

Lesson 1: Introduction to Parallel Lines

Activity 1: Parallel Line Discovery

- **Materials:** Scale, set square, paper, pencil.
- **Instructions:**
 1. Provide students with graph paper.
 2. Have them draw a horizontal line using a scale.
 3. Using a set square, draw a line parallel to the first line, 3 cm above it.
 4. Discuss how the distance between the lines remains constant and how they will never meet.

Activity 2: Parallelogram Drawing

- **Materials:** Graph paper, pencil, ruler.
 - **Instructions:**
 1. Students draw a parallelogram on graph paper with given side lengths (e.g., 3 cm and 4 cm).
 2. Label the sides and angles.
 3. Discuss the properties of the parallelogram and why the opposite sides are parallel.
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Lesson 2: Lines and Angles

Activity 1: Angle Intersection Exploration

- **Materials:** Protractor, paper, pencil.
- **Instructions:**
 1. Draw two intersecting lines on the board and have students copy them onto their papers.
 2. Measure the angles formed at the intersection.

3. Identify the pairs of small and large angles and discuss their relationships.

Activity 2: Interactive Angle Measurement

- **Materials:** Protractor, pencil, ruler.
 - **Instructions:**
 1. Students draw different pairs of intersecting lines.
 2. Measure and record the angles.
 3. Compare and discuss findings with a partner.
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Lesson 3: Angles with Parallel Lines

Activity 1: Transversal Angle Identification

- **Materials:** Protractor, colored pencils, paper.
- **Instructions:**
 1. Draw two parallel lines and a transversal on the board.
 2. Identify the eight angles formed and have students replicate the drawing.
 3. Use different colors to shade corresponding angles and alternate angles.

Activity 2: Angle Relationship Chart

- **Materials:** Chart paper, markers.
 - **Instructions:**
 1. In groups, students create a chart showing the relationships between corresponding, alternate interior, and alternate exterior angles.
 2. Present the chart to the class and explain the relationships.
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Lesson 4: Angle Relationships in Parallelograms

Activity 1: Calculating Parallelogram Angles

- **Materials:** Protractor, ruler, paper.
- **Instructions:**
 1. Draw a parallelogram on the board with one angle labeled (e.g., 55°).
 2. Have students draw the same parallelogram and calculate the remaining angles.
 3. Discuss why the opposite angles are equal and the sum of adjacent angles is 180° .

Activity 2: Dynamic Angle Exploration

- **Materials:** Protractor, paper, pencil.
 - **Instructions:**
 1. Draw a parallelogram and measure all angles.
 2. Change the position of one vertex and observe how the angles change.
 3. Record observations and discuss in pairs.
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Lesson 5: Corresponding and Alternate Angles

Activity 1: Corresponding Angle Hunt

- **Materials:** Protractor, ruler, colored pencils, paper.
- **Instructions:**
 1. Draw parallel lines and a transversal.
 2. Identify and color corresponding angles with the same color.
 3. Verify that the angles are equal using a protractor.

Activity 2: Alternate Angle Matching Game

- **Materials:** Pre-drawn angle diagrams, protractors.
 - **Instructions:**
 1. Provide students with various angle diagrams.
 2. Have them measure and match pairs of alternate angles.
 3. Discuss findings and confirm equal measures.
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Lesson 6: Interior and Exterior Angles

Activity 1: Co-Interior Angle Calculation

- **Materials:** Protractor, paper, pencil.
- **Instructions:**
 1. Draw two parallel lines and a transversal.
 2. Identify and measure co-interior angles.
 3. Calculate the sum of these angles and verify they add up to 180° .

Activity 2: Exterior Angle Puzzle

- **Materials:** Protractor, ruler, paper.
 - **Instructions:**
 1. Draw parallel lines and transversals creating various interior and exterior angles.
 2. Challenge students to find missing angle measures given some angles.
 3. Work in pairs to solve the puzzles and discuss strategies.
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Lesson 7: Sum of Angles in Triangles

Activity 1: Triangle Angle Sum Exploration

- **Materials:** Protractor, paper, pencil.

- **Instructions:**

1. Draw a triangle and extend one of its sides.
2. Draw a parallel line to this side through the opposite vertex.
3. Measure and calculate the sum of the interior angles of the triangle.

Activity 2: Angle Sum Verification

- **Materials:** Protractor, colored pencils, paper.

- **Instructions:**

1. Draw different types of triangles (e.g., scalene, isosceles, equilateral).
2. Measure each angle and sum them to confirm they add up to 180° .
3. Discuss why this property holds for all triangles.