

**COVER SHEET**  
(Where Does “ $\pi$ ” Come From?)

This will be an exciting lesson as we establish where “ $\pi$ ” comes from using simply a string. “ $\pi$ ” is an irrational number that students are always curious about. So, to help them with their curiosity, we will measure the diameter and circumference of several different sizes of lids and begin to see the pattern that is developing. This satisfies the workshop needs as we will have them write down what relationship is happening between the circumference and diameter as we measure each circle.

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6<sup>th</sup> Grade Math

“Where Does “ $\pi$ ” Come From?”

**Objectives:**

**Standard 4.1** – The student will collect data and develop formulas to find the circumference and area of circles. (eg., use string the length of the diameter of various circular lids to approximate the circumference and develop the concept of pi).

**Instruction:**

- 1. Introduction:** Yesterday we established what a diameter is of a circle. Today we are going to talk about the distance around a circle called circumference and develop the idea of “ $\pi$ ” and where it comes from.
- 2. Instructional Process:** I am going to pass out a piece of string to each student. Then I will take several different sizes of lids, pass one out to each student, then we will rotate the lids around so that everyone will get to measure each size of lid.. They are to measure around each lid with their string, lay the length of the string down on their ruler, and record that length on a piece of paper to the nearest quarter of an inch. This measurement will be the circumference of the circle.

After they have recorded all findings from their measurements, we will begin to look at what “ $\pi$ ” is. The formula we will use is  $C=\pi d$ . So “ $\pi$ ” should be the ratio of the circumference divided by the diameter. I will show them the formula and we will test our measurements using this formula to see what “ $\pi$ ” is. “ $\pi$ ” should come out to be 3.14...

- 3. Closure:** In closing, I will have them write down where “ $\pi$ ” comes from as far as calculation goes. I will also see if they can predict from our work how they can find the circumference without measuring using 3.14 as “ $\pi$ ”. Finally, I will also have them write down what the circumference is or what they think the definition would be.

**Assessment:**

I plan on giving them a worksheet where they can use their new found formula to find the circumference of several different circles with different sizes of diameters.

**Modifications/Accommodations:**

I will definitely need to help with measurement and reading the measurement from the ruler. Also, the computation with 3.14 as “ $\pi$ ” will be difficult to calculate. A calculator could be used.

**Reflection:**

I can see that this lesson could be difficult if the measurements are not accurate. We should come pretty close to “ $\pi$ ”. However, with error of measurement there will be some difficulty. I think they will find the lesson interesting and helpful. I hope it will diffuse any fears that might arise from this new symbolism.