

Pythagorean Theorem

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Abstract: This activity assists in the investigation of the fundamental ideas behind the Pythagorean Theorem and the nature of triangles.

Grade Level: 6-8

Strand:

Algebra Standard

- Represent and analyze mathematical situations and structures using algebraic symbols
 - Use symbolic algebra to represent situations and to solve problems, especially those that involve linear relationships

Geometry Standard

- Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships
 - Understand relationships among the angles, side lengths, perimeters, areas, and volumes of similar objects

Number and Operation Standard

- Compute fluently and make reasonable estimates
 - Develop and use strategies to estimate the results of rational-number calculations and judge the reasonableness of the results
- Understand meanings of operations and how they relate to one another
 - Understand the meaning and effects of arithmetic operations with fractions, decimals, and integers

Time: 2 class periods

Day 1: Discussion

Power point

Computer exploration using the links provided.

Student worksheet

Calculator

Day 2: review concept

Using Google Earth, find at least 3 separate instances of cities, monuments, or objects which form right triangles.

Materials:

Day 1: Computers or computer lab

Calculators

Summer Adventures at the Montana Learning Center (worksheet)

Day 2: Computer Lab with Google Earth loaded on the computers

Objectives:

Students will use the Pythagorean Theorem to solve a variety of application and distance problems. They will use their knowledge of algebra to isolate and solve a variable while working with the Pythagorean Theorem.

Technology:

* <http://www.shodor.org/interactivate/activities/SquaringTheTriangle/>

Be sure to check out the many tabs and interactive links related to this topic!

* http://www.geogebra.org/en/examples/ladder_wall/ladder_wall.html

Interactive application

* Google Earth uploaded onto the computers

Files/Description:

Summer Adventures – Five Pythagorean Theorem problems

Pythagorean Triples

Pythagorean Theorem Power point