

Proving Triangles Congruent

Summary

This lesson will help students to write a simple proof using inductive, deductive, and analytical methods.

Time Frame

2 class periods of 90 minutes each

Group Size

Small Groups

Life Skills

Thinking & Reasoning, Communication, Employability

Materials

For this lesson, you will need straws, protractors, rulers, and construction paper or cardstock.

Student Prior Knowledge

The students must know how to use a protractor, recognize the notation for congruent sides and angles, and solve linear equations.

Intended Learning Outcomes

Think logically, using inductive reasoning to formulate reasonable conjectures and using deductive reasoning for justification, formally or informally.

Instructional Procedures

Helping students to understand geometric proofs and how to write them is always a challenge. 1. They first need to understand the need for proofs. You can start out by asking the students when they might need to provide proof in their personal life. Some examples might be in proving their age for a driver's license, starting school, obtaining a passport, entering a sporting event, proving responsibility to a teacher or parent, or parent excuse for absence or tardy. 2. Once they have the idea, you can start preparing them for proof. The document, Preparing for Proof, gives some ideas for this. 3. Once the students understand how to develop a step-by-step plan for something with which they have prior experience, they are ready to start looking at triangles. The document, Discovering Congruent Triangles, will help them to find which shortcuts may be used to prove triangles congruent. After the activity, discuss each congruence shortcut, and which ones do not form congruent triangles. Make sure that they understand how the markings on the triangles indicate which shortcut applies. 4. Now, using both their prior and newly learned knowledge, we can show students how to use a two-column proof to prove triangles congruent. There is an example proof for your reference in the attachment, Two Column Proof.

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