GRADE 8 MATH

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GRADE 8 MATH

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BEFORE THE PARK

Welcome Grade 8 Teachers to Canada's Wonderland's Math Program

We have provided you with an Activity Manual that will take you from your classroom to an action filled day at the Park. The "**Before the Park**" activities are set up for your students to practice some new skills and review some old ones before they go to the Park. The "**At the Park**" activities are a continuation and extension of the classroom activities. The tasks set up for your students at the Park are designed to let them enjoy all that Canada's Wonderland has to offer, while gathering some data to be used back at the school. The students will use this information to complete a "**Summative Assessment"** that allows them to extend the experiences that they began in the classroom before the trip. Every activity is completely linked to the new Revised Mathematics Curriculum (2005).

Every activity is designed as a real-world experience. As in the real world, there are many possible solutions to a variety of questions. We encourage you to challenge your students to think deeply and reflect on the tasks that are set out before them. We hope that this experience will be a celebration and extension of your teaching and learning this year. Thank you for your on-going support for young people and our programs at Canada's Wonderland.

CW Physics, Science & Math Day Activities
A correlation with the Ontario Mathematics Curriculum, Grade 8

Activity	Expectations
A Stroll in the Park	**Number Sense** – solve multi-step problems arising from real-life contexts and involving whole numbers and decimals, using a variety of tools (e.g., graphs, calculators) and strategies (e.g., estimation, algorithms) – use estimation when solving problems involving operations with whole numbers, decimals, percents, integers, and fractions, to help judge the reasonableness of a solution – multiply and divide decimal numbers by various powers of ten – identify and describe real-life situations involving two quantities that are directly proportional – solve problems involving rates – solve problems involving proportions, using concrete materials, drawings, and variables **Measurement** – solve problems that require conversions involving metric units of area, volume, and capacity **Algebra and Patterning** – solve and verify linear equations involving a one-variable term and having solutions that are integers, by using inspection, guess and check, and a "balance" model – represent, through investigation with concrete materials, the general term of a linear pattern, using one or more algebraic expressions – model linear relationships using tables of values, graphs, and equations (e.g., the sequence 2, 3, 4, 5, 6,… can be represented by the equation $t = n + 1$, where n represents the term number and t represents the term), through investigation using a variety of tools – translate statements describing mathematical relationships into algebraic expressions and equations (e.g., for a collection of triangles, the total number of sides is equal to three times the number of triangles or $s = 3n$)

MEETING THE EXPECTATIONS

Round & Round	**Number Sense** – solve multi-step problems arising from real-life contexts and involving whole numbers and decimals, using a variety of tools (e.g., graphs, calculators) and strategies (e.g., estimation, algorithms) – use estimation when solving problems involving operations with whole numbers, decimals, percents, integers, and fractions, to help judge the reasonableness of a solution – identify and describe real-life situations involving two quantities that are directly proportional – solve problems involving rates – solve problems involving proportions, using concrete materials, drawings, and variables **Measurement** – solve problems that require conversions involving metric units of area, volume, and capacity – measure the circumference, radius, and diameter of circular objects, using concrete materials – solve problems involving the estimation and calculation of the circumference and the area of a circle **Geometry** – construct a circle, given its centre and radius, or its centre and a point on the circle, or three points on the circle
Money in my Pocket	**Number Sense** – solve problems involving rates **Data Management** – collect data by conducting a survey or an experiment to do with themselves, their environment, issues in their school or community, or content from another subject, and record observations or measurements; - organize into intervals a set of data that is spread over a broad range - collect and organize categorical, discrete, or continuous primary data and secondary data, and display the data in charts, tables, and graphs (including histograms and scatter plots) that have appropriate titles, labels, and scales that suit the range and distribution of the data, using a variety of tools

Money in my Pocket (cont'd)	– select an appropriate type of graph to represent a set of data, graph the data using technology, and justify the choice of graph (i.e., from types of graphs already studied, including histograms and scatter plots) – read, interpret, and draw conclusions from primary data and from secondary data, presented in charts, tables, and graphs (including frequency tables with intervals, histograms, and scatter plots) – identify and describe trends, based on the rate of change of data from tables and graphs, using informal language (e.g., "The steep line going upward on this graph represents rapid growth. The steep line going downward on this other graph represents rapid decline.") – make inferences and convincing arguments that are based on the analysis of charts, tables, and graphs – compare two attributes or characteristics, using a variety of data management tools and strategies
Concession Analysis – Location, Location, Location	**Data Management** – make inferences and convincing arguments that are based on the analysis of charts, tables, and graphs – read, interpret, and draw conclusions from primary data and from secondary data, presented in charts, tables, and graphs (including frequency tables with intervals, histograms, and scatter plots)
Concession Analysis – Cost of doing Business	**Number Sense** – use estimation when solving problems involving operations with whole numbers, decimals, percents, integers, and fractions, to help judge the reasonableness of a solution – solve multi-step problems arising from real-life contexts and involving whole numbers and decimals, using a variety of tools (e.g., graphs, calculators) and strategies (e.g., estimation, algorithms) – solve problems involving percents expressed to one decimal place (e.g.,12.5%) and whole-number percents greater than 100 **Algebra and Patterning** – represent, through investigation with concrete materials, the general term of a linear pattern, using one or more algebraic expressions – determine a term, given its term number, in a linear pattern that is represented by a graph or an algebraic equation – model linear relationships using tables of values, graphs, and equations (e.g., the sequence 2, 3, 4, 5, 6,… can be represented by the equation $t = n + 1$, where n represents the term number and t represents the term), through investigation using a variety of tools

