

## Pythagorean Theorem

Students who study the Pythagorean Theorem are learning to answer the questions

*What relationships are true in every right triangle?*

*Where do these relationships appear outside of right triangles?*

*Where do these relationships appear in everyday life?*

This unit of study addresses Indiana College & Career Ready Standards as follows:

**8.GM.7:** Use inductive reasoning to explain the Pythagorean relationship.

**8.GM.8:** Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and other mathematical problems in two dimensions.

**8.GM.9:** Apply the Pythagorean Theorem to find the distance between two points in a coordinate plane.

Gaining skills in this unit will enable students to do everyday tasks like stepping off a backyard baseball diamond, constructing a kite frame, or shipping a fishing pole. The specific skills in this unit of study include

- using the Pythagorean Theorem
- using the converse of the Pythagorean Theorem
- using the distance formula
- calculating the lengths of space diagonals
- writing Pythagorean proofs