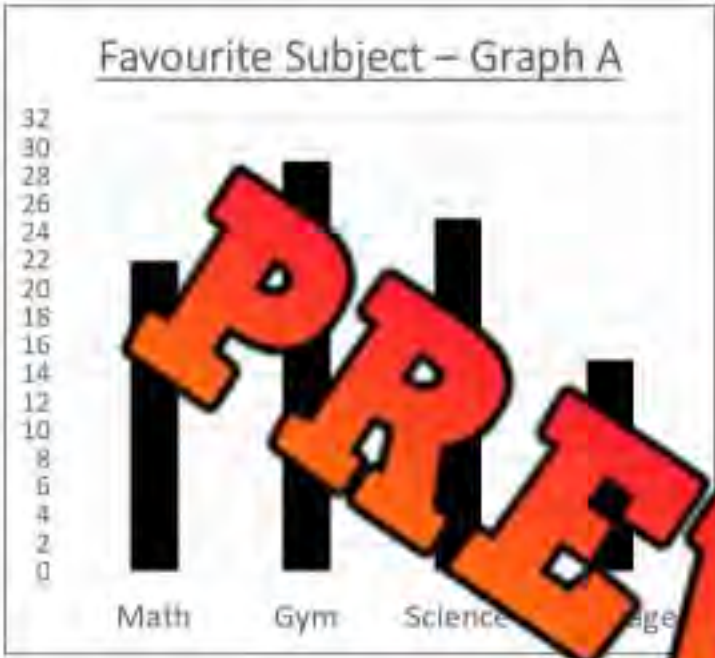
☐ Title ☐ Labels for each section ☐ Percentages/totals

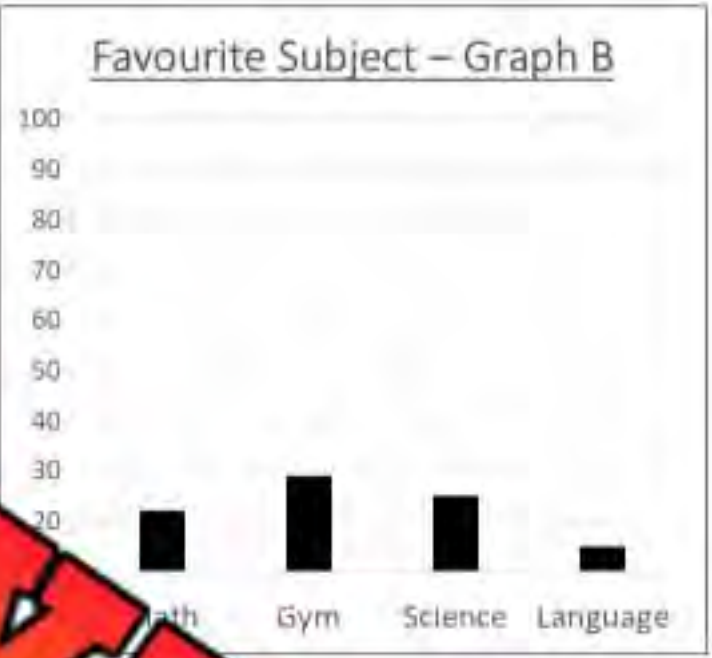
Name: _____ 88

Curriculum Connection
SP1.2

Favourite Subject – Examining Scale

The two graphs below display the same data. Examine both graphs and answer the questions below.





Questions What do you notice about the graphs?

a) What is the scale in Graph A?

b) What is the scale in Graph B?

c) Which graph is easier to read and interpret? Why is that graph better?

d) If you were a gym teacher, which graph would you show your students to demonstrate that gym is much more popular than the other subjects? Explain your choice.

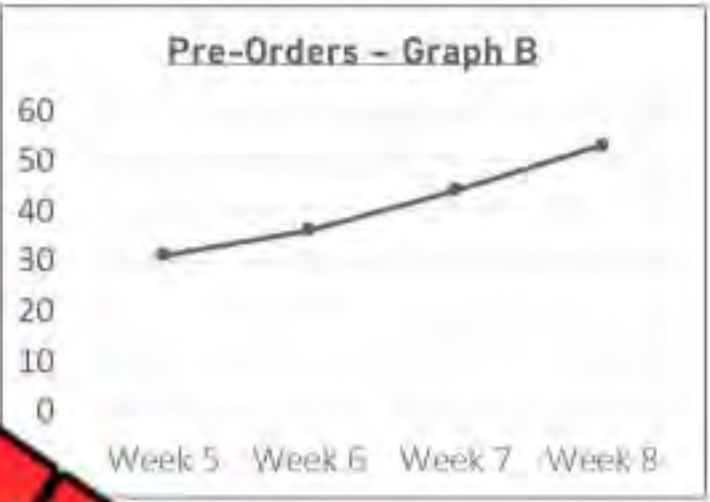
e) Why is Graph B misleading? What did the author do to make it misleading?

Name: _____ 89

Curriculum Connection
SP1.2

Misleading Graphs

Imagine you are releasing a new product in the next week - an innovative speaker that you wear around your neck that only you can hear the music. You have taken pre-orders for the last 8 weeks. You want to show that this is a hot new product and that customers better pre-order or buy it soon after it is released.



Questions What do you notice [illegible] graphs?

a) Which graph would you use to show customers that your pre-orders have been growing massively? Why?

b) How are the graphs different? Do they have the same data?

c) How many pre-orders were made from week 5 to week 8?

d) Does graph A make it seem like more pre-orders were sold? Explain.

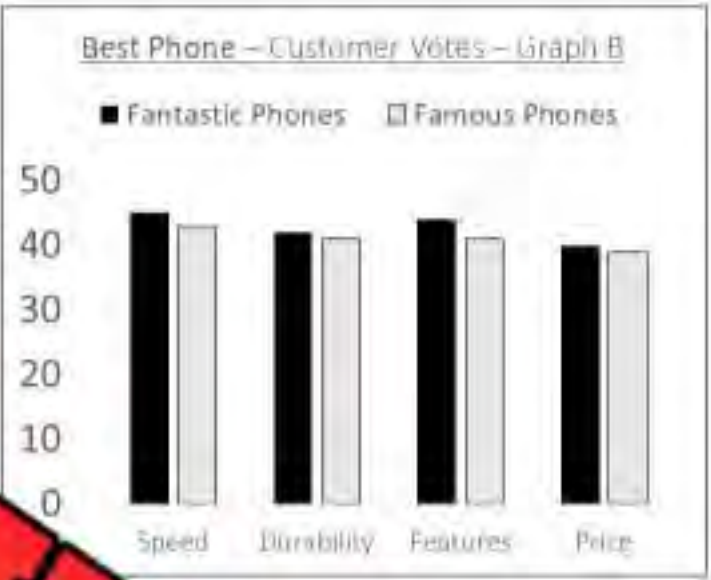
e) Why is it important to read a graph carefully?

Name: _____ 91

Curriculum Connection
SP1.2

Misleading Graph – Multiple-Bar Graph

Fantastic Phones is running an advertisement campaign to show how much better their phones are than their competitor, Famous Phones.



Questions What do you notice [illegible] phs?

a) Which graph would you use if you were Fa[illegible] Phon[illegible]

b) How many more votes in total did Fantastic Phones get over F[illegible]es?

c) Are Fantastic Phones a lot better than Famous Phones? Explain.

d) Do you think it is fair that businesses create misleading graphs like this one?

Name: _____ 93

Truth or Lie? Graph Edition

Objective What are we learning about?

Students will learn to identify and explain misleading elements in graphs, developing critical thinking skills and understanding how data can be manipulated in visual representations.

Materials What you will need for the activity.

- A s raphs (some accurate, some misle g)
- Smartboard o the graphs
- Classroom sp udent view the graphs