MEETING THE EXPECTATIONS

Concession Analysis – Cost of doing Business (cont'd)	– translate statements describing mathematical relationships into algebraic expressions and equations **Data Management** - collect and organize categorical, discrete, or continuous primary data and secondary data, and display the data in charts, tables, and graphs (including histograms and scatter plots) that have appropriate titles, labels, and scales that suit the range and distribution of the data, using a variety of tools – select an appropriate type of graph to represent a set of data, graph the data using technology, and justify the choice of graph (i.e., from types of graphs already studied, including histograms and scatter plots) – read, interpret, and draw conclusions from primary data and from secondary data, presented in charts, tables, and graphs (including frequency tables with intervals, histograms, and scatter plots) – identify and describe trends, based on the rate of change of data from tables and graphs, using informal language (e.g., "The steep line going upward on this graph represents rapid growth. The steep line going downward on this other graph represents rapid decline.") – make inferences and convincing arguments that are based on the analysis of charts, tables, and graphs
Concession Analysis – Circle the Wagons	**Number Sense** – identify and describe real-life situations involving two quantities that are directly proportional **Measurement** – solve problems involving the estimation and calculation of the circumference and the area of a circle **Geometry** – construct a circle, given its centre and radius, or its centre and a point on the circle, or three points on the circle **Data Management** – make inferences and convincing arguments that are based on the analysis of data

Concession Analysis – Let's Make A Deal	**Number sense** – solve problems involving proportions, using concrete materials, drawings, and variables – solve problems involving rates – use estimation when solving problems involving operations with whole numbers, decimals, percents, integers, and fractions, to help judge the reasonableness of a solution – solve multi-step problems arising from real-life contexts and involving whole numbers and decimals, using a variety of tools (e.g., graphs, calculators) and strategies (e.g., estimation, algorithms) **Data Management** – make inferences and convincing arguments that are based on the analysis of charts, tables, and graphs – compare two attributes or characteristics, using a variety of data management tools and strategies – read, interpret, and draw conclusions from primary data and from secondary data, presented in charts, tables, and graphs (including frequency tables with intervals, histograms, and scatter plots)
Concession Analysis – Final Analysis	**Data Management** – make inferences and convincing arguments that are based on the analysis of charts, tables, and graphs – compare two attributes or characteristics, using a variety of data management tools and strategies – read, interpret, and draw conclusions from primary data and from secondary data, presented in charts, tables, and graphs (including frequency tables with intervals, histograms, and scatter plots)

AMUSEMENT RIDE RUBRIC

A Stroll in the Park, Round and Round, Money in My Pocket

CATEGORY	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
Knowledge and Content	Demonstrates limited understanding of the content areas, including the collection and analysis of data, use of expressions and equations, properties of circles and rate and ratios	Demonstrates some understanding of the content areas, including the collection and analysis of data, use of expressions and equations, properties of circles and rate and ratios	Demonstrates considerable understanding of the content areas, including the collection and analysis of data, use of expressions and equations, properties of circles and rate and ratios	Demonstrates a thorough understanding of the content areas, including the collection and analysis of data, use of expressions and equations, properties of circles and rate and ratios
Thinking	Uses processing skills such as data collection, forming conclusions and convincing arguments and reasoning with limited effectiveness	Uses processing skills such as data collection, forming conclusions and convincing arguments and reasoning with some effectiveness	Uses processing skills such as data collection, forming conclusions and convincing arguments and reasoning with considerable effectiveness	Uses processing skills such as data collection, forming conclusions and convincing arguments and reasoning with a high degree of effectiveness
Communication	Expresses and organizes ideas and answers, using appropriate vocabulary and mathematical units with limited effectiveness	Expresses and organizes ideas and answers, using appropriate vocabulary and mathematical units with some effectiveness	Expresses and organizes ideas and answers, using appropriate vocabulary and mathematical units with considerable effectiveness	Clearly expresses and organizes ideas and answers, using appropriate vocabulary and mathematical units with a high degree of effectiveness
Application	Applies knowledge and skills in both, familiar and unfamiliar contexts, and is able to connect learning with real-world experiences with little effectiveness	Applies knowledge and skills in both, familiar and unfamiliar contexts, and is able to connect learning with real-world experiences with some effectiveness	Applies knowledge and skills in both, familiar and unfamiliar contexts, and is able to connect learning with real-world experiences with considerable effectiveness	Applies knowledge and skills in both, familiar and unfamiliar contexts, and is able to connect learning with real-world experiences with a high degree of effectiveness

