



Preview - Information



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Google Slides Lessons Preview





Ontario Math Curriculum

Data Literacy & Probability – Grade 3

3-Part Lesson Format

Part 1 – Minds On!

- Learning Goals
- Discussion Questions
- Quotes
- And More!

SORTING DATA

Learning Goal

We are learning to **sort and organize sets of data using two or three attributes**, so we can **clearly compare information and explain patterns, similarities, and differences in the data.**

SORTING DATA

Move the foods to the correct category.

Vegetables	Fruits	Dairy Products	Treats
			
			
			

Part 2 – Action!

- Writing
- Matching
- Drag and Drop
- Drawing
- And More!

Part 3 – Consolidation!

- Exit Cards
- Quizzes
- Reflection
- And More!

SORTING DATA – CARROLL DIAGRAM

Move the items to the correct category.

	Worn In Cold Weather	Worn In Hot Weather	Shirt	Leggings	Hoodie
Worn On Top					
Worn On Bottom					

Questions	Answer
1) Which other clothing is worn on top in cold weather?	
2) Which other clothing is worn on bottom in warm weather?	
3) Which other clothing is worn on top in warm weather?	



Ontario Math Curriculum

Data Literacy & Probability – Grade 3

TALLY MARKS

1 2 3 4 5 6 7 8 9 0

The students in a class were asked what their favourite fruit is. The results are shown using tally marks. Fill in the frequency for each category.

Category	Apples	Bananas	Oranges	Grapes
Tally				
Frequency				

Oranges

Grapes

1

Bananas

32

Questions

- 1) How many students were surveyed in the class?
- 2) Which fruit is the most popular in the class?
- 3) Which fruit is the least popular in the class?
- 4) How many more students chose bananas than grapes?

DATA – TREE DIAGRAMS

Job survey - read the table below and represent the data in a tree diagram.

Tool Used	Paper Colour	Used Stickers?	Number of Students
Paintbrush	White	Yes	3
Paintbrush	White	No	2
Paintbrush	Yellow	Yes	1
Paintbrush	Yellow	No	1
Fingers	White	Yes	2
Fingers	White	No	4
Fingers	Yellow	Yes	1
Fingers	Yellow	No	2
Fingers	Yellow	No	1

1	Yellow	Yes	White	Paintbrush
3	No	Fingers	2	4

Tree Diagram:

```

    graph LR
      A[Tool Used] --> B[Paper Colour]
      B --> C[Stickers]
      C --> D[# of Students]
      A --- B
      B --- C
      C --- D
      A --- D
      B --- D
      C --- D
      A --- D
  
```

SORTING

Read the paragraph and fill the table accordingly.

Thirty students were surveyed. Fourteen chose sports. Of those, six played with a partner outdoors, three played with a partner indoors, three played alone outdoors, and two played alone indoors. Ten students chose art activities. Of those, four worked alone indoors, two worked alone outdoors, two worked with a partner indoors, and two worked with a partner outdoors. Six students chose reading. Of those, three read alone indoors, one read alone outdoors, one read with a partner indoors, and one read with a partner outdoors.

Activity	Alone/With Partner	Indoor	Outdoor
Sport	Alone		
	With Partner		
Art	Alone		
	With Partner		
Reading	Alone		
	With Partner		



Ontario Math Curriculum

Data Literacy & Probability – Grade 3

MEAN AND MODE

Find the mean and mode of each data set below.

Soccer Goals 4 2 5 2 7 Mean = _____ Mode = _____	Math Points 17 20 15 18 15 Mean = _____ Mode = _____	Minutes Practising Music 20 20 10 30 Mean = _____ Mode = _____	1 2 3 4 5 6 7 8 9 0 Basketball Shots Made 10 8 6 10 11 Mean = _____ Mode = _____
Pages Read 8 12 8 4 Mean = _____ Mode = _____	Recess Laps 5 5 4 5 6 Mean = _____ Mode = _____	Stickers Earned 6 10 6 6 Mean = _____ Mode = _____	Minutes of Screen Time 30 10 30 20 30 Mean = _____ Mode = _____

Read the table below and decide the scale that should be used.

Primary school students were asked their favourite subject.

Subjects	# of Students
Science	50
Math	30
Language	40
Art	60
Gym	70

Science Math Language Art Gym

PROBABILITY

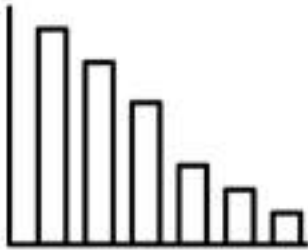
Find the probability of each event below.

1) A basket has 10 apples in a basket. Half of them are red apples, and the other half are green apples. A) How many apples are red? _____ B) How many apples are green? _____	1 2 3 4 5 6 7 8 9 0 2) A box has 18 crayons. Half of them are warm colours, and the rest are cool colours. A) How many crayons are warm colours? _____ B) How many crayons are cool colours? _____
3) There are 14 children playing at recess. Half of them are playing soccer, and the other half are playing tag. A) How many children are playing soccer? _____ B) How many children are playing tag? _____	4) There are 16 books on a shelf. Half of the books are story books, and the rest are information books. A) How many books are story books? _____ B) How many books are information books? _____



Workbook Preview





Grade 3
D1. – Data Literacy

	Curriculum Expectations	Pages That Cover the Expectations
D1.1	sort sets of data about people or things according to two and three attributes, using tables and logic diagrams, including Venn, Carroll, and tree diagrams, as appropriate	5 – 15, 18 – 33
D1.2		34 – 50, 51 – 56, 96
D1.3	display sets of data, using many-to-one correspondence, in pictographs and bar graphs with proper sources, titles, and labels, and appropriate scales	57 – 60, 72 – 83, 89, 91, 93, 95, 97
D1.4	determine the mean and identify the mode(s), if any, for various data sets involving whole numbers, and explain what each of these measures indicates about the data	34 – 41
D1.5	analyse different sets of data presented in various ways, including in frequency tables and in graphs with different scales, by asking and answering questions about the data and drawing conclusions, then make convincing arguments and informed decisions	51 – 56, 61 – 71, 98 – 101











**Preview of 90 pages from
this product that contains
233 pages total.**

Sorting Data

Part 1

Sort the animals by writing the letter in the correct category

Mammal	Bird	Reptile	Insect

 A	 B	 D	 E	 F
 G	 H	 I	 J	 L

Part 2

Read the list of data and match them with the correct category

- | | |
|---|--------------------|
| a) hammerhead shark, dolphin, seahorse, jellyfish | _____ sea animals |
| b) rose, tulip, daisy, lily | _____ plants |
| c) tiger, lion, bear, wolf | _____ wild mammals |
| d) robin, eagle, parrot, penguin | _____ birds |
| a) triangle, square, circle, rectangle | _____ shapes |
| b) one, two, three, four | _____ numbers |
| c) happy, sad, angry, excited | _____ emotions |
| d) big, small, tall, short | _____ sizes |

Name: _____

6

Sorting Data

Part 1

Sort the shapes based on two attributes



A



B



C



D



E



F



G

Triangles (Letters)	Hearts (Letters)	Moons (Letters)	White Shapes (Letters)	Striped Shapes (Letters)
Number of Triangles	Number of Hearts	Number of Moons	Number of White Shapes	Number of Striped Shapes

Part 2

Sort the shapes based on two attributes



A



B



C



D



E



F



G



H



I

White Clouds (Letters)	Dark Clouds (Letters)	Patterned Clouds (Letters)	Total Number of Clouds
Number of White Clouds	Number of Dark Clouds	Number of Patterned Clouds	Total Number of Clouds

1) How many clouds are both white AND have a pattern?

2) Which group is the largest?

3) When sorting data, can something/someone belong to two groups?

Exit Cards

Cut Out

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

Name: _____

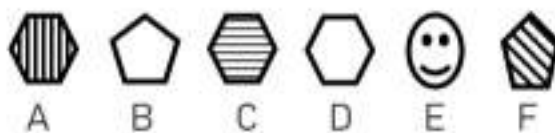
Sort the shapes based on two attributes



Pentagon (Letters)	Hexagon (Letters)	Smiley Face (Letters)
White Shapes (Letters)		Striped Shapes (Letters)

Name: _____

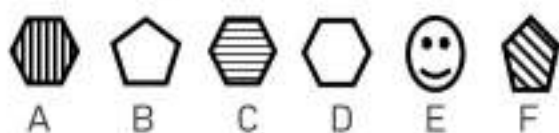
Sort the shapes based on two attributes



Pentagon (Letters)	Hexagon (Letters)	Smiley Face (Letters)
White Shapes (Letters)		Striped Shapes (Letters)

Name: _____

Sort the shapes based on two attributes



Pentagon (Letters)	Hexagon (Letters)	Smiley Face (Letters)
White Shapes (Letters)		Striped Shapes (Letters)

Name: _____

Sort the shapes based on two attributes








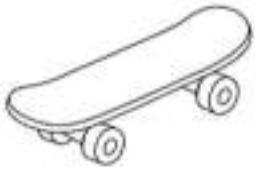


Pentagon (Letters)	Hexagon (Letters)	Smiley Face (Letters)
White Shapes (Letters)		Striped Shapes (Letters)

Sorting Data – Carroll Diagram

Part 1

Sort the vehicles into the correct categories

			
Rocket	Boat	Bus	Airplane
			
Car	Bicycle	Helicopter	Skateboard

	Used On Land	Used In Air Or Water
Used By Many People		
Used By 1 Person		

Part 2

Give examples of animals that fit the following categories

Can you think of another vehicle that...	
1) Is used on land and carries many people?	
2) Is used on land and carries only one person?	
3) Is used in air or water and carries many people?	
4) Is used in air or water and carries only one person?	

Sorting Data – Carroll Diagram

Part 1

There are 14 clocks below that show 24-hour time. Sort them in the Carroll diagram.



	Before 12:00 (AM)	After 12:00 (PM)
Before Half Past		
After Half Past		

Part 2

Give examples of times that fit the following categories.

Can you think of another time that...	
1. Is before 12:00 and before half past the hour?	
2. Is before 12:00 and after half past the hour?	
3. Is after 12:00 and before half past the hour?	
4. Is after 12:00 and after half past the hour?	
5. Is before 07:00 in the morning?	
6. Is between 13:00 and 15:00?	

Exit Cards

Cut Out

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

Name: _____

Carrol Diagram: Sort the vehicles into the correct categories.

Bicycle	Surfboard	Train
Boat	Motorcycle	Car

	Moves on Land	Does Not Move on Land
Needs Fuel		
No Fuel		

Name: _____

Carrol Diagram: Sort the vehicles into the correct categories.

Bicycle	Scooter	Surfboard	Train
Boat	Motorcycle	Airplane	Car

	Moves on Land	Does Not Move on Land
Needs Fuel		
No Fuel		

Name: _____

Carrol Diagram: Sort the vehicles into the correct categories.

Bicycle	Scooter	Surfboard	Train
Boat	Motorcycle	Airplane	Car

	Moves on Land	Does Not Move on Land
Needs Fuel		
No Fuel		

Name: _____

Carrol Diagram: Sort the vehicles into the correct categories.

Bicycle	Scooter	Surfboard	Train
Boat	Motorcycle	Airplane	Car

	Moves on Land	Does Not Move on Land
Needs Fuel		
No Fuel		

Name: _____

16

Curriculum Connection
D1.2

Tally Marks

= 1	= 2	= 3	= 4	= 5
= 6	= 7	= 8	= 9	= 10

Part 1 Count the tally marks

Part 2 Draw tally marks that match the number

5 =	9 =	
14 =	19 =	23 =
34 =	42 =	

Part 3 Which is greater? Use the < > or =

12 _____	11 _____	22 _____
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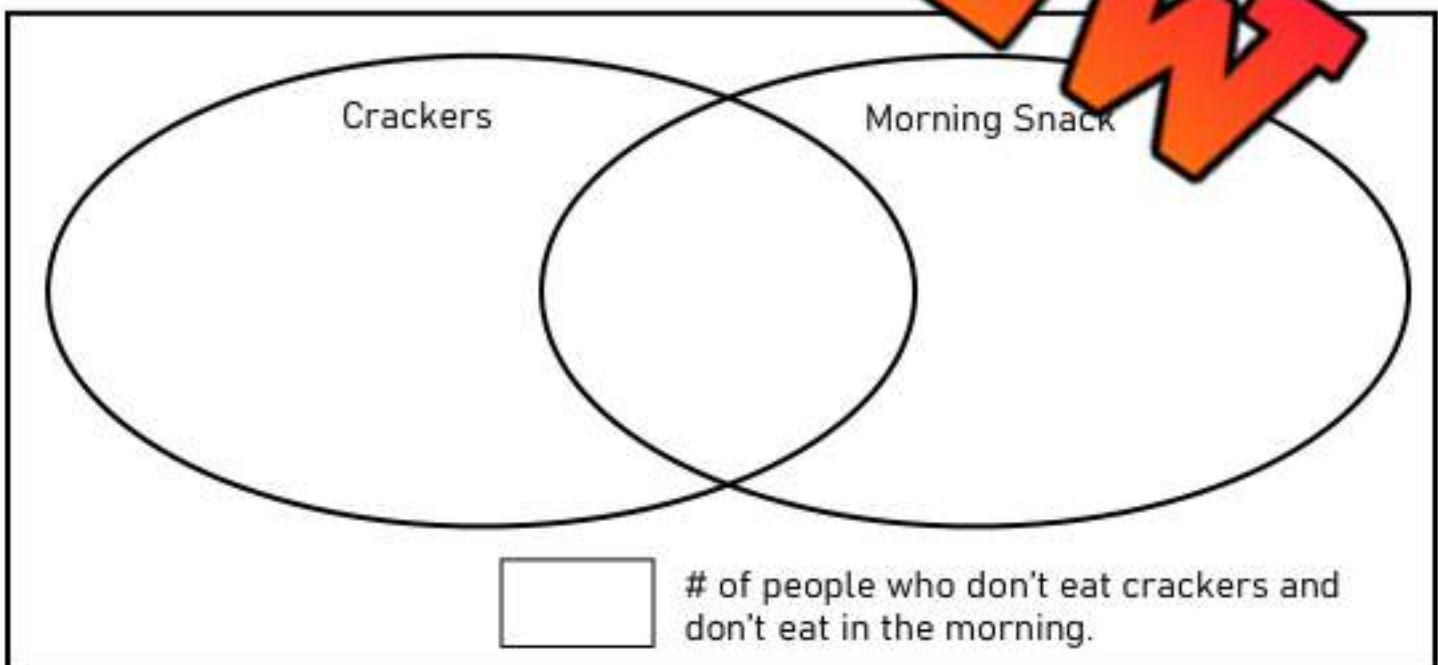
Two-Way Tables and Venn Diagrams

Snack Type	Morning Snack	Afternoon Snack
Fruit	### IIII	IIII
Crackers	###	### II
Cookies	II	### I

Part 1 Fill in the table below that is setup to display just two attributes from the data

Students' Favourite Snacks by Time of Day		
Snack Type	Morning Snack	Not Morning Snack (Afternoon Snack)
Crackers		
Not Crackers (Fruit and Cookies)		

Part 2 Fill in the Venn Diagram that is setup to display two attributes from the data



Name: _____

Snack Type	Morning Snack	Afternoon Snack
Fruit	### IIII	IIII
Crackers	###	### II
Cookies	II	### I

Part 3

Choose 2 attributes from the data and create your own Carroll Diagram.

Part 4

Choose 2 attributes from the data and create a Venn Diagram.

A large empty Venn diagram with two overlapping circles. Below the diagram is a small empty rectangular box.