Instructions How you let ty

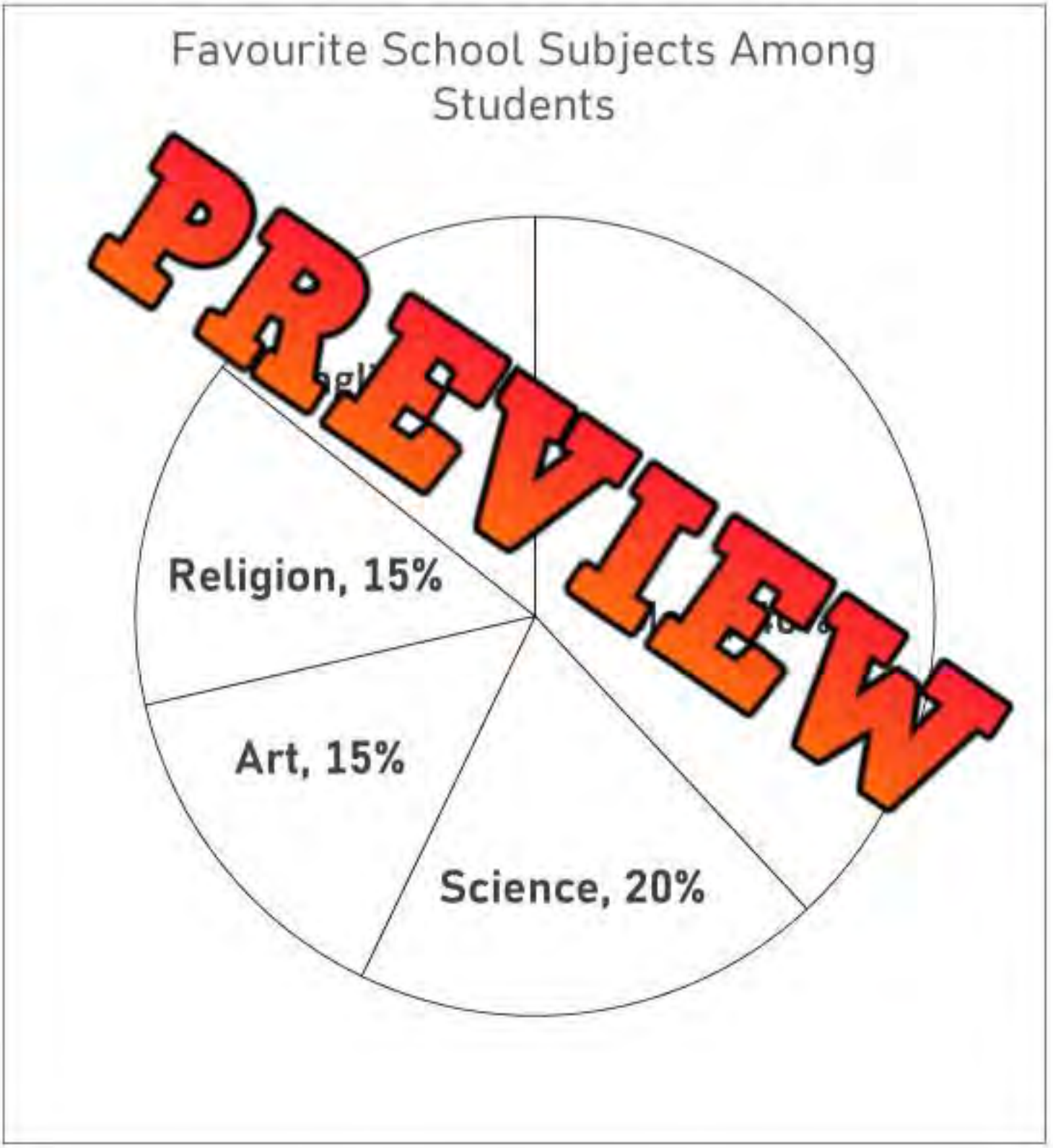
1. Begin by explaining the concept of m ing gr tudents, highlighting common ways graphs can be manipulated (e.g ging omitting data, exaggerating differences).
2. Show each graph one at a time on the smartboa r. Ma all students can see the graph clearly.
3. After showing each graph, ask the students to use finger s ls t decision. They show one finger if they believe the graph is true (a misleading) and they show two fingers if they believe the graph is tie ding in some way).
4. Once all students have made their decisions, invite a few students or groups to explain their reasoning. Ask them to point out specific elements of the graph that make it true or misleading, such as the use of a misleading scale or omitted data.
5. Facilitate a class discussion to reinforce key concepts, summarizing the points made by the students and providing additional examples if necessary.
6. Repeat steps 3-6 for each graph in the set. Encourage students to look for new elements that might be misleading as they view different graphs.
7. After all graphs have been discussed, ask the students to reflect on what they have learned. Provide them with questions to think about or answer in their math journals.

Name: _____ 94

Curriculum Connection
SP7.2

Graph What do you notice about the graph?

A student is conducting a survey among his classmates for their favourite subjects: Math, Science, Religion, English, and Art.

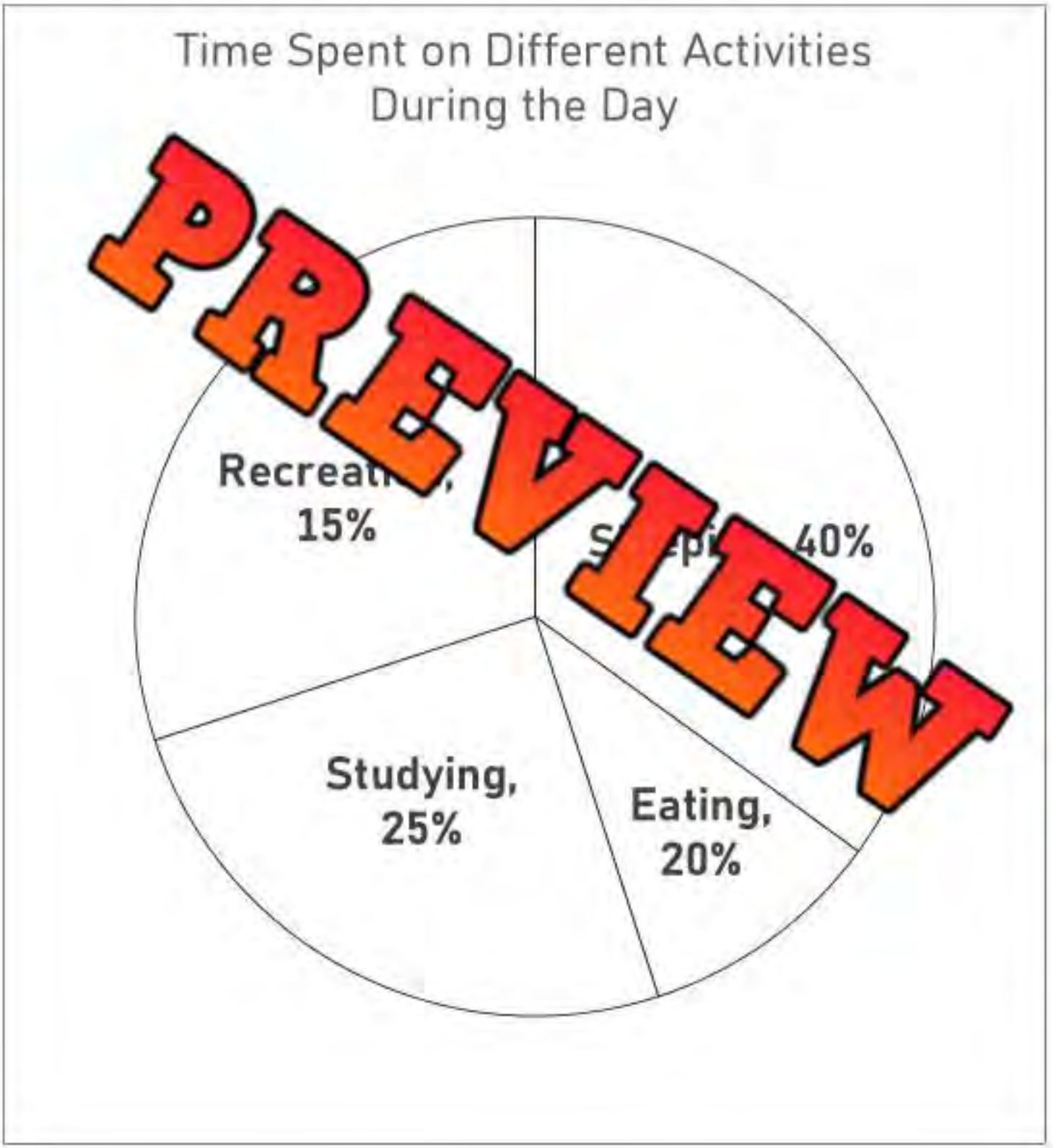


Name: _____ 95

Curriculum Connection
SP7.2

Graph What do you notice about the graph?

How are students spending their time during the day. The graph compares time spent on Sleeping, Eating, Studying, and Recreation.

