Preview - Information

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

- ✓ A selection of Ready-To-Use Google Slides Lessons.
- ✓ A selection of worksheets included in the workbook.

When you make a purchase, you will receive a folder that contains the .pdf workbook file and a link to where you can make a copy of the Google Slides Lessons unit to your Google Drive.

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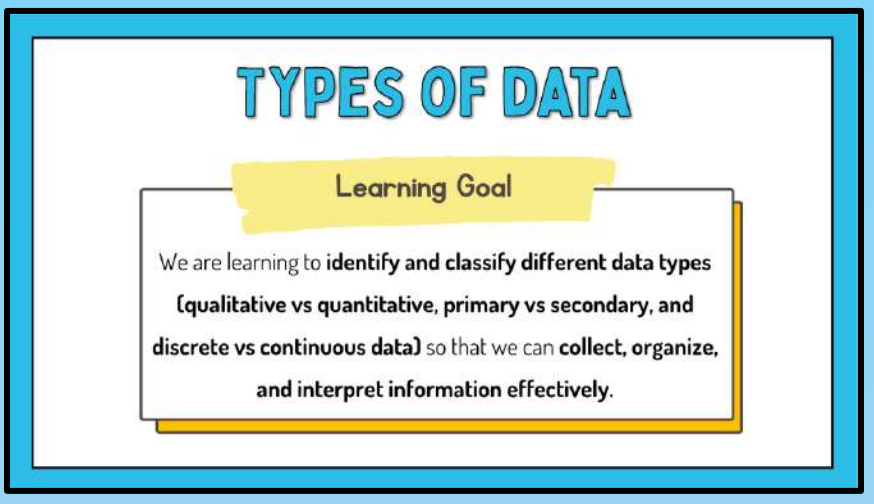
rob@supersimplesheets.com

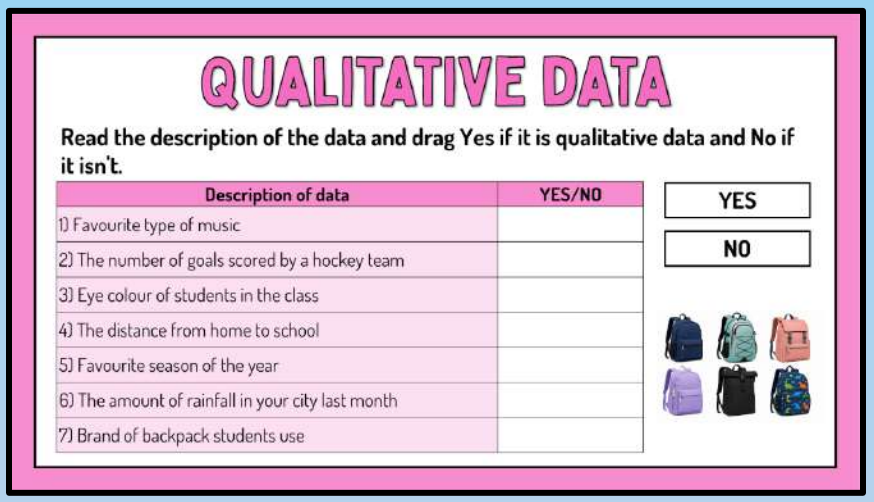
Google Slides Lessons Preview

BC Math Curriculum
Statistics Unit – Grade 6

3-Part Lesson Format

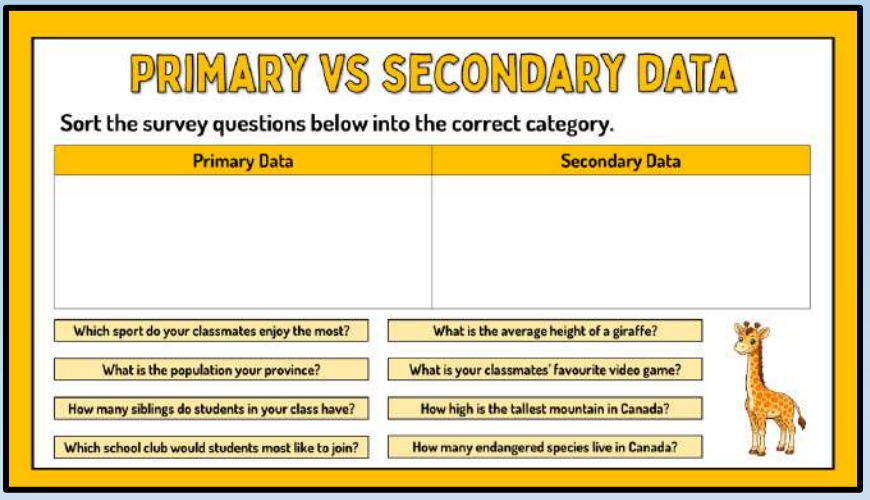
Part 1 – Minds On!
- Learning Goals
- Discussion Questions
- Quotes
- And More!



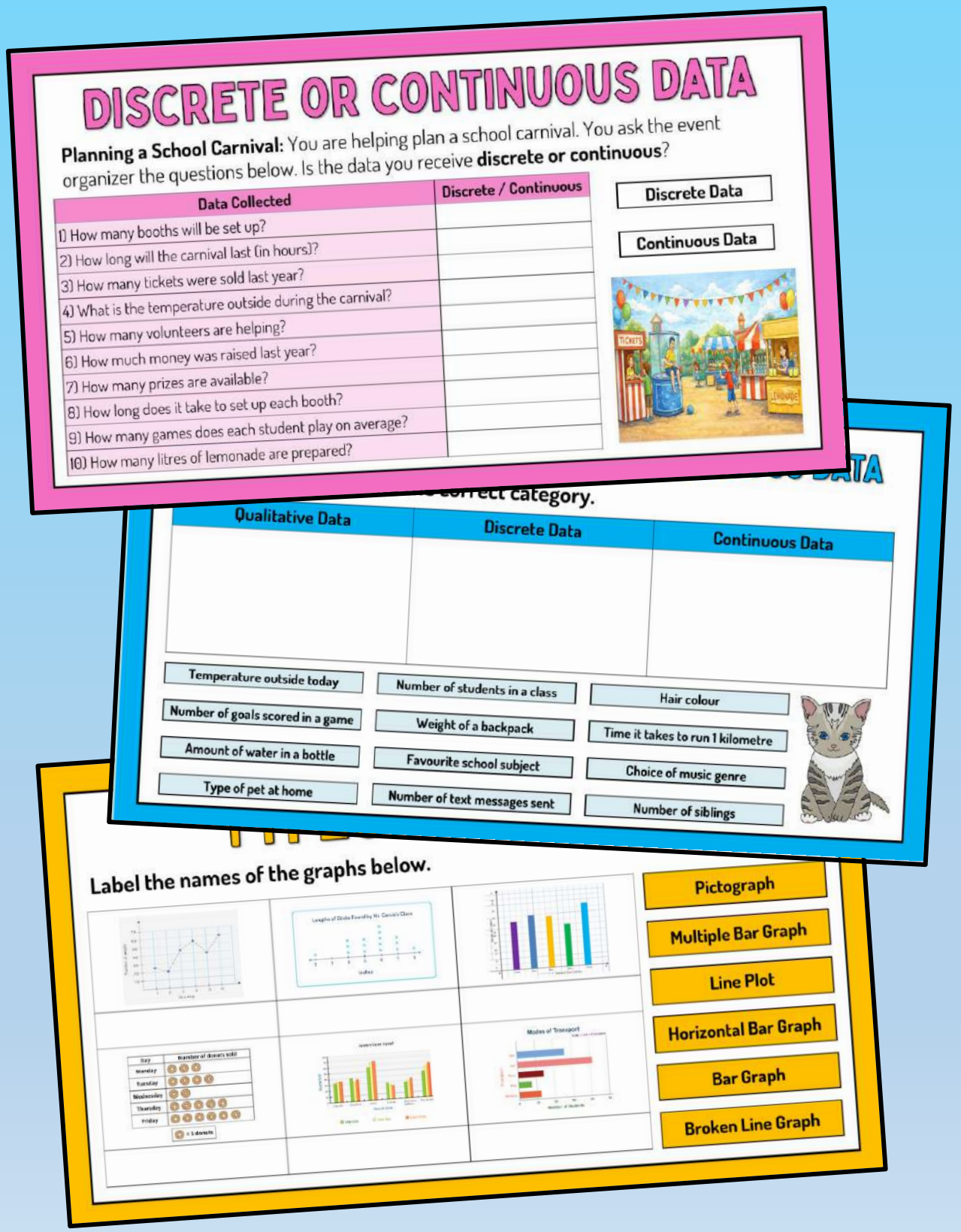


Part 2 – Action!
- Writing
- Matching
- Drag and Drop
- Drawing
- And More!

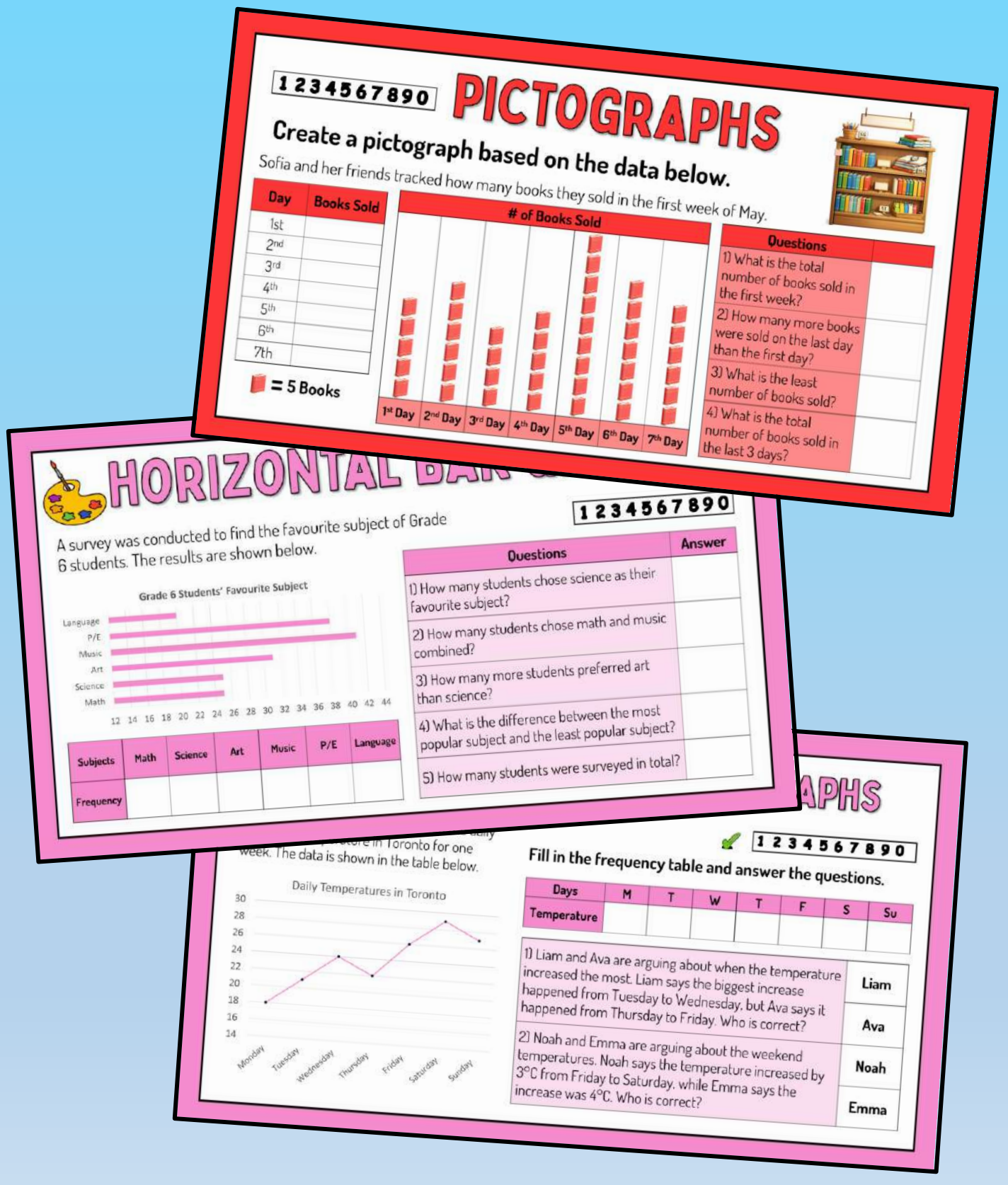
Part 3 – Consolidation!
- Exit Cards
- Quizzes
- Reflection
- And More!



BC Math Curriculum
Statistics Unit – Grade 6



BC Math Curriculum
Statistics Unit – Grade 6



Workbook Preview

Grade 6

Graphing and Probability

	Curriculum Expectations	Pages
GP.1	Line graphs • table of values, data set; creating and	5 - 99

Name: _____ 8

Curriculum Connection
GP.1

Qualitative vs Quantitative Data

Quantitative data	**Qualitative data**
Data that uses numbers (measured, counted) - length, height, area, weight, time, etc.	data that uses words (categories) - choices, favourites, foods, colours, etc.

Questions Read the description of the data and circle if it is quantitative or qualitative

1) Monthly sale last month	Quantitative Qualitative
2) Heights of students in grade 6	Quantitative Qualitative
3) Favourite foods of the grade 4 students	Quantitative Qualitative
4) Rainfall in April last year	Quantitative Qualitative
5) Favourite colours of the students in your class	Quantitative Qualitative
6) The weight of different hockey skates	Quantitative Qualitative
7) The height of the grade 6 students	Quantitative Qualitative
8) Favourite season of the students in your school	Quantitative Qualitative
9) Which town/city people live in that go to your school	Quantitative Qualitative
10) Whether or not you have a pet	Quantitative Qualitative
11) How long it took to get to school	Quantitative Qualitative

Name: _____ 10

Curriculum Connection
GP.1

Quantitative vs Qualitative Observations

Image #1

Image #2

Part 1 Write observations about image #1 and put an x if it is quantitative or qualitative

Observations	Quantitative	Qualitative
1) The vehicle has	X	
2) The vehicle has [illegible] tires		
3) The vehicle is white and [illegible]		
4) The vehicle's age is 3 years		
5) The vehicle has silver rims		
6) The vehicle has 2 headlights		
7) The vehicle is a car		
8) The vehicle drives up to 180km/hour		
9) The vehicle's tires are large		
10) The vehicle weighs 1700 kilograms		

Part 2 Write quantitative and qualitative observations about image #2

Observations	Quantitative	Qualitative
1)		
2)		
3)		
4)		
5)		

Name: _____ 12

Curriculum Connection
GP.1

Primary vs Secondary Data

Primary Data	**Secondary Data**
Data that you have collected yourself **Example** - asking your classmates their favourite food	Data that has been collected by someone else **Example** - finding data on the internet

Part 1 Read the description of the data and circle if it is primary or secondary data

1) You r… w…ny points Lebron scored in the NBA playoffs last year	Primary Secondary
2) You m…sure t… of …e kids in your class	Primary Secondary
3) You measure the …all in … …h day for a week	Primary Secondary
4) You look up how much sn… …ach … …nber	Primary Secondary
5) You record how many minutes you s… …each da…	Primary Secondary
6) You weigh different sized rocks in your yard	Primary Secondary
7) You measure the weight of your cat each year	Primary …dary
8) You research how many Orcas are left off the coast of Vancouver	…rimary Secondary

Part 2 Write your own primary and secondary data descriptions below

1) Primary	
2) Secondary	
3) Primary	
4) Secondary	

Name: _____ 16

Curriculum Connection
GP.1

Discrete or Continuous Data?

Discrete and continuous data are both forms of quantitative data. This means both are numerical, meaning the data is acquired through counting or measuring.

Discrete data is collected when the answers to a survey are only numbers. It is quantitative data that has no relationship between the numbers. For example, "how many pets you have" is discrete data because there is no relationship between 1 and 2 pets. You cannot have 1 and a half pets, only 1 or 2. Discrete data is counted.

With **ntinuous data**, there is a relationship between the numbers. For example, "how muc ll there was last week?" You can have 1 and a half millimetres of rain, which me is a relationship between 1 and 2. Continuous data is measured.

Question: Is ch question discrete or continuous?

Tip: Ask yourself an sp er in half.

Question	Discrete/Continuous
1. How many cm of snowfall we re i	
2. How many siblings do you have?	
3. What was the average temperature in July?	
4. How many minutes did you read this week?	
5. How many video games do you own?	
6. How many kilometres did you run this week?	
7. How many sports do you play?	
8. What grade are you in?	
9. How many litres of milk do you drink a week?	
10. How many cars does your family have?	

Name: _____ 17

Curriculum Connection
GP.1

Discrete or Continuous Data?

Questions | Researching a car

You are purchasing a new car over the phone. You ask the car salesman the questions below. Is the data he gives you **discrete** or **continuous**?

Data Collected	Discrete/Continuous
1) How many doors does the car have?	
2) How old is the car?	
3) How many litres does the gas tank hold?	
4) How many wheels does the car have?	
5) How fast does the car go?	
6) How many passengers can the car hold?	
7) How many speakers are in the car?	
8) How many kilometres has the car driven already?	
9) How much does the car cost?	
10) How long does it take to get up to 60km/hour?	
11) How long is the car?	
12) How many decibels do the speakers produce?	

Name: _____ 18

Curriculum Connection
GP.1

Data – Qualitative, Discrete, or Continuous?

Part 1 Researching a basketball team

You are the manager of a basketball team and are researching your next opponent. You decide to collect data based on the questions below. Is the data qualitative, discrete, or continuous?

Data Collected	Qualitative/Discrete/ Continuous
1) How many players are on the team?	
2) How tall are their players?	
3) How many points do they score per game?	
4) What colour are their jerseys?	
5) Which teams have they played before?	
6) How many games have they played?	
7) How old are their players?	
8) How many wins do they have this year?	
9) How many seconds do they take before they shoot?	
10) Which type of defense do they play – zone or man?	
11) How many three pointers do they take a game?	
12) What is the name of their mascot?	

Part 2 Write one example of each type of data

Type of Data	Example
Qualitative	
Discrete	
Continuous	

Exit Cards

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

Name: _____

Is the research question discrete or continuous?

Research Question	Discrete/Continuous
How many times did the phone ring today?	
How many different species of birds did you observe on your nature walk?	
How many seconds did it take for the ice to melt completely?	
How many beats per minute is your resting heart rate?	

Name: _____

Is the research question discrete or continuous?

Research Question	Discrete/Continuous
How many times did the phone ring today?	
How many different species of birds did you observe on your nature walk?	
How many seconds did it take for the ice to melt completely?	
How many beats per minute is your resting heart rate?	

Name: _____

Is the research question discrete or continuous?

Research Question	Discrete/Continuous
How many times did the phone ring today?	
How many different species of birds did you observe on your nature walk?	
How many seconds did it take for the ice to melt completely?	
How many beats per minute is your resting heart rate?	

Name: _____

Is the research question discrete or continuous?

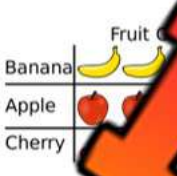
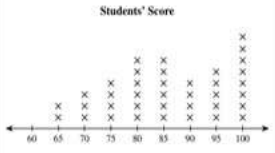
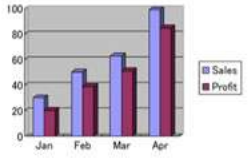
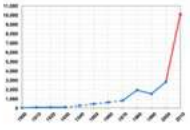
Research Question	Discrete/Continuous
How many times did the phone ring today?	
How many different species of birds did you observe on your nature walk?	
How many seconds did it take for the ice to melt completely?	
How many beats per minute is your resting heart rate?	