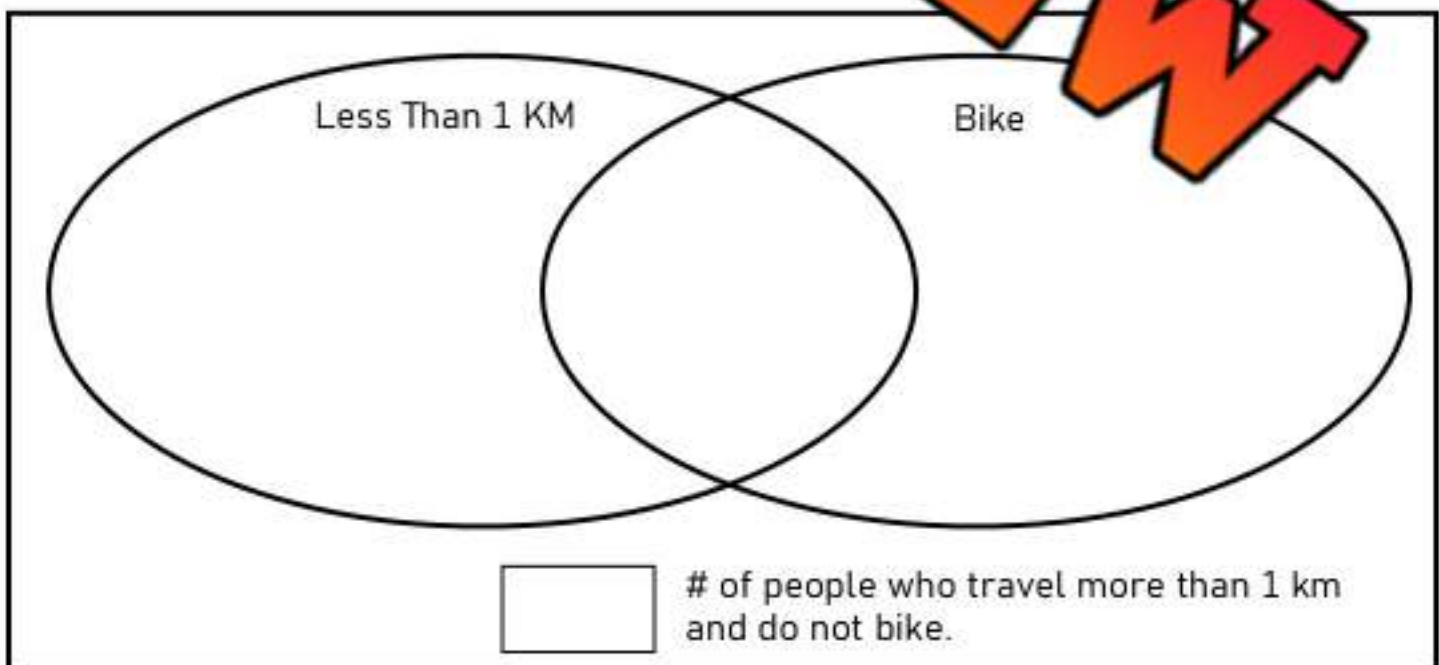
Two-Way Tables and Venn Diagrams

Transportation Method	Less than 1 km	1-5 km	Over 5 km
Walk			
Bike			
Bus			
Car			

Part 1 Fill in the two-way table below that is setup to display just two attributes from the data

	Distance	
Vehicle	Less Than 1 KM	More Than 1 KM
Bike		
Not A Bike		

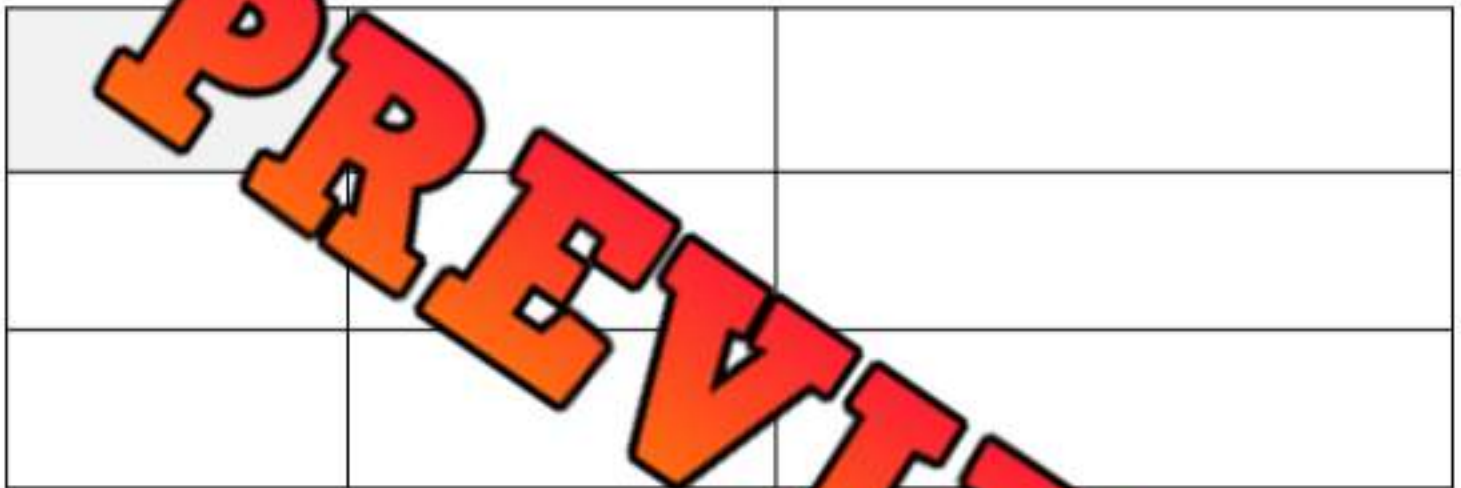
Part 2 Fill in the Venn Diagram that is setup to display two attributes from the data



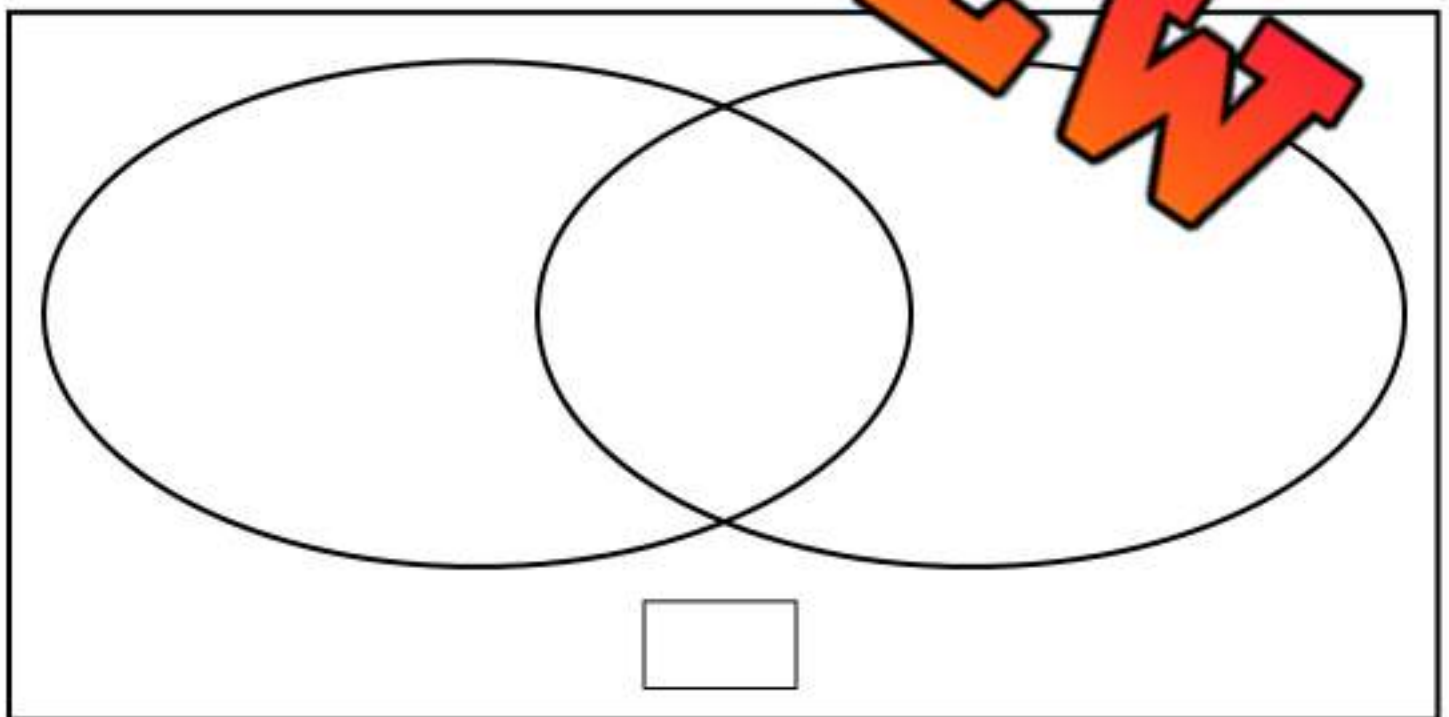
Name: _____

Transportation Method	Less than 1 km	1-5 km	Over 5 km
Walk	### ##		
Bike	### ##	###	
Bus		###	### ##
Car		###	### ##

Part 3 Choose 2 attributes from the data and create your own Carroll Diagram.



Part 4 Choose 2 attributes from the data and create your own Venn Diagram.



Two-Way Tables and Venn Diagrams

Instructions

Read the paragraph below. Represent the data in the tally table, Carroll diagram, and Venn diagram.

Twenty-seven students in a class were surveyed about where they usually do their homework and what tool they prefer to use. Ten students said they work at the kitchen table. Of those ten, four students use a pencil, three use a pen, and three prefer using a laptop. Nine students said they usually do their homework in the living room. Two of them use a pencil, one use a laptop, and two use a pen. The final eight students said they do their homework in their bedroom. Three bedroom workers use a pencil, two use a pen, and three use a laptop.

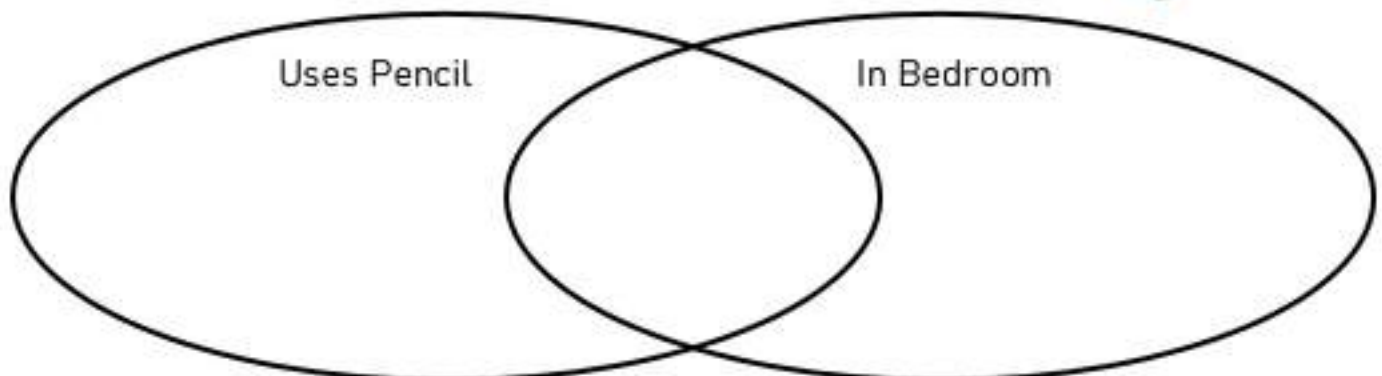
Tally Table

Tool Used	Kitchen	Living Room	Bedroom
Pencil			
Pen			
Laptop			

Carroll Diagram

Tool Use	In Bedroom	Not In Bedroom
Uses Pencil		
Does Not Use Pencil		

Part 2 Fill in the Venn Diagram that is setup to display just two attributes from the data.



of students who don't use a pencil and don't work in their bedroom

Part 3 Choose 2 attributes from the data and create your own Carroll Diagram.

Part 4 Choose 2 attributes from the data and create your own Venn Diagram.

PREVIEW

Part 5 Questions

1) How many more students use a laptop than a pen to do their homework?	
2) How many students use either a pencil or a pen, but not both?	
3) How many students do not use a laptop at all?	
4) Do more students who use a pencil work in their bedroom or outside of it?	
5) What is the total number of students who do not work in the living room?	

Name: _____

24

Curriculum Connection
D1.1

Sorting Numbers – Venn, Two-Way, Carroll

742	1428	51	982	1024
3058	4925	485	221	9842

Part 1

Sort the numbers into the correct categories in the Carroll diagram

	Less Than 1000	More Than 1000
Odd Numbers		
Even Numbers		

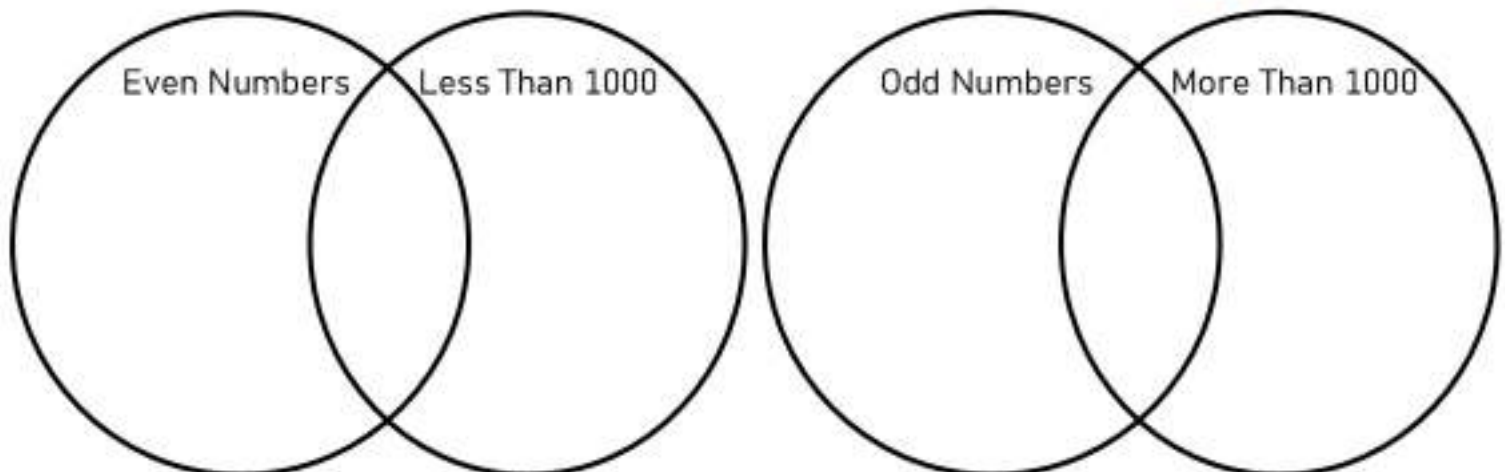
Part 2

Fill in the two-way table

	Less Than 1000	More Than 1000	Total
Odd Numbers			
Even Numbers			
Total			

Part 3

Sort the numbers using the Venn Diagram



Collecting Data – Carrol Diagram

Directions

Survey your classmates using the survey question and fill in the Carrol Diagram

Survey Question: Do you prefer chocolate or vanilla ice cream? Do you prefer your ice cream in a cone or in a bowl?



	Chocolate	Vanilla
Cone		
Bowl		



Questions

Fill in the two-way frequency table below

	Chocolate	Vanilla	Total
Cone			
Bowl			
Total			

1) How many friends participated in the survey?