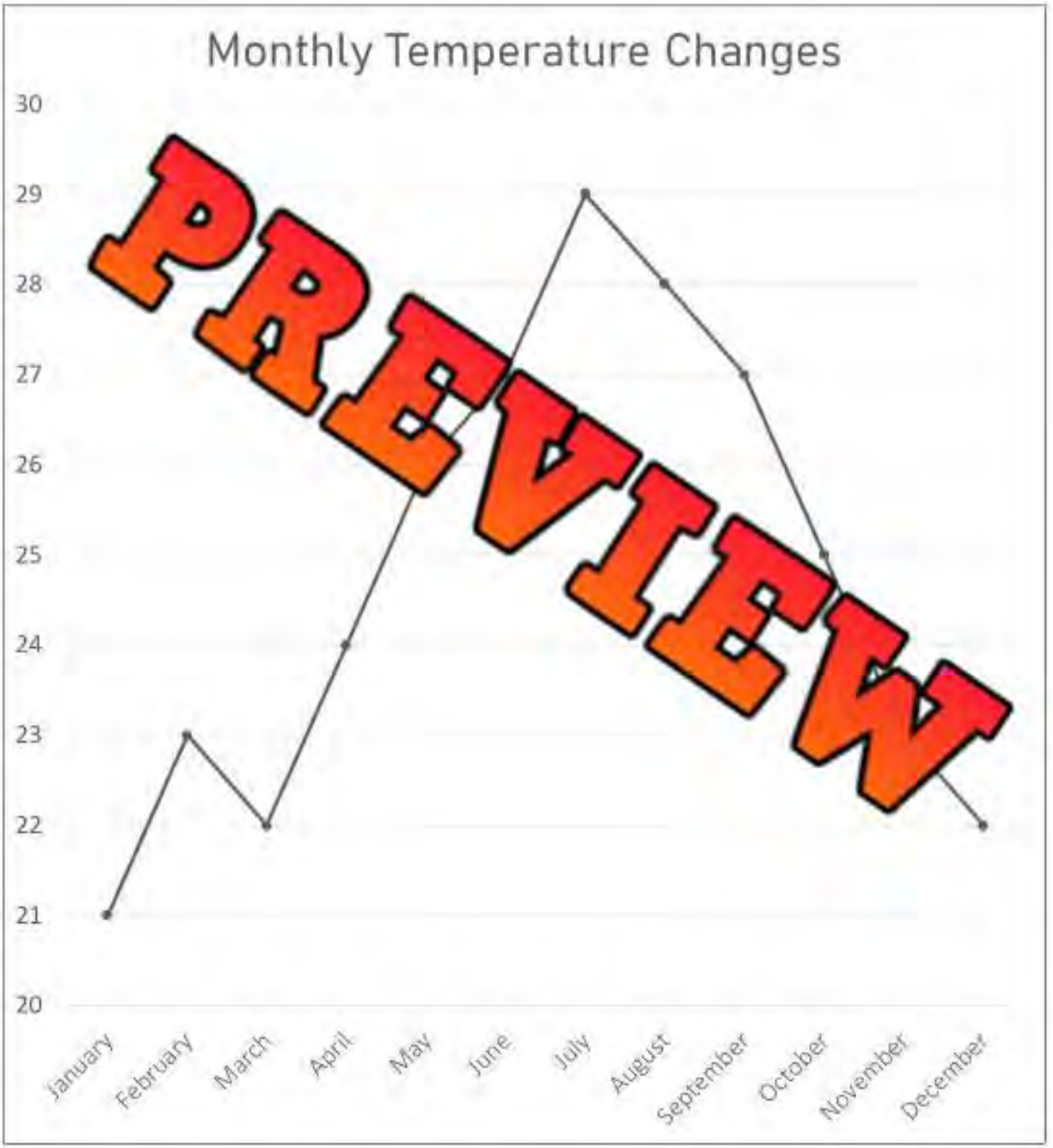


Name: _____ 96

Curriculum Connection
SP7.2

Graph What do you notice about the graph?

Brian is arguing that the climate he lives in is extreme, moving quickly from cold to warm temperatures. The graph shows temperature fluctuations from January to December.



Name: _____ 98

Curriculum Connection
SP7.2

Graph What do you notice about the graph?

A teacher is comparing test scores between two classes (Class A and Class B) in Math, Science, English, and History.

Name: _____ 100

Curriculum Connection
SP7.2

Graph What do you notice about the graph?

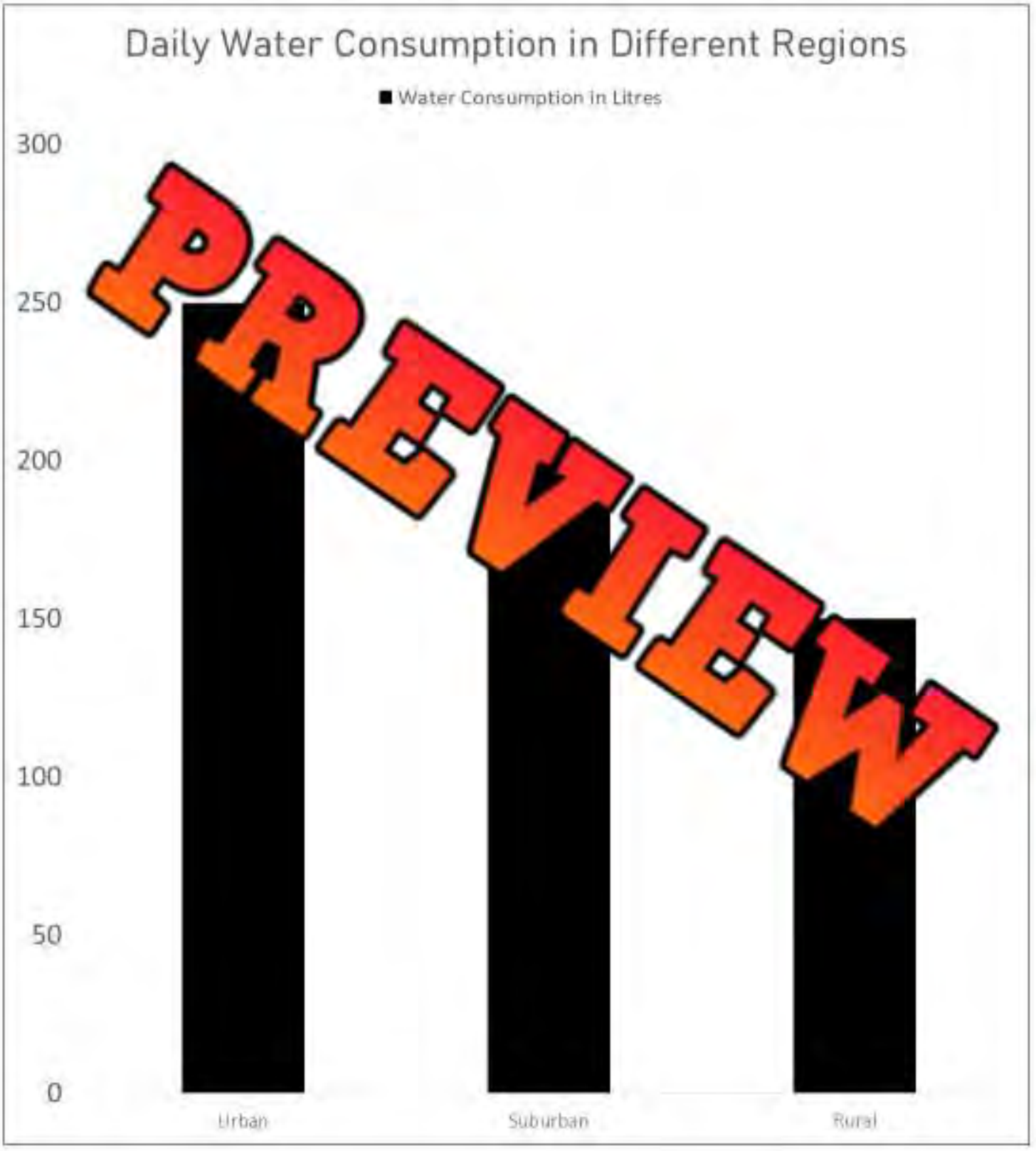
A company is comparing monthly sales figures for a new product in units.

Name: _____ 101

Curriculum Connection
SP7.2

Graph | What do you notice about the graph?

A survey graph comparing water usage (in litres) in Urban, Suburban, and Rural areas.