Name: _____ 20

Curriculum Connection
GP.1

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
Pictograph 	- A graph that uses images or symbols to represent data	- When we want to display simple data in picture form. - When we want to make our data more interesting
Bar Graph 	- A chart that uses rectangular bars or columns	- When we want to compare categories between different groups - Used with discrete data
Line Plot 	- A graph that displays data as points or symbols (checkmarks, x's) above a number line - The dots are not connected	- Used to show the frequency of data - Quick and simple way to organize data in numerical values
Multiple-Bar Graph 	- A graph that shows the relationship between different values of data - The bars are presented beside each other for clear comparisons	- To display the relationship between two sets of data. For example – gender differences or adults vs youth
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: _____ 21

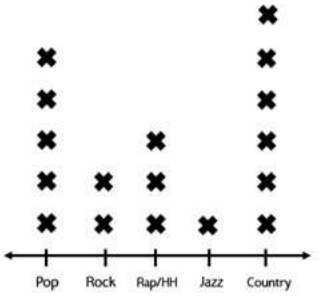
Curriculum Connection
GP.1

Types of Graphs - Questions

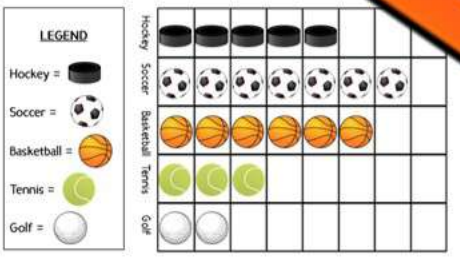
Part 1 — Circle the graph you would use to represent the data

	Description	Graph A	Graph B
1)	You want a simple graph that shows a visual representation of the data	Broken-Line	Pictograph
2)	You w[illegible] show the relationship between two diffe[illegible]es of data	Bar Graph	Multiple Bar Graph
3)	[illegible] sim[illegible]ph that has smaller values	Line Plot	Bar Graph
4)	You want [illegible]ph t[illegible] displays your data visually	Multiple Bar Graph	Bar Graph
5)	You want to grap[illegible] c[illegible] data	Broken Line Graph	Line Plot
6)	You are displaying two se[illegible] dat[illegible] and women	Bar Graph	Multiple Bar Graph

Part 2 — Label the names of the graph[illegible]w

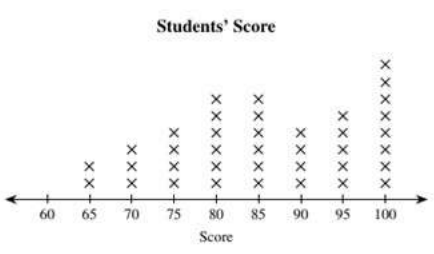


1)

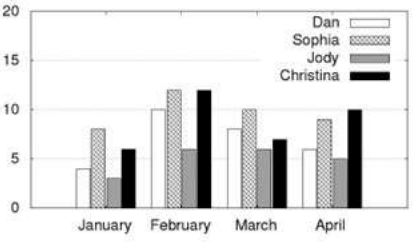


2)

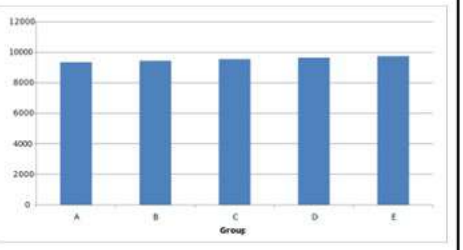
3)



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 total sales figures for four different products over a year.	Bar Graph	Line Plot
2) You are looking to display data that shows both an increase and decrease in a single variable over time.	Broken-Line Graph	Multiple Bar Graph
3) You want to represent data that shows the favourite sports of students and their frequencies.	Pictograph	Bar Graph
4) You want to show changes in data over time for different categories.	Multiple Line Graph	Line Plot

Name: _____

Circle the graph you would use to represent the data

Description	Graph A	Graph B
1) You want to compare the total sales figures for four different products over a year.	Bar Graph	Line Plot
2) You are looking to display data that shows both an increase and decrease in a single variable over time.	Broken-Line Graph	Multiple Bar Graph
3) You want to represent data that shows the favourite sports of students and their frequencies.	Pictograph	Bar Graph
4) You want to show changes in data over time for different categories.	Multiple Line Graph	Line Plot

Name: _____ 23

Curriculum Connection
GP.1

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
S		
Steve		
Tony		
Jill		
Stacy		

 = 12 Candies

a) How much is one candy worth?	
b) How much is half a candy worth?	
c) Who collected the most candy?	
d) How much more candy did Jill collect than Tony?	
e) How much total candy was collected?	
f) Did Jill and Tony collect more candy than Sam and Steve?	

Name: _____ 24

Curriculum Connection
GP.1

Horizontal Pictograph - Books

Mr. Wilson's class had a competition to see who could read the most pages in their books in a week. The results have been displayed in the pictograph below for the top 5 readers in the class.

Students	Number of Pages Read	Frequency
John		
Wi		
Emma		
Nick		
Maddy		

 = 30 pa s

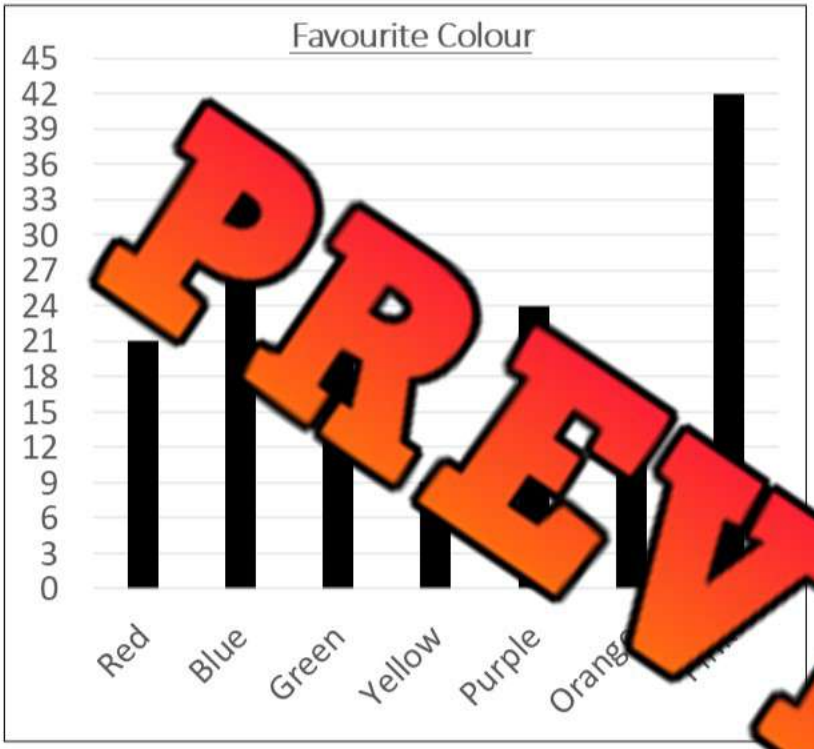
a) How many pages is one book worth?	
b) How many pages is half a book worth?	
c) Who read the most and who read the least?	Least: _____ Most: _____
d) How many more pages did Emma read than William?	
e) Did Maddy and Nick read more or less than Emma and John?	
f) How many total pages were read by these 5 students?	

Name: _____ 25

Curriculum Connection
GP.1

Vertical Bar Graph – Favourite Colour

The students in grade 6 were asked which colour was their favourite. The results of the survey have been displayed in the bar graph below.



Frequency Table	
Red	
Blue	
Green	
Yellow	
Purple	
Orange	

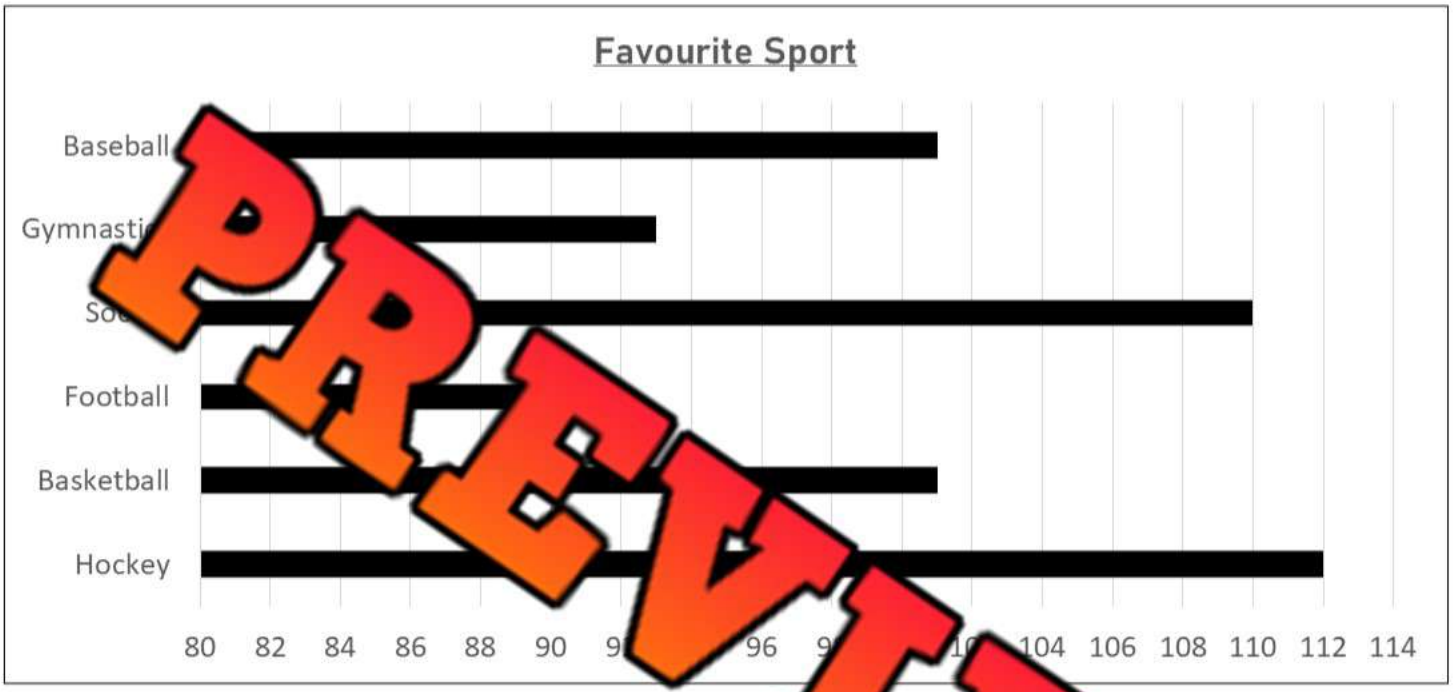
a) Which colour was most popular?	
b) Which two colours add up to pink?	
c) Is the data quantitative or qualitative?	
d) What is the scale of the graph?	
e) What could the title of the x-axis be →?	
f) What could the title of the y-axis be ↑?	
g) Is this data discrete or continuous?	
h) How many people were surveyed?	

Name: _____ 26

Curriculum Connection
GP.1

Horizontal Bar Graph – Favourite Sport

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



Questions | Fill in the tables below

Frequency Table	
Baseball	
Gymnastics	
Soccer	
Football	
Basketball	
Hockey	

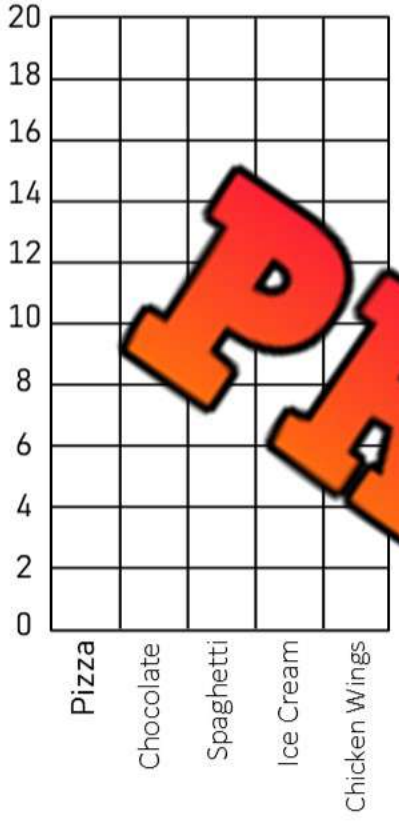
a) Which sport was most popular?	
b) What number does the scale start at?	
c) How many people chose gymnastics as their favourite?	
d) How many kids liked basketball and soccer the best?	
e) How many kids liked hockey more than football?	
f) How many kids were surveyed?	

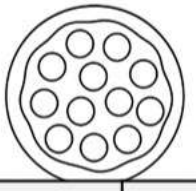
Name: _____ 30

Curriculum Connection
GP.1

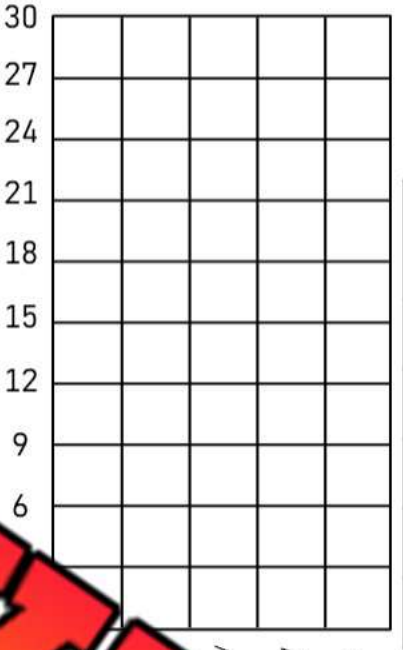
Drawing Bar Graphs

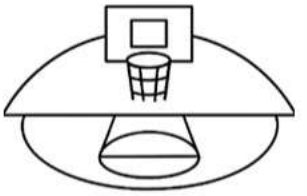
Instruction Draw the bars for each of the bar graphs below



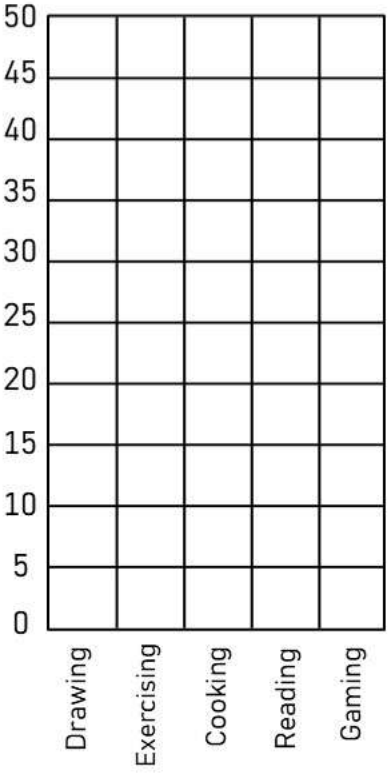


Favourite Food	# of votes
Pizza	16
Chocolate	14
Spaghetti	8
Ice Cream	
Chicken Wings	11

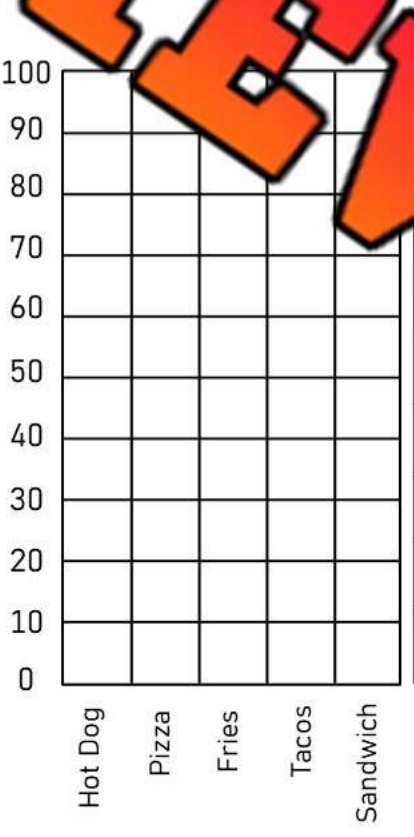




Player	# of points
Jake	21
Nathan	12
Courtney	18
Ashley	28
Luke	8



Favourite Hobby	# of votes
Drawing	30
Exercising	11
Cooking	29
Reading	13
Gaming	45



Favourite Food	# of votes
Hot Dog	40
Pizza	80
Fries	75
Tacos	35
Sandwich	25

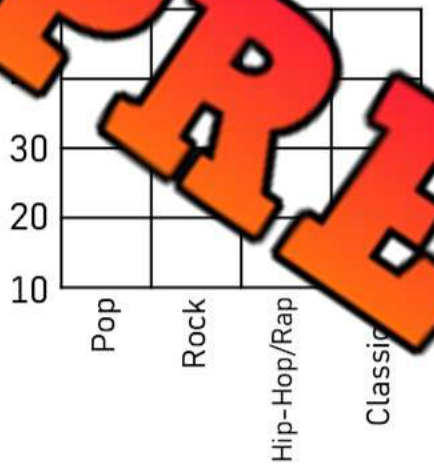
Exit Cards

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 graph below.

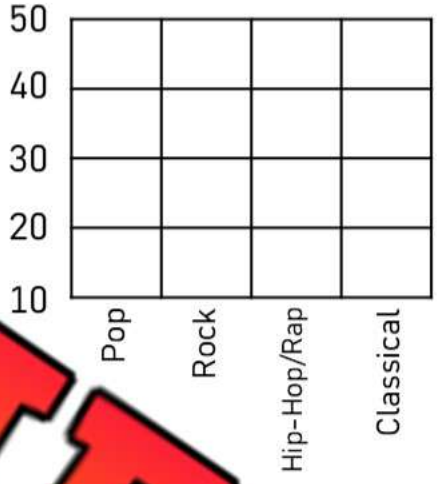
Music		Rock	Hip-Hop/ Rap	Classical
Votes			50	45



Name: _____

Draw the bars for the bar graph below.

Music	Pop	Rock	Hip-Hop/ Rap	Classical
Votes	35	20	50	45



Name: _____

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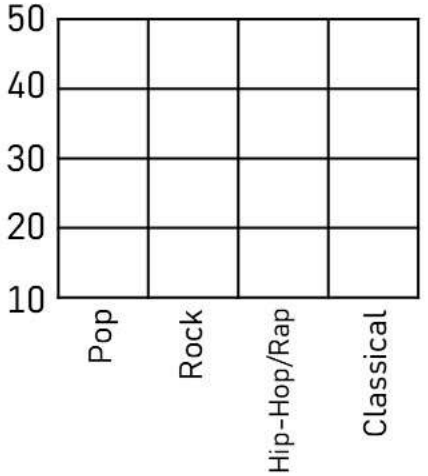
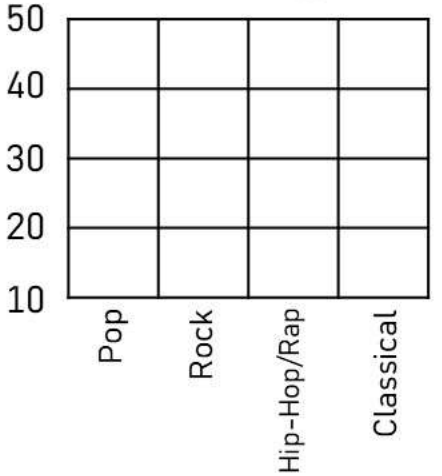


Name: _____

Draw the bars for the bar graph below.

