BLOOMSM4TH

Makes Maths Fun

Level 4

Data & Graphing

Bloomsmath is a comprehensive mathematics program which provides a fun way for every student to be learning to the best of their ability.

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BLOOMSM4TH Makes Maths Fun

Level 4

Data & Graphing

Level 4 is designed for students in their fourth year at school often called Year 3. Students will gather and organise data, display data using tables and graphs and interpret the results.

Knowledge: Students will convert data into a bar graph.

Students who demonstrate proficiency in this activity move on to Comprehension.

STOP

Students stop here as they require additional teacher support to master this activity.

Comprehension: Students will survey other students to create column and bar graphs.

Students who demonstrate proficiency in this activity move on to Application.

STOP

Students stop here if time has run out or they require additional support with this activity.

Application: Students will convert data into a bar graph and then into a pie graph.

Students who demonstrate proficiency in this activity move on to Analysis.

STOP

Students stop here if time has run out or they require additional support with this activity.

Analysis: Students will create more complex pie graphs from bar graphs.

Students who demonstrate proficiency in this activity move on to Synthesis.

STOP

Students stop here if time has run out or they require additional support with this activity.

Synthesis: Students will select the most appropriate way to display given data.

Evaluation: Suggested questions provide a starting point for discussions related to Graphs and Data.

Students may complete more or fewer activities for each learning outcome depending on the time allocated and their strength in the area being covered.

All students should participate in the Evaluation discussion to encourage the use of mathematical language, logical reasoning and reflection on that which they have completed.

Name: _____

Knowledge

Convert each set of data below into a bar graph. An example has been done to help you.

	Coloured Buttons in Each Packet			
Numbers of Buttons	5	3	1	1
Button Colours	Red	Blue	Green	Yellow

Total Number of Buttons / Segments = 10 Colour 1 segment per button.

Now try each of these.

	Student's Favourite Fast Food				
Number of Students	4	5	7	1	3
Fast Foods	Pizza	Burgers	Chips	Nuggets	Meat Pie

Total Number of Students / Segments:

	Favourite Sport						
Number of Students	2	3	3	1	2	1	3
Sports	Cricket	Soccer	Ballet	Kayaking	Running	Cycling	Football

Total Number of Students / Segments:

	Pets			
Number of Students	6	9	3	2
Pets	Dog	Cat	Fish	Bird

Total Number of Students / Segments:

 Let's Try This Again  Progress To Comprehension

Name: _____

Comprehension

Choose a topic already provided or one of your own and survey 15 students. Create a bar graph of the results as you collect them and then convert this into a bar graph. Answer the questions about your data at the bottom of the page.

	Survey Topic:					
Students						
Item:						

What was the highest scoring topic?

What was the lowest scoring topic?

Is it easier to see the data as a column graph or bar graph?

Let's Try This Again

Progress To Application

Name: _____

Application

Convert the data below into a column graph and then into a bar graph. Use your bar graph and the instruction to turn your bar graph into a pie graph.

1. Tally Graph – Fill in the number of students.

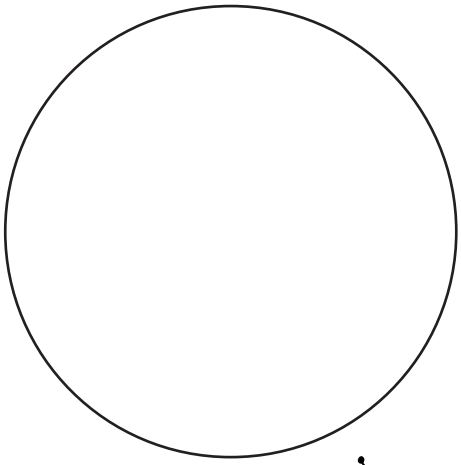
Students Hair Colour		
Hair Colour	**Tally Marks**	**Number of Students**
Red	|	
Blonde	||||	
Black	𝍸 |	
Dark Brown	||||	
Light Brown	𝍸	

2. Convert this information into a bar graph.

		Students Hair Colour				
Number of Students	7					
	6					
	5					
	4					
	3					
	2					
	1					
		Red	Blonde	Black	Dark Brown	Light Brown

3. Convert the data into a Bar Graph by colouring the bar graph on the left.

4. Cut out the bar graph and curve it into a circle. Line it up against the edge of the circle below and use the coloured segments to mark the circumference of the circle. Draw pie pieces to represent each coloured hair segment.



Let's Try This Again

Progress To Analysis

Name: _____

Analysis

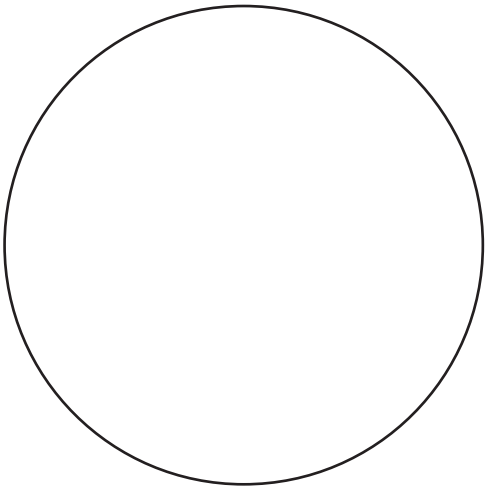
Survey 10 students on a topic of your choice and then convert the data into a bar graph and pie chart below.

