



The National Science Center

Classroom Activity

Theme: Mathematics

Title: Discovering Pi

The National Science Center

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Theme: Mathematics

Topic: Geometry

Title: Discovering Pi

National Standard: Geometry – enable all students to analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships. (NCTM, 2000)

Purpose: Many students tend to memorize, without understanding, formulas that we use in geometry or other area of mathematics. This particular activity allows students to discover why pi works in solving problems dealing with finding circumference.

Recommended Level: Grades 6-8

Time: 1 hour

Materials:

Round objects such as jars, lids, etc.
Measuring tapes, or string and rulers
Paper
Pencil
Calculator

Presentation / Procedures:

1. Divide class into groups of two.
2. Give materials to student teams.
3. Have student teams make a table or chart that shows name or number of object, circumference, diameter, and ?.
4. Have students measure and record each object's circumference and diameter, then divide the circumference by the diameter and record result in the ? column.
5. Have students find the average for the ? column and compare to other groups in the class to determine a pattern. Students can then find the average number for the class.
6. Explain to the students that they have just discovered pi, which is very important in finding the circumference of an object. (You may wish to give some historical information about pi at this time or have students research the information.)
7. Have students come up with a formula to find the circumference of an object knowing only the diameter of that object, and the number that represents pi. Students must prove their formula works by demonstration and measuring to check their results.
8. Give students three problems listing only the diameter of each object and have them find the circumference.