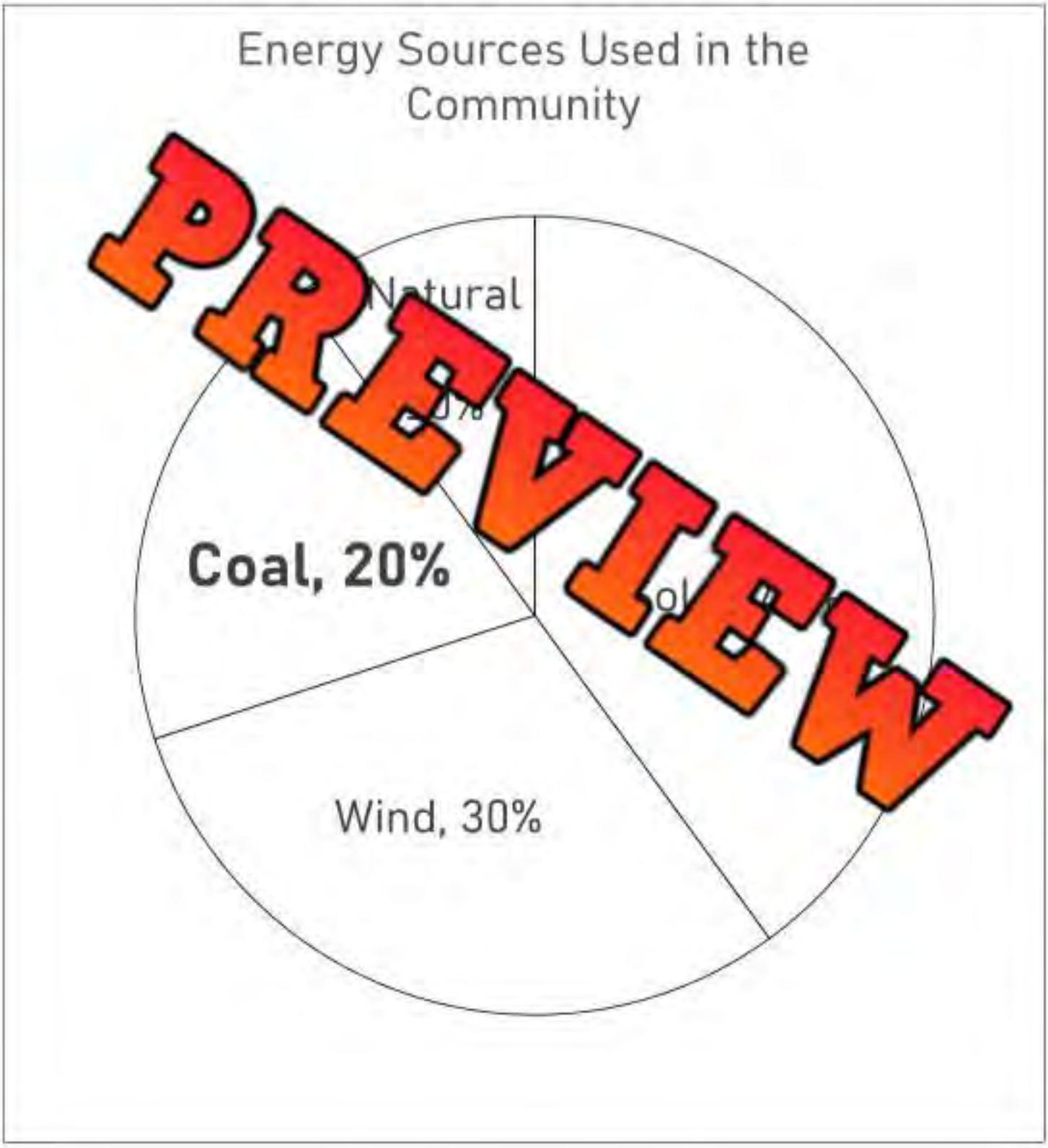


Name: _____ 102

Curriculum Connection
SP7.2

Graph What do you notice about the graph?

Electricity Utility Company is reviewing the energy that is sourced from different sources such as: Solar, Wind, Coal, and Natural Gas.



Name: _____ 104

Unit Test – Data Literacy

Part 1 Find the mean, median, mode, and range for each data set below

Data Set	23, 28, 35, 11, 28
Mean	
Median	
Mode	
Range	

Data Set	36, 41, 55, 24, 37, 41
Mean	
Median	
Mode	
Range	

Part 2 Fill in the table below to find the missing data point

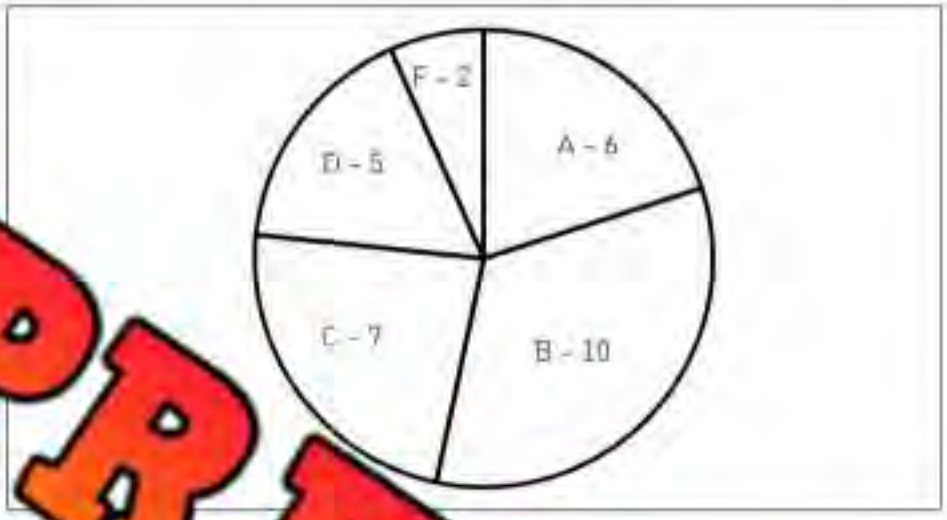
	Data Set	Mean	Calculation	Missing Data Point
1)	18, 24, 27, 33, ?	30		
2)	48, 55, ?, 62, 68, 74	59		

Part 3 Calculate the mean using the outlier and without the outlier

	Data Set	Mean With Outlier(s)	Mean Without Outlier(s)
1)	9, 7, 5, 25, 8, 6		
2)	21, 48, 24, 20, 26, 22		
3)	12.2, 15.6, 14.3, 28.4, 16.1		

Part 4 Read the graph and answer the questions below

Mr. Douglas posted the results of his math test as a circle graph. He didn't post names, but posted how many A's, B's, C's, D's and F's he gave out.



Answer the following qu[illegible] about th[illegible]h above

1. Fill in the frequency table

Grades	A			D	F
Frequency					
Percentage					

2. How many students wrote the math test? _____

3. Did half of the class get either an A or B? _____

4. Did more students get a B than a D or F combined? _____

5. How many people passed the test? _____ What percent of the clas[illegible]ssed? ___

6. Mr. Douglas posted the specific marks below. What was the average mark? _____

92	8	51	62	68	49	58	87	67	55
61	88	72	75	56	85	78	65	79	93
75	78	72	71	78	73	70	99	63	57

7. There is one outlier in the data set. What is it? _____

8. What is the mean of the data set without the outlier? _____

9. What is the mode of the data set? _____

Part 5 Fill in the table with the percentage and represent the data in a circle graph

Roger is a pitcher for his baseball team. He can throw 5 different pitches. The amount he threw each pitch last game has been represented in the table below.

Pitches	Fastball	Changeup	Slider	Curveball	Cutter
Number of Pitches	32	18	15	12	17
Percentage					
Angle Meas ent					

1) Does he throw a fastball or curveball at least half of the time? _____

2) Is this data discrete or continuous? _____

3) How does using a circle graph help the reader understand the data better?

_____

_____

Grade 7

PROBABILITY

	Curriculum Expectations	Pages
SP7.3	Demonstrate an understanding of theoretical and experimental probabilities for two independent events where the combined sample space has 36 or fewer elements.	71 - 95

Name: _____ 108

Curriculum Connection
SP7.3

Independent Events – Darts

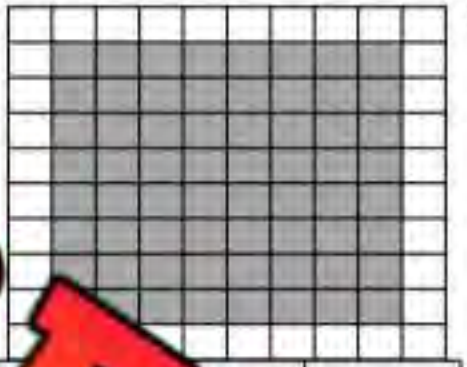
Independent events are two or more events that could happen at the same time without affecting the outcomes of the other events. Imagine below, that the shaded in area is a target and the white part is the wall. What is the probability of you hitting each target? **Think: Why are these independent events?**

Questions Represent the probability of hitting the target using a fraction, decimal and percent

1)

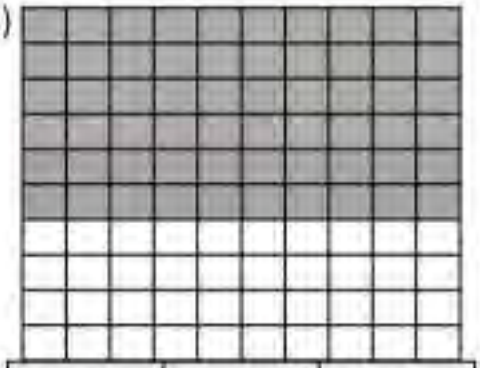
Fraction	Decimal	Percent
36/100	0.36	36%

2)



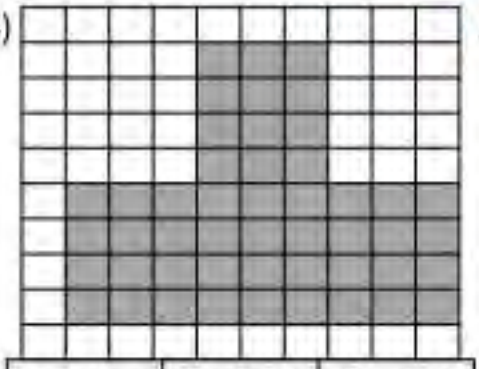
Fraction	Decimal	Percent

3)



Fraction	Decimal	Percent

4)

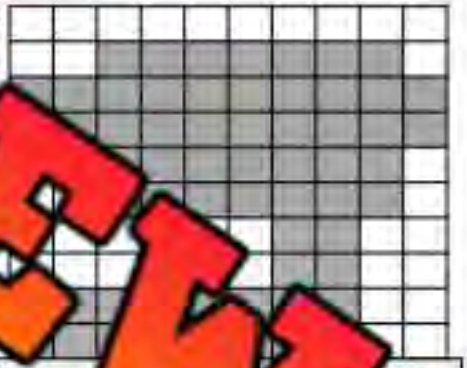


Fraction	Decimal	Percent

5)