AMUSEMENT RIDE RUBRIC

Summative Assessment Rubric: Canada's Wonderland Concession Analysis

CATEGORY	Level 1	Level 2	Level 3	Level 4
Knowledge and Content	Demonstrates limited understanding of the content areas, including the collection and analysis of data, use of expressions and equations, properties of circles and rate and ratios	Demonstrates some understanding of the content areas, including the collection and analysis of data, use of expressions and equations, properties of circles and rate and ratios	Demonstrates considerable understanding of the content areas, including the collection and analysis of data, use of expressions and equations, properties of circles and rate and ratios	Demonstrates a thorough understanding of the content areas, including the collection and analysis of data, use of expressions and equations, properties of circles and rate and ratios
Thinking	Uses processing skills such as data collection, forming conclusions and convincing arguments and reasoning with limited effectiveness	Uses processing skills such as data collection, forming conclusions and convincing arguments and reasoning with some effectiveness	Uses processing skills such as data collection, forming conclusions and convincing arguments and reasoning with considerable effectiveness	Uses processing skills such as data collection, forming conclusions and convincing arguments and reasoning with a high degree of effectiveness
Communication	Expresses and organizes ideas and answers, using appropriate vocabulary and mathematical with units limited effectiveness	Expresses and organizes ideas and answers, using appropriate vocabulary and mathematical units with some effectiveness	Expresses and organizes ideas and answers, using appropriate vocabulary and mathematical units with considerable effectiveness	Clearly expresses and organizes ideas and answers, using appropriate vocabulary and mathematical units with a high degree of effectiveness
Application	Applies knowledge and skills in both, familiar and unfamiliar contexts, and is able to connect learning with real-world experiences with little effectiveness	Applies knowledge and skills in both, familiar and unfamiliar contexts, and is able to connect learning with real-world experiences with some effectiveness	Applies knowledge and skills in both, familiar and unfamiliar contexts, and is able to connect learning with real-world experiences with considerable effectiveness	Applies knowledge and skills in both, familiar and unfamiliar contexts, and is able to connect learning with real-world experiences with a high degree of effectiveness

Stroll in the Park

To help with some of your estimations while you are at the Park, complete the following estimations and then perform the necessary measurements to check your answers.

1. Distance traveled in 10 regular steps (m)

▶ Estimated _____

▶▶ Measured _____

▶▶ Time (sec) _____

▶▶ Apply It: What is the length of your school? Explain how you made your estimation.

2. Distance traveled (m) in 5 sec

▶ Estimation _____

▶▶ Measured _____

⏱ If you traveled _____ m in 5 seconds, then you will travel _____m in 1 minute.

⏱ If you traveled _____ m in 1 minute then you will travel _____m in 1 hour.

⏱ What is your walking speed in km/h?

