

## Lesson Title: Pythagoras' Theorem in Practice

**Grade:** 8th

**Duration:** 45 minutes

**Topic:** Geometry – Right Triangles

**Objective:**

By the end of the lesson, students will:

- Understand and state the Pythagorean Theorem.
  - Identify right-angled triangles and apply the theorem to calculate side lengths.
  - Connect the theorem to real-life scenarios.
- 

## Materials Needed:

- Whiteboard and markers
  - Rulers, protractors, graph paper
  - Calculators (optional)
  - Paper cutouts or tiles (to visualize squares on triangle sides)
  - Worksheets with triangle problems
  - String or tape for floor triangle activity (optional)
- 

## Lesson Breakdown:

### 1. Introduction (5 minutes)

- Ask: "Have you ever seen a triangle used in construction or measuring?"
- Introduce **Pythagoras' Theorem**:

"In a right triangle, the square of the hypotenuse is equal to the sum of the squares of the other two sides."

$$a^2 + b^2 = c^2$$

- Briefly tell who **Pythagoras** was.
- 

### 2. Visual Demonstration (10 minutes)

- Draw a right triangle on the board with squares on each side.
  - Use colored paper or digital animation to show:  
 $a^2 + b^2 = c^2$  using square areas.
  - Optionally, use **paper tiles** or graph paper to count and prove the relationship.
-

### 3. Group Practice Activity (15 minutes)

#### Option 1: Paper Activity

- In pairs or small groups:
  1. Draw several right-angled triangles.
  2. Use ruler to measure sides, then apply  $a^2 + b^2 = c^2$ .
  3. Verify if triangle is right-angled or solve for the unknown side.

#### Option 2 (more active):

- Use string or masking tape to make a large triangle on the floor.
  - Measure sides and apply the theorem physically.
- 

### 4. Real-Life Application (5 minutes)

- Discuss real uses:
    - Construction
    - Navigation and maps
    - Finding shortest distances
    - Sports and ramps
  - Show an example: measuring the diagonal of a square room.
- 

### 5. Quick Quiz & Wrap-Up (10 minutes)

- Give a worksheet with 3–4 problems:
    1. Find the missing side.
    2. Check if a triangle is right-angled.
    3. Apply in a real-life scenario (e.g., ladder against a wall).
  - Review answers together.
- 

## Assessment:

- Group participation and problem-solving
- Accuracy on quiz
- Application during discussion