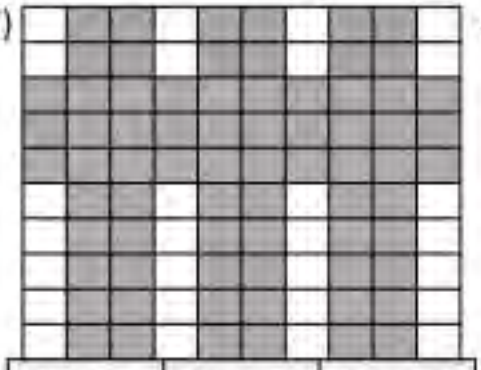
Fraction	Decimal	Percent

6)



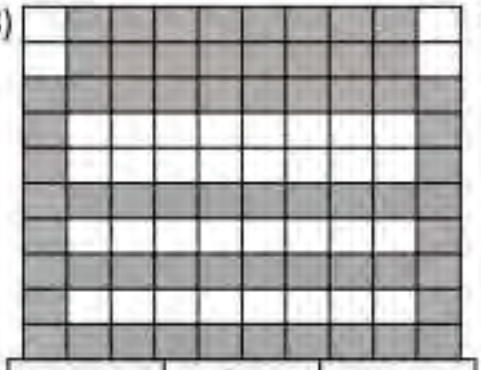
Fraction	Decimal	Percent

7)



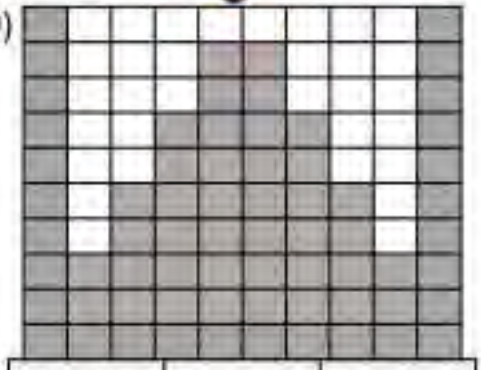
Fraction	Decimal	Percent

8)



Fraction	Decimal	Percent

9)



Fraction	Decimal	Percent

Name: _____ 110

Curriculum Connection
SP7.3

Theoretical Probability – Rolling a Dice

Rolling a Dice

A dice has 6 sides. Each side has a number of dots between 1 and 6. When you roll a dice, you have an unlikely chance of rolling a certain number.

Questions	What is the probability of...

1) Rolling a

Fraction	Decimal	Percent

2) Rolling a 5 o

Fraction	Decimal	Percent

3) Rolling an odd number?

Fraction	Decimal	Percent

4) Rolling two six-sided dice and getting a 5?

Fraction	Decimal	Percent

5) Rolling two six-sided dice and getting a 1, 2, or 3?

Fraction	Decimal	Percent

6) Rolling two six-sided dice and getting an even number?

Fraction	Decimal	Percent

7) Rolling two six-sided dice and getting a 6?

Fraction	Decimal	Percent

Name: _____ 111

Curriculum Connection SP7.3

Independent Events – Rolling a Dice and Coin Flip

Rolling a Dice and Flipping a Coin

Rolling a dice and flipping a coin are two independent events. When we roll a dice, we have a 1/6 chance at rolling a particular number. When we flip a coin, we have a 1/2 chance of getting a heads or a tails. When we combine these events, we need to multiply their probabilities.

Probability of rolling a 3 and getting a heads

$$\frac{1}{6} \times \frac{1}{2} = \frac{1}{12}$$

Questions | What is the probability when you roll a dice and flip a coin...

Event	Fraction	Decimal	Percent
1) Rol[illegible] and g[illegible]ails			
2) Rolling a 6 and g[illegible] a h[illegible]			
3) Rolling an odd number and ge[illegible]ing			
4) Rolling an even number and getting a heads tails			
5) Rolling a 4 and getting a heads or tails			
6) Rolling a 1 or a 2 and getting a tails			
7) Rolling a 1, 2, 3, or 4 and getting a heads			
8) Rolling a 1, 2, 3, 4, 5, or 6 and getting a tails			

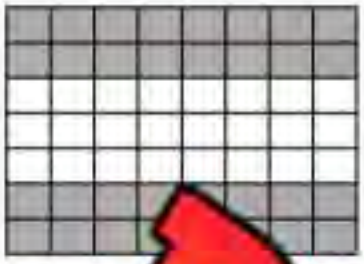
Name: _____ 112

Curriculum Connection
SP7.3

Independent Events – Darts

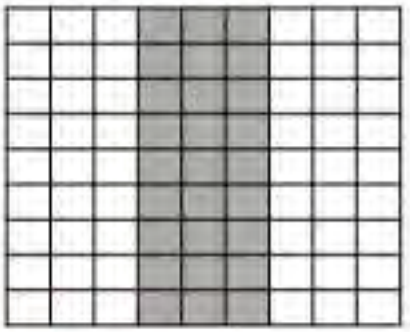
Questions What is the probability of hitting the target twice if you get 2 throws?

1)



Fraction	
Decimal	
Percent	

2)

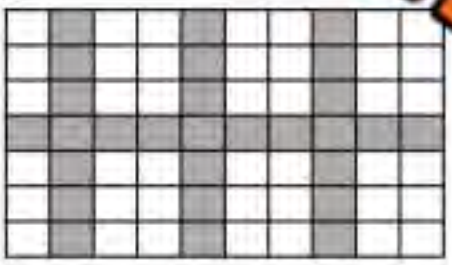


Fraction	
Decimal	
Percent	

3)

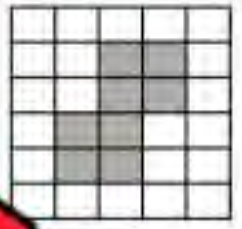
Fraction	
Decimal	
Percent	

4)



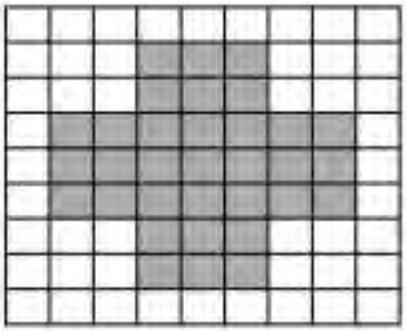
Fraction	
Decimal	
Percent	

6)



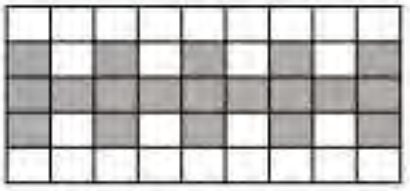
Fraction	
Decimal	
Percent	

7)



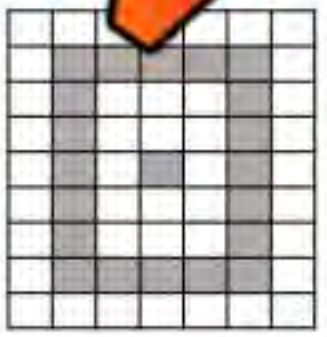
Fraction	
Decimal	
Percent	

8)



Fraction	
Decimal	
Percent	

9)



Fraction	
Decimal	
Percent	

Name: _____ 113

Curriculum Connection
SP7.3

Describing the Likelihood of Events

Candies

There are 14 candies in a bag. 6 are red, 3 are blue, and 5 are green.

Frequency Table Fill in the frequency table below

Ca ur	Frequency
Blue	
Gre	

Questions What is the pr f the elow if you get two pulls and always put the ca pu k in the bag?

Event	Fr	Decimal	Percent
1) Pulling out 2 red candies?			
2) Pulling out 2 blue candies?			
3) Pulling out a red, blue, or green candy in both of your pulls?			
4) Pulling out a purple candy in both of your pulls?			
5) Pulling out a blue first and a green second?			
6) Pulling out a red or green first and a blue second?			
7) Pulling out a blue first and a green or red second?			

Name: _____ 114

Curriculum Connection SP7.1

Describing the Likelihood of Events

Gumball Machine

There are 20 gumballs in a machine. What is the likelihood of you pulling out a red (R), yellow (Y), green (G), or blue (B) gumball?

Frequency Table Fill in the frequency table below

Gum[illegible]	Frequency
[illegible]	
Blue	
Yellow	
Green	

Questions What is the probabil[illegible] of t[illegible] if you get two pulls and always put the gumball yo[illegible] first [illegible] the bag?

Event	[illegible]	[illegible]cimal	Percent
1) Pulling out 2 green gumballs?			
2) Pulling out 2 red gumballs?			
3) Pulling out a blue or green gumball in either of your pulls?			
4) Pulling out a pink gumball in both of your pulls?			
5) Pulling out a red first and then a yellow gumball second?			
6) Pulling a red first and a green or blue second?			
7) Pulling out a blue or red first and a yellow or green second?			

