Lesson Plan

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Gallery Walks and Triangle Theorems

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Math
Grades 9–12

Introduction

One of the key components of geometry is proving theorems. In this lesson, students will test triangle theorems through whole group practice and independently while participating in a “gallery walk” throughout the classroom.

Learning Objectives

(CCSS.MATH CONTENT.HSG.CO.C.10) Students will prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180 degrees; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.

Materials Needed

- Journals/notebooks
- Triangle Theorem Checklist

Procedure

1. Students will complete an investigation of triangles. First, review theorems about triangles. Students should write these down in a journal or notebook:
   - Measures of the interior angles of a triangle have a sum of 180 degrees.
   - Base angles of isosceles triangles are congruent.
   - The segment joining midpoints or two sides of a triangle is parallel to the third side and half the length.
   - The medians of a triangle meet at a point.
2. Model for the students how to investigate the theorems. It is important that students have already had experience with the theorems before beginning this lesson. Walk through several examples. Teach students to be thorough investigators. For each triangle, they should complete the checklist and write notes of their findings. Have students use their notebooks or journals to complete the steps with the teacher on the board using the checklist to guide their work.

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3. Now, it is time for students to do their own investigating (or proving of theorems). Students are going to complete a "gallery walk" of triangles. Place numbered pictures of different triangles around the room. When the timer starts, students will walk around the room and visit each picture. Students must complete the steps to prove the theorems for each triangle. Students will use the checklist to guide their work. Students do not have to complete the pictures in order, but they will need to write down the number of the picture they are completing. Students will turn in their work for teacher evaluation.

Evaluation

Student work should be evaluated for accuracy: Did they prove each theorem? Did they work through it correctly? Use the checklist as student work is evaluated.

- Measures of the interior angles of a triangle have a sum of 180 degrees.
- Base angles of isosceles triangles are congruent.
- The segment joining midpoints or two sides of a triangle is parallel to the third side and half the length.
- The medians of a triangle meet at a point.