Lesson 78: Deriving a Formula in Finding the Circumference of a Circle

Week 9

Objective: Derives a formula in finding the circumference of a circle

Value Focus: Cooperation

Prerequisite Concepts and Skills:

Naming the parts of a circle
Using a measuring instrument

Materials: flash cards, charts, calculator, circular objects

References: K to 12 Grade 5 Curriculum, M5ME-IIIi-69, Lesson Guide - Gr.5 pp. 362 - 366, Mathematics for a Better Life Textbook p. 242 - 243

Instructional Procedure

Preliminary Activities

Drill

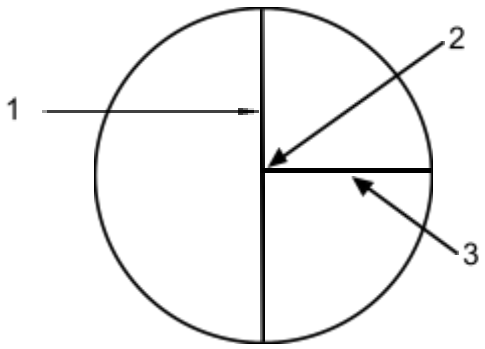
Divide the class into four to five teams. Have each team member take turns in answering on multiplication of decimals you will flash. Encourage the pupils to demonstrate accuracy and speed.

Give the product orally. You get one (1) point for every correct answer. The team with the highest total points wins the game.

1) 1.2 x 5
2) 5.12 x 4
3) 5 x 3.6
4) 1.5 x 6
5) 1.2 x 1.2
6) 2.5 x 8
7) 7 x 1.3
8) 6.5 x 2
9) 1.9 x 7
10) 3 x 2.7

Review

Identify the parts of a circle (flash a model with parts numbered)



Motivation

Let the pupils sing a song, about circles like.
(Note: Teacher draws while pupils sing)



small circle, small circle, big circle



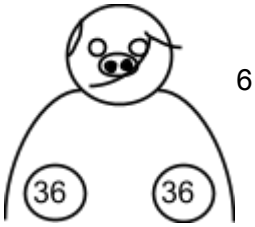
small circle, small circle, big circle



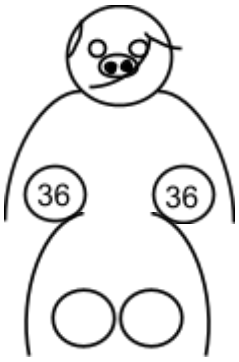
there's mama, there's papa waving at me



there's mama, there's papa smiling at me



6 x 6 is 36, 6 x 6 is 36



6 x 6, 6 x 6, small pig

B. Developmental Activities

Presentation

Present a situation to the class.

Celso wants to find the distance around their circular table. He measured its diameter to be 1.4 m. Can you help him?

Ask:

What is the shape of the table?
How long is its diameter?
What will you do to solve the problem?

Performing the Activities

Divide the class into groups. See to it that each group has all the required materials for the activity.

Expected answers:

Let each group make a sample table shown below:

Circle	Circumference	Diameter	C ÷ d (ratio of $\frac{c}{d}$)
1			
2			
3			

Let the pupils measure the distance around the circular objects by winding the string on a tape around the object. Let them also measure the diameter of the object. Allow them to use a calculator to solve for c ÷ d or the ratio of the circumference to the diameter.

Note: For any circle, the ratio of the circumference to the diameter is about $3\frac{1}{7}$ or $\frac{22}{7}$ or a number very close to 3.14.)

Processing the Activities

How did you find the activity?
How were you able to find the answer to the problem?
Discuss with the pupils the formula in getting the circumference of a circle.

4. Reinforcing the Concept and Skill

Ask pupils to answer A and B exercises under ***Get Moving***, pages ____ LM Math Grade 5. After the given time, check the pupils' answers.

Allow pupils to answer exercise A under ***Keep Movin***g, page ___ LM Math Grade 5. Check the pupils' answers.

5. Summarizing the Lesson

Lead the pupils to generalize as follows:

The formula in finding the circumference of a circle are:
C = 3.14 x d or C = πd or
C = 2πr

(The circumference is equal to π times the diameter.)
(The circumference is equal to π multiplied by twice the radius.)

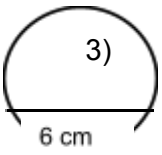
6. Applying to New and Other Situations

Let pupils answer the exercises under ***Apply Your Skills***, page ___, LM Math Grade 5.

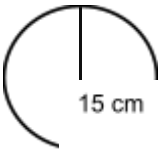
C. Assessment

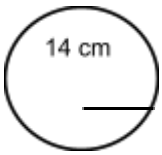
Find the circumference of these circles using $\pi = 3.14$.

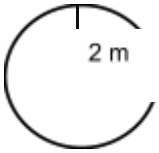
3)



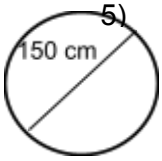
2)







5)



D. Home Activity

Remediation

Using = 3.14, find the circumference:

d = 10 cm
r = 4.5 cm
r = 6 m
d = 9 m
d = 2.5 m

Enrichment

Draw a diagram to help you solve the problem:

Barky, a puppy, made a path by walking at the end of his chain, which is 6 metres long. What is the distance around Barky's path?