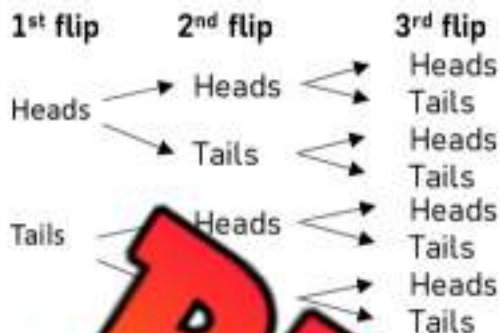
2) Which type of ice cream is the most popular?

3) Which type of ice cream is the least popular?

4) What did you learn about the data?

Sorting Data – Tree Diagrams

A tree diagram is a way of showing combinations of two or more events



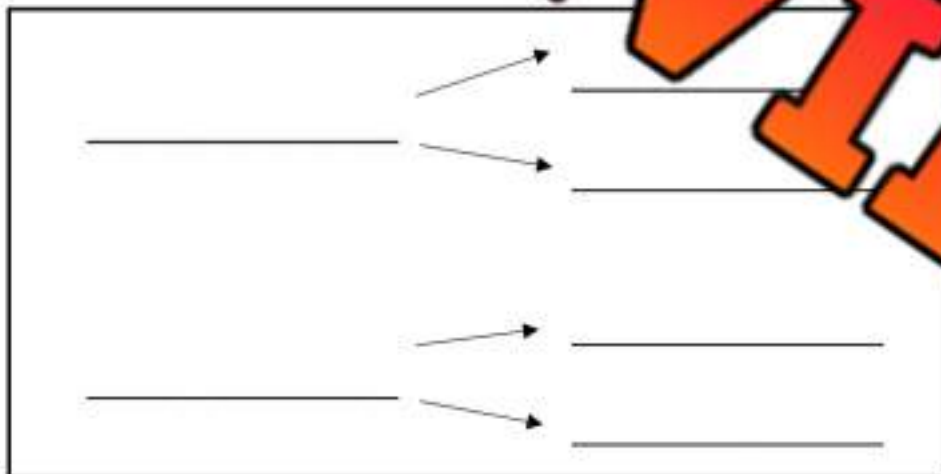
If you flip a coin three times, you could have 8 different combinations of outcomes.

HHH, HHT, HTH, HTT, THH, THT, TTH, TTT
(H=Heads, T=Tails)



Questions Draw a tree diagram to show how many different combinations you could have

An ice cream shop has two different ice cream and two different cones. Show the combinations of ice cream and cones you could have in a tree diagram below.



Menu

Waffle cone

Vanilla cone

Chocolate



1) How many combinations of ice cream could you have?

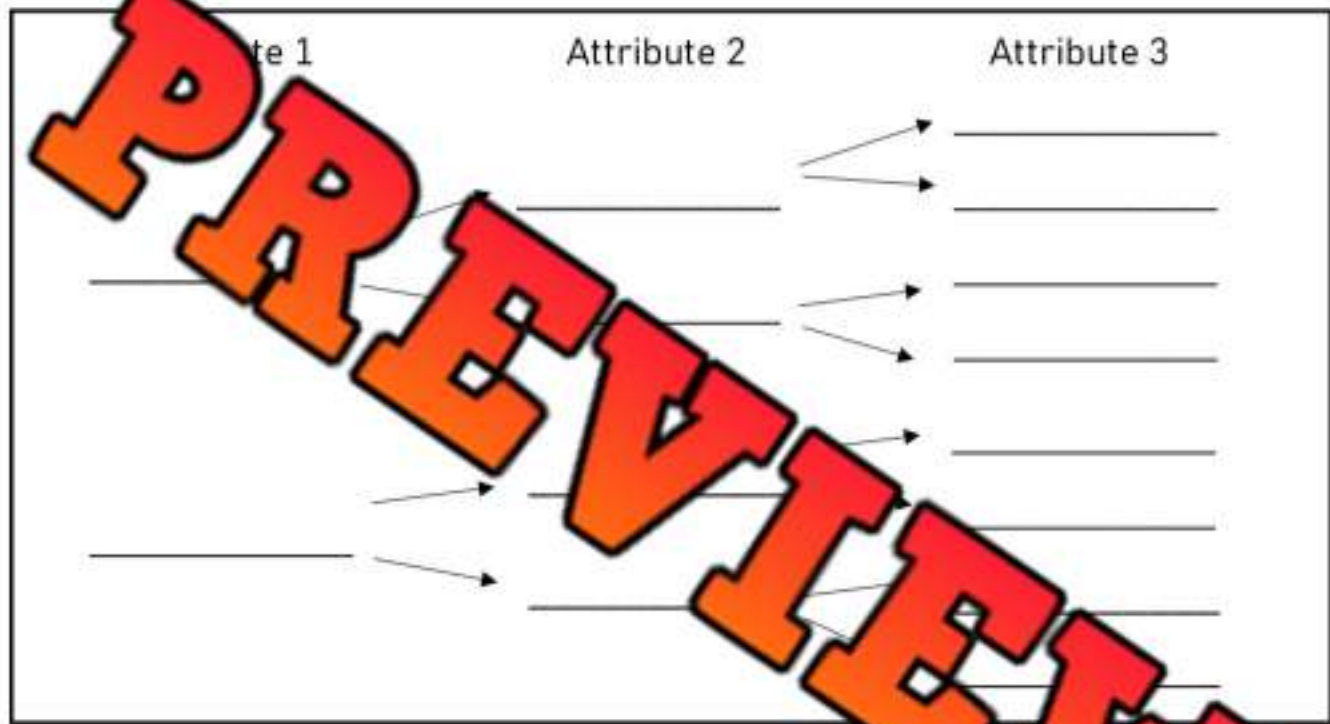
2) Which combination would you choose?

3) What combinations of things could you order at a restaurant? Come up with your own example.

Sorting Data – Tree Diagrams

Tree diagrams help us organize and show all the possible combinations when there are two or more choices. **Carroll diagrams** are used when you're sorting items using exactly two attributes.

A pizza shop sells thin and thick 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

-  Thin crust
-  Thick crust
-  Mozza cheese
-  Cheddar Cheese
-  Pepperoni
-  Mushrooms

1) How many combinations of pizza could you make?

2) Which combination would you choose?

3) Why are tree diagrams used?

4) If you were making hamburgers, list some options you could include for the bun and toppings.

Bun	Toppings


Sorting Data – Tree Diagrams

Questions Draw a tree diagram to show how many different combinations you could have

A restaurant sells hot dogs and sausages. They also have toppings. How many different combinations could you have if you were ordering from this menu?



Food	Toppings	Sauce
Hot Dog (HD)	Onion (O)	Ketchup (K)
Sausage (S)	Pickles (P)	Mustard (M)



PREVIEW

1) How many combinations of food could you have?

2) Which combination would you choose?

3) What toppings/sauces would you want to add?

Sorting Data – Tree Diagrams

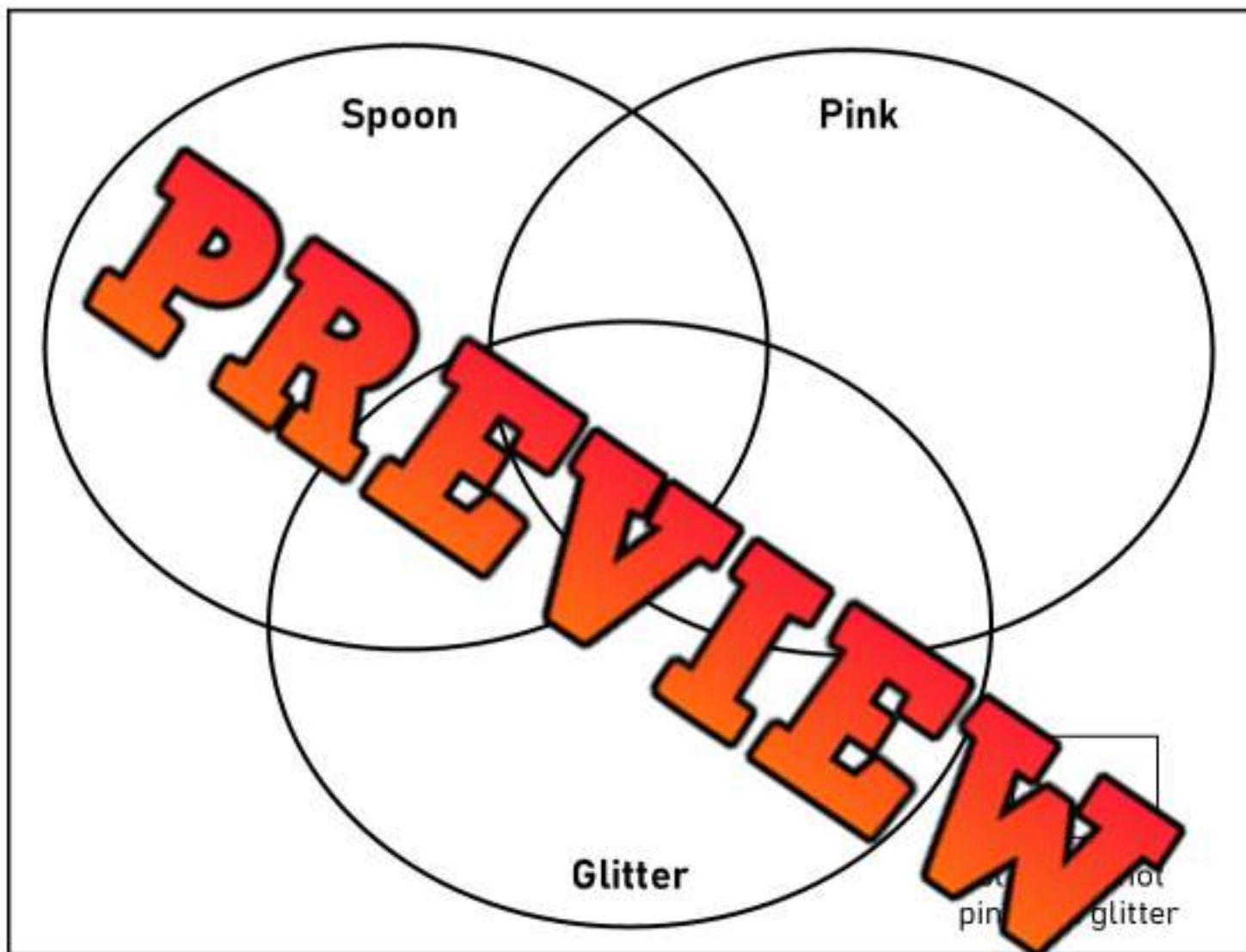
Instructions Soap making survey - read the table below and represent it in a tree diagram

Tool	Colour	Used Glitter?	Number of Students
Spoon	Pink	Yes	4
Spoon	Pink	No	2
Spoon	Blue	Yes	1
Spoon	Blue	No	3
Stick	Pink	Yes	2
Stick	Pink	No	1
Stick	Blue	Yes	2
Stick	Blue	No	1

PREVIEW

Sorting Data – Venn Diagram – 3 Attributes**Instructions**

Use the data from the previous page to create a Venn diagram.



1) How many students used a spoon in total?	
2) How many students used a stick and blue soap?	
3) How many students used a spoon and did not use glitter?	
4) How many more students used a spoon than a stick?	
5) How many students were surveyed in total?	

Sorting Data – Tree Diagrams

Instructions

Read the paragraph and fill in the tally table and Venn diagram

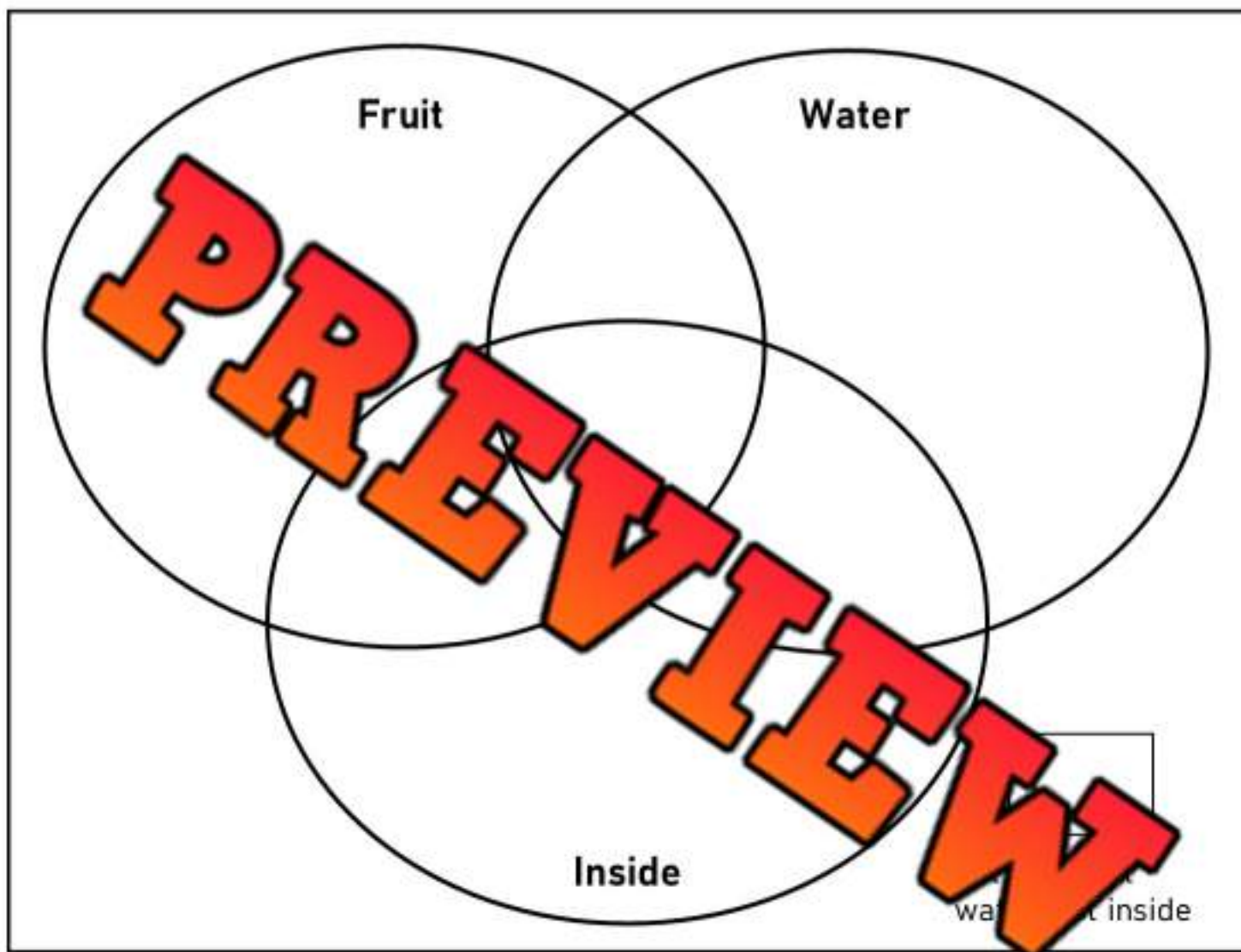
Twenty-four students were surveyed. Twelve chose a fruit snack. Of those, six chose water and ate it inside, two chose water and ate it outside, three chose juice and ate inside, and one chose juice and ate outside. Eight students chose a granola bar. Of those, three had water and ate it inside, one had water and ate outside, two had juice and ate inside, and one had juice and ate outside. Four students picked crackers – two had water and ate inside, one had water and ate outside, one had juice and ate inside, and one had juice and ate outside.