Name: _____ 116

Curriculum Connection
SP7.3

Independent Events – Dice Challenge

Part 1 Find the probability of each sum when two dice are rolled

1) What is the probability of you rolling two six-sided dice and getting a sum of the two dice greater than 8?

2) What is the probability of you rolling two six-sided dice and getting a sum of the two dice greater than 11?

3) What is the probability of you rolling two six-sided dice and getting a sum of the two dice less than 4?

+	1	2	3	4	5	6
1						
2						
3						
4						
5						

Part 2 Find the probability of each product when two dice are rolled

x	1	2	3	4	5	6
1						
2						
3						
4						
5						
6						

1) What is the probability of you rolling two six-sided dice and getting a product of the two dice greater than 20?

2) What is the probability of you rolling two six-sided dice and getting a product of the two dice less than or equal to 9?

3) What is the probability of you rolling two six-sided dice and getting a product of the two dice greater than or equal to 25?

Name: _____ 117

Curriculum Connection SP7.3

Theoretical vs Experimental Probability

Examples of Theoretical and Experimental Probability
Theoretical: You should roll a 3 once every 6 rolls = 1/6
Experimental: You rolled a 3 twice when you rolled a dice six times = 2/6

Part 1 Circle if the example is theoretical or experimental

Example	Theoretical	Experimental
1) Your free percentage is 80%, so you should make 8 of 10 free	Theoretical	Experimental
2) You the probability being 1/13 million	Theoretical	Experimental
3) There is an 80 lay	Theoretical	Experimental
4) It rained today gh th y a 10% POP	Theoretical	Experimental
5) Your teacher handed u got a hard candy.	Theoretical	Experimental
6) You have a 25% chance of draw he f cards	Theoretical	Experimental
7) You rolled a dice twice and got a 2 and a	etical	Experimental
8) The Toronto Blue Jays have a 50% probability ng their game tonight		Experimental
9) You flipped a coin 100 times and got heads 100 times!	eti	xperimental
10) The Liberal government won the Federal election	ore	al

Part 2 Follow the instructions below to complete the experiment

Example	Theoretical or Experimental	Fraction	Decimal	Percent
1) You should make 2 in every 5 three pointers.				
2) There is a one-in-8 chance of pulling a green candy from the candy bag.				
3) You rolled a dice 4 times. You got a 5 two times.				

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

Answer the following questions.

1. Your friend rolls a die 50 times and records that it lands on 2 more often than any other number.
   Circle Answer: Theoretical or Experimental

2) Based on the genetic traits of your parents, there is a 50% chance you will have blue eyes.
   Circle Answer: Theoretical or Experimental

3) Fill the table

Example	Theoretical or Experimental	Fraction	Decimal	Percent
In a class survey, 12 out of 25 students say their favourite fruit is apple.				

Name: _____

Answer the following questions.

1. Your friend rolls a die 50 times and records that it lands on 2 more often than any other number.
   Circle Answer: Theoretical or Experimental

2) Based on the genetic traits of your parents, there is a 50% chance you will have blue eyes.
   Circle Answer: Theoretical or Experimental

3) Fill the table

Example	Theoretical or Experimental	Fraction	Decimal	Percent
In a class survey, 12 out of 25 students say their favourite fruit is apple.				

Name: _____

Answer the following questions.

1. Your friend rolls a die 50 times and records that it lands on 2 more often than any other number.
   Circle Answer: Theoretical or Experimental

2) Based on the genetic traits of your parents, there is a 50% chance you will have blue eyes.
   Circle Answer: Theoretical or Experimental

3) Fill the table

Example	Theoretical or Experimental	Fraction	Decimal	Percent
In a class survey, 12 out of 25 students say their favourite fruit is apple.				

Name: _____ 119

Theoretical vs Experimental Probability

Theoretical Probability
What should happen

Example - The theoretical probability of flipping a heads is 1 time out of 2 or ½.

Experiment Probability
What did happen after the event (experiment)

Example – You flipped a coin 10 times and got 7 heads. The experimental probability is 7/10.

Part 1 Write the theoretical probability of the events happening below

Question	Fraction	Decimal	Percent
1) What is [illegible] probability of flipping a heads?			
2) Wha[illegible]ability of flipping a tails?			
3) What is the theo[illegible]ability of flipping a heads if you flipped the [illegible]?			
4) What is the theore[illegible]robability of flipping a heads and then rolling a dice a[illegible]?			
5) What is the theoretical prob[illegible] ro[illegible] and getting an odd number and then flipping a[illegible]			

Part 2 Experimental Probability - Flip a coin [illegible]mes [illegible]cord your results

1) How many heads and tails do you think you will flip[illegible]u[illegible]

He[illegible]	Tails
[illegible]	[illegible]

2) Perform the experiment by flipping a coin 20 times. Record how many [illegible]ails you get.

	Tallies	Frequency	Fraction	Decimal	Percent
Heads					
Tails					

3) Was the theoretical probability and experimental probability the same? Should it be the same? Explain.

_____

_____

Name: _____ 120

Curriculum Connection SP7.1

Theoretical vs Experimental Probability – Sock Drawer

Part 1 Write the theoretical probability of the events happening below

Your sock drawer is a mess! You have 50 socks in there in 5 different colours – white, blue, black, green, and red. Here is the breakdown of the socks in your drawer.

Colour of Sock	White	Yellow	Black	Green	Red
Number of Socks	14	4	22	6	4

1) If you reach into the drawer 50 times without looking, what is the theoretical probability that you will pull each of the colours below.

Colour	White	Yellow	Black	Green	Red
Fraction					
Decimal					
Percent					

Part 2 Complete the experiment and find the experimental probability

2) Close your eyes and point to a random [illegible] with the back of your eraser. Repeat this for 50 trials and tally your results below.

W R B Y W B W [illegible] B W
B W W R B W B Y B [illegible] G
Y B B G W Y R W B W [illegible] W
B Y G W G W Y R R R [illegible] Y

Colour of Sock	White	Yellow	Black	Green	Red
Tally					
Percent					

How did the experimental probability compare with the theoretical probability? Explain.

_____

_____

Name: _____ 121

Curriculum Connection SP7.3

Theoretical vs Experimental Probability - # of Events

The theoretical and experimental probability of an event happening is not guaranteed to be the same. Performing more trials in an experiment will cause the experimental probability to be closer to the theoretical probability.

Example – if you flip a coin 2 times, it is easy to picture getting heads twice in a row. That would mean the experimental probability of getting a heads was 100% or 2/2. However, if you flipped the coin 100 times, it is almost impossible to get 100 heads in a row.

Part 1

How many times should you get a 1, 2, 3, 4, 5, or 6 when performing the number of rolls below?

			3	4	5	6	Odd #
6 rolls							
12 rolls							
60 rolls							
600 rolls							
1200 rolls							

Part 2

Follow the instructions below to complete the experiments

1) Roll the dice 6 times. Tally your results

1			4		6

2) Roll the dice 60 times. Record how many of each number you get.

	1	2	3	4	5	6
Tallies						
Total						

3) Did the experimental probability get closer to the theoretical probability when you rolled the dice more times? Explain why this happens.

Name: _____ 122

Curriculum Connection SP7.3

Rolling Doubles

Part 1 What is the theoretical probability of rolling doubles when rolling 2 dice?

1) Fill in the table to help discover the theoretical probability of rolling doubles when rolling two dice.

Tip: favourable outcomes / total possible outcomes

2) What is the theoretical probability of rolling doubles as a fraction and percent?

Second Throw

First Throw	1	2	3	4	5	6
1	(1,1)	(1,2)	(1,3)	(1,4)	(1,5)	(1,6)
2						
3						
4						
5						
6						

Part 2 What is the experimental probability of rolling doubles when rolling 2 dice?

1) Roll 2 six-sided dice 24 times and record the number of rolls you complete using the table below. Put a tally every time you roll doubles.

Number of Rolls	Doubles

2) Was your experimental probability the same as the theoretical probability?

3) Was your experimental probability the same as the other students in your class? Explain why or why not.

4) If you performed 1000 rolls, do you think your experimental probability would be closer or further from the theoretical probability? Explain.

Name: _____ 123

Curriculum Connection SP7.3

Theoretical Probability of Two Events – Tree Diagrams

A tree diagram is used to show the probability of an outcome happening when we have more than one event

Combinations
HHH
HHT
HTH
HTT
THH
THT
TTH
TTT

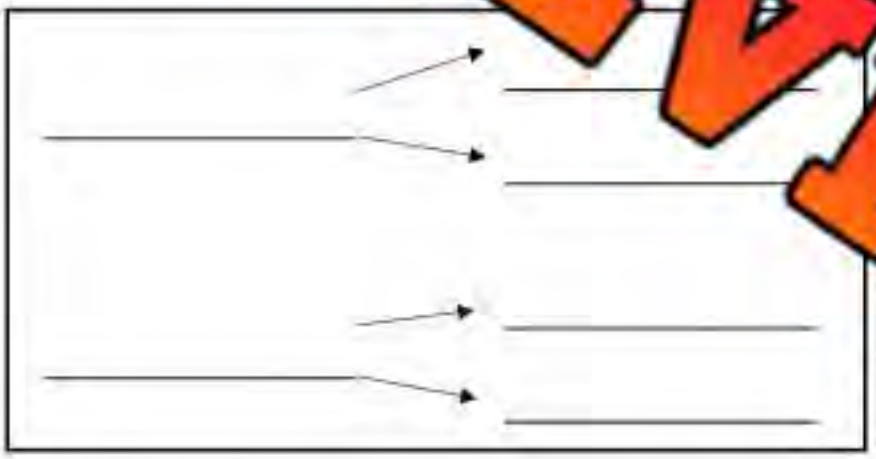
If you flip a coin three times, you could have 8 different combinations of outcomes.

