ITEMS NEEDED

In order to create a more interesting investigation, you will need the following items for this exploration activity.

Materials per Student:

- Piece of string (the length will need to be able to circle the largest item)
- Recording Sheet

Materials per Station:

- Ruler or Meter Stick
- various circular items in different sizes, including but not limited to:
  - paper plates
  - lids
  - DVDs
  - clocks
  - frisbees
  - hula hoops (this would work well for demonstrating as a class)

Station Prep

In order for students to be accurate in their measurements, be sure to mark the center of the item with a Sharpie or sticker.

***It is not necessary for students to go to each and every item. The recording sheet includes enough space for eight stations.

Unit: Plane Geometry & Similarity
Intro Activity

Name _____

Date _____ Pd _____

INTRODUCTION TO CIRCLES

Complete the following tasks with your group. Be sure to show your work and explain your thinking.

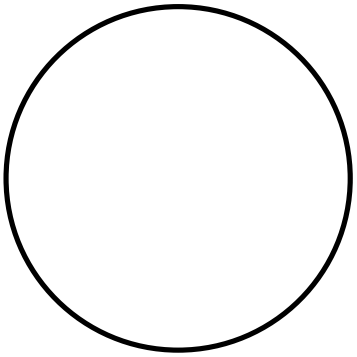
TASK 1

Use the vocabulary terms below to draw and label the different parts of the circle.

circumference: the _____ around the circle

diameter: a _____ that extends from each edge and _____ the center of the circle

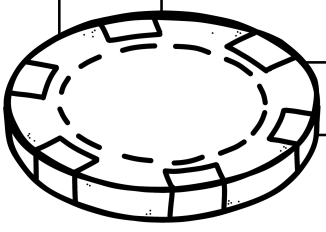
radius: a line segment that extends from the _____ of the circle to the edge

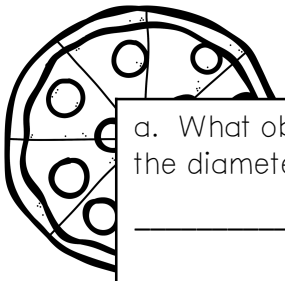


TASK 2

At each station, record the name of the item. Then, use the string to measure the circumference of the circle and the diameter of the circle. The gray section will be used in task 3.

OBJECT	DIAMETER (IN CM)	CIRCUMFERENCE (IN CM)	





TASK 3

a. What observations can you make about the relationship between the circumference and the diameter of each circle?

_____

_____

b. Divide the circumference by the diameter and record the approximate value in the gray column under task 2.

TASK 4

a. Based on the formulas and your observations of the circles, determine if you agree or disagree with the statements below.

"if the diameter of a circle is 15, then the circumference is close to 45"
JOEY

"the diameter of the circle is about three times the circumference of the circle"
AVA

I _____ with Joey because _____

_____

I _____ with Ava because _____

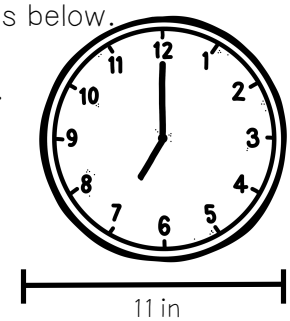
_____

b. How could you represent your observations with a formula?

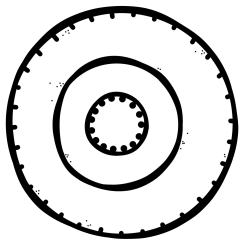
TASK 5

Using your observations and the formula you created to answer the questions below.

a. A clock is shown at right. Predict the distance around the clock in inches.



11 in



b. A tire is in the shape of a circle. After one rotation, the tire travels 75.36 inches. Predict the diameter of the tire in inches.

Unit: Plane Geometry & Similarity
Intro Activity

Name KEY

Date _____ Pd _____

INTRODUCTION TO CIRCLES

Complete the following tasks with your group. Be sure to show your work and explain your thinking.

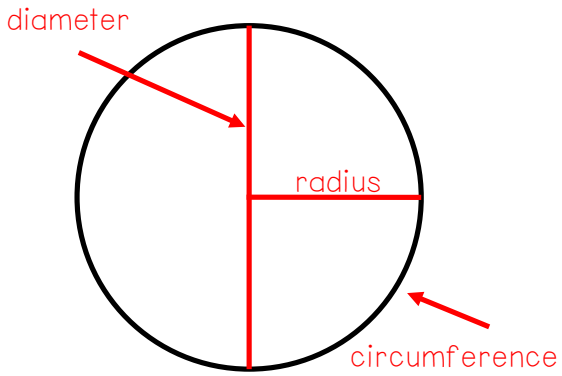
TASK 1

Use the vocabulary terms below to draw and label the different parts of the circle.

circumference: the distance around the circle

diameter: a line segment that extends from each edge and passes through the center of the circle

radius: a line segment that extends from the center of the circle to the edge

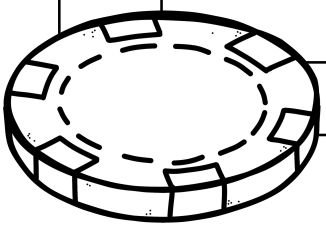


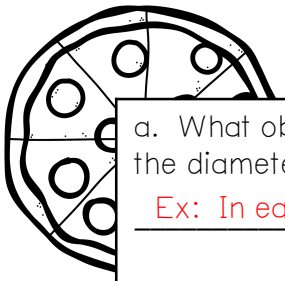
TASK 2

At each station, record the name of the item. Then, use the string to measure the circumference of the circle and the diameter of the circle. The gray section will be used in task 3.

*answers will vary based on objects and measurements

OBJECT	DIAMETER (IN CM)	CIRCUMFERENCE (IN CM)	





TASK 3

a. What observations can you make about the relationship between the circumference and the diameter of each circle?

Ex: In each example, the diameter is less than the circumference.

b. Divide the circumference by the diameter and record the approximate value in the gray column under task 2.

TASK 4

a. Based on the formulas and your observations of the circles, determine if you agree or disagree with the statements below.

"if the diameter of a circle is 15, then the circumference is close to 45" — JOEY

"the diameter of the circle is about three times the circumference of the circle" — AVA

I agree with Joey because the diameter is being multiplied by pi, so the circumference will be approximately 45

I disagree with Ava because the circumference of the circle is about three times the diameter of the circle.

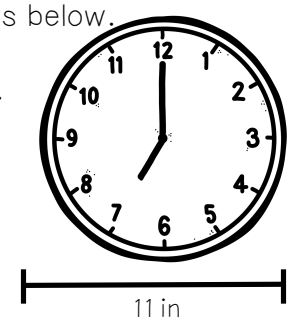
b. How could you represent your observations with a formula?

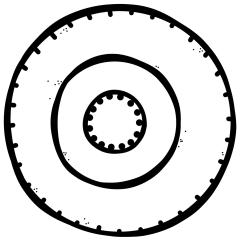
TASK 5

Using your observations and the formula you created to answer the questions below.

a. A clock is shown at right. Predict the distance around the clock in inches.

about 33 inches





b. A tire is in the shape of a circle. After one rotation, the tire travels 75.36 inches. Predict the diameter of the tire in inches.

about 25 inches