		Inside	Outside	Number of Votes
Fruit	Water			
	Juice			
Granola Bar	Water			
	Juice			
Crackers	Water			
	Juice			

PREVIEW

Sorting Data – Venn Diagram – 3 Attributes**Instructions**

Use the data from the previous page to create a Venn diagram.



1) How many students chose fruit as their snack?

2) How many more students ate inside than outside?

3) How many students drank juice and did not eat fruit?

4) How many students ate inside and drank water, but did not choose fruit?

5) How many students were surveyed?

MEAN



When we calculate the mean, we are finding the average of set of numbers.

Example:

Three brothers named Josh, Cameron, and Morgan went on an easter egg hunt. Josh found 6 eggs, Cameron found 4, and Morgan found 5. At the end of the hunt, their mother told them to share the eggs equally. So, they decided to put all the eggs in the middle and then divide equally to themselves. They had $6 + 4 + 5 = 15$ eggs and $15 \div 3$ kids = 5 eggs



Questions

Its Halloween - Mum has bought the pumpkins and then fair share it



Mean = _____



Mean = _____

Name: _____

35

MEAN



Questions

Its Halloween - total up the candy and then fair share it

Mia 5 Candy Bag	Harper 5 Candy Bag	Charlotte 2 Candy Bag	=	Total _____ Candy Bag	=	Mia _____ Candy Bag	Harper _____ Candy Bag	Charlotte _____ Candy Bag
-----------------------	--------------------------	-----------------------------	---	-----------------------------	---	---------------------------	------------------------------	---------------------------------

Liam 4 Candy Bag	Noah 5 Candy Bag	William 9 Candy Bag	=	Total _____ Candy Bag	=	Liam _____ Candy Bag	Noah _____ Candy Bag	William _____ Candy Bag
------------------------	------------------------	---------------------------	---	-----------------------------	---	----------------------------	----------------------------	-------------------------------

Mean = _____

Avery 10 Candy Bag	Skylar 6 Candy Bag	Zane 8 Candy Bag	=	Total _____ Candy Bag	=	Liam _____ Candy Bag	Noah _____ Candy Bag	William _____ Candy Bag
--------------------------	--------------------------	------------------------	---	-----------------------------	---	----------------------------	----------------------------	-------------------------------

Mean = _____

Name: _____

36

Curriculum Connection
D1.4

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: $5 + 3 + 8 + 5 = 21$

Step 2: $21 \div 4 = 5.25$



Questions: Find the mean for each data set below

1) 1, 2, 3, 4	2) 8, 4, 12, 4
3) 12, 6, 10, 8	4) 20, 10, 30, 20
5) 23, 35, 24, 30	6) 46, 28, 20, 10
7) 12, 19, 12, 26, 31	8) 15, 8, 20, 16, 11
9) 13, 18, 17, 22, 30	10) 42, 36, 55, 23, 14

MODE

Mode: The mode is the number that happens the most in a group of data. It shows what is most popular.

For example:

Thirteen Grade 3 students were asked how old they are. Their answers were:

8, 7, 8, 8, 7, 8, 8, 7, 7, 8, 8, 8, 8

- **7 years old:** 4 students
- **8 years old:** 9 students

Age	7	8
Frequency	4	9

So, the mode is 8 because more students are 8 than 7.

👉 If two numbers are picked the same amount, both are the mode.

👉 The highest number is not always the mode — the one that shows up the most is!

Questions

Give 5 people a number and ask them their age. They are listed in the data sets below. Put them in the ordered list table and write the mode(s).

Data Set	Ordered List	Mode										
1) 13, 15, 11, 16, 11, 13, 11	<table border="1"> <tbody> <tr> <td>#</td> <td>11</td> <td>13</td> <td>15</td> <td>16</td> </tr> <tr> <td>Frequency</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	#	11	13	15	16	Frequency					
#	11	13	15	16								
Frequency												
2) 22, 25, 23, 22, 25, 28	<table border="1"> <tbody> <tr> <td>#</td> <td>22</td> <td>23</td> <td>25</td> <td>28</td> </tr> <tr> <td>Frequency</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	#	22	23	25	28	Frequency					
#	22	23	25	28								
Frequency												
3) 37, 49, 35, 37, 49, 35, 49, 35	<table border="1"> <tbody> <tr> <td>#</td> <td>35</td> <td>37</td> <td>49</td> </tr> <tr> <td>Frequency</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	#	35	37	49	Frequency						
#	35	37	49									
Frequency												
4) 65, 54, 58, 58, 54, 65, 54, 58	<table border="1"> <tbody> <tr> <td>#</td> <td>54</td> <td>58</td> <td>65</td> </tr> <tr> <td>Frequency</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	#	54	58	65	Frequency						
#	54	58	65									
Frequency												

MODE**Questions**

Answer the questions below

1) Justin tracks what time he goes to bed at for 15 days. His bedtimes are written below:

7, 11, 8, 8, 7, 9, 10, 10, 7, 8, 9, 9, 8, 11, 9

a) Fill in the frequency table

	8	9	10	11
Frequency				



b) What is the mode?

c) What does the mode tell us?

2) Warren's friends were asked which dinner they would like to have at a wedding reception. The results are below.

Fish, fish, chicken, steak, vegetables, vegetables, chicken, steak, chicken, chicken, fish, vegetables, chicken, steak, steak, steak, vegetables, fish, chicken, steak

a) Fill in the frequency table

Food	Fish	Chicken	Steak	Vegetables
Frequency				



b) What is the mode?

c) How does a frequency table help us find the mode?

Mode and Frequency Tables

Questions

Answer the questions below

1) Tracy ran 5 races. Her times in seconds are listed in the data set below:

25, 24, 22, 26, 23



a) Fill in the frequency table

Time (seconds)					
Frequency					

b) What is the mode?

c) When is it possible to have more than one mode in a data set?

2) Bella recorded her grades on math tests this year. Her grades are listed below:

B, C, A, A, A, B, B, C, D, A, A, A, A, B, D, A, B, A, B, A, A, A, C

a) Fill in the frequency table

Grades					
Frequency					

b) What is the mode?

3) Courtney did 20 sets up pull-ups. She recorded how many reps she did in each set.

6, 5, 8, 5, 5, 4, 3, 3, 3, 4, 4, 2, 2, 5, 4, 3, 4, 5, 4, 3

a) Fill in the frequency table

Pull-Ups	2	3	4	5	6	8
Frequency						

b) What is the mode?

MODE

Mode: The number that occurs the most in a data set.

Step 1: Order the numbers from smallest to biggest

Step 2: Find the number or numbers that show up the most

Example: 5, 3, 6, 3, 9, 11

3, 3, 5, 6, 9, 11

Answer: 3



	Ordered List	Mode
3, 2, 7, 7	2, 3, 6, 7, 7, 12	7
15, 23, 37, 14, 24,		
131, 147, 75, 147, 44		
134, 135, 165, 173, 165		
12, 10, 0, 0, 12, 18, 0		
190, 165, 214, 316, 214		
16, 25, 25, 16, 25, 16		

1) The number of points scored in a series of football games is listed below. Which score happened most often?

7, 13, 18, 24, 9, 3, 18

2) The amount of rainfall that occurred in April is listed below. Find the mode.

28, 12, 32, 7, 14, 12, 7, 24, 7

Name: _____

Mean and Mode

Hockey Goals 				
6	3	2	2	7

Basketball Points 				
13	22	20	15	15

Mean: _____

Mean: _____

Mode: _____

Mode: _____ 

Minutes Read Per Day				
12	18	42	36	12

Test Scores 				
95	78	65	82	92

Mean: _____ 

Mean: _____ 

Mode: _____

Mode: _____

PREVIEW

Name: _____

44

Quantitative vs Qualitative Observations

Qualitative Observations

use your senses to observe the results



Quantitative Observations

use measurement tools to make observations



Part 1 Observe the picture below with your senses. Write as many qualitative observations as you can (imagine the smell/noise/taste/feel)



Smell: _____

Feel: _____

See: _____

Taste: _____

Part 2 Pretend you can measure the weight, speed, and height of the animals below. Provide a quantitative observation (estimation of these values)



Height: _____ cm

Weight: _____ kg

Speed: _____ km/h



Height: _____ cm

Weight: _____ kg

Speed: _____ km/h



Height: _____ cm

Weight: _____ kg

Speed: _____ km/h



Height: _____ cm

Weight: _____ kg

Speed: _____ km/h

Exit Cards

Cut Out

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

Name: _____

Read the description and circle if it is quantitative or qualitative.

1. Age of your pet
Quantitative / Qualitative
2. Type of music you like
Quantitative / Qualitative
3. Your favourite food
Quantitative / Qualitative
4. Number of pencils in your desk
Quantitative / Qualitative

Name: _____

Read the description and circle if it is quantitative or qualitative.

1. Age of your pet
Quantitative / Qualitative
2. Type of music you like
Quantitative / Qualitative
3. Your favourite food
Quantitative / Qualitative
4. Number of pencils in your desk
Quantitative / Qualitative

Name: _____

Read the description and circle if it is quantitative or qualitative.

1. Age of your pet
Quantitative / Qualitative
2. Type of music you like
Quantitative / Qualitative
3. Your favourite food
Quantitative / Qualitative
4. Number of pencils in your desk
Quantitative / Qualitative

Name: _____

Read the description and circle if it is quantitative or qualitative.

1. Age of your pet
Quantitative / Qualitative
2. Type of music you like
Quantitative / Qualitative
3. Your favourite food
Quantitative / Qualitative
4. Number of pencils in your desk
Quantitative / Qualitative

Creating Questions – Qualitative Data

Practice

Write a question and 4 options for answers

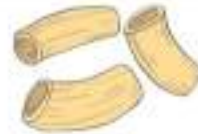
1) What is your favourite food?

a) Macaroni and Cheese

b) Pizza

c) Hot Dog

d) _____



2)

a)

b)

c)

d)

3)

a)

b)

c)

d)

4)

a)

b)

c)

d)

PREVIEW

Creating Questions – Quantitative Data

Practice

Write a question and 4 options for answers

1) How many points did each student in grade 3 get in the basketball game?

a) 0-5

b) 6-10

c) 11-15

d) 16-20



2)

a)

b)

c)

d)

3)

a)

b)

c)

d)

4)

a)

b)

c)

d)

PREVIEW

Horizontal Pictograph - Candy

A **pictograph** is a graph that displays data using symbols or pictures. Read the pictograph below and answer the questions.

Sam and his friends collected candy on Halloween. The amount of candy each friend collected is displayed below in the pictograph.

Friend	Number of Candies Collected	Frequency
Sam		
Steve		
Tony		
Jill		
Stacy		



= 3 Candies

- | | |
|--|--|
| a) How much is one candy worth? | |
| b) Who collected the most candy? | |
| c) How much more candy did Jill collect than Tony? | |
| d) Did Sam and Steve collect <u>more</u> or <u>less</u> candy than Stacy and Jill? | |
| e) How much total candy was collected? | |

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 and answer the question.

Friend	Kilometers Run	Frequency
Ted		
Anne		
Bella		
Craig		

 = 3 kilometers

How many total kilometers did all 4 friends run?

Name: _____

Fill in the table and answer the question.




Friend	Kilometers Run	Frequency
Ted		
Anne		
Bella		
Craig		


 = 3 kilometers

How many total kilometers did all 4 friends run?

Name: _____

Fill in the table and answer the question.

Friend	Kilometers Run	Frequency
Ted		
Anne		
Bella		
Craig		


 = 3 kilometers

How many total kilometers did all 4 friends run?

Name: _____

Fill in the table and answer the question.

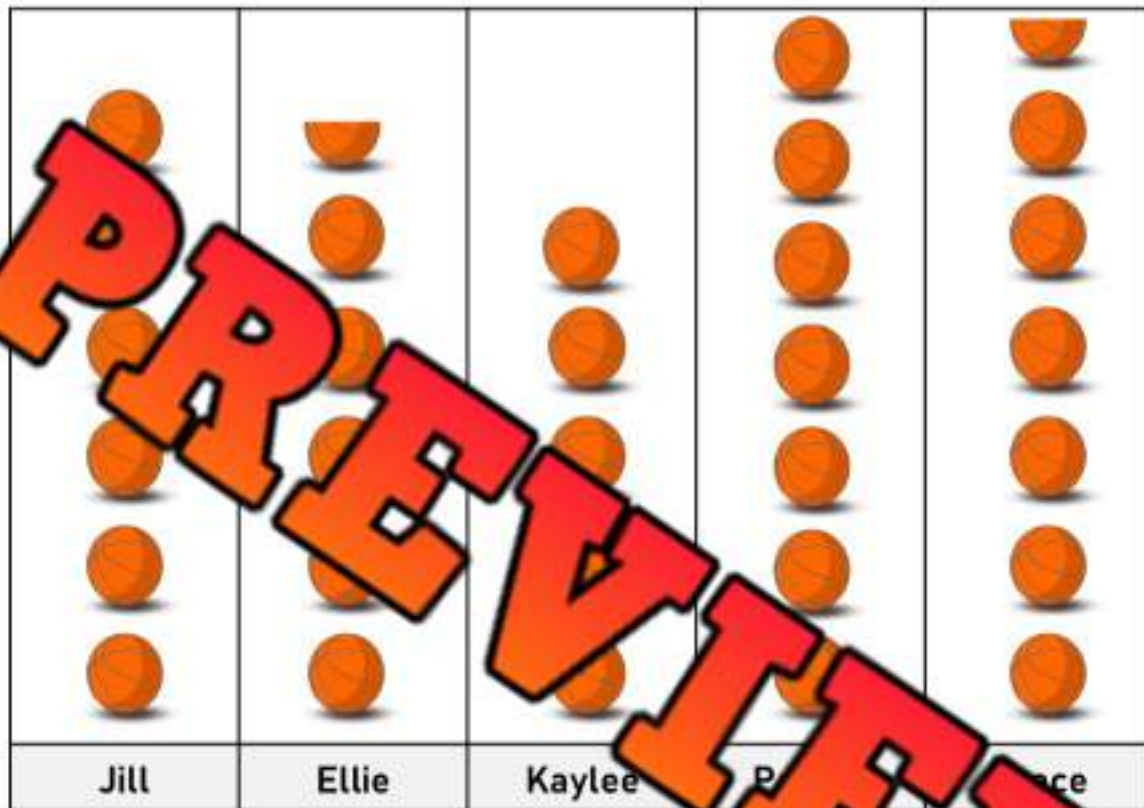
Friend	Kilometers Run	Frequency
Ted		
Anne		
Bella		
Craig		


 = 3 kilometers

How many total kilometers did all 4 friends run?

Vertical Pictograph – Basketball Points

Grace's basketball team counted how many points each of the players scored in a tournament. The point totals for the starting 5 are displayed below in a pictograph.



 = 2 points

- | | |
|--|--|
| a) How many points is one basketball worth? | |
| b) How many points is half a basketball worth? | |
| c) Who scored the most points in the tournament? | |
| d) How many total points did all 5 girls score? | |
| e) How many more points did Jill score than Ellie? | |
| f) Did Payton and Kaylee score more or less than Grace and Ellie? | |
| g) Did Jill and Ellie score more or less points than Grace and Kaylee? | |






Exit Cards

Cut Out

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






Name: _____

Write down the number of books each student has.

Friend	Number of Books Students Have	Total
Mia		
Noah		
Emma		
Lucas		
 = 5 Books		






Name: _____

Write down the number of books each student has.

Friend	Number of Books Students Have	Total
Mia		
Noah		
Emma		
Lucas		
 = 5 Books		






Name: _____

Write down the number of books each student has.

Friend	Number of Books Students Have	Total
Mia		
Noah		
Emma		
Lucas		
 = 5 Books		

Name: _____

Write down the number of books each student has.