Music	Pop	Rock		Classical
Votes	35	20		45

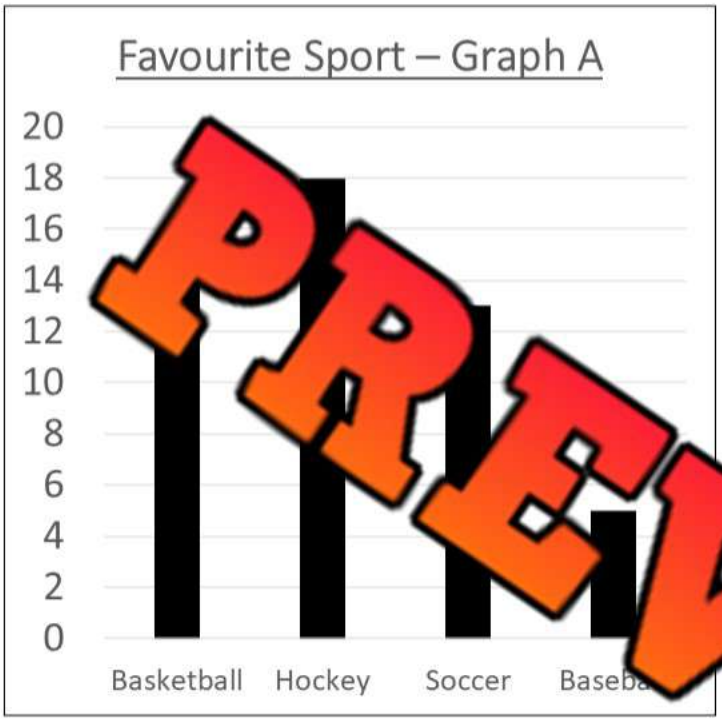


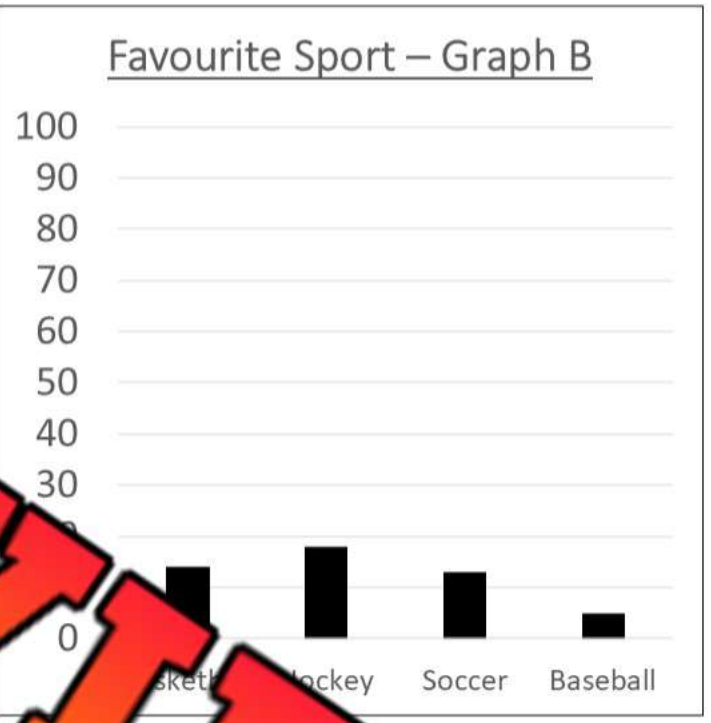
Name: _____ 33

Curriculum Connection
GP.1

Examining Scale – Favourite Sport

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





Questions What do you notice about th w ?

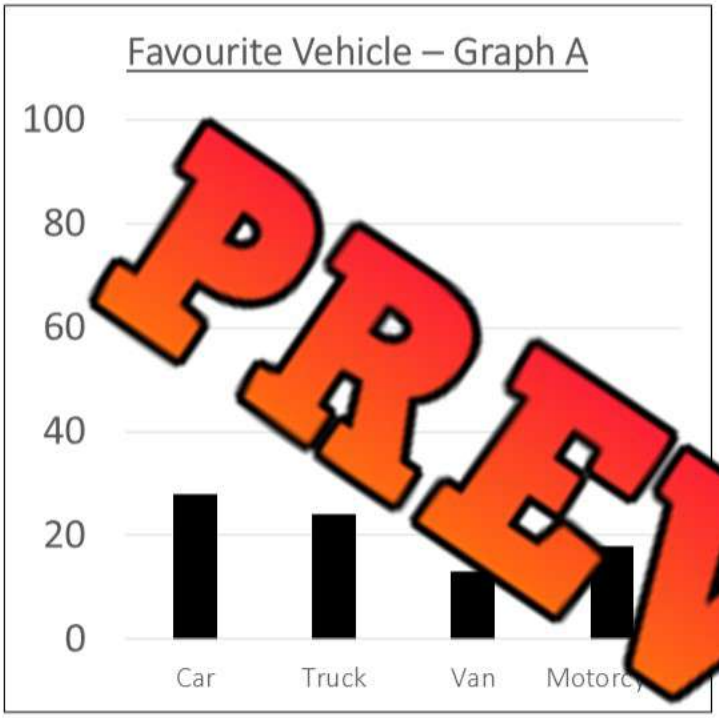
a) What is the scale in Graph A?	
b) What is the scale in Graph B?	
c) Which graph uses more of the space?	
d) Which graph is easier to read and interpret? Why is that graph better?	
e) Why is it important to choose an appropriate scale?	

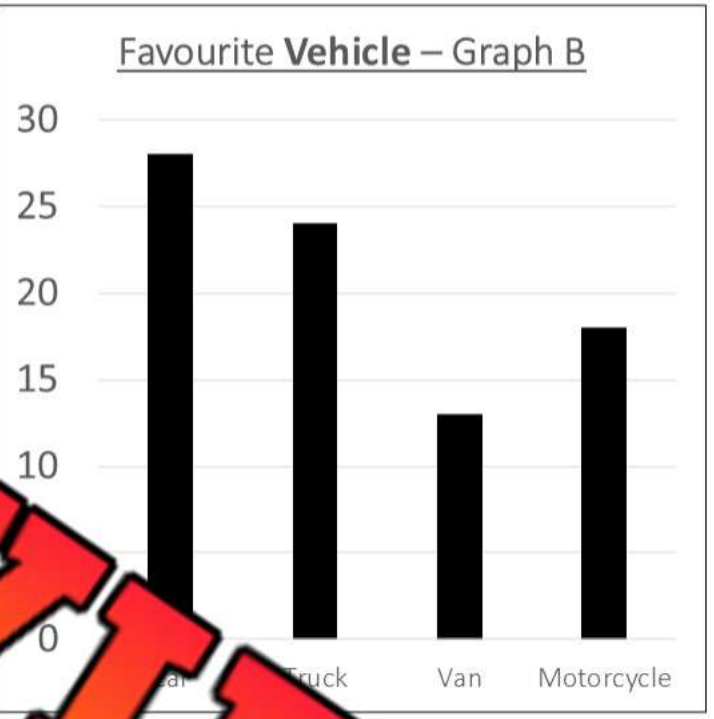
Name: _____ 34

Curriculum Connection
GP.1

Examining Scale – Favourite Vehicle

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





Questions What do you notice about the t[illegible]

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 better? Why?

e) What other scales could you use for the data?

- Go up by _____
- Go up by _____

Name: _____ 35

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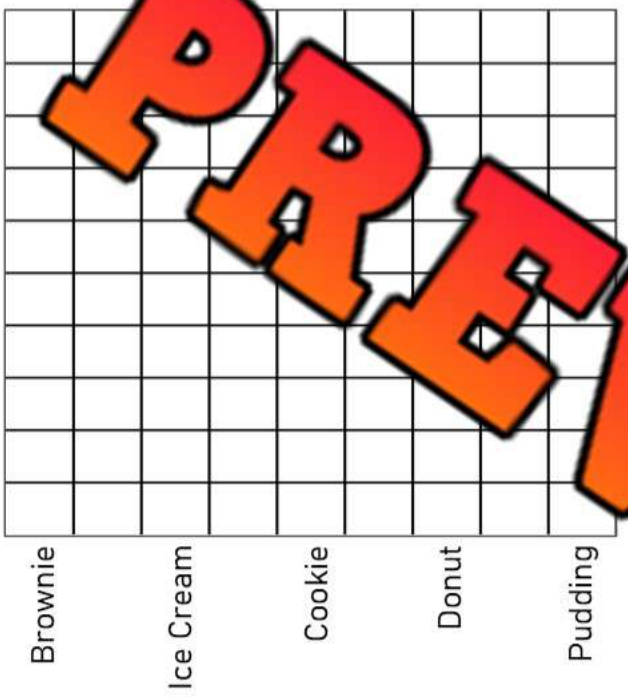
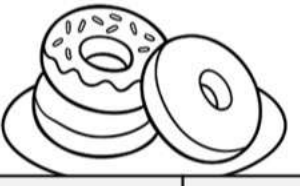
Creating Scale

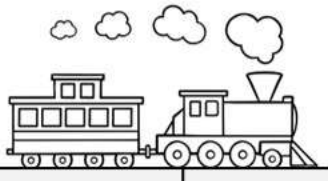
When you create a scale for your graph, you need to look at the data so you can decide what to go up by. The goal is to create a graph that will fill the graph area.

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.

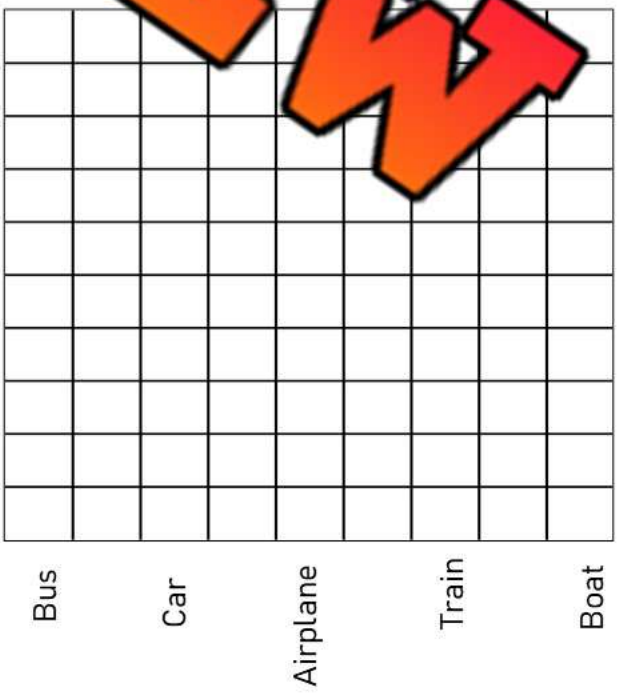




Favourite Dessert	# of votes
Brownie	21
Ice Cream	27
Cookie	15
D[illegible]t	12
P[illegible]	9



Transportation Method	# of votes
Bus	11
Car	49
Airplane	91
Train	70
Boat	82



Name: _____ 36

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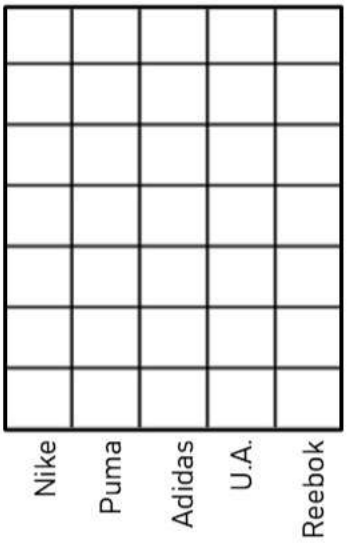
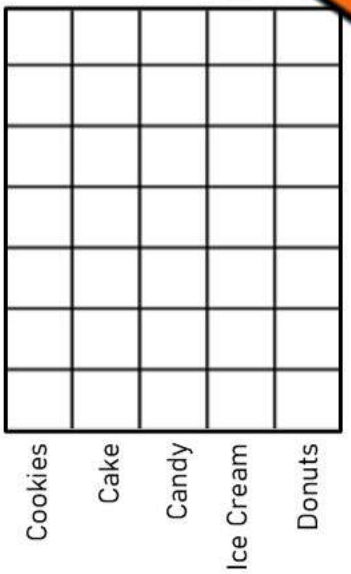
Creating Scale

Questions 1. Read the numbers and decide which scale to use 2. Draw your bar graphs

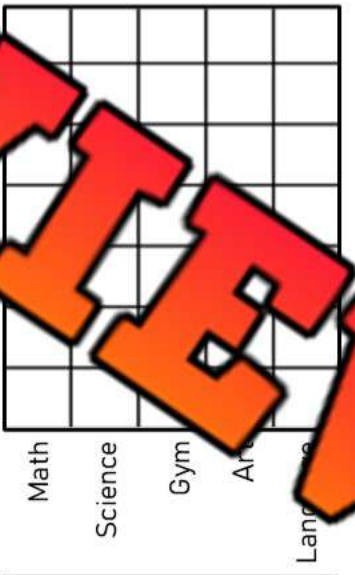
Pets	Votes
Dog	3
Cat	12
Bunny	18
Hamster	15
[illegible]tle	9



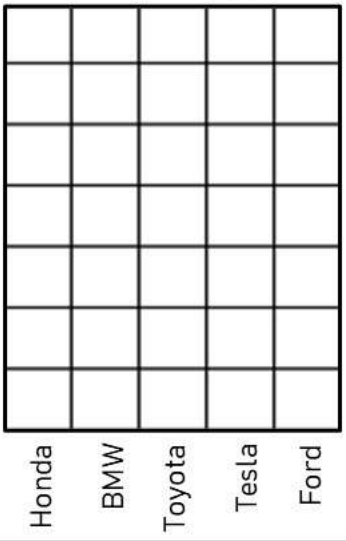
Brand	Votes
Nike	10
Puma	6
Adidas	3
Under Armour	8
Reebok	12



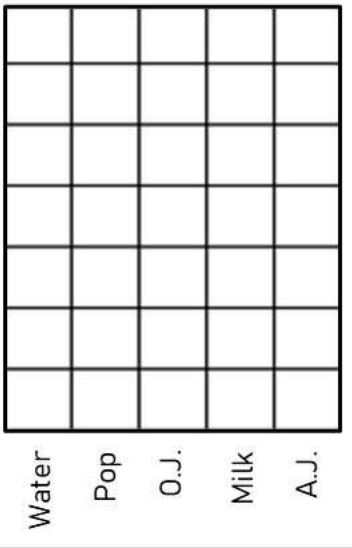
[illegible]	Vote[illegible]
Cookie[illegible]	1[illegible]
Cake	[illegible]
Candy	35
Ice Cream	24
Donuts	12



Subject	Votes
Math	8
Science	22
Gym	65
[illegible]Art	41
[illegible]	30



Cars	Votes
Honda	200
BMW	450
Toyota	225
Tesla	675
Ford	350



Drinks	Votes
Water	700
Pop	1300
Orange Juice	550
Milk	150
Apple Juice	825

Name: _____ 37

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Collecting Data – Qualitative

Qualitative data is non-numerical data that can be organized by categories, such as type of pet, or favourite colour.

Questions of interest are questions we have that we want to learn more about. We learn more about them by collecting data from a population.

Examples - Which YouTuber is the best from this list? Which video game system is the best?

Population - Choosing your population is important. If you asked kindergartens the same question a[illegible] 6's, you would expect different results and you might not be interested in the kin[illegible] data.

Data C[illegible]tion [illegible]ct data by asking the population your survey question

Survey Questi[illegible] _____ *Example*: What is your favourite music genre? _____				
Categories				
Tally				
Frequency				

Interpreting Your Survey Results

1. Which population did you ask? (ex- grade 6's, kids under 12) _____

2. How many people were surveyed? _____

3. Which category was the most popular? _____ least popular_____

4. If you asked your entire school, which category do you think would win? Explain.

_____

5. What conclusions can you make from your data? What did you learn?

_____

_____

Name: _____ 38

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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 ☐

Name: _____ 41

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GP.1

Collecting Quantitative Discrete Data

Quantitative discrete data – is data that is collected through counting. We don't use categories, instead we use numbers or intervals.

Examples – number of pets, number of siblings, number of goals scored, number of books read this week

Intervals – You can setup your responses into a group of numbers to allow for a larger range of n bers. For example: 0-4, 5-9, 10-14, 15-19, 20-24

Data Col Collect data by asking the population your survey question

Survey Questi _____

Example: How ma d did you read this wee _____

Numbers/Intervals					
Tally					
Frequency					

Interpreting Your Survey Results

1. Which population did you survey? _____

2. Which number/interval was the most popular? _____ least po _____

3. How many people did you survey? _____

4. Why is this data quantitative? _____

_____

5. What conclusions can you draw from your data? What did you learn?

_____

_____

Name: _____ 42

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Graphing Quantitative Data

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

X axis label ☐ Y axis label ☐ Title ☐ Scale ☐ Number/Intervals ☐

Name: _____ 45

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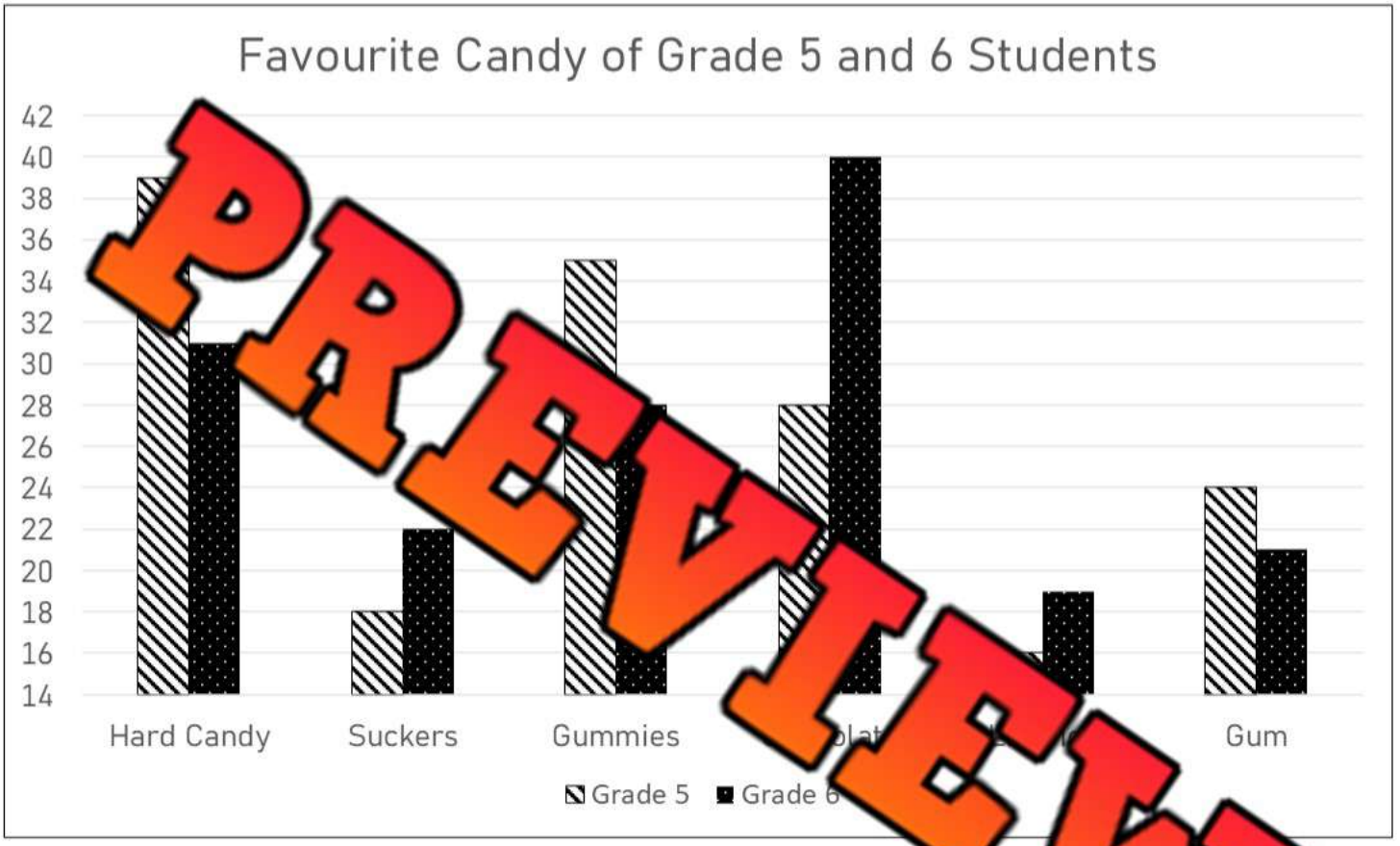
Interpreting a Double Bar Graph

The students in grades 5 and 6 were asked which candy was their favourite. The results have been sorted by grade in the double bar graph below.

