Circle Parts

STRAND: Measurement and Geometry

STRAND CONCEPT: Circles and Polygons – Identify and Describe

SOL 5.10

Remediation Plan Summary

Students explore and define the radius, diameter, center, circumference, and chord of a circle.

Common Errors and Misconceptions

Students may have the misconception that each diameter or radius in a circle has a different length.
Students may have the misconception that ovals and spheres are also considered circles.

Materials

- Scissors
- Circle sheet
- Reflection sheet
- Rulers
- Yarn
- Colored pencils or markers or crayons
- Sir Cumference and the Knights of the Round Table (book)

Introductory Activity

Read and discuss Sir Cumference and the Knights of the Round Table. Have students brainstorm a list of "real-life" objects that are shaped like circles. If students mention objects that are spheres, remind them that circles are 2-dimensional and spheres are 3-dimensional.

Plan for Instruction

1. Pass out copies of the "Circle" handout, and have students cut out the circle.
2. Tell the students to fold the circle in half and then unfold it. Ask them to use a colored pencil and a ruler to trace the line segment formed by the crease they just made, and ask them to label this colored line "diameter" (see "Labeled Circle: Front" sample).
3. Have students fold the circle in half again, but not along the same fold as before. Again, tell them to unfold, and ask whether they notice anything special about where these two lines intersect. (It is the center of the circle.) Have them draw a dot there and label it "center."
4. Repeat step three twice more for a total of four diameters.
5. Have the students use a different colored pencil and a ruler to trace the line segment along any diameter *from the center to the edge of the circle.* Tell them to label this line segment "radius."
6. Have students make a final crease by making a "flap," i.e., making any fold that does *not* go through the center. Have them use yet a different colored pencil and a ruler to trace and label this line "chord."

7. Now, have the students turn the circle over and use a different colored pencil to trace around the periphery of the circle. Have them label this "circumference."
8. Ask students to use their labeled circle to verbally define *radius, diameter, chord,* and *circumference* Give guidance as necessary, and point out that the diameter is a special chord because it goes through the center.
9. Have students use the ruler and yarn to measure each circle part.
10. As a class compare answers and discuss. Through discussion, be sure students notice that all diameters are the same length, that the radius is half the diameter and, conversely, that the diameter is twice the radius, and that chords can have many different lengths. Ask, "*Are all radii the same length if they are on the same circle?*" Ask, *"Are all diameters the same length from the same circle? From different circles?*
11. Have students complete the "Circle Parts" worksheet.

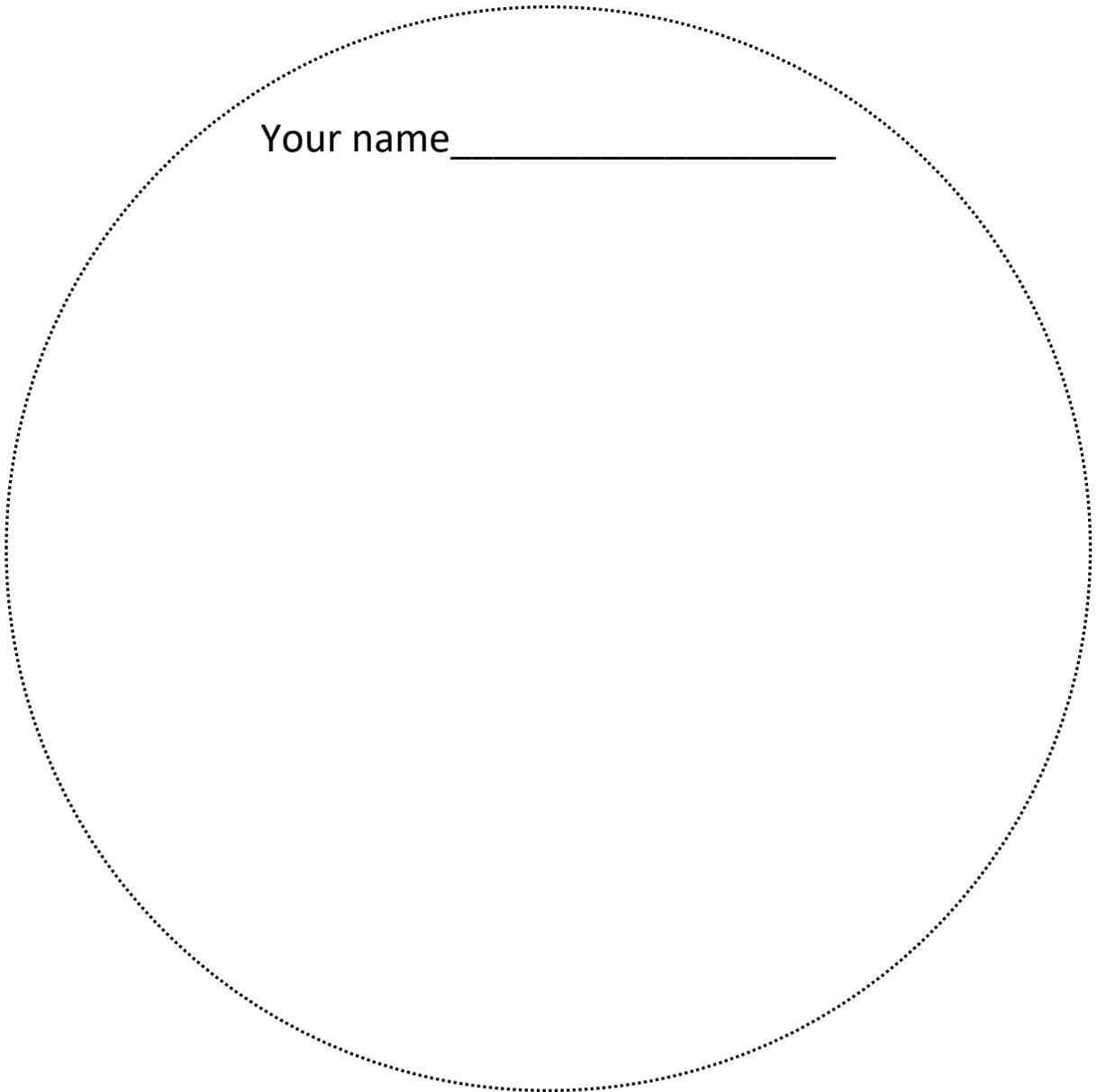### *Pulling It All Together (Reflection)*

