2D & 3D Shapes Area and Perimeter

Name:_____

Answer Key

Date:_____

Vocabulary

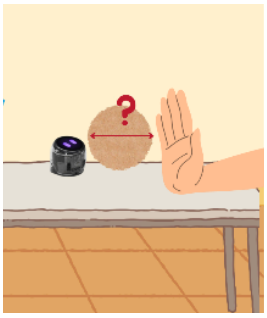
Area - the measurement of a surface
Perimeter - the line that forms the boundary of a geometric shape

Activity 1

Cut the two-dimensional circle, square, rectangle, and triangle out of the provided paper as well as the three-dimensional cube and rectangular prism.

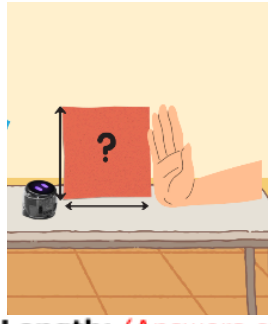
Once each shape is cut, use the Ari distance application to measure the listed measurements on each shape.

1



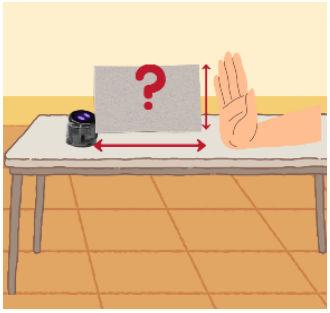
Diameter:
Answers can vary
2.5 inches

2



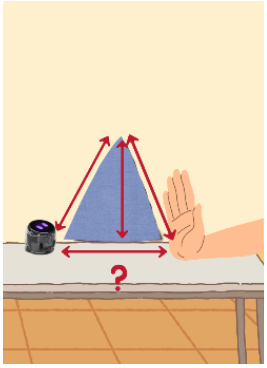
Length: (Answers can vary)
2.3 inches
Width:
2.3 inches

3



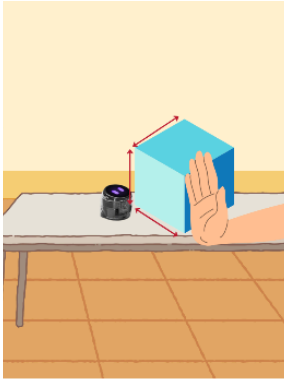
Length: (Answers can vary)
2.2 inches
Width:
1.3 inches

4



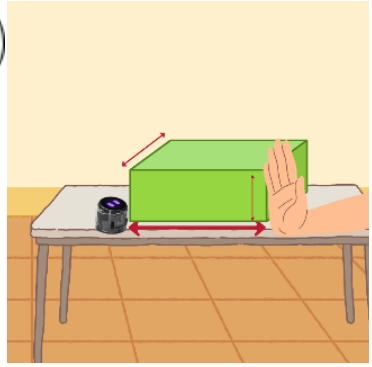
Base/Side 1: 2.2 inches
Side 2: 1.6 inches
Side 3: 1.7 inches
Height: 2.0 inches

5



Length: 1.8 inches
Width: 1.8 inches
Height: 1.8 inches

6



Length: 1.5 inches
Width: 1.0 inches
Height: 1.3 inches

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Activity 2

Calculate the area and perimeter of each of the four shapes using the measured values from Activity 1. Note that answers vary based on measurements.

Circle:

Area (in²) πr^2=

3.14 x 1.25^2= 4.9 in^2

Perimeter (inches) πd=

3.14 x 2.5= 7.85 *inches*

Rectangle:

Area (in²) l x w =

2.2 x 1.3 = 2.86 in^2

Perimeter (inches) l + l + w + w =

2.2 + 2.2 + 1.3 + 1.3= 7 inches

Square:

Area (in²) l x w =

2.3 x 2.3 = 5.29 in^2

Perimeter(inches) l + l + w + w =

2.3 + 2.3 + 2.3 + 2.3 = 9.2 inches

Triangle:

Area (in²) ½ x b x h =

½ x 2.2 x 2.0 = 2.2 in^2

Perimeter (inches) side1 + side2 + side3 = 1.6 + 1.7 + 2.0 = 5.3 inches

Cube:

Surface *Area(in²) length² + length²+ length² + length² + length² + length² =*

1.8^2+ 1.8^2+ 1.8^2+ 1.8^2+ 1.8^2+ 1.8^2 = 19.44 in^2

Volume (inches³) length x width x height = 1.8 x 1.8 x 1.8 =5.832 in^3

Rectangular Prism:

Surface *Area (in²) =*

2(length x width) + 2(width x height) + 2 (length x width) =

2(1.5 x 1.1) + 2(1.1 x 1.3) + 2(1.5 x 1.1) = 7.81 in^2

Volume (inches³) length x width x height = 1.5 x 1.1 x 1.3 = 2.145 in^3

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Exit Ticket

Please respond to the following prompts.