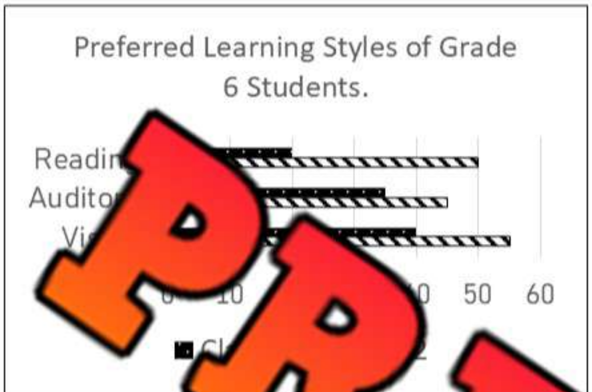


a) Which candy did the grade 5's like the most?	
b) Which candy did the grade 6's like the most?	
c) Which candy got the most votes combined?	
d) How many more votes did chocolate get in total over licorice?	
e) Did more grade 5s or grade 6s participate in the survey?	
f) How many students participated in the survey?	

Exit Cards

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

Name: ______________________________



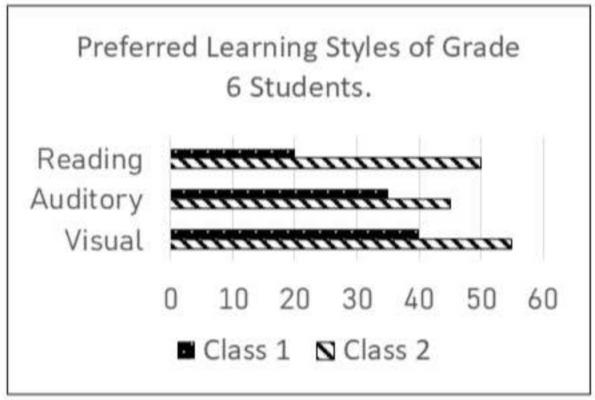
1) Which learning style is the most preferred among the students?

____

2) What is the total number of students who prefer either Visual or Auditory Learning?

____

Name: ______________________________



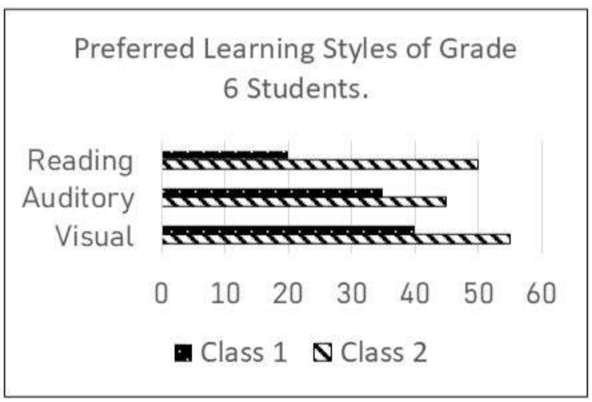
1) Which learning style is the most preferred among the students?

____

2) What is the total number of students who prefer either Visual or Auditory Learning?

____

Name: ______________________________



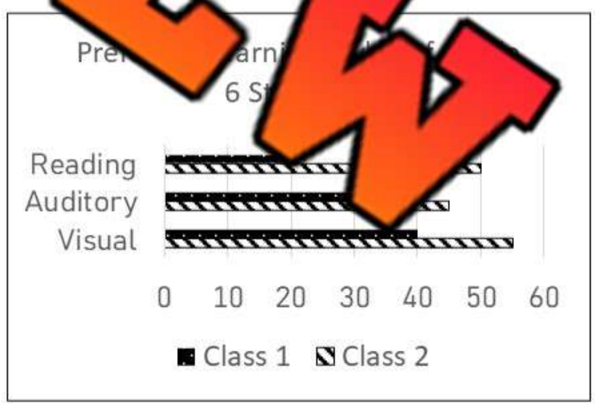
1) Which learning style is the most preferred among the students?

____

2) What is the total number of students who prefer either Visual or Auditory Learning?

____

Name: ______________________________



1) Which learning style is the most preferred among the students?

____

2) What is the total number of students who prefer either Visual or Auditory Learning?

____

Name: _____ 49

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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.

- B or cups g
- A sm tboard r t display bar graphs
- Timer (sto h martp p)
- Question card on th data
- Scoreboard to ke

Instructions

How you wi mpl

1. Divide the class into small teams, ideally of 5 tude ch.
2. Prepare a series of bar graphs to display c smart d, with corresponding question cards that ask about t gr
3. One team at a time comes to the front where the gr play
4. Display the first bar graph on the smartboard.
5. The first student from the active team reads the graph and sel card. Start the timer when the question is first shown.
6. The student answers the question based on the data presented in the graph. 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: _____ 50

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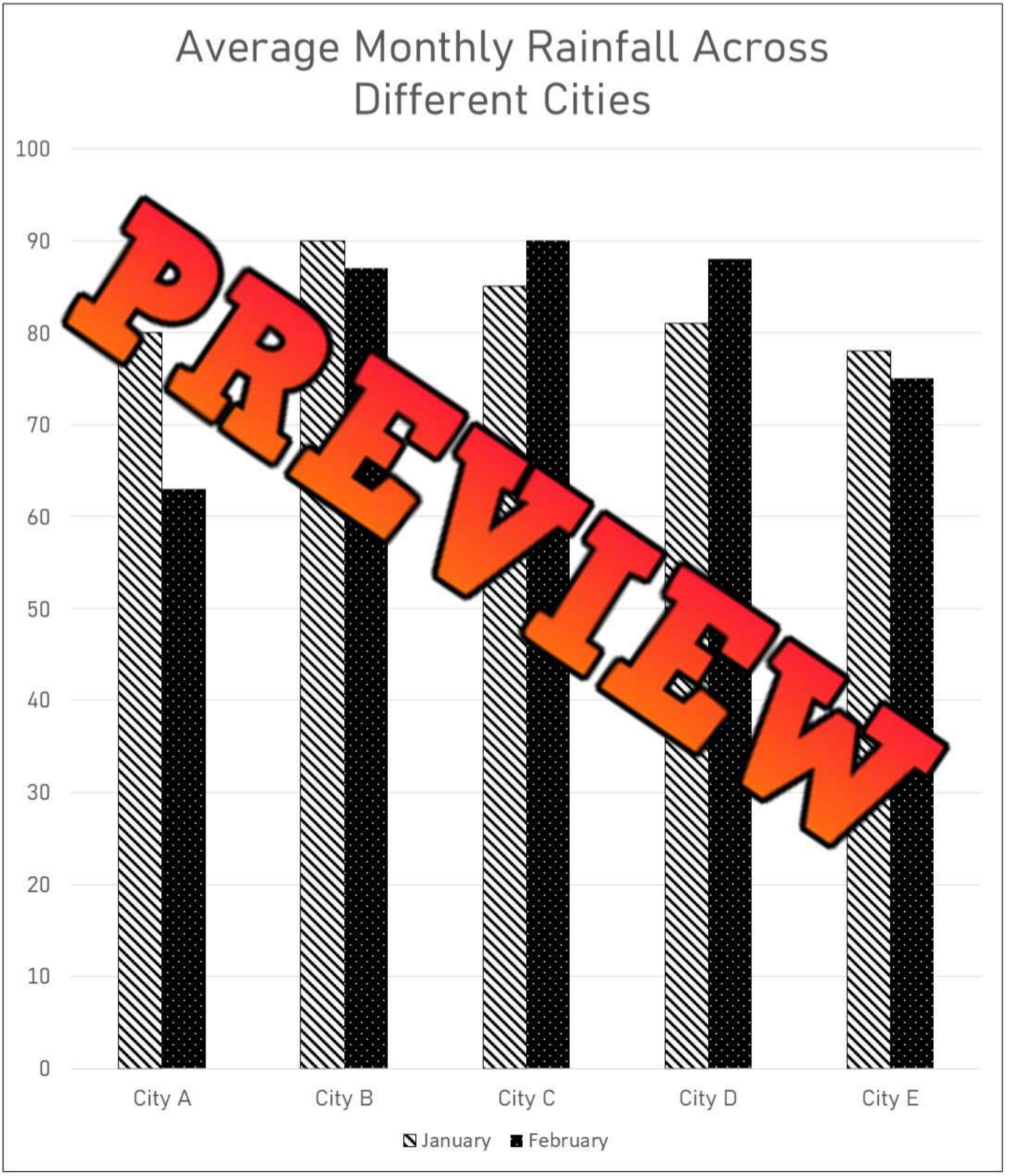
Graph 1 | What did you learn from the graph?



Name: _____ 54

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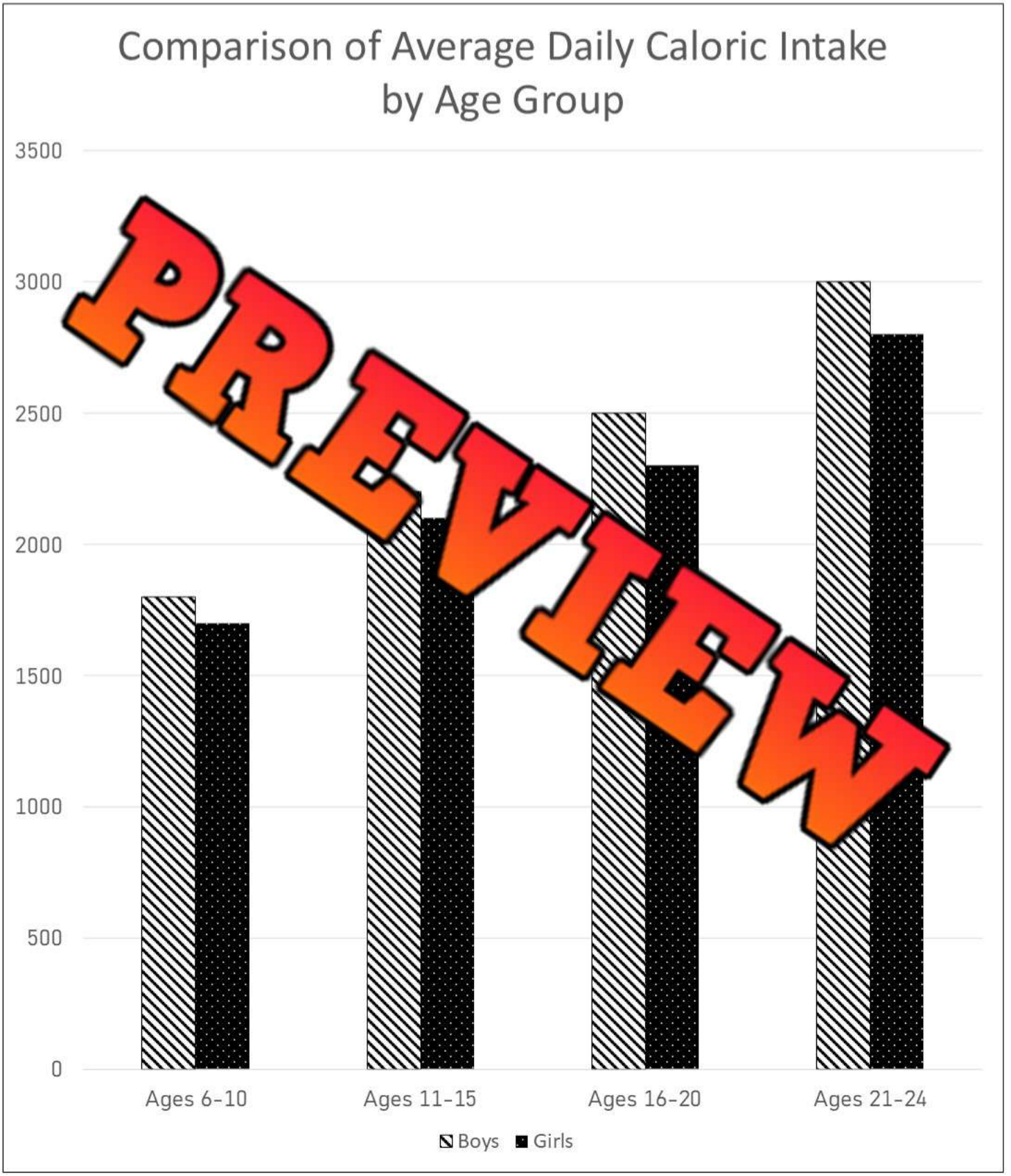
Graph 5 | What did you learn from the graph?



Name: _____ 55

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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 category has the lowest values for both bars?
How many categories are displayed on the graph?
What is the range of values shown on the Y-axis?
What is the total number of units represented by all bars?
What is the difference in value between the highest and lowest categories for both bars?
Are there any categories that have similar values? Which ones?
How does the value of one specific category compare to others?
What could be a possible reason for the highest value?
What could be a possible reason for the lowest value?
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 it be?
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?

Name: _____ 56

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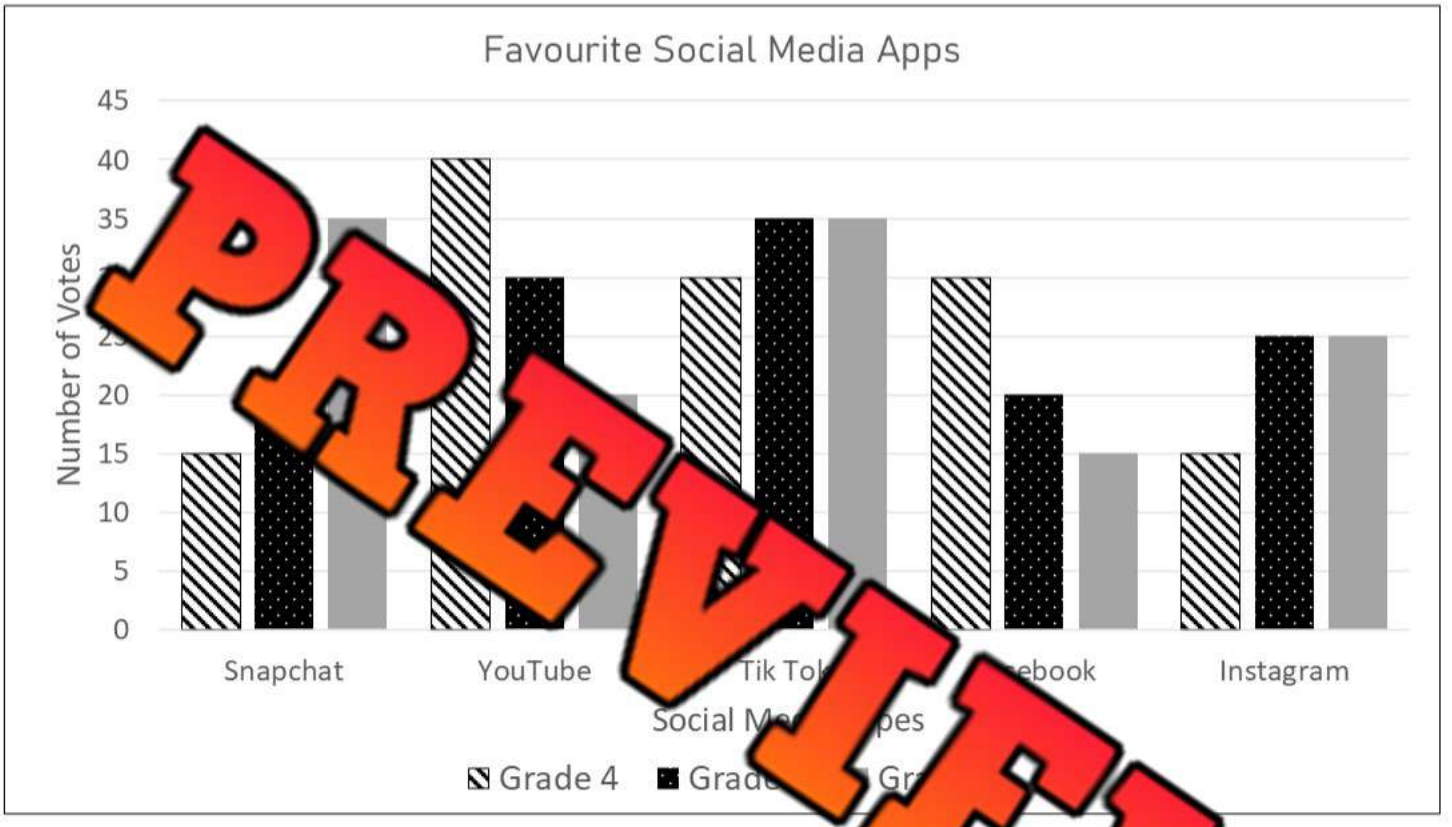
GP.1

Multiple-Bar Graph – Favourite Social Media

The students in grade 4, 5, and 6 were asked which social media app was their favourite. The results have been sorted by grade in the multiple-bar graph below.



Part 1 Fill in the frequency table by reading the

Grades	Snapchat	YouTube	Tik Tok	Facebook	Instagram
4					
5					
6					

Part 2 Answer the questions below

a) How many students in each grade were surveyed?	
b) Which social media was the most popular? How many votes did it get?	
c) How many more grade 4's liked YouTube than grade 6's?	

Name: _____

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GP.1

Creating a Multiple-Bar Graph - 3 Groups

Assignment Create a multiple-bar graph using data you have col

1. Choose a population that you can segment into 3 groups.
Example – Kids with no siblings, kids with 1 sibling, kids with more

Groups within Population: _____

2. Choose a survey question you would like to learn more abo k about how the answers might be different based on your different groups.

Survey Question: _____

Option 1			Option 2						Option 4			Option 5		
Group 1	Group 2	Group 3												
Tally	Tally	Tally												

Name: _____ 59

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Creating a Multiple-Bar Graph – 3 Groups

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

X axis label ☐ **Y axis label** ☐ **Title** ☐ **Scale** ☐ **Categories** ☐

Legend

☐

☐

Fill in the frequency table below with your 5 categories and 3 different groups

Name: _____ 60

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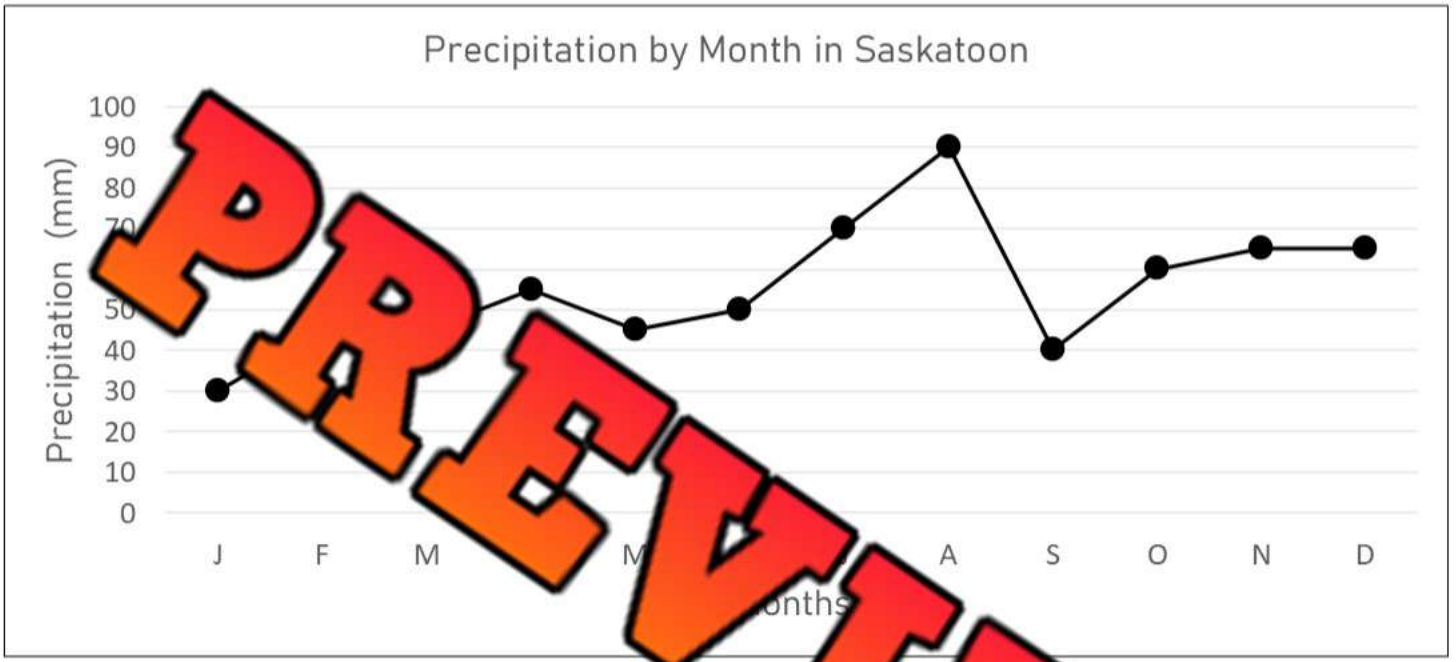
Interpreting a Broken-Line Graph

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.