Friend	Number of Books Students Have	Total
Mia		
Noah		
Emma		
Lucas		
 = 5 Books		

Creating a Horizontal Pictograph

Kevin and his friends went to an arcade on Saturday. They had a contest to see who could win the most tickets from the arcade games. The results are displayed in the table below.

Kevin	110
Neil	50
Steve	75
Dane	100
Chris	80



Questions

A pictograph that displays the data above

Kevin	
Neill	
Steve	
Dane	
Chris	



= 10 tickets

1) Who won the most tickets?	
2) How many more tickets did Dane win than Neil?	
3) How many more tickets did Kevin get than Steve?	
4) Neil and Chris think they have more tickets than Steve and Dane. Are they right?	
5) How many total tickets did the 5 kids win?	

Creating a Vertical Pictograph

Colton played 5 games of basketball last week. The number of points he scored in each game is displayed below. Create a pictograph to show his points.

Game 1	Game 2	Game 3	Game 4	Game 5
20	16	18	14	24



PREVIEW				
Game 1	Game 2	Game 3	Game 4	Game 5

=

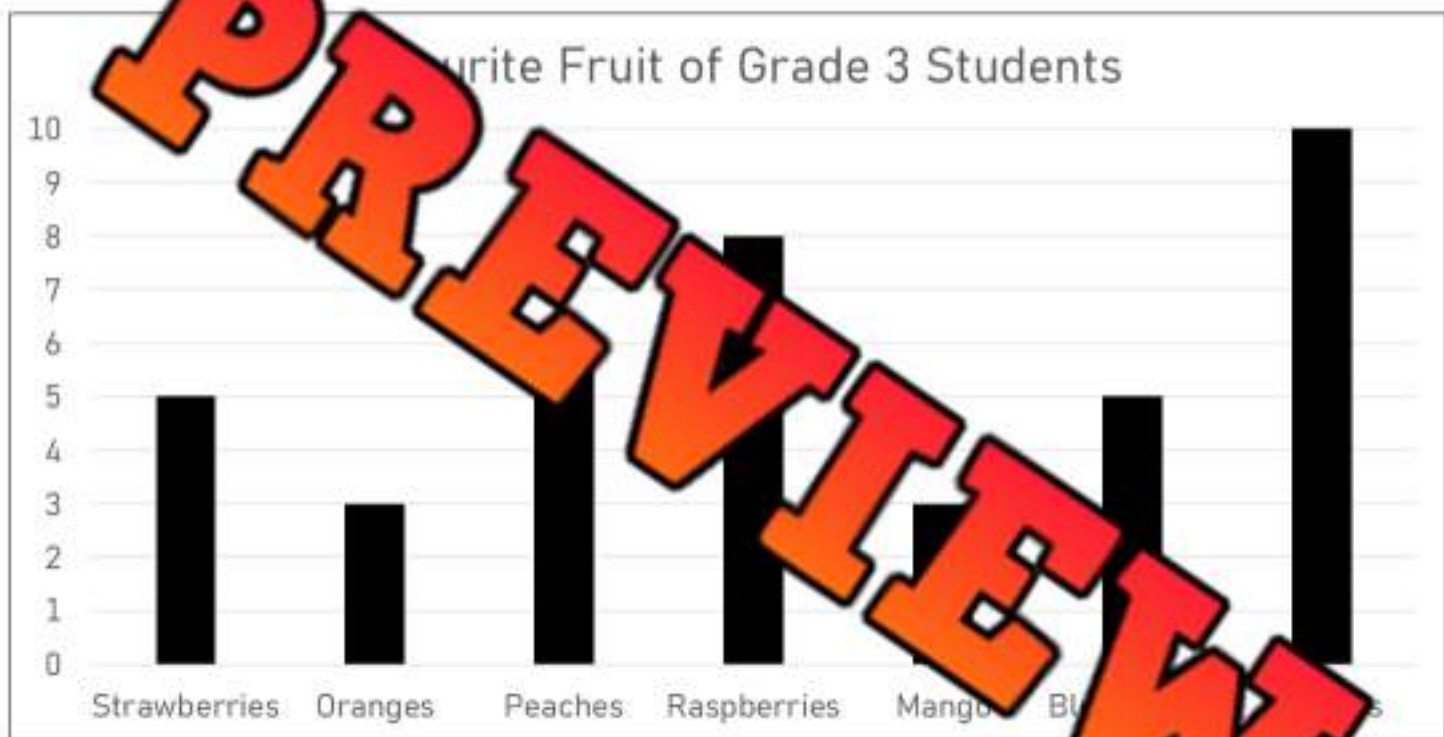
- 1) Which game did he score the most points? _____ Least points? _____
- 2) Did he score more or less points in games 1 and 2 than games 4 and 5? _____
- 3) How many total points did he score in all 5 games? _____

Why We Use Graphs

Luca wanted to know which fruit was most popular in his class. He collected data and displayed it in the bar graph below.



Strawberries	Oranges	Peaches	Raspberries	Mango	Blueberries	Bananas



a) Which fruit was the most popular?

b) How many students liked bananas more than oranges?

c) Does the graph and table show the same data?

Yes

No

d) Which is easier to read, the table or the graph? Which one allows you to find the most popular fruit faster?

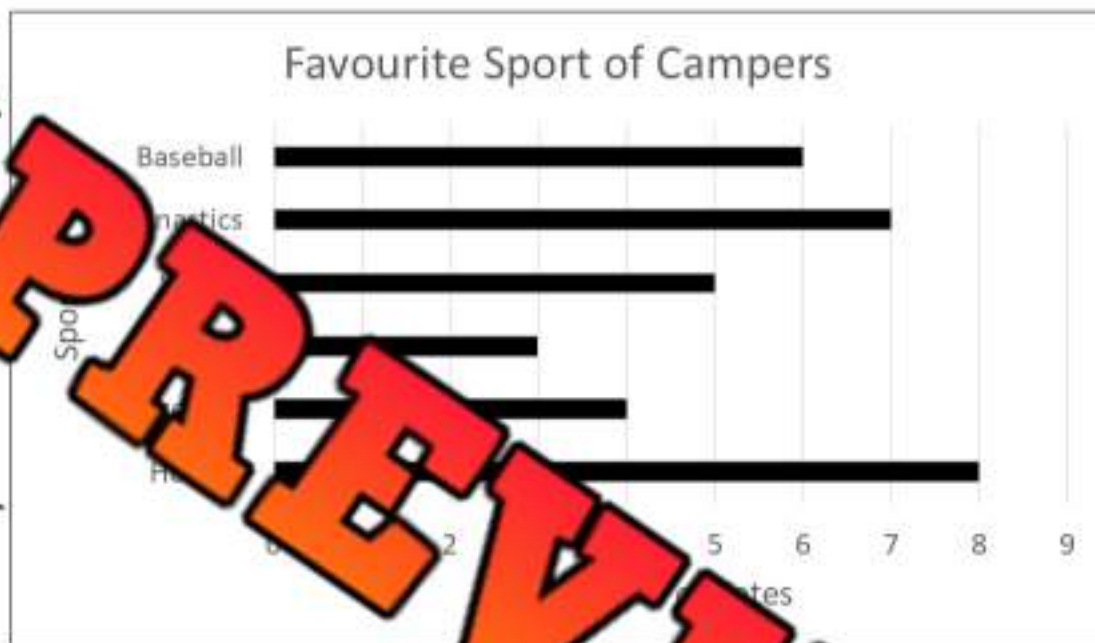
Graph

Table

e) What are the benefits of using a graph?

Horizontal Bar Graph – Favourite Sport

The kids at camp were asked which sport they liked the best. They surveyed each kid and displayed the results in a horizontal bar graph.



- Which sport was most popular?
- Which sport was the least popular?
- Who is the population that was surveyed?
- How many kids liked basketball and soccer the best?
- What is the title of the y-axis ↑ ?
- What is the title of the x-axis → ?
- What is the title of the graph?
- How many kids were surveyed?
- What is the statistical question for this graph?

Exit Cards

Cut Out

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

Name: _____

1) Which category of drink is most popular?
_____2) How many people were surveyed?

Name: _____

1) Which category of drink is most popular?
_____2) How many people were surveyed?

Name: _____

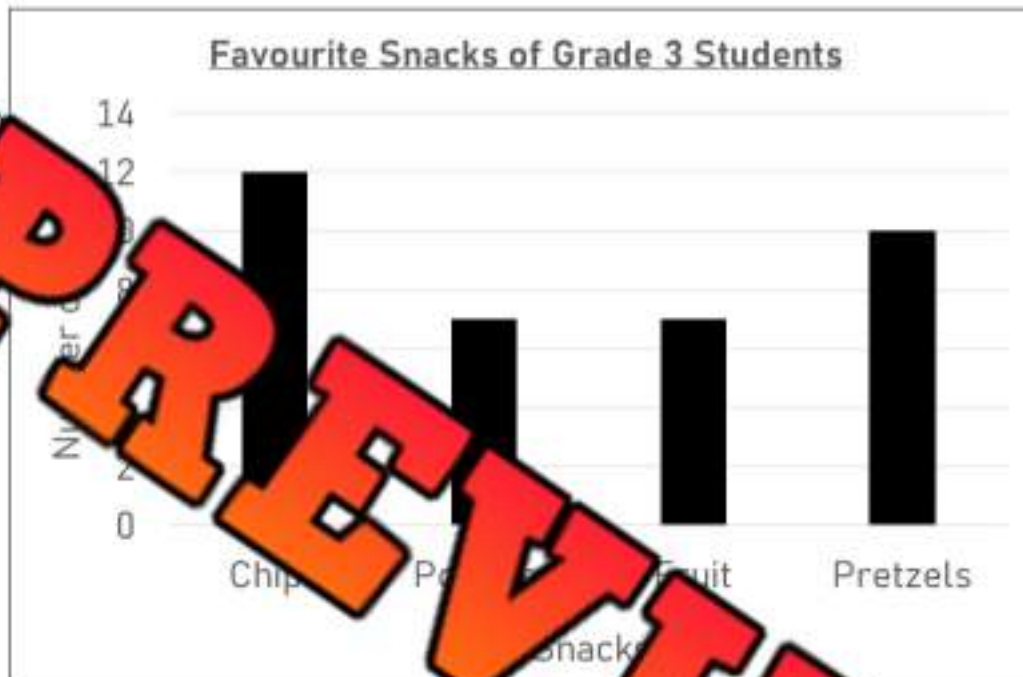
1) Which category of drink is most popular?
_____2) How many people were surveyed?

Name: _____

1) Which category of drink is most popular?
_____2) How many people were surveyed?

Reading a Bar Graph – Favourite Snack

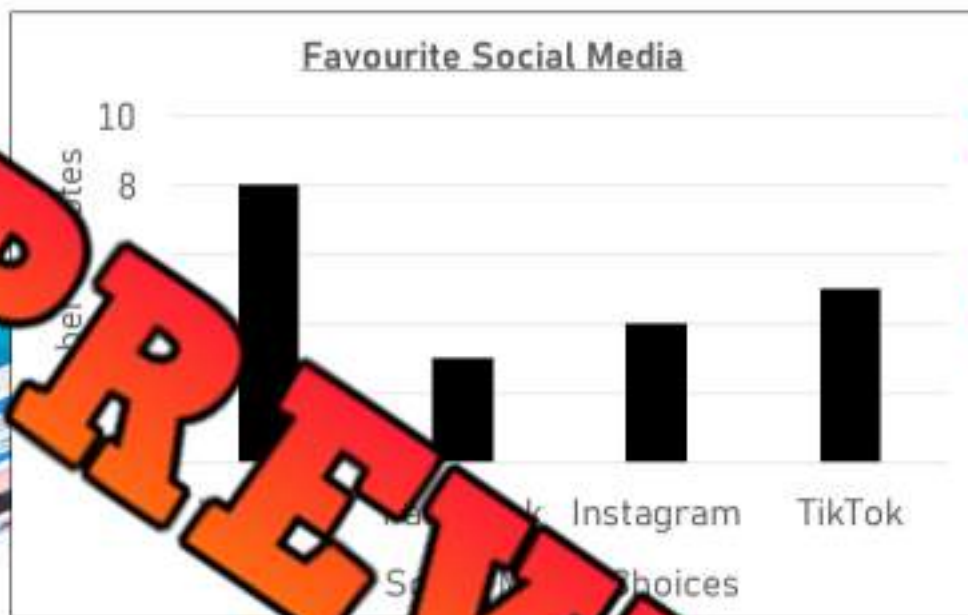
Roger asked his grade 3 classmates what their favourite snack was. He gave them four options. His results are below.



- | | |
|---|--|
| a) Which snack was most popular? | |
| b) Which snack was the least popular? | |
| c) How many more kids chose chips than fruit? | |
| d) How many kids liked popcorn and fruit together? | |
| e) Roger thinks chips were more popular than popcorn and fruit put together. Is he correct? | |
| f) What other snack options could he have included? | |
| g) How many kids were surveyed? | |
| h) What is the statistical question for this graph? | |

Surveying a Suitable Representation

Bella wants to know what the most popular social media app is at her school. She decides to ask 20 students from her grade 3 class.



a) Which social media was the most popular?

b) Did Bella find out which social media was the most popular in the school? Explain.

c) Who should she have asked if she wanted to know what the most popular social media app was in her entire school?

d) If she only wanted to survey around 20 kids in total, how could she do it so that she still found out what the most popular app was in the whole school?

Inuit Living in Canada



Statistical Question

Which 5 provinces/territories do most Inuit people live in?

Number of Thousands of Inuit People Living in the Provinces/Territories of Canada



Source: Statistics Canada

Interpret

What did you learn from the graph?

1) Where do most Inuit people live in Canada?

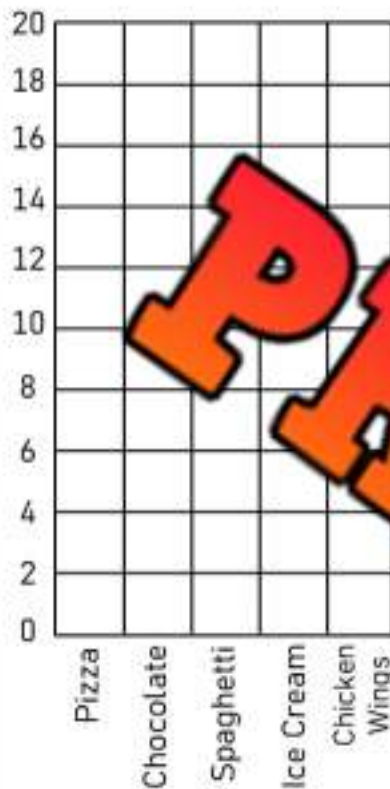
2) What surprised you about the data?

3) Where in Canada do most Inuit people live - in the north or south? Where do you think they live in provinces - the northern or southern regions?