HHH, HHT, HTH, HTT, THH, THT, TTH, TTT

This means you have a 1/8 probability of flipping three heads or tails in a row.

Questions Draw a tree diagram to show how many different combinations you could have

An ice cream shop sells two flavours of ice cream and two different cones. Show the combinations of ice cream you could have in a tree diagram below.



Combinations

Menu
- Waffle cone (W)
- Sugar cone (S)
- Chocolate (C)
- Vanilla (V)

1) How many combinations of ice cream could you have? _____

Combinations	Fraction	Decimal	Percent
a) Waffle cone with chocolate:			
b) Waffle cone with vanilla:			
c) Sugar cone with chocolate:			
d) Sugar cone with vanilla:			

Name: _____ 124

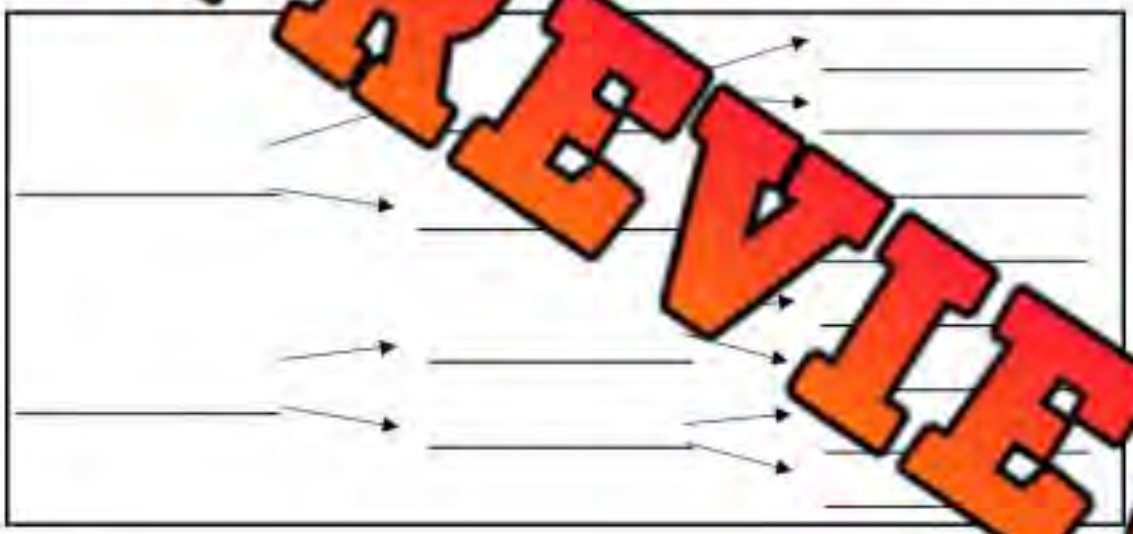
Curriculum Connection
SP7.3

Tree Diagrams – Independent Events

Questions Draw a tree diagram to show how many different combinations you could have

A pizza shop sells regular and gluten-free crust pizza. They have 2 types of cheese and 2 types of toppings. Check out their menu and draw a tree diagram to show all the combinations of pizza.

Menu
- Regular crust (R)
- Gluten-Free crust (G)
- Mozza cheese (M)
- Cheddar cheese (C)
- Pepperoni (P)
- Onion (O)



Combinations

1) How many combinations of pizza could you have? _____

What is the probability of a customer ordering a...	Fraction	Decimal	Percent
2) Regular crust with mozza cheese and pepperoni			
3) Gluten-free crust with cheddar cheese and onions			
4) Gluten-free or regular crust with mozza and pepperoni			
5) Gluten-free crust with mozza or cheddar cheese and onions			
6) Regular crust with cheddar or mozza cheese and onions or pepperoni.			
7) Gluten-free or regular crust with cheddar or mozza cheese and pepperoni			

Name: _____ 125

Curriculum Connection
SP7.3

Tree Diagrams – Independent Events

Questions Draw a tree diagram to help you find the probability of different combinations

A restaurant sells hot dogs, sausages, and cheeseburgers. They also have toppings and sauces. What is the probability a customer will order a specific combination of food, topping, and sauce?

Food	Topping	Sauce
Hot Dog (H)	Onion (O)	Ketchup (K)
Sausage (S)		Mustard (M)
Cheeseburger (C)		Relish (R)
		Mayonnaise (M)

1) How many combinations of food could you have? _____

What is the probability of a customer ordering a...	Fraction	Decimal	Percent
2) Hot dog with onion, and ketchup			
3) Sausage with onion and relish or mustard			
4) Cheeseburger or Sausage with onion and relish			
5) Hot dog or sausage with onion and ketchup, mustard, relish, or mayonnaise			
6) Cheeseburger with onion and ketchup, mustard, or mayonnaise			

Curriculum Connection
SP7.1

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

Draw a tree diagram to help you find the probability of different combinations

A smoothie shop allows customers to create their own smoothies by choosing one option from each category: base, fruit, and topping. They have 2 types of bases, 3 types of fruits, and 2 types of toppings.

Bases	Fruits	Toppings
Yogurt (Y)	Banana (B)	Granola (G)
Almond Milk (A)	Strawberry (S)	Chia Seeds (C)
	Blueberry (BB)	

Name: _____

Draw a tree diagram to help you find the probability of different combinations

A smoothie shop allows customers to create their own smoothies by choosing one option from each category: base, fruit, and topping. They have 2 types of bases, 3 types of fruits, and 2 types of toppings.

Name: _____ 127

Curriculum Connection
SP7.3

Tree Diagrams – Independent Events

Questions Draw a tree diagram to help you find the probability of different combinations

There is a bag full of the following different colour marbles:

- 2 red marbles (R)
- 2 blue marbles (B)
- 2 green marbles (G)

Draw a tree diagram for the following scenario:
You pull one marble out and then put it back in the bag before pulling another marble

Tree Diagram	Combinations
1st Draw 2nd Draw	

1) How many combinations of colours could you draw? _____

What is the probability of drawing...	Fraction	Decimal	Percent
2) A red marble and then a green marble?			
3) A green marble and then a blue marble?			
4) A blue marble and another blue marble?			
5) A red marble and a blue marble?			

Name: _____ 128

Curriculum Connection SP7.3

Determining Probability of Multiple Events – Tree Diagram

1) Jeff is getting dressed for the day. He has many options for clothing. Check out the tree diagram below to see all the combinations he can choose from.

a) How many options does Jeff have for a top? _____

b) How many options does Jeff have for a bottom? _____

c) How many options does Jeff have for shoes? _____

d) How many different combinations of clothing does Jeff have? _____

e) What happens if you multiply the options all together? _____ x _____ x _____ = _____

What is the probability of you choosing a...	Fraction	Decimal	Percent
2) Shirt with pants and sandals			
3) Sweater or jersey with shorts or pants and sneakers			
4) Jersey with pants or shorts and sandals			
5) Shirt or sweater with pants or shorts and sneakers			
6) Shirt, sweater, or jersey with pants or shorts, and sandals or sneakers			

Name: _____ 129

Curriculum Connection
SP7.3

Determining Probability of Multiple Events

Questions | Solve each problem

1) A customer walks in Premiere Pizza where you can order one type of pizza and a drink for $10. The menu is below.

Pizza	Drink
Pep[illegible]oni	Soda
[illegible]	Juice
[illegible]	

a) How [illegible] the customer order?

b) What is the prob[illegible] custo[illegible] orders bacon pizza wi[illegible]?

c) What is the probability the cu[illegible] orders mushroom or pepperoni pizz[illegible]th juice?

2) Your teacher teaches 3 classes in the morning. The options for each class are below.

Class 1	Class 2	Class 3
Math	Gym	Social Studies
Language	French	Science
Health	Drama	Music

a) How many combinations could your teacher choose?

b) What is the probability your teacher chooses math or health, gym, and music?

[illegible]is the probability your teacher [illegible]th, gym or French, and science mus[illegible]

3) At a fancy restaurant, you can order a surprise dinner. They tell you the options for the meat, vegetables, and dessert.

Meat	Vegetables	Dessert
Chicken	Potatoes	Donuts
Steak	Salad	Brownie
Fish		Cake

a) How many combinations could the chef make?

b) What is the probability the chef makes chicken with potatoes and cake or donuts?

c) What is the probability the chef makes steak or fish with salad or potatoes and donuts?

