

Title:

# **$\pi$ in your eye!**

<b>Objectives:</b> Student will learn about the number pi and how it is used to determine the circumference of a circle.	<b>Time frame to Complete</b> 30 minutes
	<b>NRS EFL</b> 4

Stackable Certificate Documentation	Technology	Study / Life skills	EL-Civics	Career Pathways	Police	Paramedic	Fire Rescue	Medical Asst.	EKG / Cardio	Phlebotomy	Practical Nursing	Healthcare Admin	Pharmacy Tech	IMT	AMT	HVAC	Welding	Other:	
X														X	X	X			

**Standard(s) Addressed in Lesson**

Use Math to Solve Problems and Communicate

**Benchmark(s) Addressed in Lesson**

- M.4.9 Use established formulas to calculate perimeter, circumference, area and volume for basic figures.
- M.4.11 Show that geometric measures such as length, perimeter, area and volume depend on the choice of unit and that measurements are only as precise as the units used.
- M.4.14 Apply the concept of rounding to specified place value; distinguish between exact and approximate values.
- M.4.28 Confirm results with a calculator.
- M.4.29 Use correct mathematical terminology (for example circumference, radius, pi  $\pi$ ).

**Materials:**

- PVC pipe approximately 4” in diameter and at least 4” long (If PVC pipe is not available, any solid cylindrical object will do.)
- String
- Pi worksheet
- Ruler
- calculator

**Learner Prior Knowledge:**

definition of circle, diameter, radius, circumference, and formulas for finding circumference and area of a circle

**Activities**

**Step 1** Learner takes a piece of string, wraps around the PVC pipe, cuts and measures. Discuss circumference.

**Step 2** Learner takes another piece of string, runs across the PVC pipe through the center. Cuts and measures. Discuss diameter.

**Step 3** Learner lays the two strings side by side and compares the lengths. Teacher prompts the learner to notice

the “approximate” difference in length of the two strings.

**Step 4** Learner learns that the distance around (circumference) is approximately three times the distance across the circle. Teacher discusses the definition of the number  $\pi$  and explains what it means.

**Step 5** Teacher discusses the formula:  $C = \pi d$  and explains how  $\pi = C/d$

**Step 6** Teacher hands out worksheet for students to apply knowledge.

**Assessment/Evidence:**

Completed worksheets with correct responses

This worksheet can be used as documentation for a Basic Stackable Certificate. Collect for portfolios, if needed.

**Adaptations for Beginning Students:**

Have beginners work with the teacher or in a group.

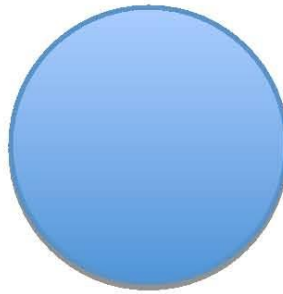
**Adaptations for Advanced Students:**

Have advanced students determine volume of the cylinder.

**Teacher Reflection/Lesson Evaluation**

This lesson was created by Middletown ABLE.

$$C = \pi d$$



Use your calculator to find the circumference of a circle. (Use 3.14 for  $\pi$ ) Round to the nearest 10<sup>th</sup>.

- 1) A circle with diameter of 42 mm.
- 2) A circle with a diameter of 125 in.
- 3) A circle with a radius of 10 ft.
- 4) A circle with a radius of 22.5 m.

Use your calculator to find the circumference of a circle (Use  $\frac{22}{7}$  for  $\pi$ )

- 5) A circle with diameter of  $12 \frac{1}{2}$  inches.
- 6) A circle with radius of  $3 \frac{3}{4}$  feet.
- 7) Amanda wants to fence in her circular swimming pool and surrounding walkway. The pool plus walkway around is 50' in diameter. How much will it cost her to fence in her pool, if fencing costs \$3.95 per foot. (Round your answer to the nearest \$)

$$C = \pi d$$



Use your calculator to find the circumference of a circle. (Use 3.14 for  $\pi$ ) Round to the nearest 10<sup>th</sup>.

1) A circle with diameter of 42 mm.  $131.9 \text{ mm.}$

2) A circle with a diameter of 125 in.  $393 \text{ in}$

3) A circle with a radius of 10 ft.  $62.8 \text{ ft.}$

4) A circle with a radius of 22.5 m.  $141.3 \text{ m.}$

Use your calculator to find the circumference of a circle (Use  $\frac{22}{7}$  for  $\pi$ )

5) A circle with diameter of  $12 \frac{1}{2}$  inches.  $39 \frac{2}{7} \text{ ''}$

6) A circle with radius of  $3 \frac{3}{4}$  feet.  $23 \frac{4}{7} \text{ '}$

7) Amanda wants to fence in her circular swimming pool and surrounding walkway. The pool plus walkway around is 50' in diameter. How much will it cost her to fence in her pool, if fencing costs \$3.95 per foot. (Round your answer to the nearest \$)

$$\$ 628.00$$