3. Choose a random sample of 10 students in your class and record their walking speeds below. Find an average walking speed for your class.
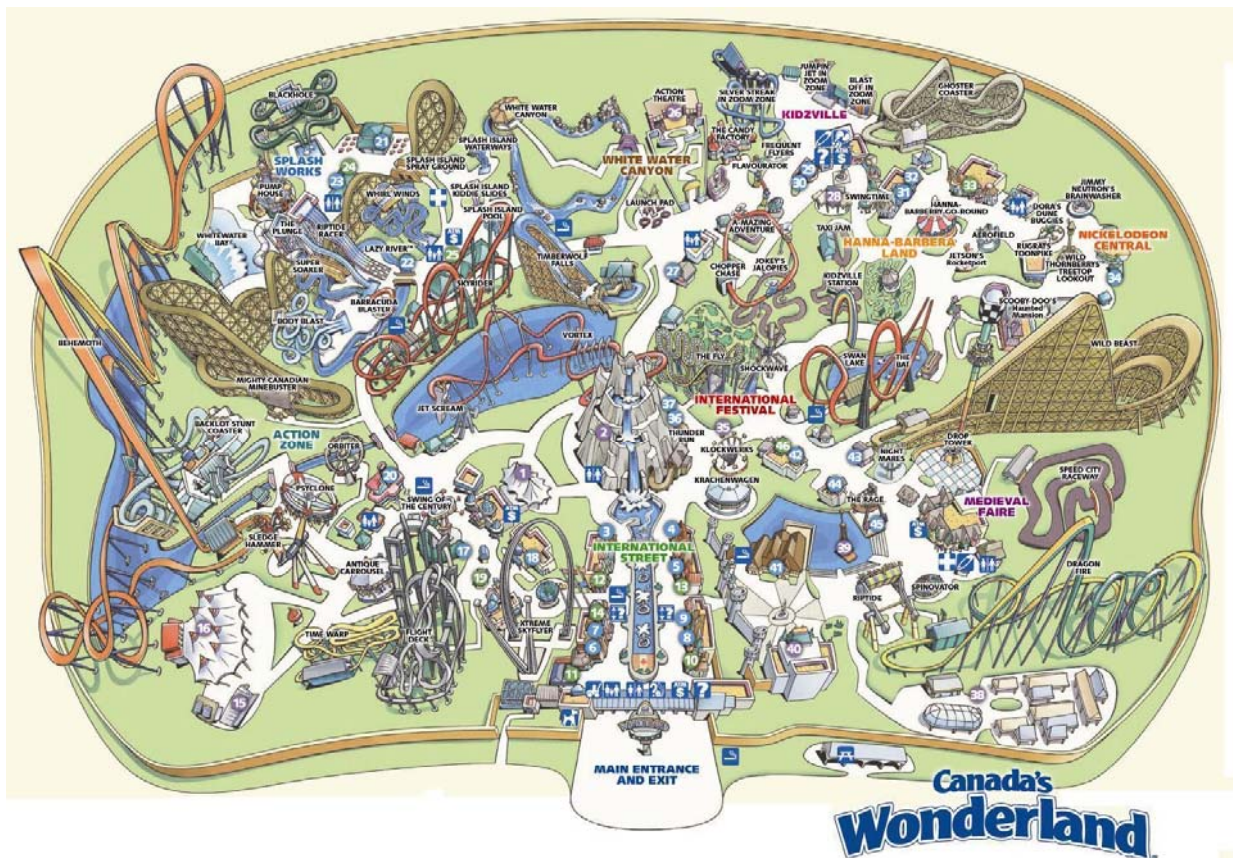
∗	∗
∗	∗
∗	∗
∗	∗
∗	∗

4. One of your friends states, "It is inaccurate to report this as the class' average walking speed because we only included 10 pieces of data." Do you agree or disagree with your friend?

5. What assumptions did you have to make in order to make this activity possible?

6. Observe the following map of Canada's Wonderland. It covers an area of 1.3 km^2. Convert the area into m^2 _____

7. Estimate the approximate dimensions, in meters, of Canada's Wonderland? Explain how you determined your answer.

8. Assume that Canada's Wonderland was a rectangle and the length was double the width.
a) Write an algebraic expression to determine the total area of the Park.

8b) Fill in the following table using a "guess and check" method to try and find values that will total the area of Canada's Wonderland.

Length	Width	Area (length x width)	Difference between actual area

8c) Using the expression in question 8, develop an equation and solve for the actual dimensions of the Park.

9. A scale is a ratio comparing the distance on a map with the actual "real life" distance. For example 1:1000 means 1 cm on the map is equal to 1000 cm in real life. What is the scale on the Canada's Wonderland map?

Round & Round

To help with some of your estimations while you are at the Park, complete the following and then perform the necessary measurements to check your answers.

1. Height (cm)

▸ Estimated_____

▸▸Measured_____

▸▸Apply It: How high is the ceiling in your classroom? Explain how you made your estimation.

2. Wing Span

Distance from left hand to right hand when arms are fully extended to the sides (cm)

▸ Estimated _____

▸▸Measured _____

▸▸Apply It: How wide is your classroom? Explain how you made your estimation.

3. Open a compass to any length and draw a circle in the space below. Make 3 points on the circle and label them A, B and C. Label the centre of the circle D.

4. What is the relationship between points A, B and C and the centre D
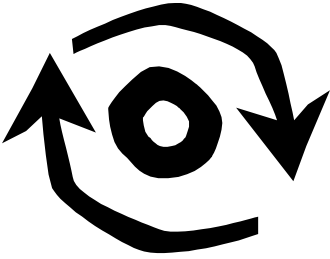
5. Estimate the circumference of the circle. Explain how you made your estimation

6. Estimate the area of the circle. Explain how you made your estimation

7. Suppose this circle was a scale (1:10) drawing for a tire that was going to be used on your bicycle. How many complete revolutions would the wheel make if you were to ride your bike to Canada's Wonderland?

