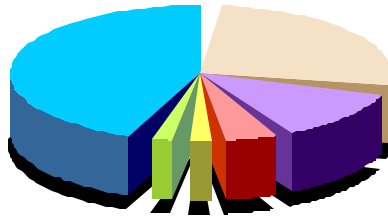


Sixth Grade Sample lesson

Math 4 Success CONSTRUCTING CIRCLE GRAPHS LEVEL 17 Lesson 8



A circle has 360°

A central angle is an angle formed by two radii of a circle. Each sector of a circle is a central angle whose measure has the same ratio to 360° as the part it represents has to the total to be represented. The sum of the measure of the central angles will equal 360°

1. CONCEPT:

Constructing circle graphs

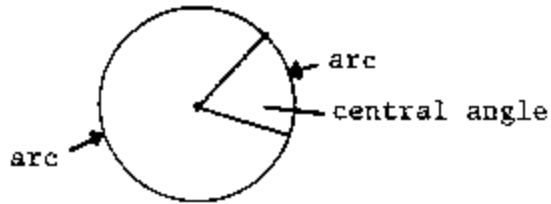
2. BEHAVIORAL OBJECTIVE:

The student given a circle graph will be able to interpret the information or given the data will be able to represent it on a circle graph.

3. MATHEMATICAL IDEAS:

- a) The sector of the circle that represents each part on a circle graph must bear the same ratio to the whole graph as the part it represents bears to the total.

- b) A central angle is an angle formed by any two radii of a circle. An arc is a curve on a circle that is one of two arcs formed when two radii intersect the circle.

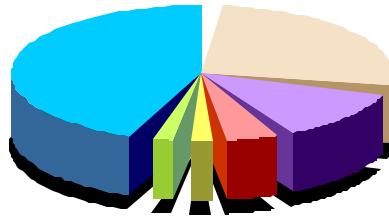


4. KEY WORDS:

data sector arc central angle

5. ACTIVITIES:

- a) This lesson on circle graphs would be excellent to follow the lesson on Lesson 5 Level 17. A circle graph is visual representation of what a given percent means. Students should search the newspapers and magazines for circle graphs and interpret the data to the group.
- b) Before drawing the circle graph, review central angle, degrees in a circle and how to read a protractor.
- c) Survey class members for preference and construct circle graph to illustrate the results of a survey. Suggested topics for the survey; favorite TV show, favorite ice cream flavor, favorite holiday, hair color, and favorite food.
- d. Assign each student or pair of students a topic to survey. Have them construct a circle graph to illustrate the results of their survey. With an appropriate title these graphs would make a Good bulletin board display.



CONSTRUCTING A CIRCLE Worksheet

NAME _____

1. a) Construct a circle with radius 2" on a sheet of paper.
 b) Draw radius OA.
 c) Using your protractor, draw the following central angles:
 90°, 135°, 75° and 60°.

2. Jane surveyed 30 classmates to determine which sport basketball, football, baseball, tennis or soccer they enjoyed the most. The results of the survey were:

| Number | Proportion | ∠ Measures |
|----------------|------------------------------|--------------------------------------|
| Football – 5 | $\frac{5}{30} = \frac{1}{6}$ | $\frac{1}{6} = 360^\circ = 60^\circ$ |
| Basketball - 6 | | |
| Baseball - 10 | | |
| Tennis - 6 | | |
| Soccer - 3 | | |

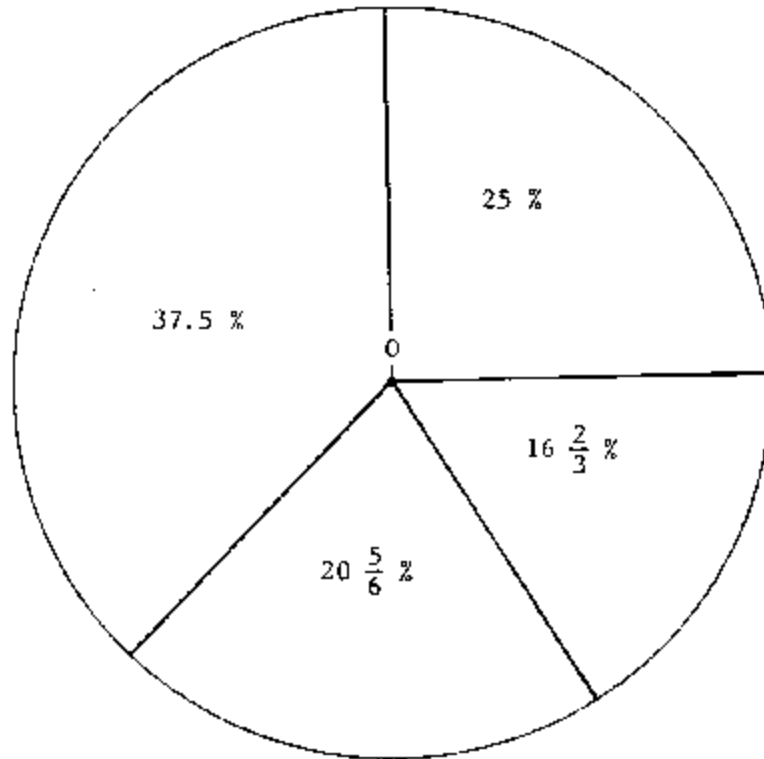
Is the total 360°?

Determine the degree measure of the central angle for constructing a circle graph.

CONSTRUCTING A CIRCLE

Answers to Worksheet

1. Construct a circle with radius 2" on a sheet of paper. Draw radius OA



| Number | Proportion | ∠ Measures |
|----------------|------------------------------|--------------------------------------|
| Football – 5 | $\frac{5}{30} = \frac{1}{6}$ | $\frac{1}{6} = 360^\circ = 60^\circ$ |
| Basketball - 6 | $\frac{1}{5}$ | 72° |
| Baseball - 10 | $\frac{1}{3}$ | 120° |
| Tennis - 6 | $\frac{1}{5}$ | 72° |
| Soccer - 3 | $\frac{1}{10}$ | 36° |

MEASUREMENT OF A CIRCLE

Concept Test

Name _____

Score _____

Make a circle graph to represent the following set of data:

| Fund Raising Activities | Measure of each central angle |
|------------------------------------|-------------------------------|
| <i>BakeSale</i> $\frac{1}{10}$ | |
| <i>CandySale</i> $\frac{3}{10}$ | |
| <i>CarWash</i> $\frac{1}{4}$ | |
| <i>GarageSale</i> $\frac{3}{20}$ | |
| <i>PancakeSupper</i> $\frac{1}{5}$ | |

MEASUREMENT OF A CIRCLE

Answers to Concept Test

Make a circle graph to represent the following set of data:



| Fund Raising Activities | Measure of each central angle |
|------------------------------------|-------------------------------|
| <i>BakeSale</i> $\frac{1}{10}$ | 36° |
| <i>CandySale</i> $\frac{3}{10}$ | 108° |
| <i>CarWash</i> $\frac{1}{4}$ | 90° |
| <i>GarageSale</i> $\frac{3}{20}$ | 54° |
| <i>PancakeSupper</i> $\frac{1}{5}$ | 72° |