Survey Data

		Title:			
Number of Students	10				
	9				
	8				
	7				
	6				
	5				
	4				
	3				
	2				
	1				
	Topic				

Bar Graph (at the left side):

Pie Graph:



Let's Try This Again

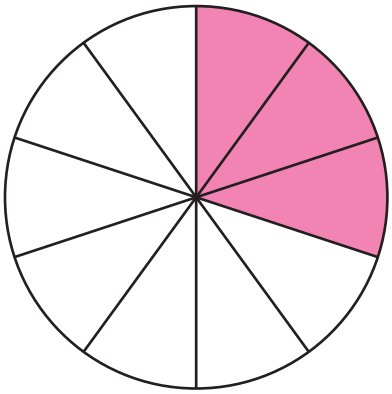
Progress To Synthesis

Name: _____

Synthesis

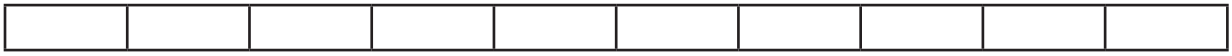
Bar graphs and pie charts can also be used when percentages are given. Ie. 30% of people liked strawberry ice cream can be shown as:

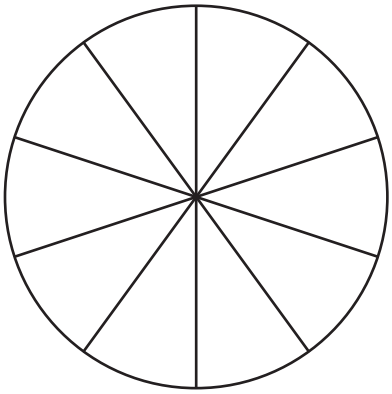
Or



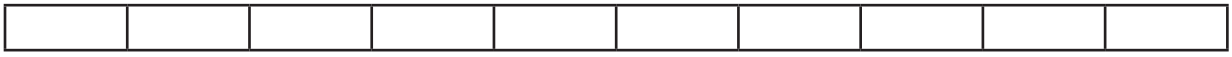
Use both of these methods for representing data to display these pieces of information.

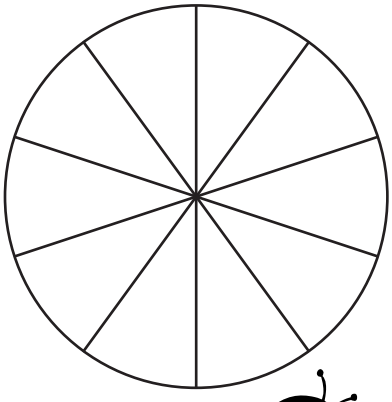
1. The Liberal member was expected to win 60% of the vote.





2. Of the 100 people interviewed 30 liked KFC, 40% liked McDonalds and the rest preferred to not eat fast food.





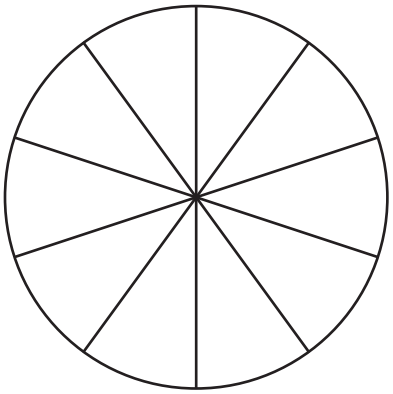
Let's Try This Again

Progress To Evaluation

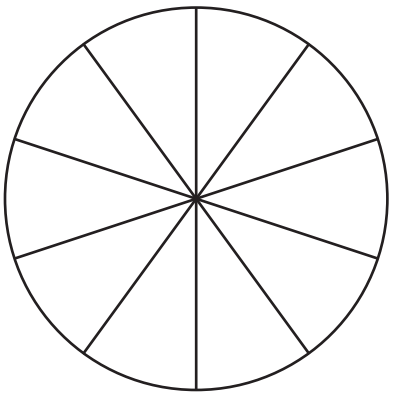
Name: _____

Synthesis (part 2)

3. The rain poured but only for 3 of the 10 days that we were at camp. The rest of the time it was sunny.



4. Of the 40 students interviewed 20% said that they liked wearing school uniform, 20 said that they wanted to choose their own clothes every day and the rest couldn't decide.



Evaluation

The following questions and activities are provided as a starting point for fun discussions related to Graphs and Data. During these conversations students will have an opportunity to use appropriate mathematical language in its correct context, to engage in reflection on the Graphs and Data activities they have completed and to use logical reasoning to tie their in-class mathematics to its everyday context.

Is it easier to collect data as a tally mark or a bar graph?

Why do tally marks use a cross across four lines to show 5?

Is it easier to read column tally marks, totals, a bar graphs or a pie graph – why?

Does different data need to be displayed in different ways?

Which graph is the easiest to construct? Which graph is the most difficult to construct?

How could you make a pie graph if it was not divided into segments for you and you did not have a bar graph?