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

Part 2

Solve an argument

a) Nolan and Rachel are arguing over which time of year has more precipitation. Nolan says that more precipitation falls from January-June, but Rachel says more falls from July-December. Who is correct? Explain using data to support your answer.

b) Rachel says the largest increase of precipitation happened from January to February, but Nolan thinks it was from September to October. Who is correct? Explain.

Name: _____ 61

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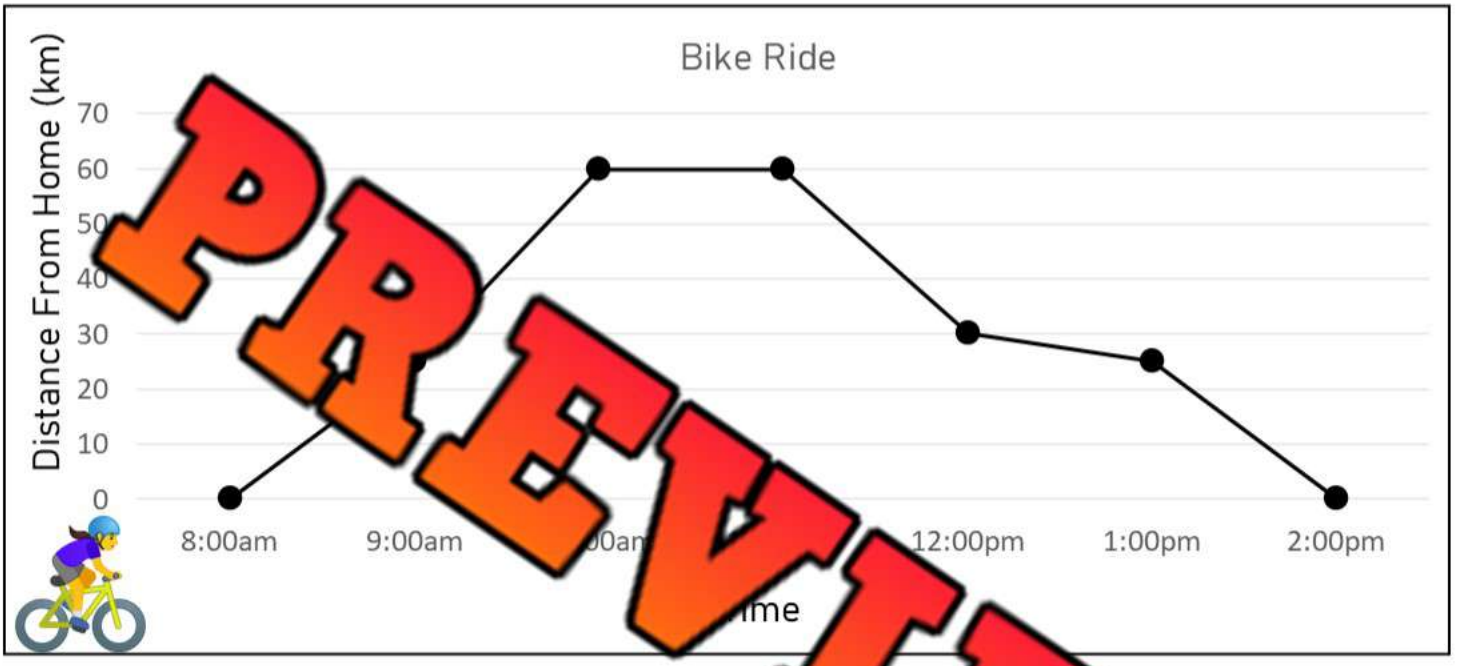
Interpreting a Broken-Line Graph

Jessica went for a bike ride from 8:00am to 2:00pm. She stopped to enjoy some food at a park and then went home. Unfortunately, she had a flat tire on the way home, but she eventually made it.



Part 1 Fill in the frequency table by rea… th… …raph above

Time							
Distance Travelled (km)							

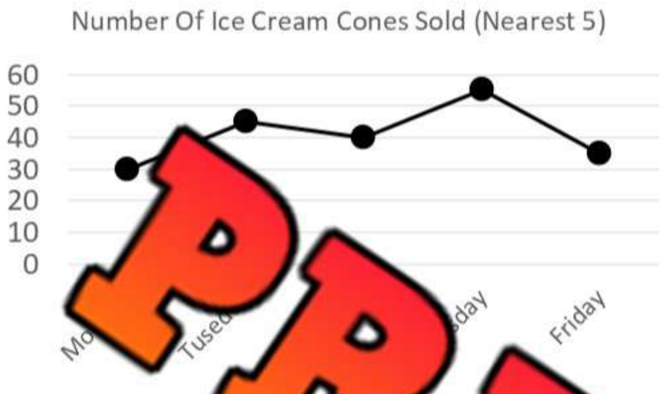
Part 2 Answer the questions below

a) How many kilometres in total did Jessica travel?	
b) What time did Jessica stop at the park?	
c) When did Jessica have a flat tire?	
d) What hour did Jessica travel the most kilometres?	
e) How many hours was Jessica biking for?	

Exit Cards

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

Name: ____________________



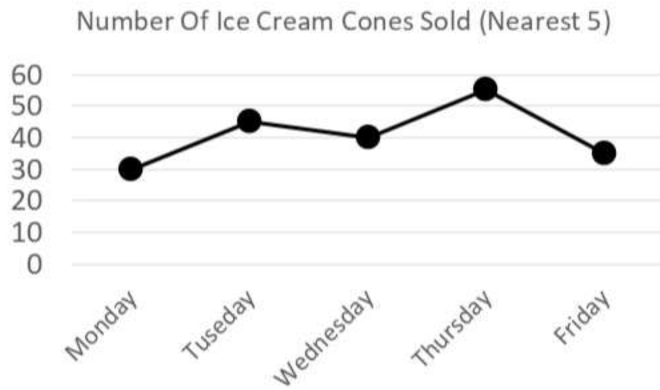
1) On which day were the most ice cream cones sold?

____

2) How many more ice cream cones were sold on Friday than on Monday?

____

Name: ____________________



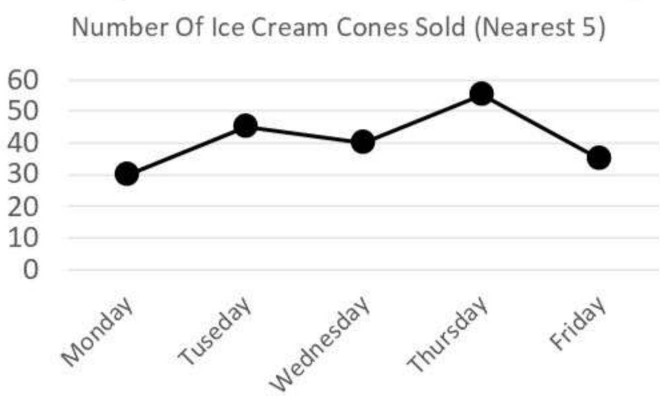
1) On which day were the most ice cream cones sold?

____

2) How many more ice cream cones were sold on Friday than on Monday?

____

Name: ____________________



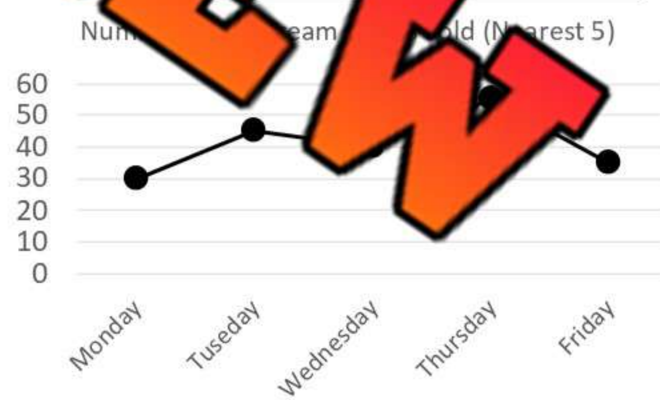
1) On which day were the most ice cream cones sold?

____

2) How many more ice cream cones were sold on Friday than on Monday?

____

Name: ____________________



1) On which day were the most ice cream cones sold?

____

2) How many more ice cream cones were sold on Friday than on Monday?

____

Name: _____ 63

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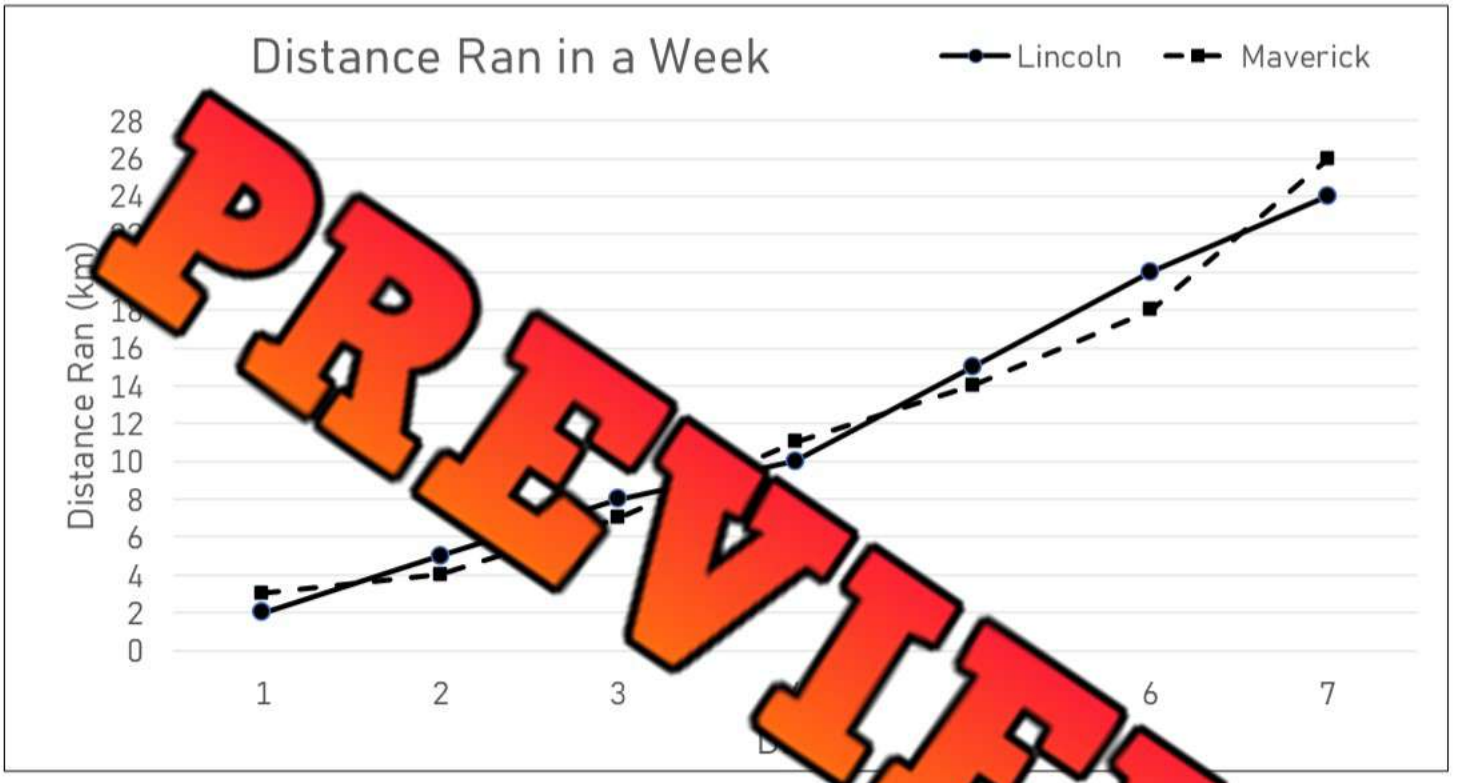
GP.1

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.



Questions	Answer the questions below

1) Who ran more km in the week?	
2) Is the data continuous or discrete?	
3) Which day did Maverick run the most? How far did he run?	
4) Who was winning the contest after the fifth day?	
5) How many total km did the two girls run together?	
6) Which day did Lincoln run the furthest? How far did he run?	
7) How many more km did Maverick run on day 7 than Lincoln?	

Name: _____ 64

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GP.1

Experiment - Collecting Continuous Data

Instructions: Create a "track" that you can run or walk around 10 times. Have a friend use a stopwatch to record how many seconds it takes for you to complete each lap.

Hypothesis Will your lap times get faster or slower? Explain.

_____

_____

Data Collection lected data and answer the questions below

Record how many nds it s ou to complete each of the 10 laps.

1	2	3		5	6	7	8	9	10

Interpreting The Data

1. Was your data collected from a primary or s ry so _____

2. What conclusions can you draw from your data? Wh o learn?

a) _____

_____

b) _____

_____

3. Why is this data continuous data? _____

_____

4. If your graph has ten lines on the y axis (up and down), what scale will you go up by?

_____

_____

Name: _____ 65

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Creating a Broken-Line Graph

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

X axis label ☐ Y axis label ☐ Title ☐ Scale ☐ Categories ☐

Name: _____ 79

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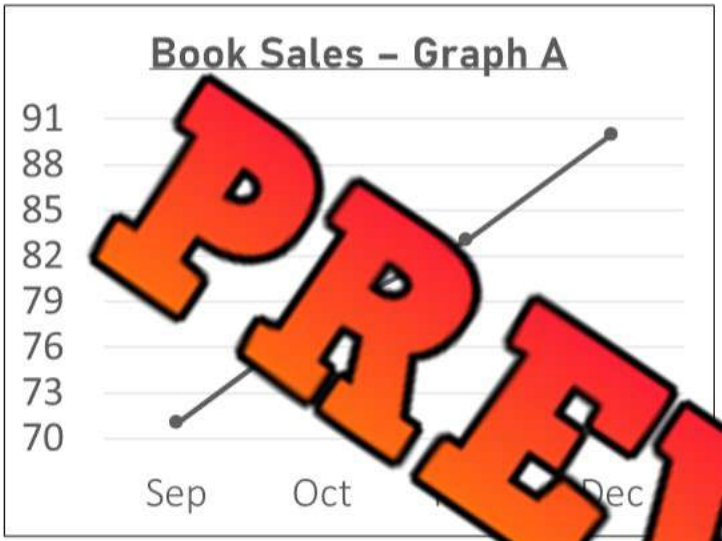
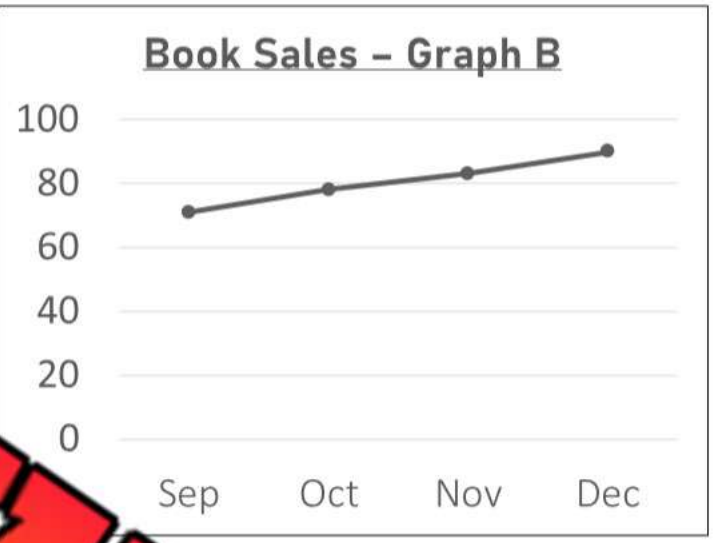
Misleading Graphs

Imagine you are selling a book you wrote. You want to show your customers that your book is selling like crazy, and they should buy it now before it sells out. Which graph would you choose for an infographic?





Questions What do you noti[illegible]ut the [illegible]s?

a) Which graph would you use to show custo[illegible] tha[illegible] ve been growing massively? Why?

b) How are the graphs different? Do they have the same data?

c) How many sales were made from September to December?

d) Does graph A make it seem like more books were sold? Explain.

e) Why is it important to read a graph carefully?

Name: _____ 80

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Misleading Graphs

Fantastic Footwear is running an ad campaign comparing their products versus their competitor, Super Shoes.

Questions What do you notic[illegible] the t[illegible]phs?

a) Which graph would you use if you were F[illegible]ic Fo[illegible]y?

b) How many more votes in total did Fantastic Footwear get over S[illegible]hoes?

c) Are Fantastic Footwear shoes a lot better than Super Shoes? Explain.

d) Why would advertisers use charts like this to sell their products?

Name: _____ 81

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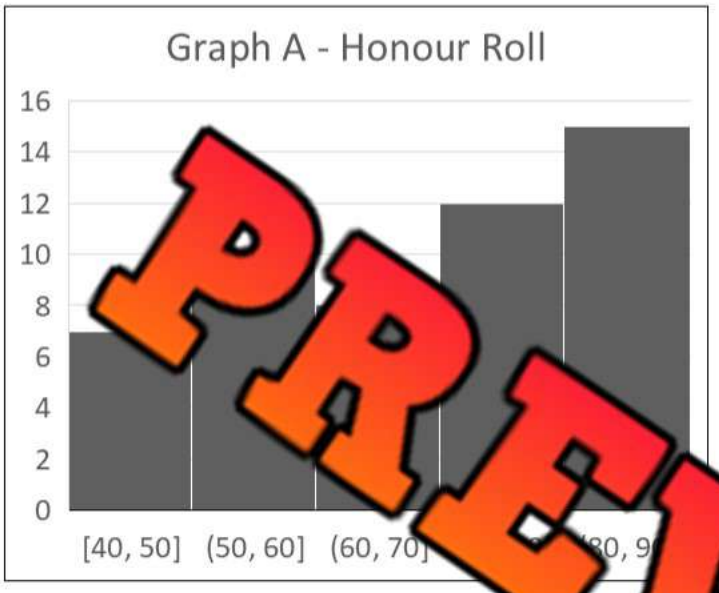
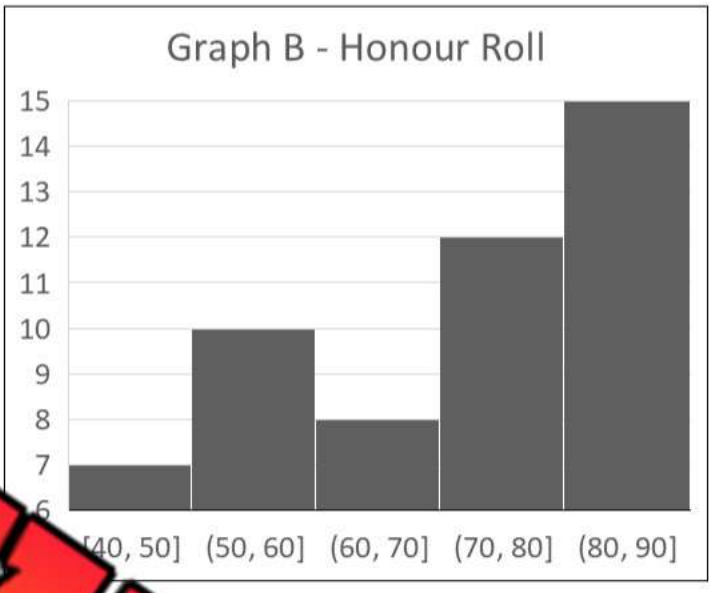
Misleading Graphs

Wellington High School is proud of how many students they have on their honour roll (80% or more). They want to show off their success by posting their data.