Money in my Pocket

As a class, complete the following survey. Refer to the map to help identify the various theme areas and rides

1. Which area are you most excited to visit?

Theme Area	Boys	Girls
International Street		
Medieval Faire		
International Festival		
Nickelodeon Central		
Hanna-Barbera Land		
KidZville		
White Water Canyon		
Splash Works		
World Exposition of 1890		

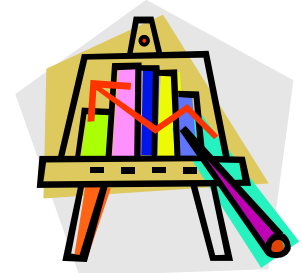➢ Draw a bar graph that accurately displays the data on the favourite theme areas.
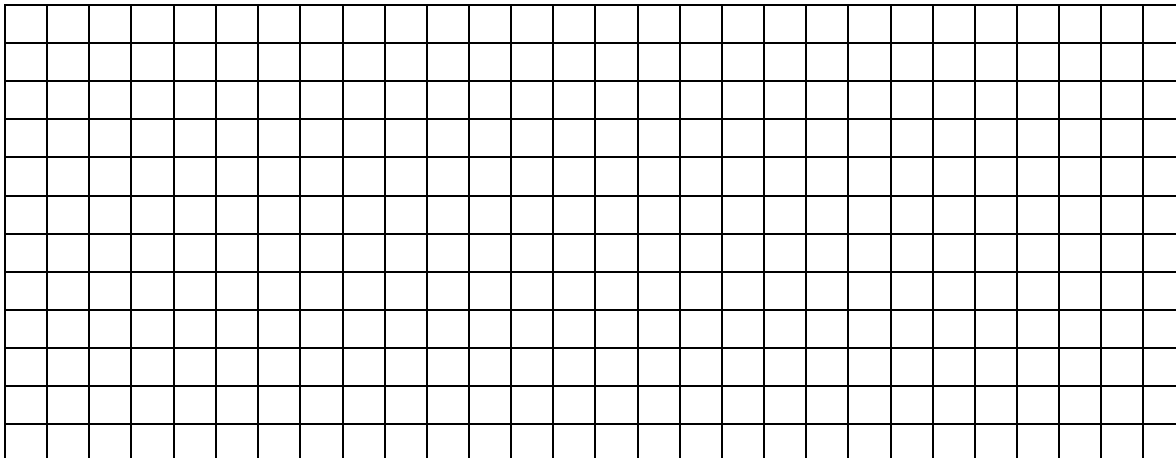
If we were to conduct this survey with a Grade 1 class, we would likely get different results. Hypothesize how the data might look different?
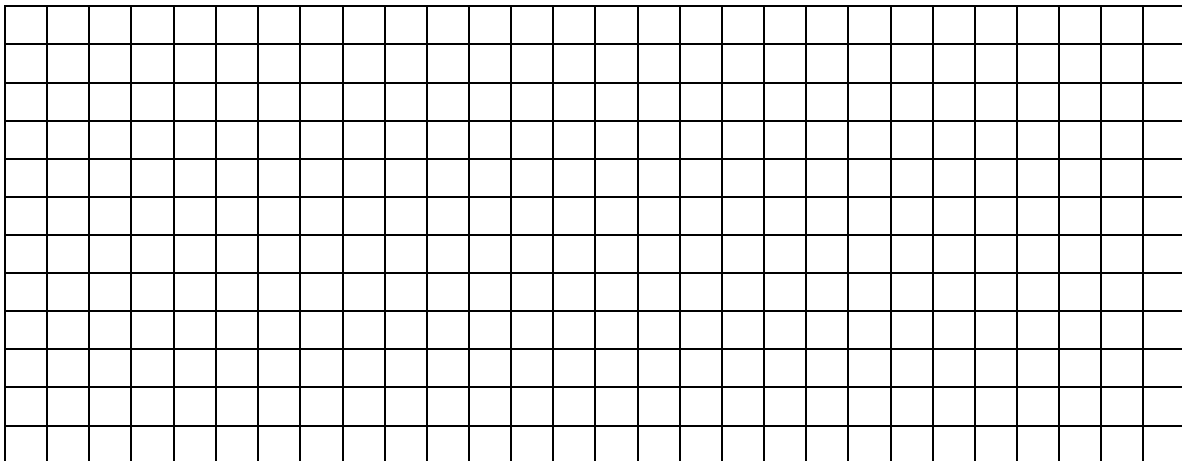
➢How would the differences in the data between the grade 1 and grade 8 classes be reflected at Canada's Wonderland?

2. How many times have you attended Canada's Wonderland in the past 3 years?

# of visits	# of people
0-2	
3-5	
6-8	
9-11	
12 +	

➢Draw a histogram that accurately displays the experience level of the people attending the Park.