1. Question 1: Which shape had the smallest and largest perimeter? The circle had the smallest perimeter and the rectangle had the largest perimeter.

2. Question 2: What information would we need to calculate the volume of the square and rectangle shapes? We would need the heights of the cubes that the square and rectangle quadrilaterals would become.

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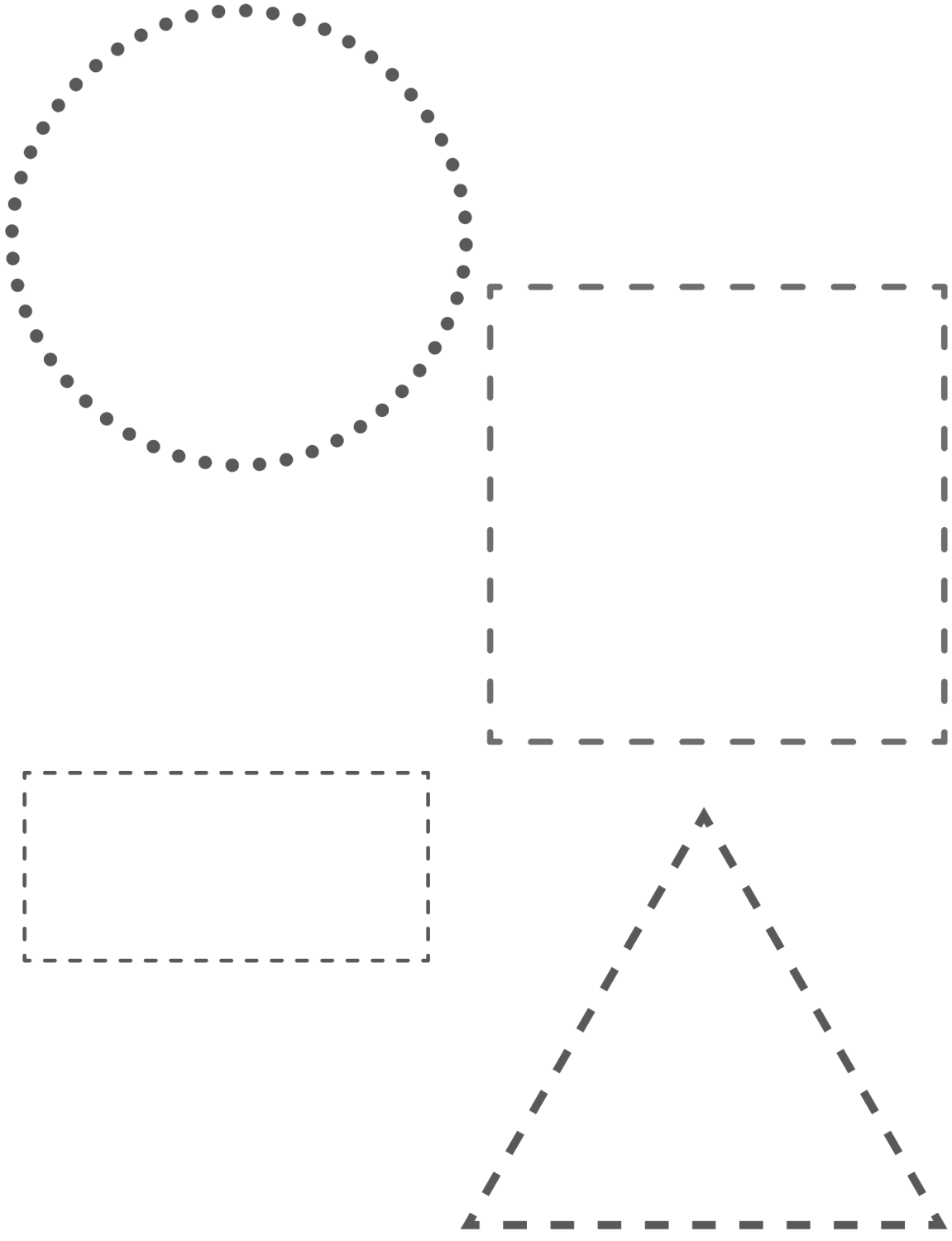
Supplemental Materials

Cut along the dotted line for Activity 1.



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Cut along the perimeter and fold on the solid lines to make a cube or rectangular prism.