Questions What do you notic[illegible] the t[illegible]phs?

a) Which histogram should Wellington High [illegible]l use[illegible]t to emphasize their success?

_____

_____

_____

b) How many more students were on the honour roll? _____

c) How many did not make the honour roll? _____

d) Would it be fair to use Graph B? Why or why not?

_____

_____

e) **Make a connection** – Have you ever seen an advertisement use a misleading graph?

_____

_____

Name: _____ 82

Curriculum Connection
GP.1

Misleading Graphs

Part 1 Draw two graphs – one that is misleading and one that is honest

If you were selling cola as a business, how would you graph the data to make it look like your product is much more popular than the other products?

Ho… …aph

Favourite Pop	# of votes
…l Tea	15
…	21
…oot B…	18
…nerg…	…
Ging…	…

Misleading Graph

Part 2 What do you notice about the two graphs?

a) Which graph would the cola business use? Explain why.

b) How did you make the graphs different?

Name: _____ 83

Curriculum Connection
GP.1

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[illegible]ed [illegible]al graphs (some accurate, some mi[illegible]ing)
- Smartboard [illegible] to [illegible]play the graphs
- Classroom [illegible]e [illegible]studen[illegible] and view the graphs

Instructions

How y[illegible]mple[illegible]tivity

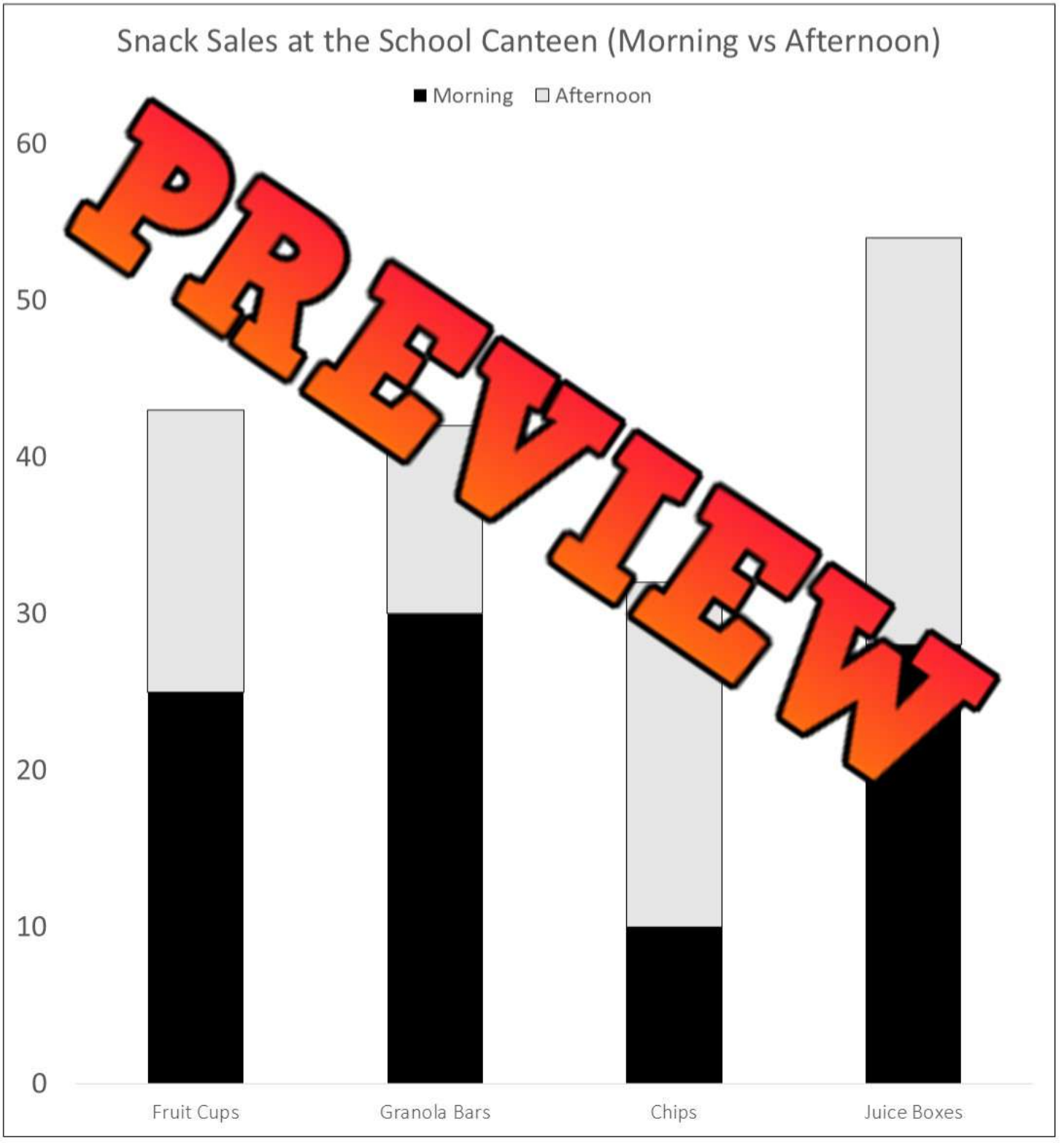
1. Begin by explaining the concept of [illegible]ng gr[illegible]n the students, highlighting common ways graphs can be mani[illegible]ed (e.g[illegible]n[illegible]ales, omitting data, exaggerating differences).
2. Show each graph one at a time on the smar[illegible]d or[illegible]sure all students can see the graph clearly.
3. After showing each graph, ask the students to use fing[illegible]als[illegible]ir decision. They show one finger if they believe the graph is true[illegible]a misleading) and they show two fingers if they believe the grap[illegible]ading 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 or as a group.

Name: _____ 89

Curriculum Connection
GP.1

Graph | What do you notice about the graph?

A graph comparing the number of different snacks sold in the school canteen during the morning and afternoon periods.



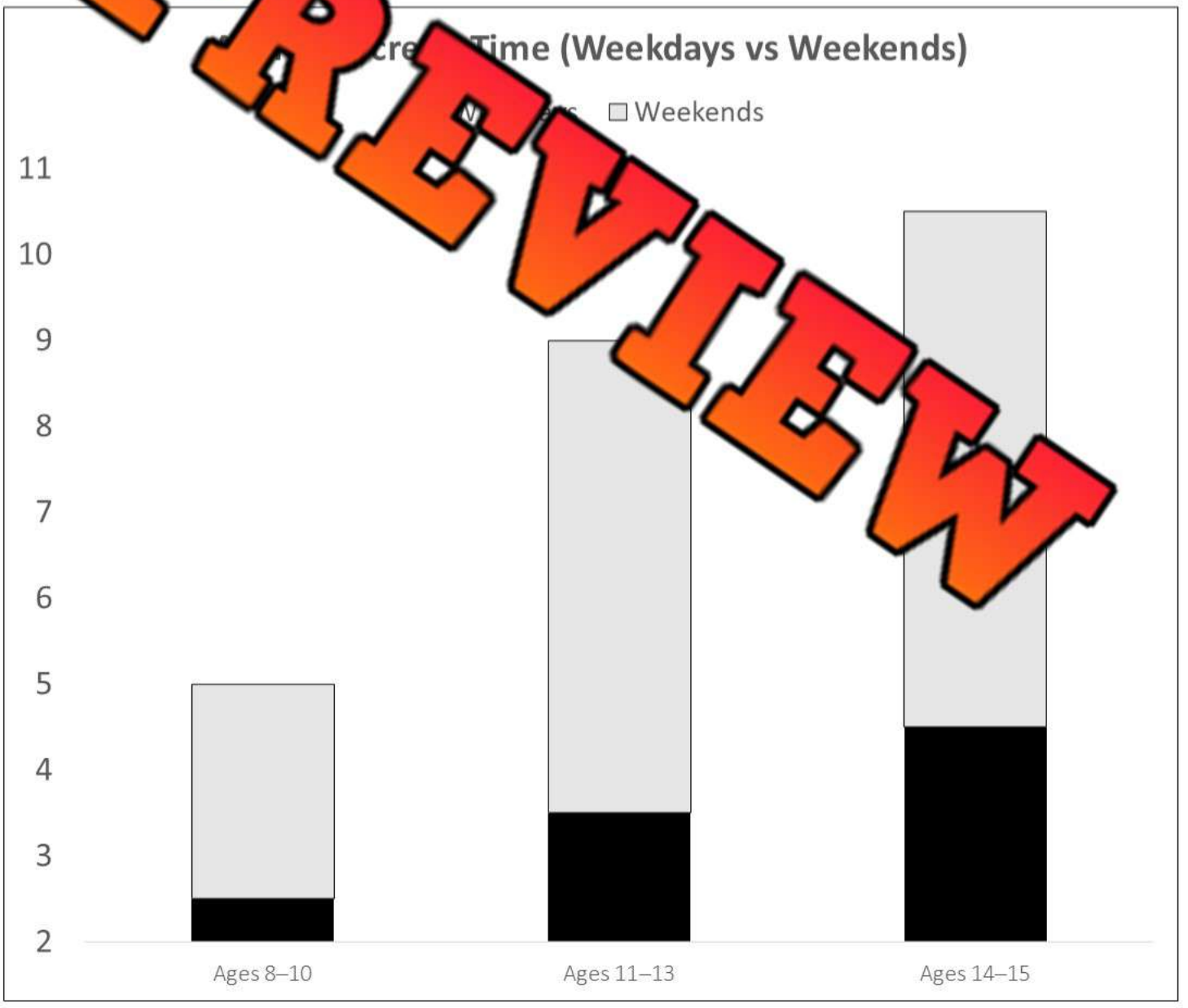
Name: _____ 90

Curriculum Connection
GP.1

Graph | What do you notice about the graph?

A graph showing the average number of hours students in different age groups spend on screens during weekdays and weekends.

Age Group	Weekdays	Weekends
Ages 8–10	2.5	2.5
A –13	3.5	5.5
	4.5	6.0



Name: _____ 91

Curriculum Connection
GP.1

Graph	What do you notice about the graph?

How many hours students sleep on a typical school night.

Name: _____ 92

Curriculum Connection
GP.1

Graph	What do you notice about the graph?

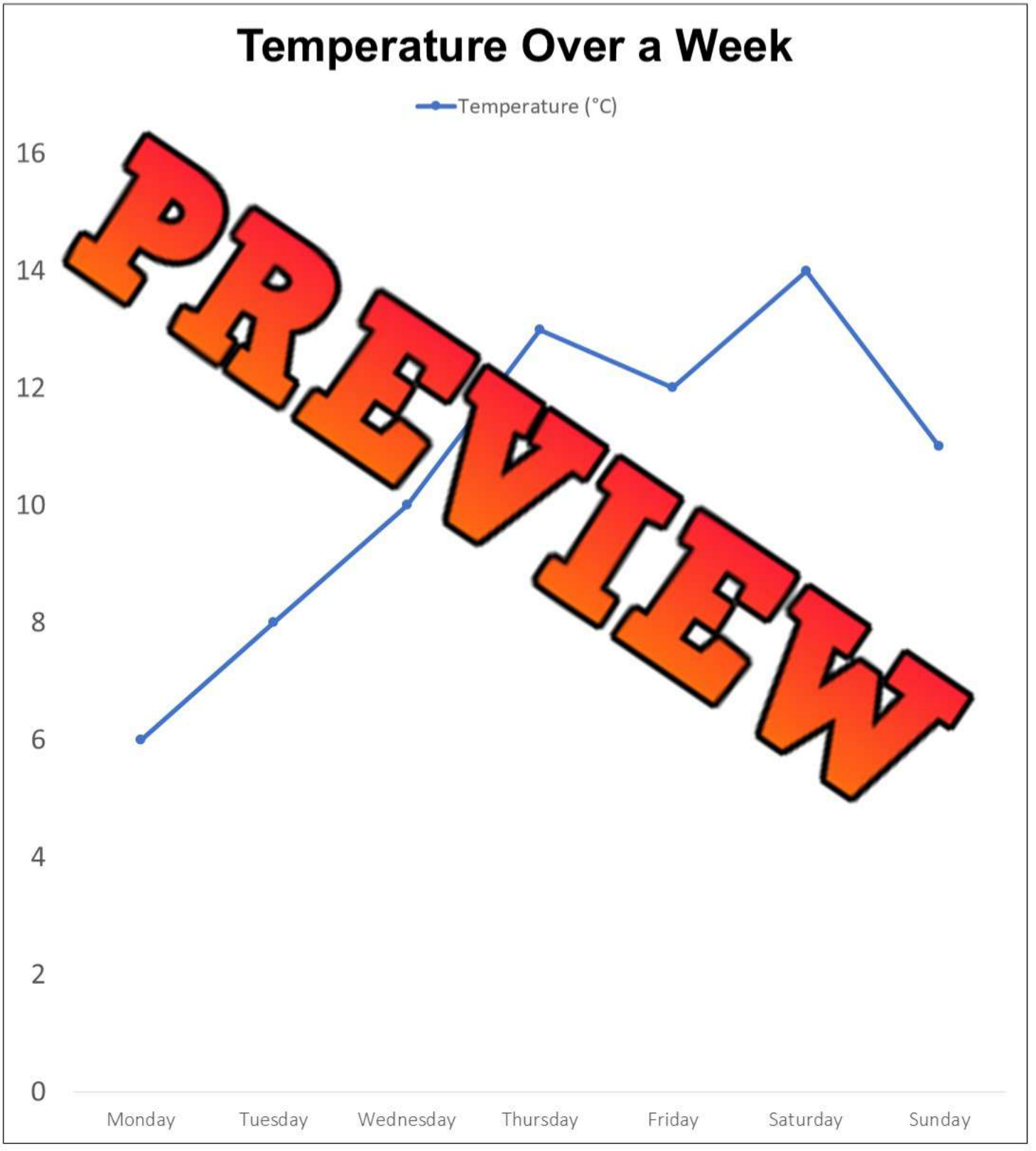
How many texts students sent in a single day.

Name: _____ 93

Curriculum Connection
GP.1

Graph | What do you notice about the graph?

A graph showing how the daily high temperature changed over a week in early spring.

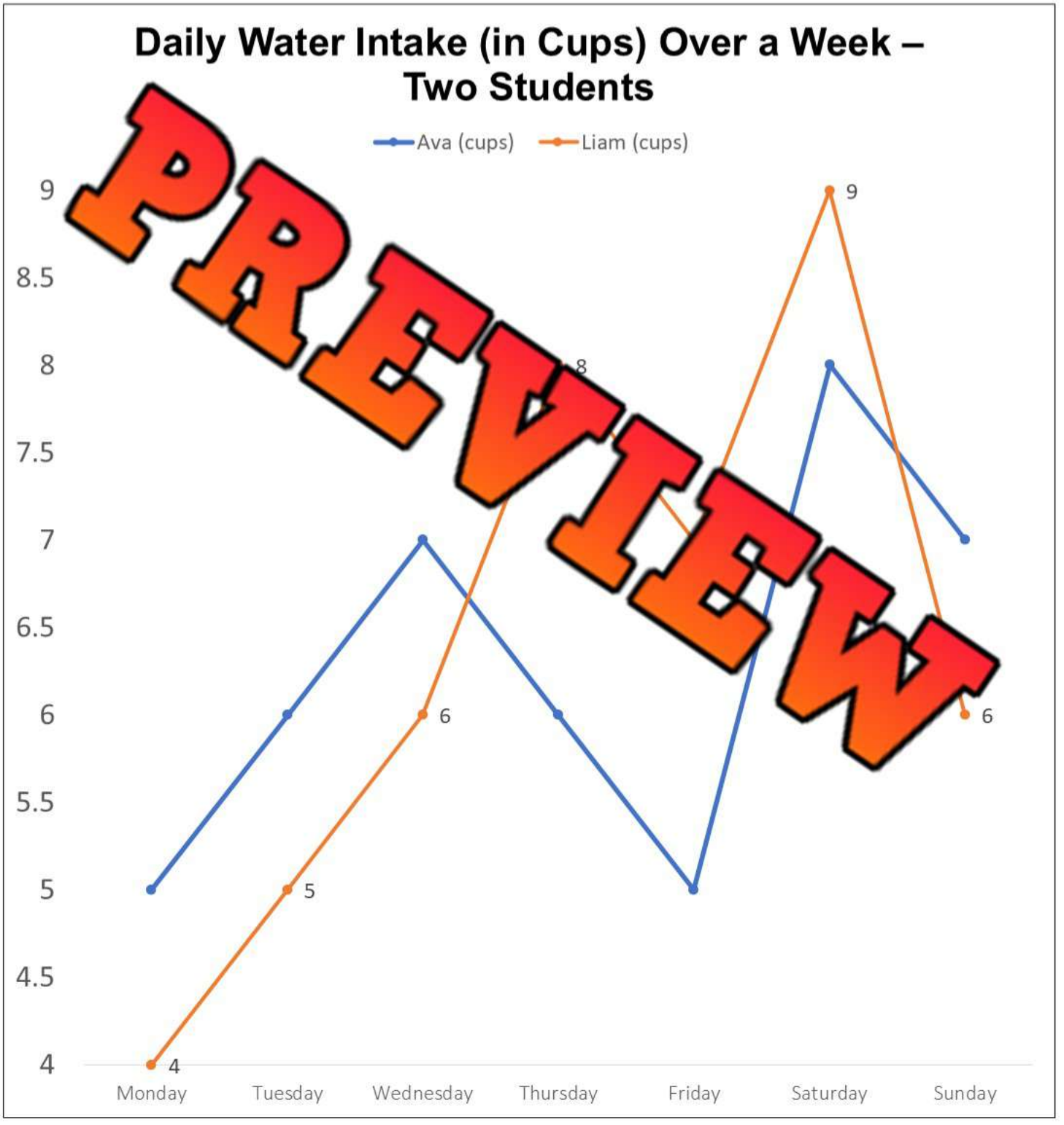


Name: _____ 94

Curriculum Connection
GP.1

Graph | What do you notice about the graph?

A graph comparing how many cups of water two students (Ava and Liam) drank each day over the course of a week.



Name: _____ 95

Curriculum Connection
GP.1

Choosing an Appropriate Graph

Questions Read the data below and decide which type of graph you would use to represent the data

1) You surveyed your classmates asking which sport is their favourite. The results are listed below.

Baseball	Gymnastics	Dance	Hockey	Football
21	35	22	18	12

Which type of graph would you use to represent the data? Explain your choice.

2) You surveyed the teachers and students in your school asking them which food was their favourite. The results are listed below.

	Pizza	Pasta	Chicken	Steak	Hot Dogs
Students	22	17			25
Teachers	16	21			2

Which type of graph would you use to represent the data? Explain your choice.

3) You are displaying your height in centimetres from when you were 1 years old until you were 6 years old.

1	2	3	4	5	6
52	67	79	92	102	114

Which type of graph would you use to represent the data? Explain your choice.

Exit Cards

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

Name: _____

Read the data below and decide which type of graph you would use to represent the data.

You recorded the rainfall (in mm) for two cities over three months. The results are listed below.