➢How could Canada's Wonderland use this data about the experience level of their customers to ensure everyone has an enjoyable experience?
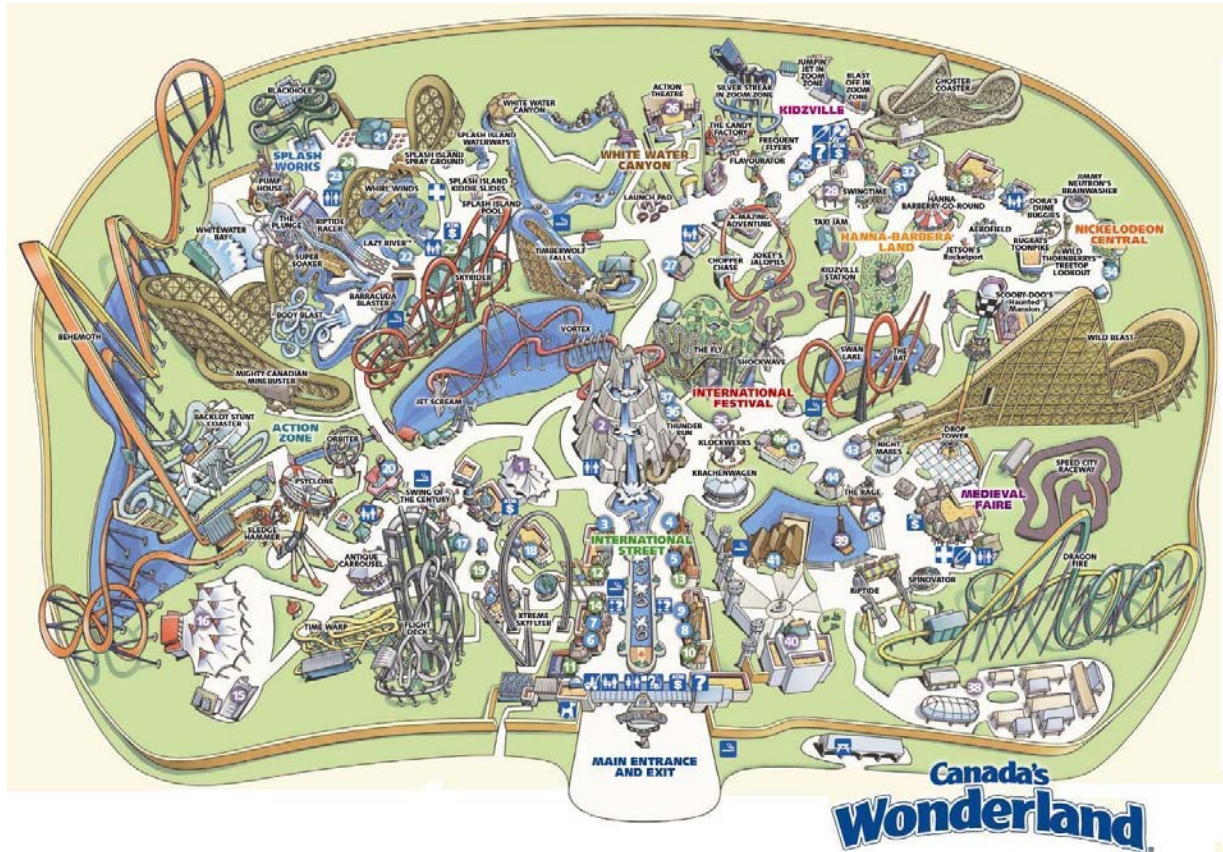
GRADE 8 MATH

AMUSEMENT RIDE ACTIVITIES

AT THE PARK
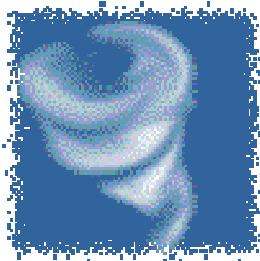
SUMMATIVE ASSESSMENT

A Stroll in the Park

Based on the "Before the Park" activity, you found that the approximate dimensions of Canada's Wonderland are as follows:

➔Length_____

➔Width_____

➔Map Scale_____

1a. Based on this data, how long should it take you to walk from **Psyclone** to **Drop Tower**? Show all your work.

1b. Go for a stroll from **Psyclone** to **Drop Tower**, or in the opposite direction, and time to see how long it actually takes.
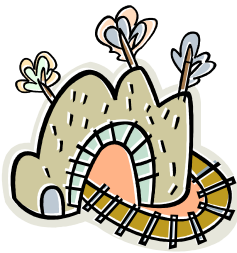Estimated Time _____
Actual Time _____

1c. Were your times similar? Provide reasons to support your findings

2. Use the scale you developed to estimate the length of the track of **Skyrider**.

★How long did it take the **Skyrider** train to make a complete trip from station to station?

★Suppose **Skyrider** travels at an average speed of 17 km/h from the time it leaves the station until it returns, how long is the track?

3. You and your friends are debating which of the following is the fastest roller coaster at Canada's Wonderland:

➤You think it is **Vortex** at 720 m long.

➤Richie is sure it is **Mighty Canadian Minebuster**, one of the original roller coasters, it covers a distance of 1167 m.