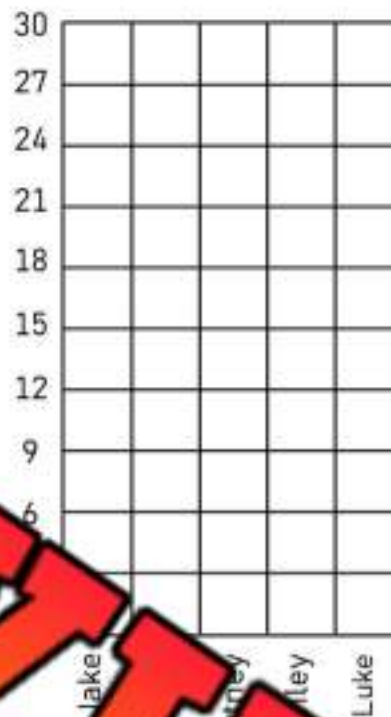
Drawing Bar Graphs

Questions

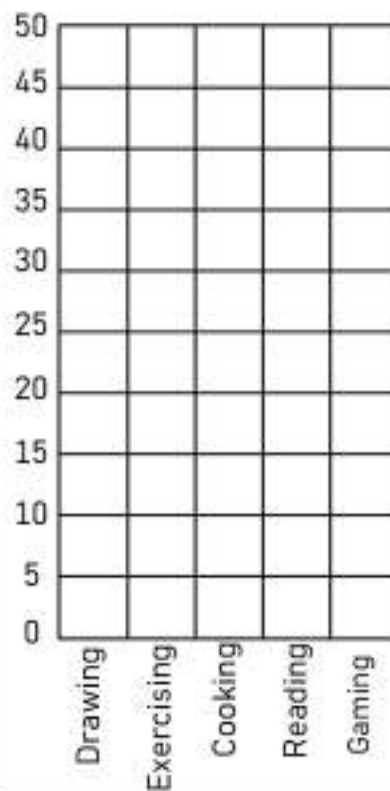
Draw the bars for each of the bar graphs below



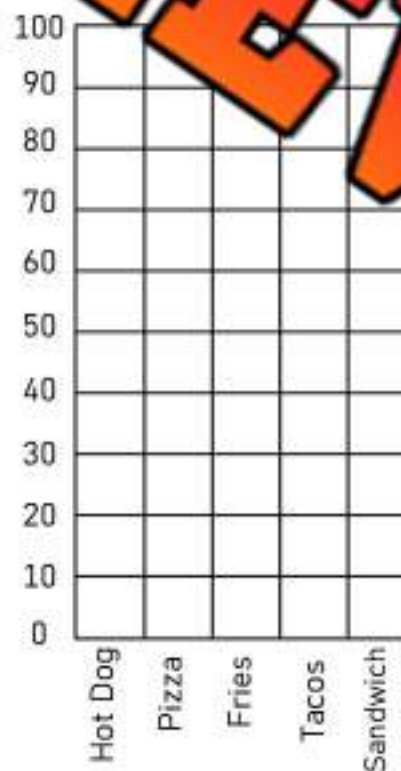
Favourite Food	# of votes
Pizza	14
Chocolate	10
Spaghetti	4
Ice Cream	2
Chicken Wings	6



Player	# of points
Jake	30
Nathan	12
Courtney	18
Ashley	24
Luke	6



Favourite Hobby	# of votes
Drawing	10
Exercising	20
Cooking	35
Reading	25
Gaming	40



Favourite Food	# of votes
Hot Dog	30
Pizza	60
Fries	50
Tacos	80
Sandwich	35

Exit Cards

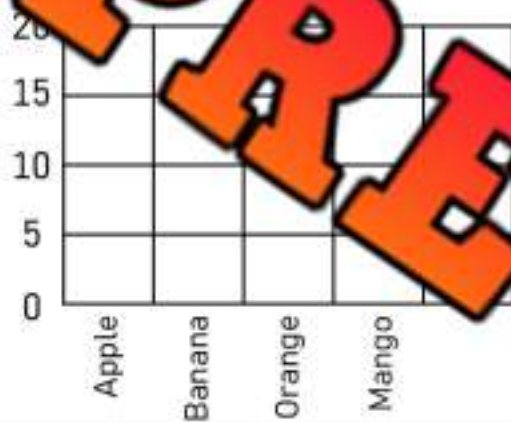
Cut Out

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

Name: _____

Draw the bars for the bar graphs below.

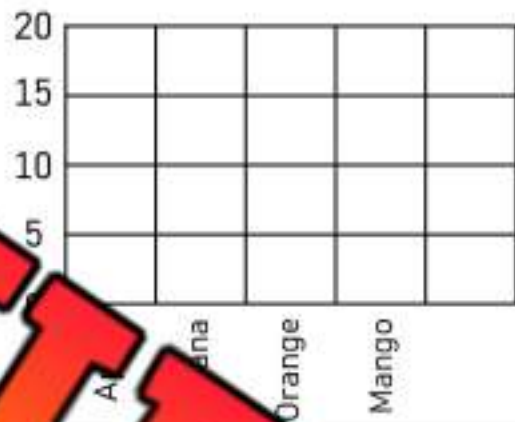
Fruit	Apple	Banana	Orange	Mango
Votes	10	10	15	5



Name: _____

Draw the bars for the bar graphs below.

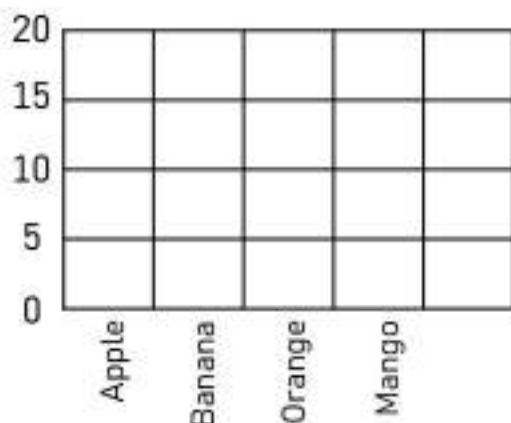
Fruit	Apple	Banana	Orange	Mango
Votes	20	10	15	5



Name: _____

Draw the bars for the bar graphs below.

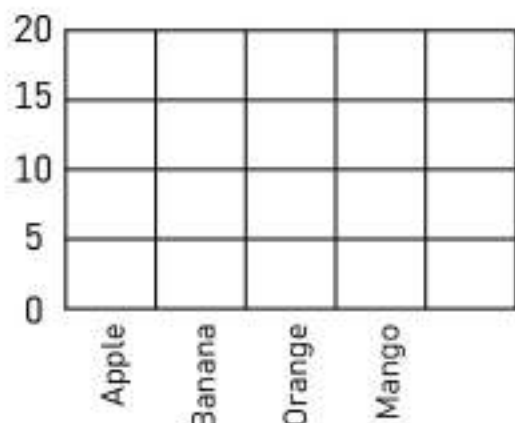
Fruit	Apple	Banana	Orange	Mango
Votes	20	10	15	5



Name: _____

Draw the bars for the bar graphs below.

Fruit	Apple	Banana	Orange	Mango
Votes	20	10	15	5



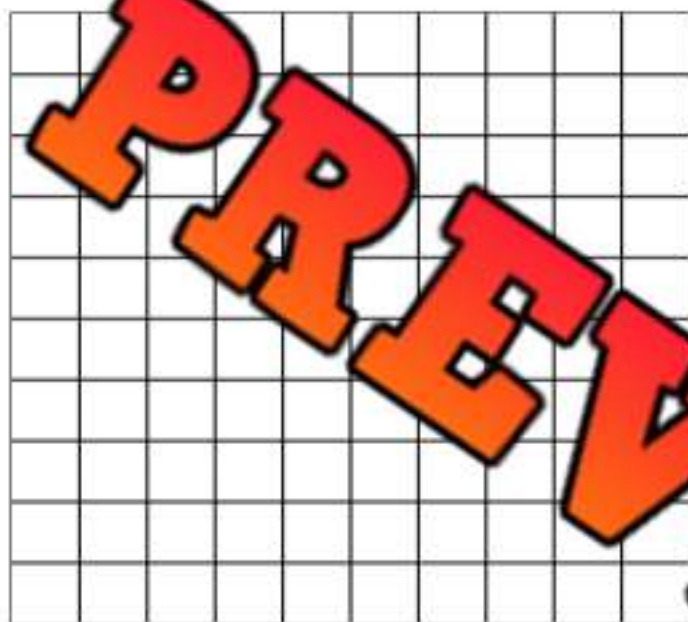
Creating Scale

When you create a scale for your graph, you need to look at the data so you can decide what to go up by. The goal is to create a graph that will fill the graph area.

Step 1: Look at the data. Find the lowest and highest numbers.

Step 2: Count how many lines you have to plot your data.

Step 3: Decide what to go up by to ensure you have enough space to plot ALL the data.



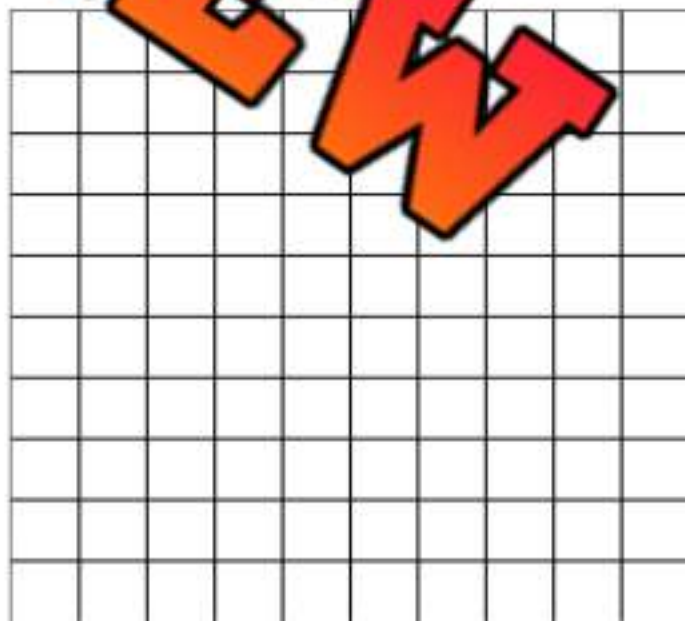
Brownie
Ice Cream
Cookie
Donut
Pudding



Favourite Dessert	# of votes
Brownie	14
Ice Cream	12
Cookie	2
Donut	16
Pudding	6



Transportation Method	# of votes
Bus	5
Car	15
Airplane	30
Train	25
Boat	40



Bus
Car
Airplane
Train
Boat

Activity Title: 4-Corners Scaling Game

Objective

What are we learning about?

Students will learn to read data presented in a table and decide on the appropriate scale to use for creating various types of graphs.

Materials

What you will need for the activity.

- Data table provided by the teacher
- Four signs labeled A, B, C, D for each corner of the room



Instructions

How you will complete the activity.

1. Explain to the students the importance of choosing the best scale for graphing data and how different scales can affect the appearance and readability of the data.
2. Show the students one of the data tables provided below. You may want to project the table to the class.
3. Present multiple-choice options for the scale that could be used to graph the data. Each corner of the room will represent one of the multiple-choice answers.
4. Read out the scale options and ask the students to move to the corner that they believe represents the best scale for the data.
5. Once all students have chosen a corner, discuss the correct answer and explain why it is the best choice.
6. Repeat the process with different data tables and scale options.

Table 1

Analyze the data and then move to one of the corners of the room

Fruits	Votes
Grape	40
Apple	10
Banana	50
Banana	30
Orange	20

Table 1

Scale Options:

- A: 5
- B: 10
- C: 15
- D: 20

Table 8

Analyze the data and then move to one of the corners of the room

Seasons	Votes
Summer	33
Fall	18
Winter	15
Autumn	12
Spring	22

Table 8

Scale Options:

- A: 1
- B: 2
- C: 5
- D: 10

Table 10 Analyze the data and then move to one of the corners of the room

Books	Votes
Fantasy	75
Mystery	25
History	20
Adventure	50
Science	100

Table 10**Scale Options:**

- A: 25
- B: 5
- C: 10
- D: 20

Collecting Data

Directions

Create your own statistical question and survey your classmates

Statistical Question

Example: Which flavour of ice cream is most popular among grade 3s?

Category				
Tally				
Frequency				

Interpret

What did you learn from your data?

Interpreting Your Survey Results

1. How many people did you survey? _____
2. Which category was the most popular? _____
3. Which category was the least popular? _____
4. If you asked your entire school, which category do you think would win? Explain.

5. Did any of the survey results surprise you?

I'm surprised that _____

Name: _____

Creating a Bar Graph

Use the data you collected to plot your graph. Remember the following labels:

- X axis label Y axis label Title Scale Categories

Title: _____

Collecting Data - Qualitative

We collect data so that we can learn more about something we are interested in. We also collect data to solve a problem.



Examples:

Area of Interest: "What is your favourite animal?"

Solving a Problem: "Are you coming to the party on Saturday?" (this solves the problem of how many will be attending the party).

Survey Question

Area of Interest

Collect data by asking your classmates your survey question

Survey Question

Example: What is your favourite colour?

Categories				
Tally				
Frequency				

Interpreting Your Survey Results

1. How many people did you survey? _____
2. Which category was the most popular? _____
3. Which category was the least popular? _____
4. If you asked your entire school, which category do you think would win? Explain.

5. Did any of the survey results surprise you?

I'm surprised that _____

Creating a Bar Graph

Use the data you collected to plot your graph. Remember the following labels:

X axis label

Y axis label

Title

Scale

Categories

Title: _____

PREVIEW



Collecting Data - Quantitative

When we collect quantitative data, we are asking a survey question that results in a numbered answer. For example: "How many pets do you have?"



Example:

Area of Interest: "How many hours do you watch TV a day?"

Solving a Problem: "How many hot dogs will you eat at the party this weekend?"
(this solves the problem of how many hot dogs you'll need to buy for your party).

Survey Question _____ collect data by asking your classmates your survey question
Area of Interest _____

Survey Question	_____			
Example: How many books did you read this week?	_____			
Categories				
Tally				
Frequency				

Interpreting Your Survey Results

- How many people did you survey? _____
- Which number/number range was the most popular? _____
- Which number/number range was the least popular? _____
- If you asked your entire school, which number/number range do you think would win? Explain. _____
- Did any of the survey results surprise you?