Month	City A	City B
January	50	80
February	70	65
March	85	90

Which type of graph would you use to represent the data? Explain your choice.

_____

_____

_____

Name: _____

Read the data below and decide which type of graph you would use to represent the data.

You recorded the rainfall (in mm) for two cities over three months. The results are listed below.

Month	City A	City B
January	50	80
February	70	65
March	85	90

Which type of graph would you use to represent the data? Explain your choice.

_____

_____

_____

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March	85	90

Which type of graph would you use to represent the data? Explain your choice.

_____

_____

_____

Name: _____

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You recorded the rainfall (in mm) for two cities over three months. The results are listed below.

Month	City A	City B
January	50	80
February	70	65
March	85	90

Which type of graph would you use to represent the data? Explain your choice.

_____

_____

_____

Name: _____ 97

Unit Quiz – Data Literacy

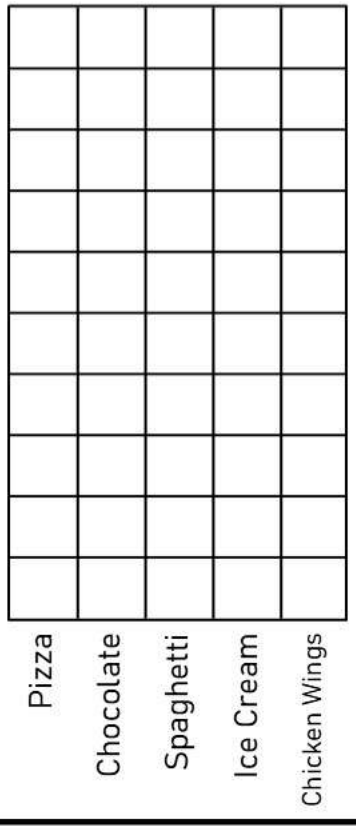
Part 1 Read the description of the data and circle if it is quantitative or qualitative

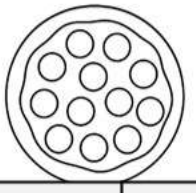
1) Favourite music genre	Quantitative	Qualitative
2) Heights of students in your class	Quantitative	Qualitative
3) Numbe dents in each classroom	Quantitative	Qualitative

Part 2 Read the tion of the data and circle if it is discrete or continuous

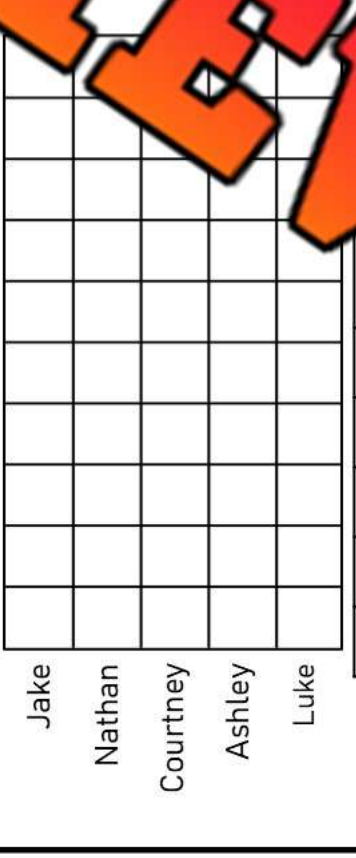
1) Temperatur over long time period	Discrete	Continuous
2) How many siblings t has s	Discrete	Continuous
3) How tall a tree grows over ye	Discrete	Continuous

Part 3 Draw the bars for each of the bar grap low lculate the averages





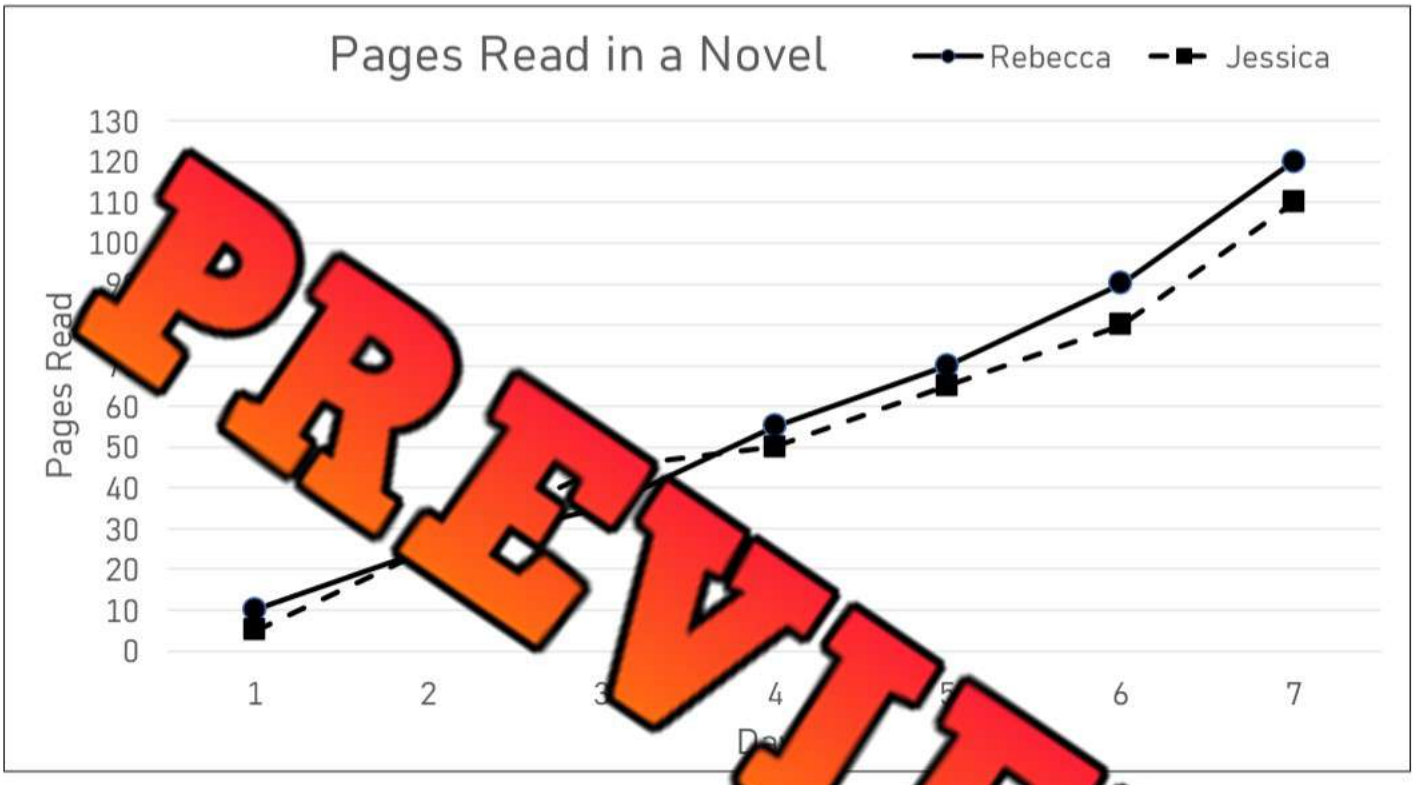
Favourite Food	# of votes
Pizza	27
Chocolate	15
Spaghetti	12
Ice Cream	15
Chicken Wings	21



er	# of points
Jake	70
Nathan	60
Courtney	30
Ashley	70
Luke	90

Part 4 Read the graph and answer the questions below

Rebecca and Jessica had a contest to see who could read more pages in their novels in 7 days.



Questions Answer the questions below

1) Who read more pages in the 7 days?	
2) Is the data continuous or discrete?	
3) Which day did the two girls read the most pages?	
4) Which day were they tied?	
5) How many total pages did the two girls read together?	
6) Which day was Jessica ahead?	
7) How many pages did Rebecca read from day 6 to 7?	

Part 5 Graph the data below in a broken-line graph

The data for the amount of snowfall in Edmonton is presented in the table below. Graph the data as a broken-line graph. Make sure to label your graph properly.

Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Snowfall (cm)	8	24	19	50	75	9	5

1) Which month had the most snowfall? _____

2) Which month had the least snowfall? _____

3) How much did it snow in total during these 7 months? _____

4) Is this data discrete or continuous? _____

5) What conclusions can you make from this data? List at least 2.

_____

_____

Grade 6

PROBABILITY

	Curriculum Expectations	Pages
GP.2	Single-outcome probability, both theoretical and experimental • single-outcome probability events (e.g., spin a spinner, roll a die, toss a coin) • listing all possible outcomes to determine theoretical probability • comparing experimental results with theoretical expectation	101 - 137

Name: _____ 101

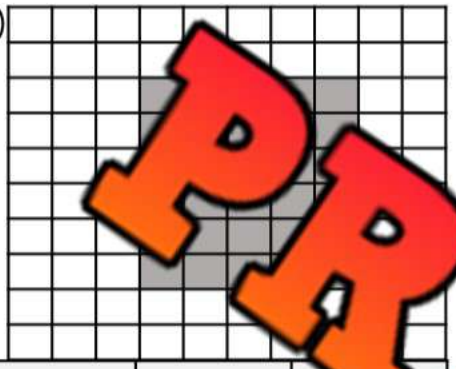
Curriculum Connection
GP.2

Theoretical Probability - Darts

Theoretical probability is the likelihood an event should happen. It is based on the number of favourable outcomes divided by the sample size (total possible outcomes). Imagine below, that the shaded in area is a target and the white part is the wall.

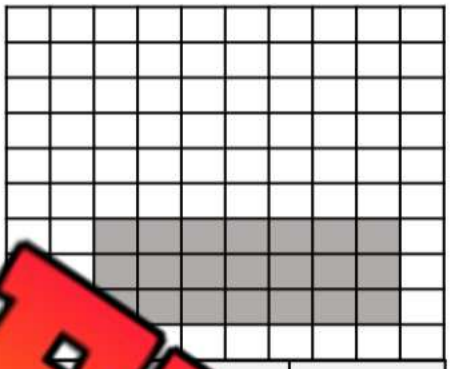
Questions Represent the probability of hitting the target using a fraction, decimal and percent

1)



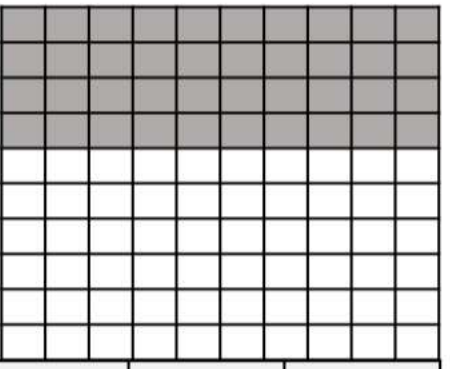
Fraction	Decimal	Percent
30/100	0.3	30%

2)



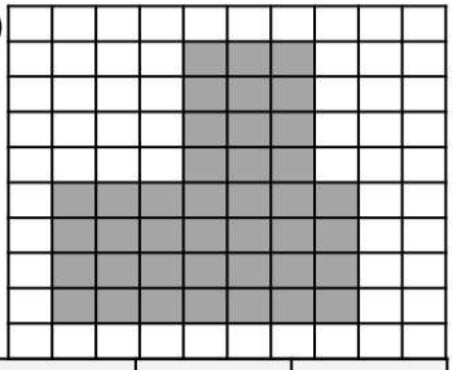
Fraction	Decimal	Percent

3)



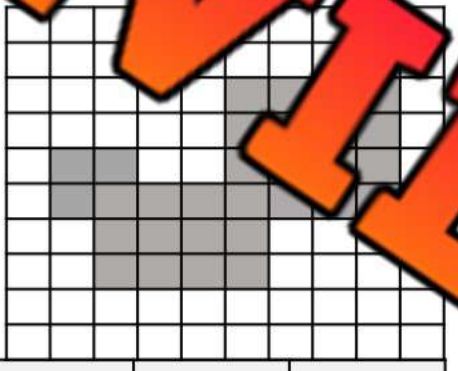
Fraction	Decimal	Percent

4)



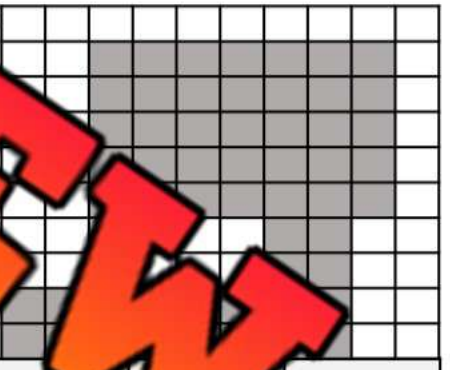
Fraction	Decimal	Percent

5)



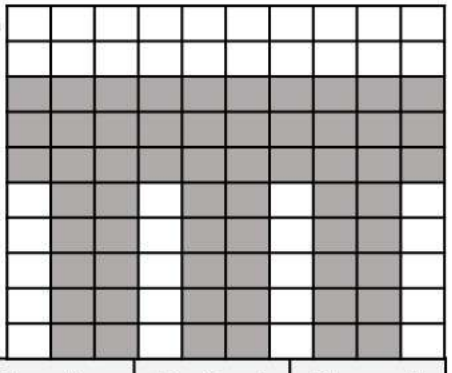
Fraction	Decimal	Percent

6)



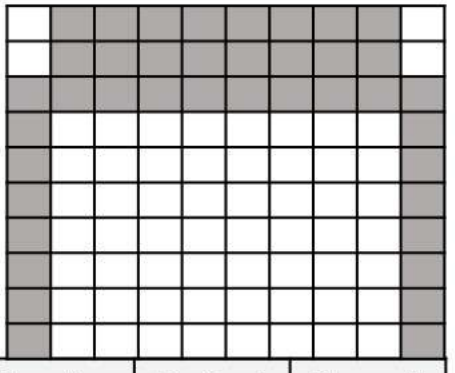
Fraction	Decimal	Percent

7)



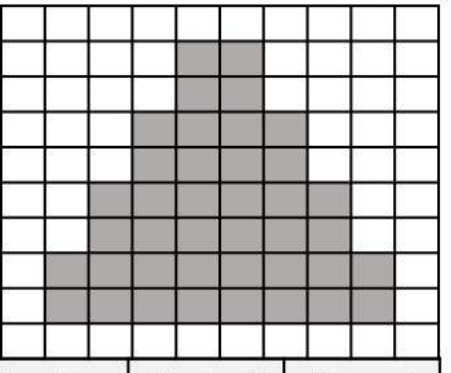
Fraction	Decimal	Percent

8)



Fraction	Decimal	Percent

9)



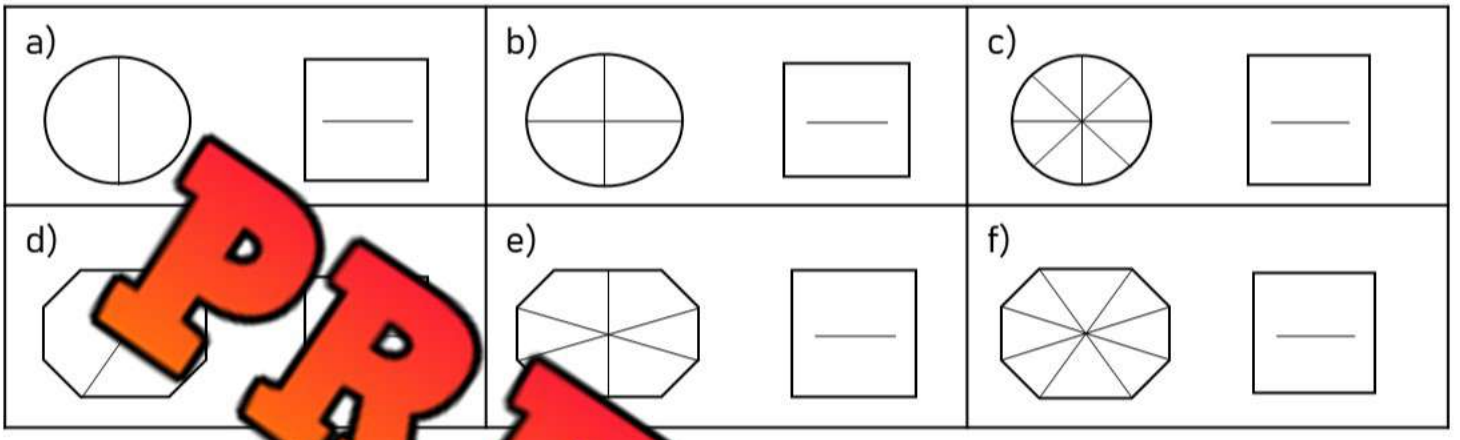
Fraction	Decimal	Percent

Name: _____ 104

Curriculum Connection
GP.2

Probability – Finding Halves

Part 1 Shade in half of the shapes. Write the fraction of shaded in shapes to total shapes



Part 2 What is half of each number? Write the fraction

#	Number	Half	Fraction
1	30	15	$\frac{15}{30}$
2	48		
3	22		
4	8		
5	36		
6	60		
7	82		

#	Number	Half	Fraction
8	9[illegible]		
9			
10	74		
11	54		
12	86		
13	78		
14	62		

Name: _____ 105

Curriculum Connection
GP.2

Probability - Quarters

Part 1 Shade in one quarter of the shapes. Write the fraction of shaded shapes to total shapes

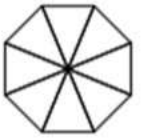
a)  ___

b)  ___

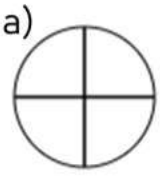
c)  ___

d)  ___

e)  ___

f)  ___

Part 2 Shade in [illegible]uarte[illegible]hapes. Write the fraction of shaded in shapes

a)  ___

 ___

c)  ___

Part 3 Fill in the tables below

	#	One Quarter	Fraction
1	20	5	$\frac{5}{20}$
2	80		
3	60		
4	24		
5	48		
6	68		
7	96		

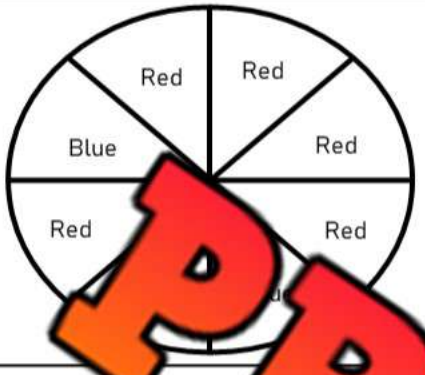
	#	[illegible]ee	[illegible]tion
1	60		$\frac{45}{60}$
2	40		
3	72		
4	16		
5	44		
6	84		
7	92		

Name: _____ 106

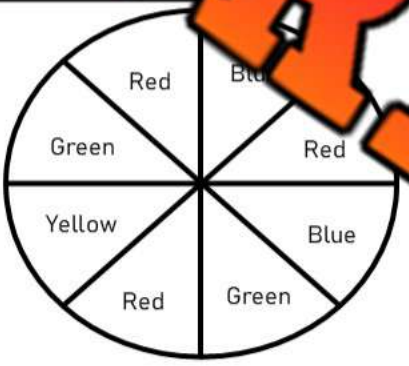
Curriculum Connection
GP.2

Theoretical Probability - Spinner

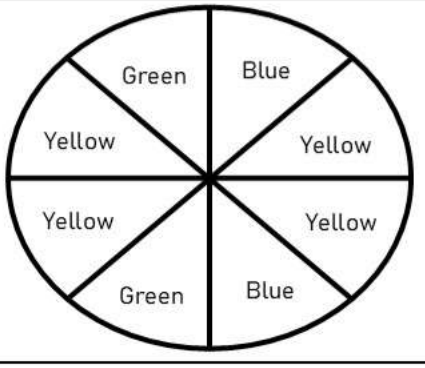
Directions Read the spinner and represent the probability using a fraction/decimal/percent