➤Suzette just came off **Flight Deck** and has assured both of you that it is the fastest at covering its 689 m of track.
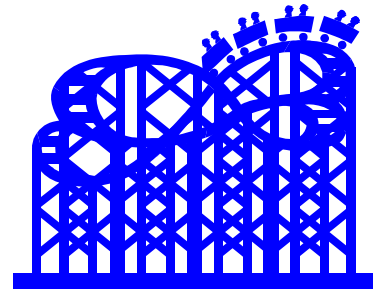
Who is correct? Walk to the rides and time one trip around the track from start to finish. Calculate and show all your work.

Round & Round

1. You and your friends decide to ride **Sledge Hammer**.
Sledge Hammer stands 25.9m above the ground.
Estimate the length of each arm extending from the center.
Explain how you made the estimation.

2. What is the circumference of **Sledge Hammer**, based on your estimation from #1, when the arms are fully extended?

3. How long did the ride last (sec)?

4. How far did each person travel while on the ride? Explain your answer.

5. What was the average speed (km/h) of **Sledge Hammer**?

❋**Challenge**   Travel over to **Shockwave** and observe how the ride works. On one ride, how far would you travel (Hint: This is a 2 part question).

✺ If you were sitting on the outside seat compared to the inside seat, would your answer change? Explain why or why not

Money in my Pocket

As you travel around the Park, look for souvenir stands and mark them as "X" on the map below.

1. Do you notice any patterns regarding the location of the souvenir shops? Why do you think they are placed in their current locations?

2. Compare your map with another group of students. Did they find a souvenir shop that you did not? From a business point of view, if a shop is hard to find sales will suffer. What did the other shops have that made them easier to find? Discuss it with your group and summarize your findings.

➢Stop at a souvenir shop for 5 minutes and record the following information.

➢Find 2 other souvenir shops in different theme areas and fill in the remaining columns:

Location (Theme Area)			
Merchandise (what are they selling)			
Number of people who stop and look at merchandise			
Number of people who make purchases			
Number of attractions within a 50m radius			
Average price of souvenir (Sample minimum of 3 items)			
Time of day			

◆Complete the following table ranking the data from 1(highest) to 3 (lowest)

Category	Location 1	Location 2	Location 3
Most people who stopped			
Most people who purchased			
Most rides within a 50 m radius of stand			
Most affordable price			

3. After looking at the data, what makes an effective and profitable souvenir shop?

3b. Which factor had no influence on the souvenir shop? Explain your thinking.

4. Did your results support your original hypothesis about what makes an effective souvenir shop?

Canada's Wonderland
Concession Analysis

Prior Classroom Learning Required

- ✓ **Problem Solving and Reasoning Skills**
- ✓ **Algebraic Expression, Equations and Patterning**
- ✓ **Data Management and Making Predictions**
- ✓ **Properties of Circles**
- ✓ **Ratio, Rate and Proportions**
- ✓ **Number Sense**

➢ Canada's Wonderland is looking for a highly energetic, team member to use their mathematical skills to examine the placement of new souvenir stands throughout the park. (For purposes of activities)

➢ Using a variety of techniques, which you mastered over your Grade 8 year, you will be responsible for gathering data, making estimations, making decisions and plotting the new locations of the stands.

Canada's Wonderland Concession Analysis
Location, Location, Location

Canada's Wonderland is looking for new locations for their souvenir stands. Reflect on your observations in the "Money in My Pocket" activity during your visit to Canada's Wonderland. Using a red marker, place an "X" where you hypothesize the new stands should go. Provide a brief description of your reasoning of why you decided on those locations.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Canada's Wonderland Concession Analysis
Cost of Doing Business

There are 3 companies which specialize in the construction of souvenir stands.

- ✓ **Souvenir Sally's** sells her stands for $250 each.

- ✓ **Stan's Stands** sells his at different prices depending on how many are purchased. For the first 3 stands, he charges $325 each. If you purchase any additional stands, he charges $200 for each one over the original minimum order of 3.

- ✓ **Suzie's Souvenir Stands** sells their stands for $395; however, they are having their annual sale and are offering 35% off all in-stock stands.

a) When first examining the different companies, who do you think offers the best deal? Provide a brief description of your reasoning.

_____
_____
_____
_____
_____

b) Fill out the table of values for each company up to 6 stands.

Sally's

# of stands	Total Cost

Stan's

# of stands	Total Cost

Suzie's

# of stands	Total Cost

c) Write an expression used to calculate the total cost for each company if we are purchasing x amount of stands.

