

Circles: Circumference & Area

Name: _____ Date: _____

LEARNING OBJECTIVE

The student will measure circular objects and apply the formulas for circumference ($C = \pi \times d$) and area ($A = \pi \times r^2$) to real objects.

MATERIALS NEEDED

- String
- ruler
- 3 circular household objects (plate, cup, lid, clock, etc.)
- paper
- pencil
- calculator (optional)

HANDS-ON ACTIVITY

1. Choose three circular objects around your house of different sizes.
2. For each object, wrap a piece of string once around the outside edge, mark where it meets, then lay the string flat against the ruler to measure the circumference directly.
3. For each object, measure the diameter straight across the center with the ruler, then divide by 2 to find the radius.
4. Using the formula $C = \pi \times d$ (use 3.14 for π), calculate the expected circumference for each object and compare it to your string measurement.
5. Using the formula $A = \pi \times r^2$, calculate the area of each circular object and record all results in a table.

QUESTIONS

1. For your three objects, how close was your calculated circumference (using $C = \pi \times d$) to your string measurement?

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2. What was the diameter, radius, and calculated area of your largest object?

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3. Why do we divide the diameter by 2 to get the radius before using the area formula?

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4. If a circle's diameter doubles, does its area also just double? Use your data or the formula to explain.
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