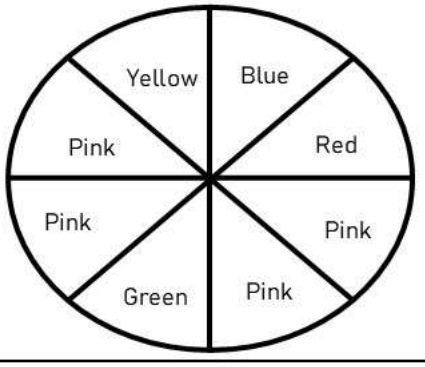
	Fraction	Decimal	Percent
a) Spinning a red	_____		
b) Spinning a blue	_____		
c) Spinning a blue or red	_____		



	Fraction	Decimal	Percent
a) Spinning a [illegible]	_____		
b) Spinning [illegible]	_____		
c) Spinning a yellow	_____		



	Fraction	Decimal	Percent
a) Spinning a green or blue	_____		
b) Spinning a yellow	_____		
c) Spinning a yellow, green or blue	_____		



	Fraction	Decimal	Percent
a) Spinning a blue or green	_____		
b) Spinning a blue or yellow	_____		
c) Spinning a pink	_____		

Name: _____ 107

Curriculum Connection
GP.2

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 Circle the fraction that represents the probability of the event

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

Impossible | Unlikely | Even Chance | Likely | Very Likely | Certain

$\frac{0}{6}$ $\frac{1}{6}$ $\frac{3}{6}$ $\frac{4}{6}$ $\frac{5}{6}$ $\frac{6}{6}$

Decimal	Percent

2. What is the likelihood of you rolling a 5?

Impossible | Very Unlikely | Likely | Very Likely | Certain

$\frac{0}{6}$ $\frac{1}{6}$ $\frac{2}{6}$ $\frac{3}{6}$ $\frac{6}{6}$

Decimal	Percent

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

Impossible | Very Unlikely | Unlikely | Even Chance

$\frac{0}{6}$ $\frac{1}{6}$ $\frac{2}{6}$ $\frac{3}{6}$ $\frac{4}{6}$ $\frac{5}{6}$

Percent

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

Impossible | Very Unlikely | Unlikely | Even Chance | Likely | Very Likely | Certain

$\frac{0}{6}$ $\frac{1}{6}$ $\frac{2}{6}$ $\frac{3}{6}$ $\frac{4}{6}$ $\frac{5}{6}$ $\frac{6}{6}$

Decimal	Percent

5. What is the likelihood of you rolling an odd number?

Impossible | Very Unlikely | Unlikely | Even Chance | Likely | Very Likely | Certain

$\frac{0}{6}$ $\frac{1}{6}$ $\frac{2}{6}$ $\frac{3}{6}$ $\frac{4}{6}$ $\frac{5}{6}$ $\frac{6}{6}$

Decimal	Percent

Exit Cards

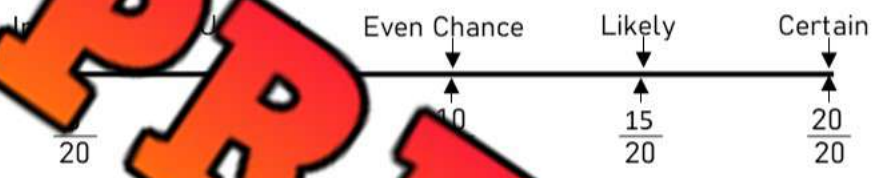
Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: _____

A bookshelf contains 20 books: 8 are fiction, 7 are non-fiction, and 5 are graphic novels.

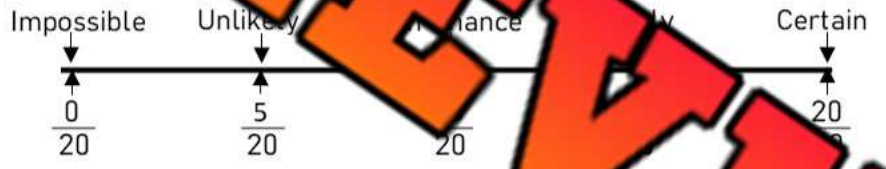
Circle the probability term and write the fraction, decimal, and percent.

1. What is the likelihood of picking a fiction book?



Decimal	Percent

2. What is the likelihood of picking a fiction or non-fiction book?



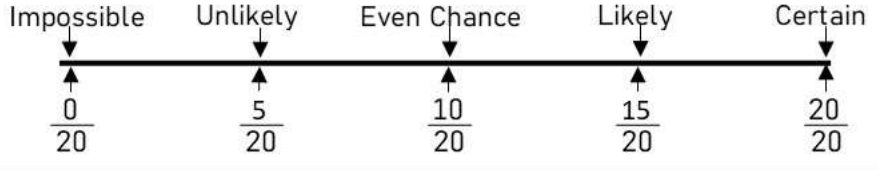
Decimal	Percent

Name: _____

A bookshelf contains 20 books: 8 are fiction, 7 are non-fiction, and 5 are graphic novels.

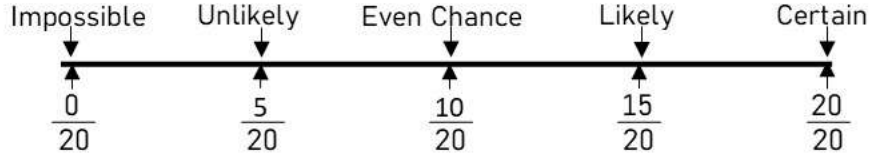
Circle the probability term and write the fraction, decimal, and percent.

1. What is the likelihood of picking a fiction book?



Decimal	Percent

2. What is the likelihood of picking a fiction or non-fiction book?



Decimal	Percent

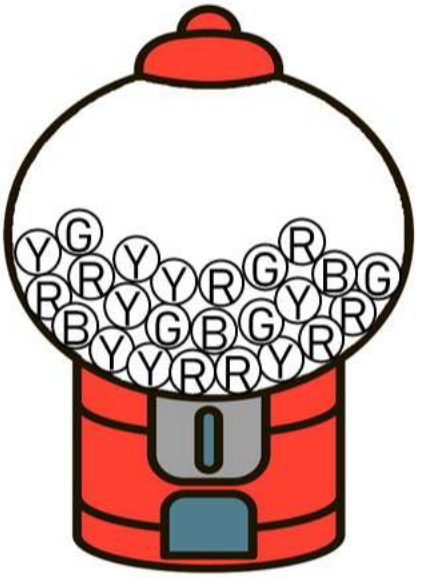
Name: _____ 113

Curriculum Connection
GP.2

Describing the Likelihood of Events

Gumball Machine

There are 24 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

Colour	Frequency
Green	

Questions

1) Describe the probability of pulling out a gumball as impossible, equally likely, likely or certain
2) Represent the probability of pulling out a gumball as a fraction/decimal/percent

Event		Decimal	Percent
1. What is the probability of pulling out a green gumball?			
Probability:			
2. What is the probability of pulling out a pink gumball?			
Probability:			
3. What is the probability of pulling out a blue or green gumball?			
Probability:			
4. What is the probability of pulling out a red or yellow gumball?			
Probability:			
5. What is the probability of pulling out a blue, red, yellow, or green gumball?			
Probability:			
6. What is the probability of pulling out a red gumball?			
Probability:			

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Probabilities

Questions | Answer the questions below

1) In Regina on New Years Day, it has snowed 21 of the last 50 years.	
a) What is the probability of it snowing on New Years Day as a...	
Fraction	
Decimal	
Percent	
b) Describe th… of it s… next New Years Day – likely, unlikely, equally l… ertain… …ble.	

2) A survey of 20 000 new ca… fou… …uyers had a major mechanical problem in the first year they ha… …eir …	
a) What is the probability of...	
i) Having a mechanical issue in the … ar as …	
ii) Not having a mechanical issue in the first yea… …tion	

3) A hockey team played 45 games last year. Their results are below (… …, ties)

W	T	L	W	W	L	W	L	L	W	L	W	…	W	L
L	W	T	W	L	W	L	W	T	W	W	L	W	W	L
L	W	L	L	W	L	L	W	W	L	W	W	L	T	W

Fill in the table below.

Results				**Total**
Fraction				

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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
1) What the th… robability of flipping a heads?	
2) What is the th… al pr… f flipping a tails?	
3) What is the theoretic… bility … g a heads if you flipped the coin 20 times?	

Part 2 Experimental Probability – …ip a coi… time… d record your results

1) How many heads and tails do you think you will fl…

Heads

Tails

20

2) Perform the experiment by flipping a coin 20 times. Record how many he… d tails 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.

_____

_____

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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	18	8	14	4	6

1) If you [illegible] drawer 50 times without looking, what is the theoretical probability you will each of the colours below.

Colour of Sock	White	Yellow	Black	Green	Red
Fraction					

Part 2 — Complete the experiment and find the experimental probability

2) Close your eyes and point to a random spot in the box below with 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 Y [illegible] G
Y B B G W Y R W B W W B W
B Y G W G W Y R R R W Y

Colour of Sock	White	Yellow	Black	Green	Red
Tally					
Fraction					
Percent					

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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

ite the theoretical probability of the events happening below

	cal Probability	Fraction
1) Rolling a 1 o ce		
2) Rolling a 3 on d dic		
3) Rolling a 2 or a 5 o e		
4) Rolling a 6 on a 6-sided		

Part 2

Follow the instructi elow t te the experiments

1) Roll the dice 6 times. Tally your results

1	2	3	4	5	6

2) Roll the dice 60 times. Record how many of each number you get.

	1	2	3	4	5	6
Tallies						
Fraction						

3) Did the experimental probability get closer to the theoretical probability when you rolled the dice more times? Explain why this should happen.

_____

_____

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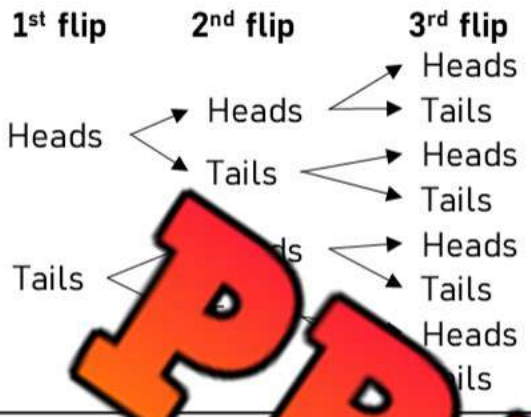
Theoretical Probability – Tree Diagrams

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

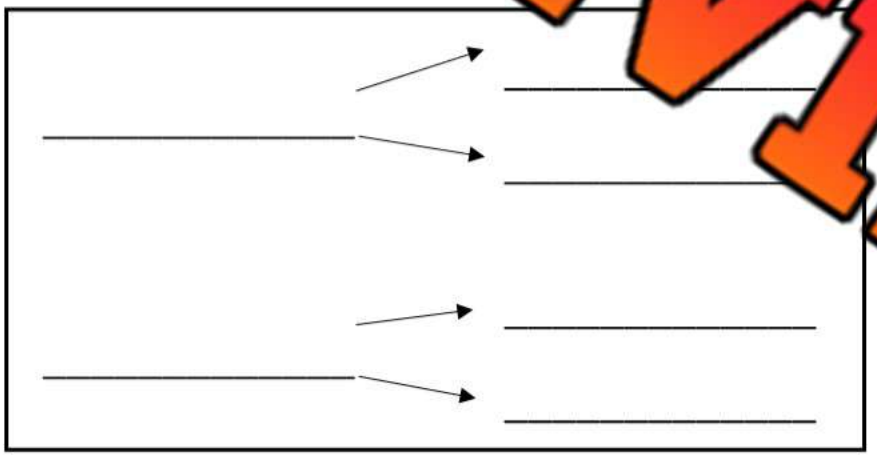
If you flip a coin three times, you could have 8 different combinations of outcomes.

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 Dra agram how many different combinations you could have

An ice cream shop sells s of m and two different cones. Show the combinations of ice cream y hav diagram below.



mbinations

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:			

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Drawing Tree Diagrams

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. Customers may only choose 1 topping, and 1 sauce for each food. What is the probability a customer order a specific combination of food, topping, and sauce?

Food	Topping	Sauce
Hot Dog (H)	Onion (O)	Ketchup (K)
Sausage (S)	Pickles (P)	Mustard (M)
Cheeseburger (C)		

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) Cheeseburger with pickles and mustard			
4) Hot dog or sausage with onion and ketchup			
5) Hot dog or sausage with onion or pickles and mustard			
6) Cheeseburger with onion or pickles and ketchup or mustard			

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Drawing Tree Diagrams

Questions Draw a tree diagram to help you find the probability of different combinations

You are having a surprise dessert at a party you are having. Your parents said it is either cookies or brownies. They also told you the options for the treats and icing. What is the probability of them choosing a specific combination of baked good, treat, and icing.

Baked Goods	Treats	Icing
Cookies (C)	Chocolate Chips (CC)	Vanilla (V)
Brownies (B)	Smarties (S)	Chocolate (CH)
	Raisins (R)	Caramel (CA)

1) How many combinations of food could you have? _____

2) **What is the probability of your parents choosing...**	**Fraction**	**Decimal**	**Percent**
a) Cookies with chocolate chips and vanilla icing			
b) Brownies with raisins and caramel icing			
c) Cookies or brownies with smarties and vanilla icing			
d) Cookies or brownies with raisins or smarties and vanilla or chocolate icing			
e) Cookies with chocolate chips, smarties or raisins and vanilla or caramel icing			

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Lahal Stick Game - Probability

Objective

What are we learning about?

Students will participate in a hands-on game where they make predictions using theoretical probability before playing and collect real data during the game to calculate experimental probability afterward.

Materials

What you will need for the activity.

- Pre-game and post-game probability worksheets
- Bones (or similar objects used as bones)
- Sticks (used for drumming)

Instructions

How you will complete the activity

1. Before playing the game, students review the description of the game and how the bones are hidden and guessed.
2. Students answer the pre-game questions using theoretical probability, meaning they do not use real results yet.
3. Students complete all predictions before the game begins.
4. As the game is played, students track each round on the post-game worksheet.
5. For each round, students record whether the guess was correct or incorrect.
6. Students continue recording results for every round played.
7. After the game ends, students review the data they collected.
8. Students calculate the experimental probability based on the actual results from the game.
9. Students compare their experimental probability to the theoretical predictions they made before playing.

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How-To-Play Guide | Read the instructions below

1) Divide players into two teams and give each team the same number of sticks.

2) Decide which team will go first.

3) For the first round, each team chooses one player:
   - One player from the starting team will hide the bones.
   - One player from the other team will guess where the bones are hidden.

4) The hiding player takes the bones and mixes them out of sight, such as behind their back, under a sweater.

5) While the bones are being hidden, the hiding team sings the Lahal song to distract the other team and cover any sounds that might give clues.

6) Once the hiding player is ready, the song stops.

7) The guessing player chooses (with their hand position) they believe the bones are in.

8) If the guess is correct, the guessing team takes a stick from the hiding team.

9) If the guess is incorrect, the guessing team gives one stick to the hiding team.

10) After the round is complete, the teams switch roles:
    - The team that guessed now hides the bones.
    - The other team becomes the guessing team.

11) The game continues with teams taking turns hiding and guessing the bones.

12) The game ends when one team has collected all of the sticks from the other team.

13) The team with all the sticks is the winner.

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Theoretical Probability

Answer the questions below

1) If the bones are hidden in one of two hands, what is the theoretical probability of guessing the correct hand on a single turn?

2) Using words only, describe how likely it is that the guessing team will guess correctly on one turn. Use probability language such as impossible, unlikely, equally likely, likely, or certain.

3) If the [illegible] played fairly and the bones are mixed the same way each time, are guess[illegible] [illegible]essing incorrectly equally likely? Explain why or why not.

4) Predict how ma[illegible]rect [illegible]es [illegible]would expect out of 10 rounds if the probability stays the same each ro[illegible]nd.

5) Using theoretical probability, wi[illegible] the[illegible] a [illegible]? Explain.

6) Draw a tree diagram showing the possible outcomes [illegible]round[illegible]uessing. Each round should show two branches: correct guess and incor[illegible]ess.

7) What is the probability as a fraction of you winning all 3 rounds?

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Experimental Probability

Record your results below

Record your results below for each round. Put an "x" if you won the round by guessing correctly. Put an "x" if your opponent won as well.

Round #	Your Turn	Opponent's Turn
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		

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Experimental Probability | Answer the questions below

1) How many total rounds were played in the game?

2) How many of those rounds resulted in a correct guess for your team?

3) What i… …ntal probability of a correct guess based on your results?

4) How does yo… …mental … …ity of a correct guess compare to the theoretical probability you pre… …bef… …plain.

5) If the game were played again with more rounds, … …he exp… …ntal probability change? Explain your thinking.

6) Why was there eventually a winner when the theoretical probability showed that no one should ever win?

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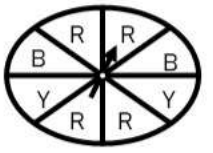
Unit Quiz - Probability

Part 1 Circle if the example is theoretical or experimental

Example	Theoretical or Experimental
1) You should get a tails 5 out of 10 times when flipping a coin.	Theoretical Experimental
2) You sho[illegible]ke 30 three pointers out of 100 because [illegible] percentage is 30%.	Theoretical Experimental
3) You m[illegible]de 10 f[illegible]out of 13.	Theoretical Experimental
4) You have a 1/100 [illegible]ce [illegible] 50/50 draw because you have 1 ticke[illegible]00 so	Theoretical Experimental

Part 2 Read the spinner and circle t[illegible]abilit[illegible]ch scenario. Then write the fraction.



1) What is the likelihood of landing on a red p[illegible]

Impossible — Unlikely — Even Chance — Likely

$\frac{0}{8}$ $\frac{2}{8}$ $\frac{4}{8}$ $\frac{6}{8}$ $\frac{8}{8}$

[illegible]	Percent

2. What is the likelihood of landing on a blue part?

Impossible — Unlikely — Even Chance — Likely — Certain

$\frac{0}{8}$ $\frac{2}{8}$ $\frac{4}{8}$ $\frac{6}{8}$ $\frac{8}{8}$

Decimal	Percent

3. What is the likelihood of landing on a red or yellow part?

Impossible — Unlikely — Even Chance — Likely — Certain

$\frac{0}{8}$ $\frac{2}{8}$ $\frac{4}{8}$ $\frac{6}{8}$ $\frac{8}{8}$

Decimal	Percent

Marbles

There are 30 marbles in a bag. What is the likelihood of you pulling out a white, grey, or black marble?

Part 3 Fill in the frequency table below

Marble Colour	Frequency
White	

Part 4 1) Descri… robabi… …ible, unlikely, equally likely, likely or certain
2) Represent… prob… …out a marble as a fraction/decimal/percent

Event	Fraction	Decimal	Percent
1. What is the probability of pulling out… …k marb…			
Probability:			
2. What is the probability of pulling out a grey marb…?			
Probability:			
3. What is the probability of pulling out a white marble?			
Probability:			
4. What is the probability of pulling out a black, white, or grey marble?			
Probability:			
5. What is the probability of pulling out a black or white marble?			
Probability:			
6. What is the probability of pulling out a green marble?			
Probability:			

Part 5 Draw a tree diagram to help you find the probability of different combinations

A gym instructor runs a workout class. She always picks 3 different exercises to do one after the other. She switches up the exercises each class. Her options for each exercise are below.

Exercise 1	Exercise 2	Exercise 3
Push-ups (PUSH)	Squats (SQ)	Running (RU)
Pull-ups (PULL)	Lunges (L)	Swimming (SW)
Shoulder Press (SP)		Rowing (RO)

1) Draw a tree diagram below.

2) How many combinations of exercises could you have? _____

What is the probability of the instructor choosing...	Fraction	Decimal	Percent
3) Push-ups, squats, and running			
4) Pull-ups, lunges, and rowing			
5) Shoulder press, squats or lunges, and swimming			
6) Push-ups or pull-ups, lunges, and running or swimming			
7) Shoulder press, squats or lunges, and running, swimming, or rowing			