Souvenir Sally's_____

Stan's Stands_____

Suzie's Souvenir Stands_____

d) Plot the cost of the 3 different companies on the following table.

i) Who is the offering the best deal? How do we know?
_____
_____
_____
_____
_____
_____

ii) Do you think that they will always offer the best price? How can you use the graph to prove or disprove your theory?
_____
_____

_____
_____
_____
_____

iii)   Suppose your supervisor has just informed you that Canada's Wonderland would like to place an order for 8 souvenir stands, use your knowledge of graphing and expressions to prove who will give us the best price.

_____
_____
_____
_____
_____

Canada's Wonderland Concession Analysis
Circle the Wagons

In your budget you have determined that you can only afford to place one souvenir shop in the area of **White Water Canyon**, **Splash Works** and **Skyrider**. These 3 attractions are arranged below.

● WWC

● SW
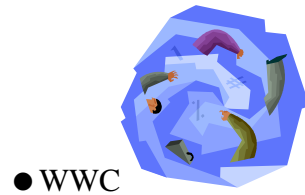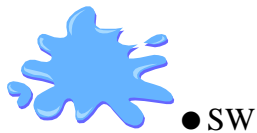
● SR

Place a red X where you would place the shop to service all three areas. Provide a brief description of your reasoning.

_____
_____
_____
_____
_____

Your supervisor is impressed with your choice, but she wants to be sure that it is equally accessible from all areas. You study the problem carefully, then exclaim,

"Eureka! I can use my knowledge of circles to provide you with the proof you need. All I have to do is …

_____
_____
_____
_____
_____
_____
_____
_____
_____."

Your supervisor nods with approval and states "If you keep this up, we will have no choice but to make you our full-time park mathematician!"

Canada's Wonderland Concession Analysis
Let's Make a Deal

You have to decide which products you are going to stock your souvenir shops with. You have several choices:

	Cost	Profit/Sale
✓ Canada's Wonderland T- shirts	$25.00	$6.50
✓ Personal Souvenir Photos on Rides	$5.00	$3.50
✓ Themed Key Chains	$8.00	$2.75
✓ Baseball Caps (Various Rides)	$15.00	$4.00
✓ Small Stuffed Animals	$12.00	$5.25
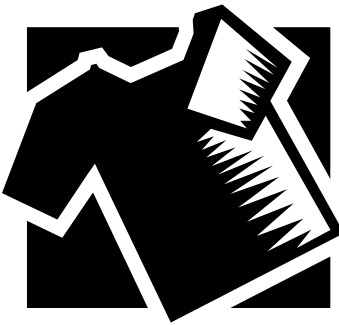
1. One of your colleagues says that "we should stock the Canada's Wonderland T- shirts because we would make the most profit." Do you agree or disagree with this statement?

2. Based on your data in the "Money in My Pocket" activity, which item would you want to stock the most of? Explain your reasoning.

3. You gathered data from last month regarding souvenir sales. The results are as follows:

Item	# of units sold	Profit per unit	Total profit
Canada's Wonderland T- shirts	275		
Personal Souvenir Photos on Rides	522		
Themed Key Chains	450		
Baseball Caps (Various Rides)	387		
Small Stuffed Animals	398		

Your supervisor has asked you to rank them in order from 1 to 5 of which ones we have to get (1) and the ones we can leave out if necessary (5).

1.

2.

3.

4.

5.

4. Explain the criteria you used to determine your ranking.

5. Every morning, the souvenirs need to be restocked within an hour. Your employee has stated that this is impossible and he needs a $1000 motorized vehicle to complete the job in a timelier manner. He is responsible for stocking the shops along the southern and western edges of the Park. He walks at a pace of 3.5 km/h. How long will it take him to complete this trip? State your answer in hours and minutes.

6. Did you have to make any assumptions to answer this question?

Canada's Wonderland Concession Analysis
The Final Analysis

You have just received your final budget for all of your souvenir shops and allowance for merchandise for the first month. You have a maximum of $5000 to spend on your shops, supplies and souvenirs. Develop an innovative plan to present to your supervisor, which clearly demonstrates your understanding of how to maximize your money.

SHOPS

Number of souvenir shops that you will purchase: _____

Shops will be purchased from _____ (store)

Total spent on these shops: _____

Label all the shops with a black square on the map below

Clearly describe your rationale for your decisions made about the shops. (e.g. Number of shops, location, and amount of overall budget spent on the shops)

SOUVENIRS

Indicate the number of each souvenir that you are going to purchase for the first month.

Item	Cost to purchase	Number	Total Cost
Canada's Wonderland T- shirts			
Personal Souvenir Photos on Rides			
Themed Key Chains			
Baseball Caps (Various Rides)			
Small Stuffed Animals			

Clearly describe your rationale for your decisions made about the souvenirs. (e.g. Type of souvenir, number of souvenirs, amount of overall budget spent on the souvenirs)

Cost of Shops   _____

Cost of Souvenirs   +_____

Cost of Motorized Vehicle   +_____
(optional $1000)
                          =Total Cost   _____