I'm surprised that _____

Name: _____

Creating a Bar Graph

Use the data you collected to plot your graph. Remember the following labels:

X axis label

Y axis label

Title

Scale

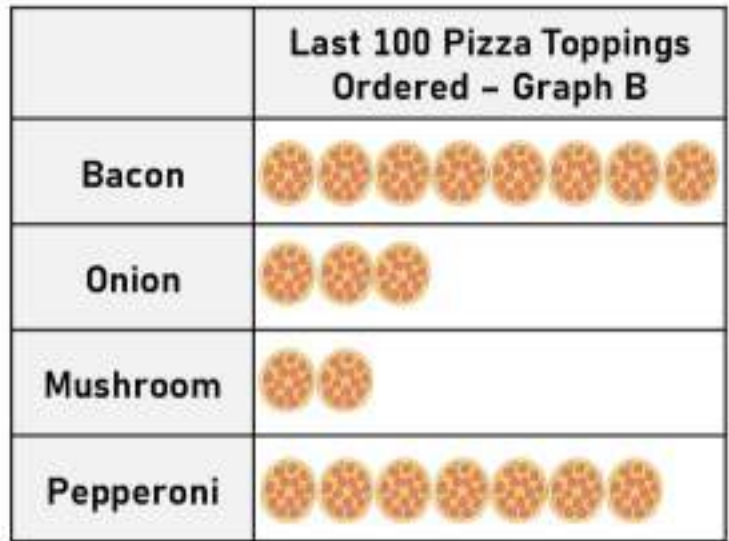
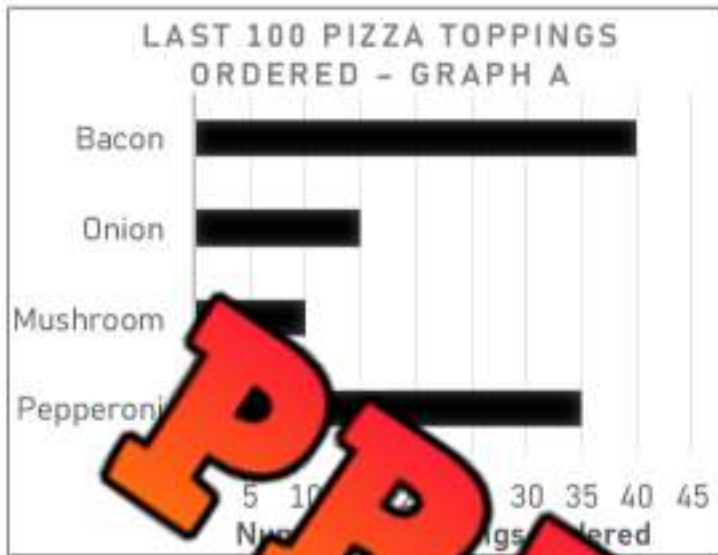
Categories


Title:

PREVIEW

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Displaying Data Using Different Graphs



 = 5 toppings

Questions

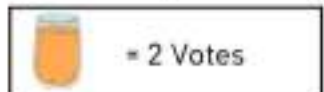
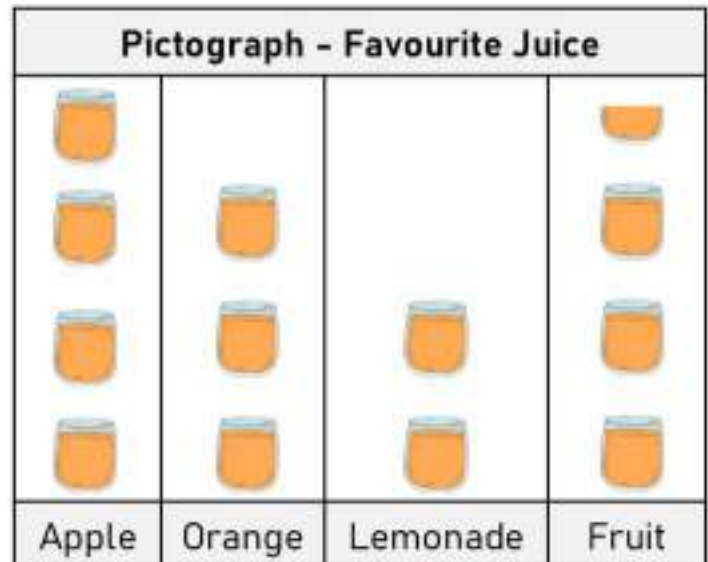
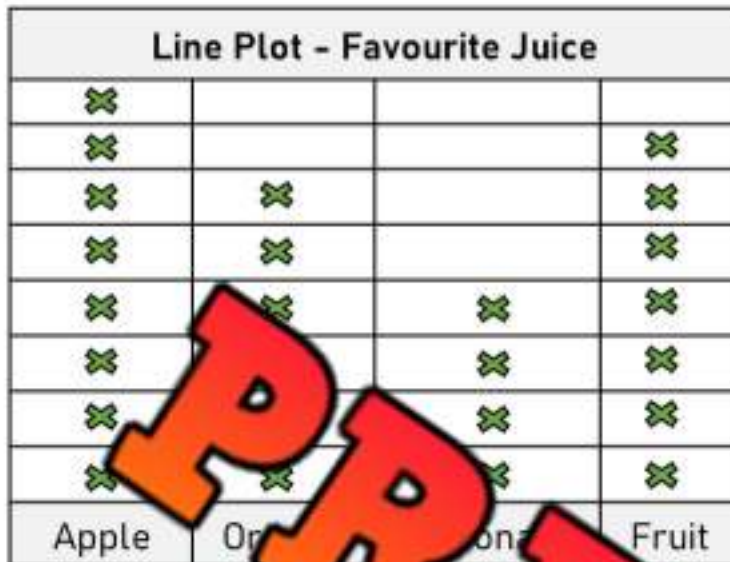
a) Which graph displays the information more clearly? Explain your choice.

b) If you were reading this data quickly, which graph would be easier to read? Explain.

c) When do you think a bar graph is better than a pictograph?

d) When do you think a pictograph is better than a bar graph?

Displaying Data Using Different Graphs



Questions

Answers

a) What is the difference between a dot plot and a pictograph? Which graph always uses one-to-one correspondence?

b) If you were reading this data quickly, which graph would be faster to read? Explain.

c) When do you think a dot plot is better than a pictograph?

d) When do you think a pictograph is better than a dot plot?

Favourite Subject – Examining Scale

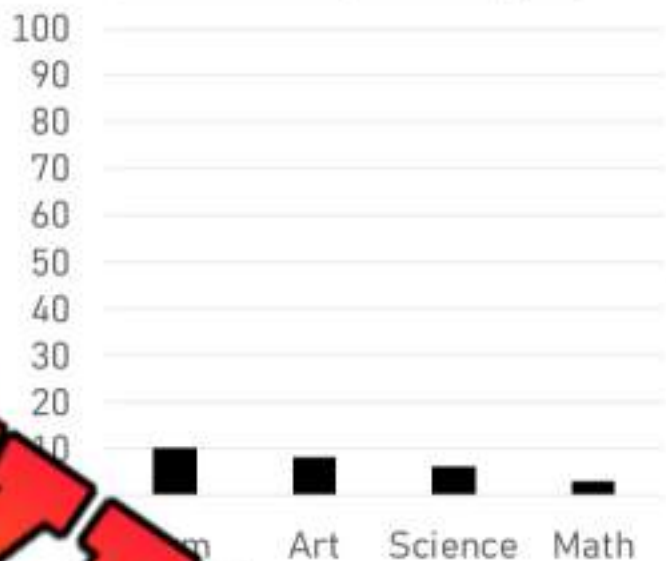
The two graphs below display the same data. Examine both graphs and answer the questions below.



Favourite Subject – Graph A



Favourite Subject – Graph B



Questions

What do you notice about the two graphs?

a) What is the scale in Graph A?

b) What is the scale in Graph B?

c) Which graph uses more of the space?

d) Which graph is easier to read and interpret? Why is that graph better?

e) Why is it important to choose an appropriate scale?

Unit Test – Data Literacy**Part 1**

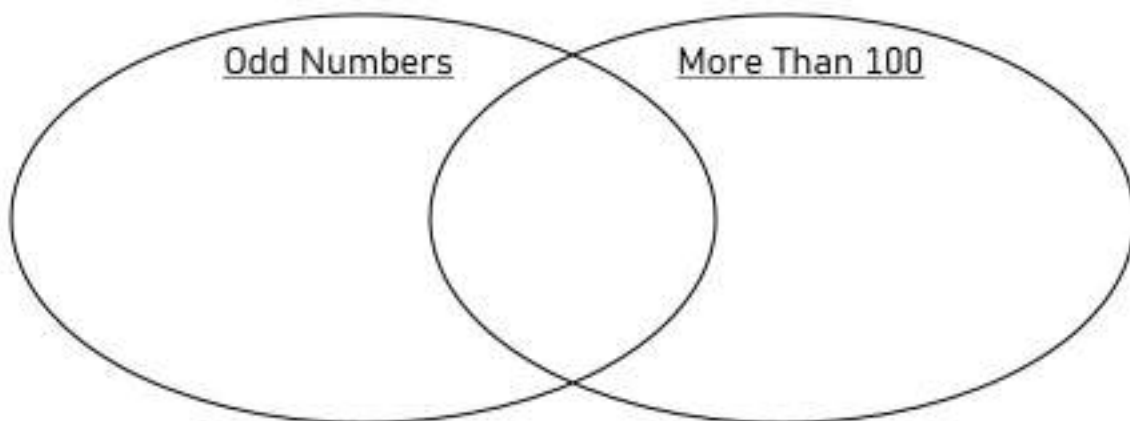
Sort the numbers into the correct categories in the Carroll Diagram

232	536	43	15	96
185	102	77	63	752

	Less Than 100	More Than 100
Odd Numbers		
Even Numbers		


Part 2

Sort the numbers using the Venn Diagram




Part 3

Read the graph and answer the questions below



Hockey Goals				
4	1	5	4	6
Mean: _____				
Mode: _____				



Basketball Points				
15	25	18	20	22
Mean: _____				
Mode: _____				

Part 4

Draw the bars for each of the bar graphs below

20					
18					
16					
14					
12					
10					
8					
6					
4					
2					
0					
Pizza	Chocolate	Spaghetti	Ice Cream	Chicken Wings	

Favourite Food	# of votes
Pizza	6
Chocolate	5
Spaghetti	10
Ice Cream	18
Chicken Wings	14

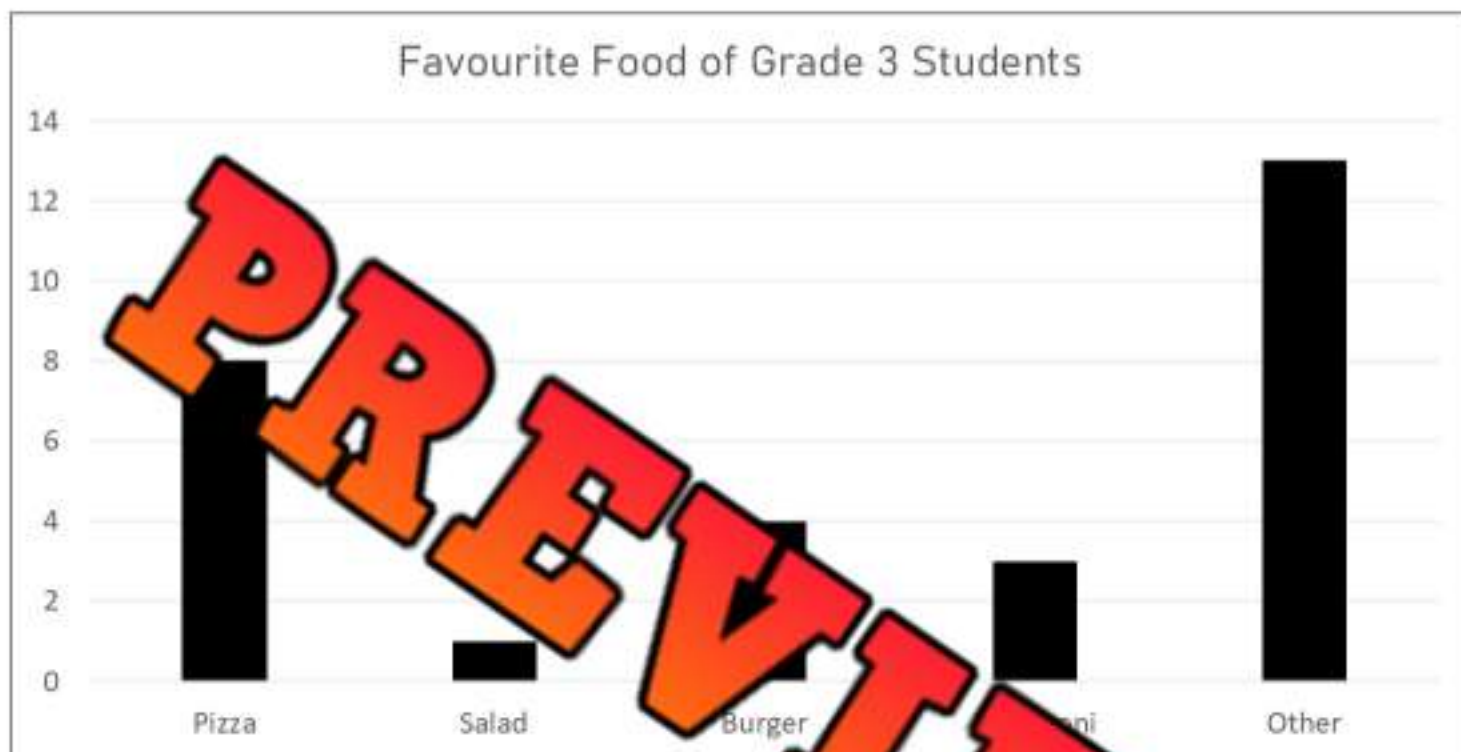
20					
18					
16					
14					
12					
10					
8					
6					
4					
2					
0					
Jake	Nathan	Courtney	Ashley	Luke	

Player	# of points
Nathan	7
Courtney	4
Ashley	19
Luke	12

Part 5

Read the graph and answer the questions below

Mr. Simpson collected data from his grade 3 class. He asked them what their favourite food is. He graphed the results in the bar graph below.



a) Which food was the most popular?

b) How many more students voted for pizza than salad?

c) What is the scale of the graph?

d) Was the "other" category more popular than pizza and burgers together?

e) Which three foods together add up to the total number of votes pizza received?

f) How many students were surveyed?

Part 6

Graph the data below in a bar graph

The grade 3s were asked which entertainment they liked the best. The results are below.

Movies	TV Shows	YouTube	Video Games	Music
9	12	21	27	15



a) Which form of entertainment was most popular?

b) How many more votes did video games get than music?

c) What scale did you choose for the graph?

d) How many students were surveyed?

Grade 3

D2. Probability

	Curriculum Expectations	Pages That Cover the Expectations
D2.1	use mathematical language, including the terms "impossible", "unlikely", "equally likely", "likely", and "certain", to describe the likelihood of events happening, and use that likelihood to make predictions and informed decisions	107 - 127
D2.2	make and test predictions about the likelihood that the mean and the mode(s) of a data set will be the same for data collected from different populations	128 - 136



Describing Probability - Certain

If an event will definitely happen, we describe the probability of the event as certain. **Certain** means something will for sure happen!

Examples of certain events:

- 1) You will go to the bathroom today
- 2) You will sleep tonight



Questions: Is the event certain - yes or no?

1) You will eat something today		Yes	No
2) You will breathe today		Yes	No
3) You will eat something today		Yes	No
4) You will drink something today		Yes	No
5) You will play hockey today		Yes	No
6) You will play tag at recess this week		Yes	No
7) It will rain later today		Yes	No
8) There will be a fire drill today		Yes	No
9) It will be Friday after Thursday		Yes	No
10) The sun will rise tomorrow morning		Yes	No

Describing Probability - Impossible

If an event will definitely not happen, it is impossible. **Impossible** means that something can't happen!

Examples of impossible events:

- 1) You will fly like a bird
- 2) You will teleport to Africa today



Question: Is the event impossible - yes or no?

1) You will be a teacher tomorrow	Yes	No
2) You will grow 1 cm today	Yes	No
3) You will jump over a house today	Yes	No
4) You will eat a treat today	Yes	No
5) You will find money on the ground today	Yes	No
6) You will get a new toy today	Yes	No
7) It will be Saturday after Monday	Yes	No
8) You will roll a 7 on a 6-sided dice	Yes	No
9) It will rain today	Yes	No
10) You will take over as teacher today	Yes	No

Name: _____

Describing Probability – Certain, Impossible?

Questions

Write 4 examples of events that are certain or impossible.

Certain	Impossible

PREVIEW

Describing the likelihood – Equally Likely

Equally likely means that there is an even chance that an outcome will happen. This means during the event, the outcome has the same chance of happening as it does not happening.



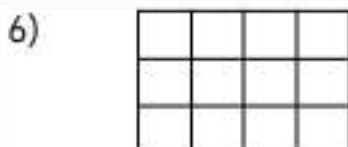
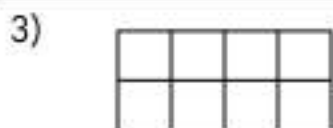
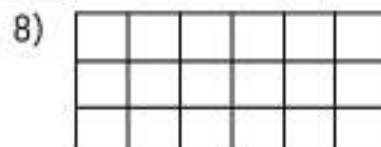
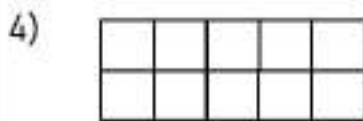
For example: Flipping a coin and it landing on heads is an even chance.

Explanation: There is an equal chance of the coin landing heads and not landing heads (tails).

