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Understanding Pi Lesson Plan 7th Grade

This is a second lesson on circles. It can follow the [Elements of a Circle Lesson Plan 7th Grade](#) if you feel as if your students need an initial lesson on radius and diameter, or it can be a standalone lesson if you are looking for a one-day hands-on activity. I like to follow it up with the lesson on [Area and Circumference of a Circle](#) to allow more practice and to embed opportunities for deeper reasoning about circles. When all three lessons are done, the entire 7th grade standard for circles is addressed.

Common Core Standard Addressed

[CCSS.MATH.CONTENT.7.G.B.4](#)

Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.

Addresses all 8 Standards for Mathematical Practice

Objectives/Learning Targets

- Students will understand that pi is the ratio circumference: diameter.

Supplies Required

- 1 traceable circular item (mug, lid, pot, etc.) per student (ideally -8 in diameter) (Students will be working in groups of 4-5 students. No member of a group should have the same sized item.)
- A piece of yarn (2 ½ feet long) per student
- Scissors
- Glue sticks
- 1 sheet of colored card stock or construction paper per student
- A ruler that shows centimeters (Students may share but I recommend no more than 2 students per ruler.)
- Calculators
- "Investigation of Pi" Worksheet (available as part of the download with this lesson plan)
- Student's Circle Foldable from the [Elements of a Circle Lesson Plan 7th Grade](#)

Methodology

1. Break students into groups of 4-5 students. Pass out 4-5 (depending on group size) traceable circular items (lids, mugs, pots, etc.) to each group. To make resources easier, do not use items that have larger than an 8" diameter. Also pass out the "Investigation of Pi" Worksheet, a pair of scissors, and a length of yarn (a little longer than the circumference of the largest item) to each student.
2. Have each student trace one of the items onto a colored sheet of paper or construction paper. They will then cut out their circle and fold it in half two times to approximate a center point. This will be necessary to find the diameter.

3. From here they will use their length of yarn and wrap it around the item. They will then cut the yarn to the best of their ability to represent the distance around the item.
4. They will then fill in the data for row #1 on their "Investigation of Pi" Worksheet. They will need a calculator.
5. Have students rotate their worksheets allowing each student to fill in the data for each circle at the table. Students may find that they need to cut yarn pieces again, so have extra on hand.
6. As a class, share out responses and observations.
7. Have each student answer the questions on page 2 of the "Investigation of Pi" Worksheet. Stress the importance of responding in complete sentences.
8. Give the class 10 minutes or so to assemble their circles into posters and to decorate them. They should attach their chart as evidence/justification to the circle.
9. As a final summation of the day, have the students complete the next section (Pi) on their Circle Foldable from the [Elements of a Circle Lesson Plan 7th Grade](#).

Here's a snippet of the "Investigation of Pi" Worksheet that is available as part of this download. It also has a set of reflection questions on the back to help the students understand pi.

Investigation of Pi

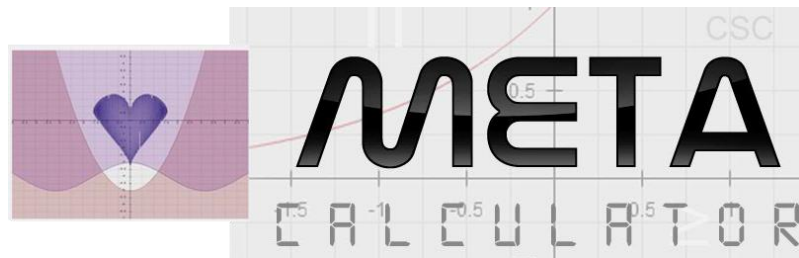
Item: _____

Student's Name	Circumference of the Circle (rounded to the nearest cm)	Diameter of the Circle (rounded to the nearest cm)	circumference diameter (round your answer to the nearest hundredth)

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Check out our Free Online Graphing Calculator

www.meta-calculator.com/online/



And our free Chart Wizards at

www.meta-chart.com

