



The Circle Graph

Suggested Time: 45 minutes

What's important in this lesson:

In this lesson, you will read, interpret and create circle graphs.

Complete the following steps:

1. Read through the lessons on your own.
2. Complete all questions provided.
3. If you have any questions, ask your teacher.
4. Check your answers with the teacher.

Hand in the following:

1. Practice Problems
2. The Circle Graph Evaluation

Questions for the teacher:

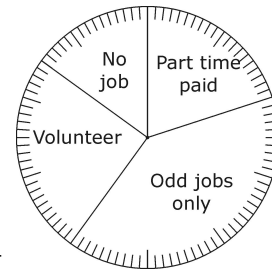


The Circle Graph

Part A: By Percent

A **circle graph** represents a whole, divided into sections. One type of circle graph is called a **percent circle**, because it is divided into **100** equal sections.

Students at Work



1. Read the circle graph to answer:

- What percent of students have part time paid work? _____
- What is the type of work done by the highest percent of students? _____
- If 200 students were surveyed for this graph, how many students volunteer? _____ Explain how you calculated this.

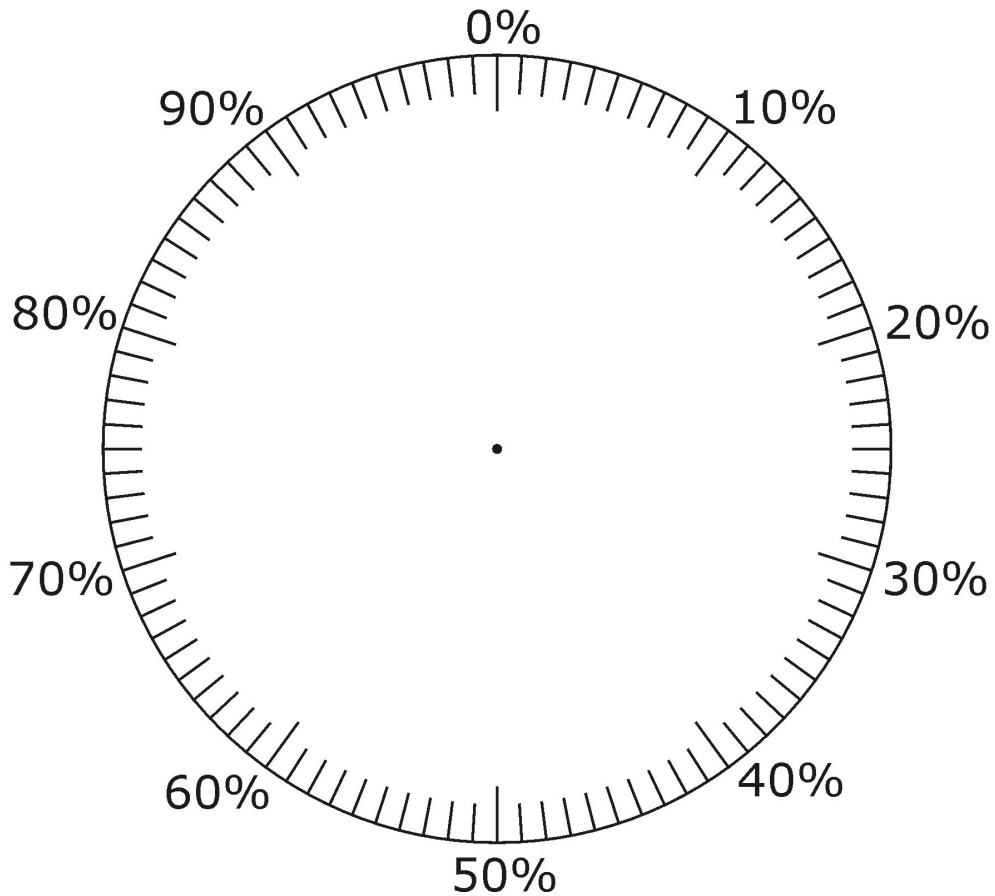
2. A family recorded their monthly spending in a table.

a) Complete the table. The first one is done for you.

Category	Amount per Month	Percent of Budget = $\frac{\text{Amount spent}}{\text{total}} \times 100\%$
Clothes	\$300	
Charity	\$20	$\frac{20}{2000} \times 100\% = 1\%$
Entertainment	\$80	
Food	\$400	
Rent	\$900	
Transportation	\$220	
Other	\$80	
Total	\$	



2. b). Create a circle graph for the data on a Percent Circle. Check to include: Title
 Labels on each section Percent on each section



2. c) Read the graph to answer:
- i) What category does this family spend almost half of their spending on?
 - ii) What category does this family spend a little more than one-tenth on?
 - iii) What percent of their spending is on food and entertainment?

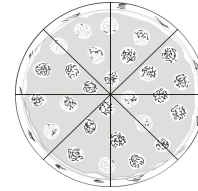


Part B: By Degree

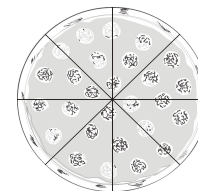
The other type of **circle graph** is divided into 360 equal sections, because there are **360°** in a whole circle. It is easy to use **angles** to create this type of circle graph.