Part 1 Shade in half of the shapes to split them equally

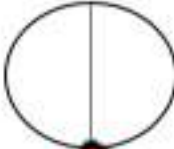
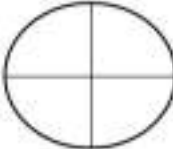
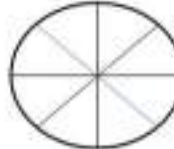

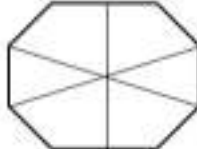
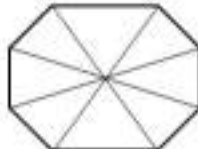


Part 2 Shade in half of the squares in the shapes below



Describing the likelihood – Equally Likely

Part 1 Shade in half of the shapes so you have two equal parts

a) 	b) 	c) 
d) 	e) 	f) 

Part 2 Write half of the numbers below?

1) Half of 2 is _____	4) Half of 10 is _____	7) Half of 12 is _____
2) Half of 6 is _____	5) Half of 8 is _____	8) Half of 20 is _____
3) Half of 4 is _____	6) Half of 14 is _____	9) Half of 18 is _____

Part 3 Answer the word problems below

1) There were 20 kids at a birthday party. Half of them asked for hot dogs and the other half asked for hamburgers.	
a) How many asked for hot dogs?	
b) How many asked for hamburgers?	
2) In a class of 16 students, half are boys.	
a) How many kids are boys?	
b) How many are girls?	

Describing the Likelihood of Events

Part 1

Circle if the likelihood is possible or impossible

a) You will eat something today



Impossible

Certain

b) You will drive home from school



Impossible

Certain

c) You will get a cold today



Impossible

Certain

d) You will breathe today



Impossible

Certain

Part 2

Circle if the likelihood is more likely or unlikely

a) You have a guest speaker today



Even Chance

Likely

Unlikely

b) You will read a book today



Even Chance

Likely

c) You will eat chips today



Even Chance

Likely

Unlikely

d) You will win your game today



Even Chance

Likely

Unlikely

e) You will drink pop today



Even Chance

Likely

Unlikely

f) Your favourite team will win today



Even Chance

Likely

Unlikely

Exit Cards

Cut Out

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

Name: _____

Circle the likelihood of the event happening

1) A cat will take your math test.

Certain	Likely	Equally Likely	Unlikely	Impossible
---------	--------	----------------	----------	------------

2) You will get a heads when flipping a coin.

Certain	Likely	Equally Likely	Unlikely	Impossible
---------	--------	----------------	----------	------------

3) You will eat something today.

Certain	Likely	Equally Likely	Unlikely	Impossible
---------	--------	----------------	----------	------------

Name: _____

Circle the likelihood of the event happening

1) A cat will take your math test.

Certain	Likely	Equally Likely	Unlikely	Impossible
---------	--------	----------------	----------	------------

2) You will get a heads when flipping a coin.

Certain	Likely	Equally Likely	Unlikely	Impossible
---------	--------	----------------	----------	------------

3) You will eat something today.

Certain	Likely	Equally Likely	Unlikely	Impossible
---------	--------	----------------	----------	------------

Name: _____

Circle the likelihood of the event happening

1) A cat will take your math test.

Certain	Likely	Equally Likely	Unlikely	Impossible
---------	--------	----------------	----------	------------

2) You will get a heads when flipping a coin.

Certain	Likely	Equally Likely	Unlikely	Impossible
---------	--------	----------------	----------	------------

3) You will eat something today.

Certain	Likely	Equally Likely	Unlikely	Impossible
---------	--------	----------------	----------	------------

Name: _____

Circle the likelihood of the event happening

1) A cat will take your math test.

Certain	Likely	Equally Likely	Unlikely	Impossible
---------	--------	----------------	----------	------------

2) You will get a heads when flipping a coin.

Certain	Likely	Equally Likely	Unlikely	Impossible
---------	--------	----------------	----------	------------

3) You will eat something today.

Certain	Likely	Equally Likely	Unlikely	Impossible
---------	--------	----------------	----------	------------

Name: _____

117

Activity: Probability Card Sort and Rank

Objective

What are we learning about?

Students will learn to identify and classify events as certain, likely, equally likely, unlikely, or impossible by sorting and ranking scenarios based on their probability.

Materials

What you will need for the activity.

- 30 scenario cards with different events (e.g., "The sun will rise tomorrow").
- A board divided into the categories: Certain, Likely, Equally Likely, Unlikely, and Impossible.
- Glue sticks or glue.



Instructions

How you will complete the activity

1. Begin by explaining the concepts of certain, likely, equally likely, unlikely, and impossible events. Give examples to ensure students understand these probability terms.
2. Have all students stand in a single line in front of the categorization board.
3. Provide each individual student with a scenario card. Each student has one card.
4. Display the large categorization board at the front of the classroom so that all students can easily see and access it.
5. Instruct the students to take turns, one by one, reading their scenario card aloud and then discussing where they think the event should be classified on the categorization board.
6. After the student has decided on the classification, have them use glue to attach the card in the corresponding category on the board.
7. Encourage the students to explain their reasoning and engage in discussion with the class if they disagree with the placement of a card.
8. Continue until all 30 cards have been placed on the board.
9. Once all cards have been placed, review the classifications as a class, addressing any misconceptions or disagreements.

Scenario Cards

A set of scenario cards with different events

A robot will serve lunch at school.

You will have a birthday this year.

You will write something on your notebook.

Your pencil will roll off your desk.

A cow will drive a car.

A dog will bark.

It might rain tomorrow.

You will fly without wings.

You will eat something today.

Your friend may be absent tomorrow.

PREVIEW

Scenario Cards

A set of scenario cards with different events

A fish will ride a bicycle.

You will have gym class every day.

A coin flip will land on heads.

Your teacher will sing instead of talk all day.

You will see clouds in the sky.

Your backpack might fall off your back.

You will grow wings overnight.

You might drop your eraser.

You will see a book in your classroom.

Your shoes will talk to you.

PREVIEW

Scenario Cards

A set of scenario cards with different events

It might snow in winter.

You will have homework this year.

You will see a bird in your yard.

You will have lunch at school today.

You will see a bird fly.

You will read something today.

It will snow in summer.

The school will turn into a rocket ship.

You will blink your eyes today.

You may lose a pencil this week.

PREVIEW

Board Divide each scenario into the following categories

Certain	Likely	Equally Likely	Impossible

PREVIEW

Likelihood of Events – 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, it is possible you could get any of the numbers from 1-6.



Questions

Use these terms to describe the likelihood: impossible, less likely, more likely, likely, certain.

1. What is the likelihood of you rolling a 1?
2. What is the likelihood of you rolling a 3?
3. What is the likelihood of you rolling a 1, 2, 3, 4, 5, or 6?
4. What is the likelihood of you rolling an even number?
5. What is the likelihood of you rolling a 1, 2, 3, or 4?
6. What is the likelihood of you rolling a 0?

Describing the Likelihood of Events

Candies

There are 14 candies in a bag. 6 are red, 3 are blue, and 5 are green.



Frequency

Fill in the frequency table below

Colour	Frequency
Red	
Blue	
Green	

Questions

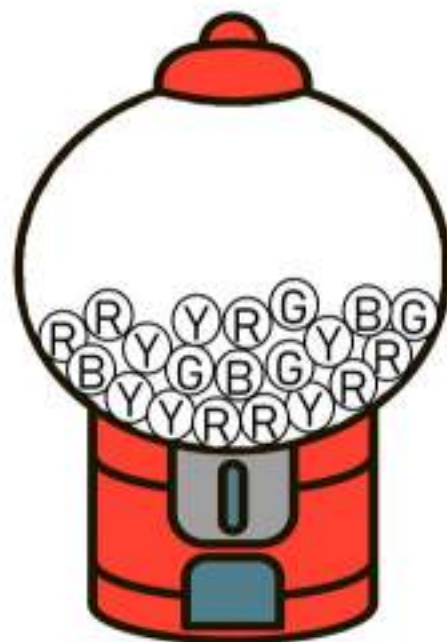
Use these terms to describe the likelihood: impossible, less likely, equally likely, more likely.

1. What is the likelihood of pulling out a red candy?
2. What is the likelihood of pulling out a blue candy?
3. What is the likelihood of pulling out a green candy?
4. What is the likelihood of pulling out a red, blue, or green candy?
5. What is the likelihood of pulling out a blue or green candy?
6. What is the likelihood of pulling out a purple candy?

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 _____ Fill in the frequency table below

	Frequency
Red	
Yellow	
Green	
Blue	

Questions

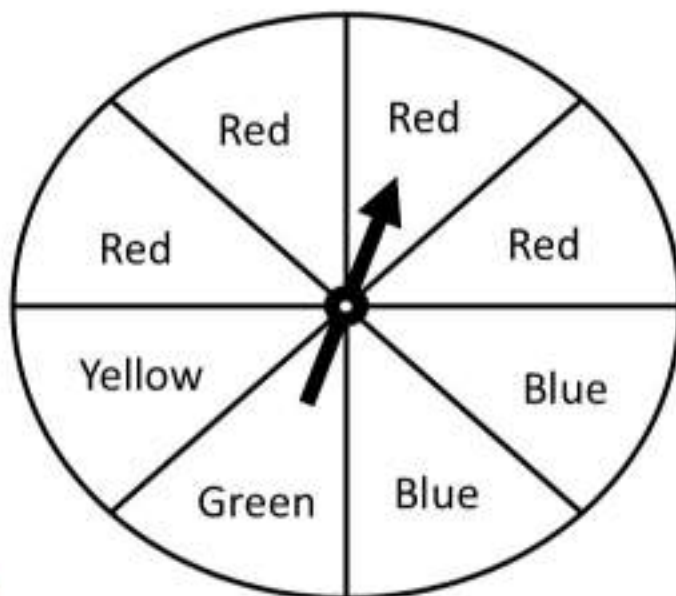
Use these terms to describe the likelihood of an event: impossible, less likely, equally likely, more likely, certain.

1. What is the likelihood of pulling out a green gumball?
2. What is the likelihood of pulling out a red gumball?
3. What is the likelihood of pulling out a blue or green gumball?
4. What is the likelihood of pulling out a red or yellow gumball?
5. What is the likelihood of pulling out a blue, red, yellow, or green gumball?
6. What is the likelihood of pulling out a pink gumball?

Describing the Likelihood of Events

Spinner

The spinner has different coloured parts on it. When you spin the arrow, it will land on one of the colours. The likelihood of landing on a green part is unlikely.



Impos Equ Certain
Less Likely More

Questions

Use these terms to describe the likelihood: impossible, less likely, more likely, certain.

1. What is the likelihood of landing on a red part?
2. What is the likelihood of landing on a blue part?
3. What is the likelihood of landing on a yellow part?
4. What is the likelihood of landing on a red or yellow part?
5. What is the likelihood of landing on a red, blue, green, or yellow part?
6. What is the likelihood of landing on a purple part?

Predicting Survey Results – Food - Class



When we do a survey, we can predict what the results will be based on who we ask. The people we survey are called the population. If you ask adults the same question that you ask kids, you will probably be able to predict different survey results. Try it below!

Predict

What do you predict will be the results of the survey

1) Write down what you think the results will be if you asked 10 students in your class the question: "What is your favourite food?"

Survey Question: What is your favourite food?

Categories

Hot Dog

Steak

Fish

Sandwiches

Frequency

2) Complete the survey by asking 10 classmates

Survey Question : What is your favourite food?

Categories

Pizza

Hot Dog

Steak

Fish

Sandwiches

Tally

Frequency

Results

How were your predictions?

Were your predictions accurate or not? What surprised you?

Predicting Survey Results – Food - Adults

Predict

What do you predict will be the results of the survey

1) Write down what you think the results will be if you asked 10 different adults the survey question, "What is your favourite food?"



Survey Question: What is your favourite food?

Categories	Pizza	Hot Dog	Steak	Fish	Sandwiches
Frequency					

2) Complete the survey by asking 10 different adults.



Survey Question: What is your favourite food?

Categories	Pizza	Hot Dog	Steak	Fish	Sandwiches
Tally					
Frequency					

Results

How was your prediction?

1) Were your predictions accurate or not? What surprised you?

2) Why do you think you got different results when you asked adults?

Predicting Survey Results – Drink - Class

Predict

What do you predict will be the results of the survey

1) Write down what you think the results will be if you asked 10 students in your class the survey question: "What is your favourite drink?"



Survey Question : What is your favourite drink?	Water	Juice	Tea	Pop	Coffee
Frequency					

2) Complete the survey by asking your classmates.



Survey Question : What is your favourite drink?	Water	Juice	Tea	Pop	Coffee
Tally					
Frequency					

Results

How was your prediction?

1) Were your predictions accurate or not? What surprised you?

2) If you asked adults the same question, which two drinks do you think will be the most popular?

Predicting Survey Results – Drink - Adults

Predict

What do you predict will be the results of the survey

1) Write down what you think the results will be if you asked 10 different adults the survey question, "What is your favourite drink?"



Survey Question: What is your favourite drink?

Categories	Water	Juice	Tea	Pop	Coffee
Frequency					

2) Complete the survey by asking 10 different adults.



Survey Question: What is your favourite drink?

Categories	Water	Juice	Pop	Coffee
Tally				
Frequency				

Results

How was your prediction?

1) Were your predictions accurate or not? What surprised you?

2) Why do you think you got different results when you asked adults?

Unit Quiz - Probability

Part 1

Circle the likelihood of the event happening

1) You will see a unicorn today.



Certain
Likely
Equally Likely
Unlikely
Impossible

2) It will get dark tonight



Certain
Likely
Equally Likely
Unlikely
Impossible

3) Your dog will _____



Certain
Likely
Unlikely
Impossible

4) You will eat chocolate today.



Certain
Likely
Equally Likely
Unlikely
Impossible

5) You will see a truck today.



Certain
Likely
Equally Likely
Unlikely
Impossible

6) It will rain/snow today.



Certain
Likely
Unlikely
Impossible

Part 2

Use these terms to describe the likelihood: impossible, unlikely, equally likely, likely, certain

1. What is the likelihood of you rolling a 6?

2. What is the likelihood of you rolling a 0?

3. What is the likelihood of you rolling a 1, 2, 3, or 4?

4. What is the likelihood of you rolling an even number?

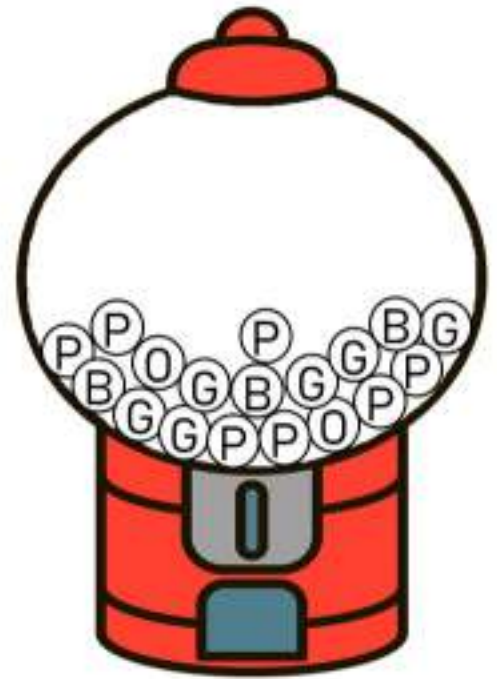
Gumball Machine

There are 18 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

Mark	Colour	Frequency
	Orange	
	Green	



Questions

Use these to describe likelihood: impossible, less likely, equally likely, more likely, certain

1. What is the likelihood of pulling out a pink gumball?

2. What is the likelihood of pulling out a green gumball?

3. What is the likelihood of pulling out a pink or green gumball?

4. What is the likelihood of pulling out a blue or orange gumball?

5. What is the likelihood of pulling out a blue, pink, orange, or green gumball?

6. What is the likelihood of pulling out a red gumball?