Have students complete the "Reflection" handout

Note: The following pages are intended for classroom use for students as a visual aid to learning.

Circle

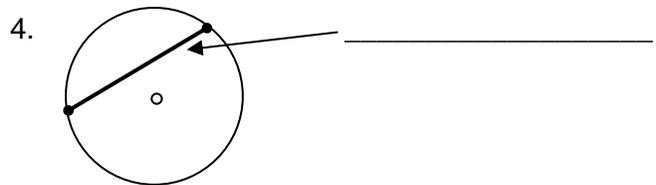Using a pair of scissors, cut out the circle on the dotted line.

Your name_____

Name:

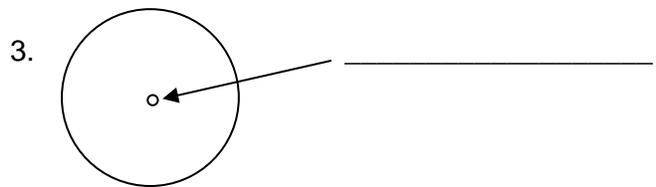# Circle Parts
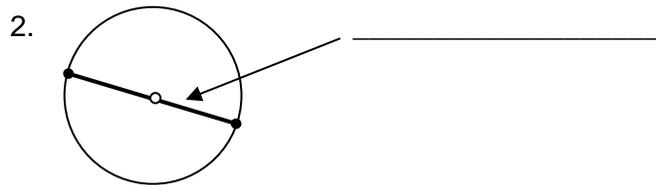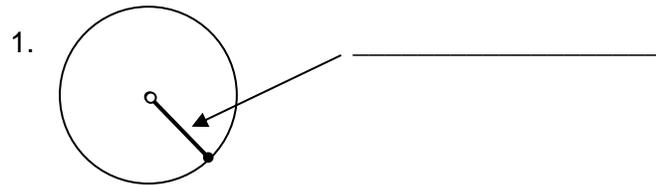
Use the words in the Word Bank to label each picture or description.
Words may be used more than once.

<table>
<tr><td colspan="2"><u>Word Bank</u></td></tr>
<tr><td colspan="2">chord</td></tr>
<tr><td colspan="2">diameter</td></tr>
<tr><td colspan="2">circumference</td></tr>
<tr><td colspan="2">radius</td></tr>
<tr><td colspan="2">center</td></tr>
</table>

1. _____

2. _____

3. _____

4. _____

5.   Half as long as the diameter: _____

6.   The distance around a circle: _____

7.   A line segment connecting any two points on a circle: _____

8.   The line segment from the center of a circle to any point on the circle: _____

9.   Twice as long as the radius: _____

10.   The perimeter of a circle: _____

11.   A chord that passes through the center of a circle: _____