Lesson title: Thales' Theorem in Practice

Grade: 8th
Duration: 45 minutes
Topic: Geometry – Circles and Angles
Objective:
By the end of the lesson, students will:

- Understand Thales' Theorem.
- Be able to construct and identify right-angled triangles inscribed in semicircles.
- Apply the theorem to solve simple geometry problems.

Materials Needed:

- Whiteboard and markers
- Compass, ruler, protractor
- Graph paper
- String and cardboard semicircles (for activity)
- Worksheets for group activity
- Projector (optional for diagram/video demonstration)

Lesson Breakdown:

1. Introduction (5 minutes)

- Briefly explain **who Thales was** and introduce the theorem:
  "If A, B, and C are points on a circle where AB is the diameter, then angle ACB is a right angle."
- Draw a circle on the board and illustrate the theorem.

2. Demonstration & Explanation (10 minutes)

- Use a compass and ruler to draw a circle with a diameter and show a triangle inscribed with the third point on the circumference.
- Use a **protractor** to measure the angle and confirm it's 90°.
- Explain **why** the theorem works using basic circle and angle facts.

3. Guided Group Activity (15 minutes)

- Students work in **groups of 3-4**.
- Task:
  1. Draw a circle with a given diameter.
  2. Choose multiple points on the circle and connect to form triangles.
  3. Measure angles and observe patterns.

- Give each group a **worksheet** to fill out angle measurements and answer questions about patterns they see.

4. Real-World Application Discussion (5 minutes)

- Ask: "Where do we see right angles in the real world?"
- Examples: bridges, constructions, architecture.
- Briefly explain how knowing this theorem can help in practical fields like engineering and carpentry.

5. Review & Wrap-Up Quiz (10 minutes)

- Quick quiz (4–5 questions):
    - Define Thales' Theorem.
    - Draw a triangle using the theorem.
    - Identify if a triangle follows the theorem from a diagram.
- Go over answers together.

Assessment:

- Observation during group work
- Participation in discussion
- Accuracy in quick quiz