4) [illegible]ll yo[illegible]rise you with your [illegible]ons for [illegible]

Top	[illegible]	[illegible]	[illegible]Hat
Shirt	Pa[illegible]	[illegible]	[illegible]
Sweater	Shorts	[illegible]	[illegible]ap
Hoodie	[illegible]	Runn[illegible]	[illegible]

a) How many combinations could your mom pick?

b) What is the probability your mom picks a shirt with pants and shoes and a cap?

c) What is the probability your mom picks a hoodie or shirt with pants and sandals or runners with a toque or cap?

Name: _____ 130

Curriculum Connection
SP7.3

Experimental Probability of Two Events

Activity Complete the experiment below to find the experimental probability

Question: What is the experimental probability of getting two heads in a row when flipping a coin?

Directions
1) Flip a c twice
2) Repeat es
3) Recor sults in the frequency table

Results	Frequency
HH	
HT	
TT	
TH	

1) Fill in the table to fi imental probability as a percent, decimal, and fraction.

Results	an	mal	Percent
HH			
HT			
TT			
TH			

2) Fill in the table below to determine the theoretical pr ty below if you completed 30 trials (each trial is flipping a coin twi

Results	Fraction	Decimal	Percent
HH			
HT			
TT			
TH			

3) If you performed this experiment 100 times instead of 30, would you be closer to the theoretical probability? Explain.

_____

_____

Name: _____ 131

Curriculum Connection
SP7.3

Number Simulation – Independent Events

Part 1 Theoretical Probability – Answer the questions below

Pretend you are drawing two numbers from 1-10. Since these are independent events, you can select the same number more than once.

If you picked two numbers, what is the theoretical probability of...	
1) Picking a [illegible] and a 2?	
2) Picking [illegible]	
3) Pick[illegible]	

If you complete[illegible] (rolling [illegible] numbers)	
4) 10 trials, what [illegible] probabil[illegible] a 3 and a 6?	
5) 30 trials, what is the p[illegible] get[illegible] and a 6?	
6) 100 trials, what is the prob[illegible] ge[illegible] a 6?	

Part 2 Experimental Probab[illegible] Perfo[illegible]eriment below

Set up the experiment by cutting the numbers out [illegible] belo[illegible] them in a bag. Perform the number of trials below by selecting 2 nu[illegible] the ba[illegible] you select a number, you put the number back in the bag bef[illegible]g th[illegible] number.

Complete...	
1) 10 trials - how many times did you get a 3 and a 6?	
2) 30 trials - how many times did you get a 3 and a 6?	
3) 100 trials - how many times did you get a 3 and a 6?	

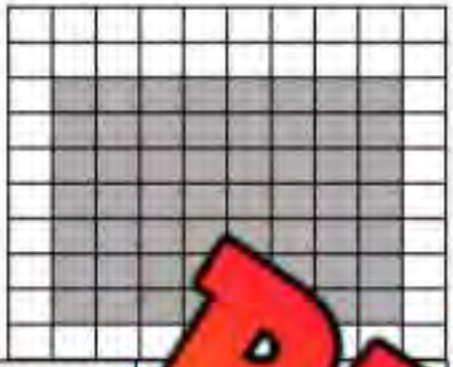
1	2	3	4	5
6	7	8	9	10

Name: _____ 132

Unit Quiz - Probability

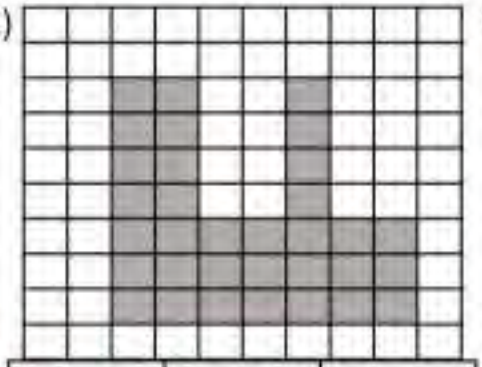
Part 1 Represent the probability of hitting the target using a fraction, decimal and percent

1)



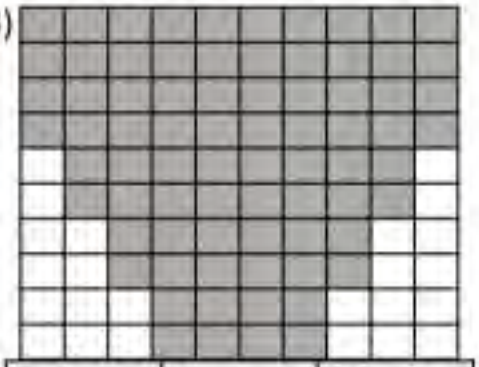
Fraction		

2)



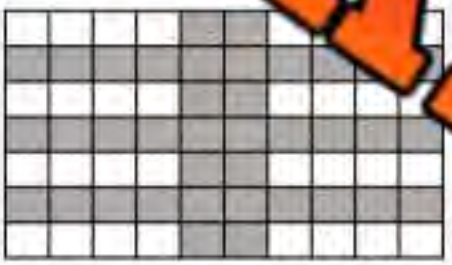
Fraction	Decimal	Percent

3)



Fraction	Decimal	Percent

4)



Fraction	
Decimal	
Percent	

5)

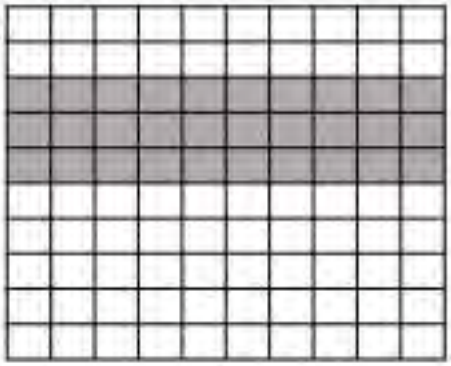
Fraction	
Decimal	
Percent	

6)

ion	
Perc	

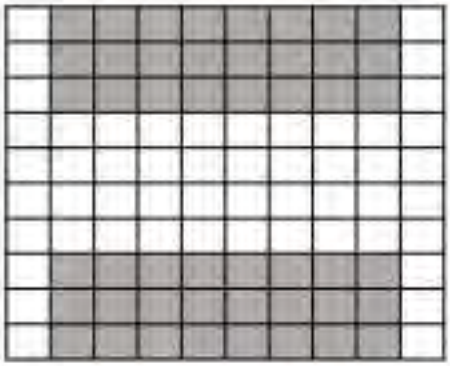
Part 2 What is the probability of hitting the target twice if yo ws?

7)



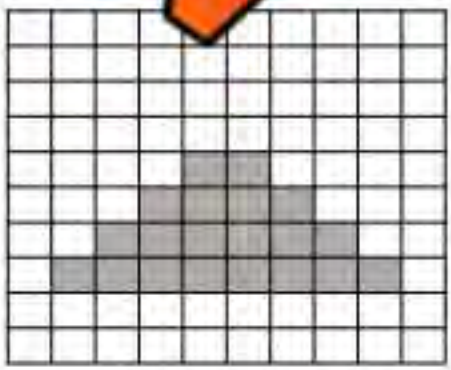
Fraction	Decimal	Percent

8)



Fraction	Decimal	Percent

9)



Fraction	Decimal	Percent

Part 3 What is the probability of...

Event	Fraction	Decimal	Percent
1) Flipping a heads with a coin			
2) Rolling a 6-sided dice and getting an odd number			
3) Rolling a 2 and getting a tails			
4) Rolling a [illegible]d getting a heads			
5) Rolling [illegible]r and getting a tails			
6) Roll[illegible] even [illegible]d getting a heads or a tails			
7) Rolling a 1, 2, 3[illegible]nd g[illegible]ds			
8) Rolling a 1, 2, 3, 4, 5, o[illegible]tting			

Part 4 Circle if the example i[illegible]etical [illegible]imental

Example	T[illegible] Experimental
1) You should get a tails 5 out of 10 times when flipping a coin	The[illegible]al Ex[illegible]
2) You should make 30 three pointers out of 100 because your 3-point percentage is 30%.	T[illegible] Experim[illegible]tal
3) You made 10 free throws out of 13	Theoretical Experimental
4) You have a 1/100 chance of winning the 50/50 draw because you have 1 ticket out of 100 sold.	Theoretical Experimental
5) There is a 25% chance that it will rain today	Theoretical Experimental

Marbles

There are 24 marbles in a bag. What is the likelihood of you pulling out a white, grey, or black marble?

Part 5 Fill in the frequency table below

Marble Colour	Frequency
Bl	

Part 6 What [illegible] probability [illegible] events below if you get two pulls and always put back [illegible] marble [illegible]?

Even[illegible]	Fraction	Decimal	Percent
1) Pulling out two black marbles?			
2) Pulling out two grey marbles?			
3) Pulling out a black, grey or white marble in either of your pulls?			
4) Pulling out a green marble in either of your pulls?			
5) Pulling out a black first and a grey second?			
6) Pulling out a white first and a black or grey second?			
7) Pulling out a white or grey first and a black second?			