$360 = 3 \times 4 \times 5 \times 6$.
So it is easy to divide the circle into angles involving thirds, quarters, fifths, sixths.

1. The circle is divided into 8 sections. Shade one in.
a) $360^\circ \div 8 = \underline{\hspace{2cm}}$. Therefore each section is $\underline{\hspace{2cm}}^\circ$.

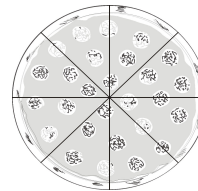


- b) Divide the circle into 4 sections, by shading in a quarter.
 $360^\circ \div 4 = \underline{\hspace{2cm}}$. Therefore each section is $\underline{\hspace{2cm}}^\circ$.



Write another math name for this angle. $\underline{\hspace{2cm}}$

- c) Divide the circle into two sections, by shading half.
 $360^\circ \div 2 = \underline{\hspace{2cm}}$. Therefore each section is $\underline{\hspace{2cm}}^\circ$.



2. A **compass rose** is a circle marked to show directions relative to North. Maps usually have a compass rose or an arrow to show which way is North.

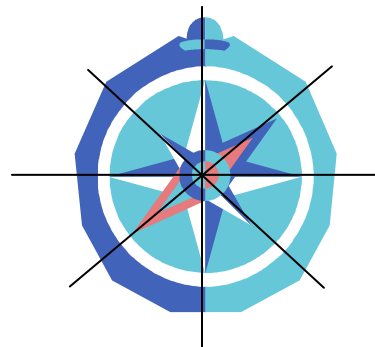
- a) Write in the main directions on the compass rose. (Hint NEWS)
b) The direction halfway between North and East is called Northeast. Write in NE on the compass rose. It is $\underline{\hspace{2cm}}$ degrees from the horizontal.

- c) Label the directions NW, SE, and SW on the compass rose.

- d) What is the angle between NW and SW? $\underline{\hspace{2cm}}$

- e) What is the angle between SW and NE? $\underline{\hspace{2cm}}$

- f) What is the angle between S and SE? $\underline{\hspace{2cm}}$





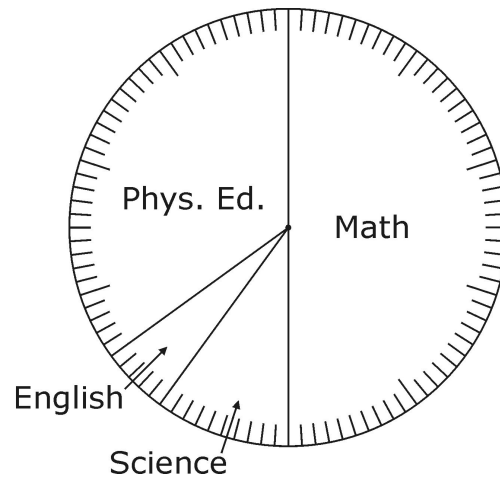
The Circle Graph Evaluation

1. Complete the table by reading the circle graph.
It is in percent circle form.

[8]

Favourite Subjects

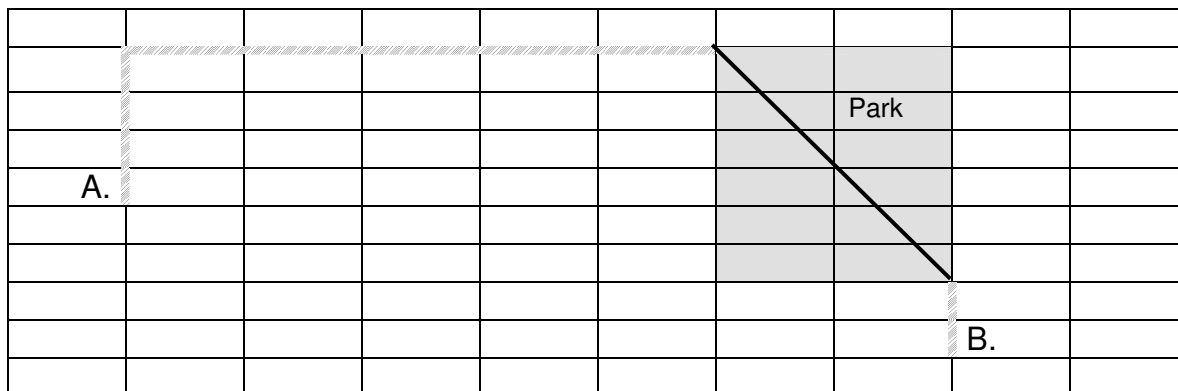
Subject	Percent of students who said it was their favourite



2. On a hike, Sarah starts from Point A

[5]

- a) She walks north for 4 blocks. Then she turns _____° to the right. What direction is she facing? _____
- b) She walks 5 blocks to the right, and then turns ____° to the right. She walks diagonally across the park. What direction is she heading? _____
- c) When she reaches the park edge, she turns what direction for 2 blocks? What is at her destination? _____





Reflective Activity

Using the Internet, newspapers, or magazines:
 Find an example of each type of graph in the chart below
 Cut and paste the graph into the chart

Bar Graph	Line Graph	Circle Graph

2. Why is the graph below misleading?

Cost of Housing in Canada

