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| Lesson Plan no : |
| Date : |  | Subject : | Mathematics |
| Class : | 10 | Chapter : | Pythagorus theorem |
| Time : | 45 | Period : |  |

**Overview and Learning Objective**  
The Pythagorean theorem is a fundamental principle in geometry that establishes a relationship between the sides of a right triangle.   
  
LO-1: Students will be able to define the Pythagorean theorem and its application in finding the unknown side of a right-angled triangle.  
LO-2: Students will be able to identify the hypotenuse, adjacent, and opposite sides of a right-angled triangle.  
LO-3: Students will be able to apply the Pythagorean theorem to solve real-world problems involving right triangles.

**Curricular Goals and Curricular competencies**  
CG-1: Students will be able to understand the relationship between the sides of a right-angled triangle.  
CG-2: Students will be able to apply the Pythagorean theorem to solve real-world problems.  
CC-1: Students will be able to identify the hypotenuse, opposite, and adjacent sides of a right-angled triangle.  
CC-2: Students will be able to calculate the length of a missing side of a right-angled triangle using the Pythagorean theorem.  
CC-3: Students will be able to communicate their understanding of the Pythagorean theorem using mathematical language.

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| Learning Objective | Curricular competencies | FACTUAL KNOWLEDGE | CONCEPTUAL KNOWLEDGE | PROCEDURAL KNOWLEDGE |
| LO-1 | CC-1 | It applies to right-angled triangles only. The square of the hypotenuse equals the sum of the squares of the other two sides. It can be used to find unknown side lengths. | Relating sides in a right triangle Finding unknown side lengths Applying to real-world problems | Identify the hypotenuse and legs of the right triangle. Square the lengths of the two legs. Add the squares of the legs. |

**Essential question**  
Q-1: How can we use the relationship between the sides of a right triangle to solve for missing lengths?  
Q-2: What is the proof of the Pythagorean theorem and how does it demonstrate the relationship between the sides of a right triangle?  
Q-3: How can we apply the Pythagorean theorem to real-world problems and situations?

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| **Teaching Points** | **Learning Outcomes** | **Sequential Learning Activities** | **Formative Assessment** | **Expected Queries** |
| TP-1: The Pythagorean theorem states that in a right triangle, the square of the hypotenuse (the side opposite the right angle) is equal to the sum of the squares of the other two sides. TP-2: The theorem can be used to find the length of any side of a right triangle if the lengths of the other two sides are known. TP-3: The Pythagorean theorem has many real-world applications, such as finding the distance between two points or calculating the height of a building. | LO1, LO2 | Activity-1: Introduce the Pythagorean theorem using a real-world example, like a ladder leaning against a wall. Activity-2: Have students work in pairs to measure the sides of right triangles using rulers and then calculate the hypotenuse using the Pythagorean theorem. Activity-3: Present students with word problems that involve the Pythagorean theorem and have them solve them individually or in small groups. | [formative assessment no 1] A right triangle has a hypotenuse of 10 centimeters and one leg of 6 centimeters. What is the length of the other leg? [formative assessment no 2] Can you use the Pythagorean theorem to find the length of the diagonal of a square? Explain your reasoning. [formative assessment no 3] A ladder leans against a wall, forming a right triangle. The base of the ladder is 4 meters from the wall, and the ladder reaches 3 meters up the wall. How long is the ladder? | Q-1: What is the Pythagorean Theorem? Q-2: How do you find the hypotenuse? Q-3: Can you name a real-world example where you might use the Pythagorean Theorem? |
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**summarization And Home work :**   
The Pythagorean theorem states that in a right triangle, the square of the hypotenuse (the side opposite the right angle) is equal to the sum of the squares of the other two sides.   
  
Q-1: A right triangle has sides of length 3 and 4. What is the length of the hypotenuse?  
Q-2: A rectangular garden has a length of 12 meters and a width of 5 meters. What is the length of the diagonal of the garden?  
Q-3: A ladder leans against a wall, reaching a height of 8 meters. If the base of the ladder is 6 meters from the wall, what is the length of the ladder?

**Signature of Teacher**