

## OVERLAPPING TRIANGLES – CONGRUENCE

### Contributed by:

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INTELLIGENT BEHAVIOR EMPHASIZED: Persistence

    X     Directly Taught      Practiced

CONTENT OBJECTIVE: The learner will apply the triangle congruence theorems to prove angles and segments congruent in overlapping triangles.

TIMEFRAME: This lesson could be taught in two 90-minute blocks or three to four traditional periods.

### TEACHER STRATEGIES

### STUDENT ACTIVITIES

<p>Explain and model the intelligent behavior framework (attached ) in order to help students develop an understanding of persistence. Monitor student groups Ask students to elaborate and clarify if necessary and then summarize</p>	<p>In groups of 3 or 4 students work through the intelligent behavior framework. When ready they display the results of their thinking on chart paper and explain it to the total class.</p>
<p>Hand out copies of overlapping figures from Math Ties Book A1. Tell students to practice the attributes of persistence as they work.</p>	<p>Think-Pair-Share Students work independently first. After approximately 20 minutes they pair. Finally, they share with the entire class.</p>
<p>Students complete Metacognitive Strategy. Ask for volunteers to share.</p>	<p>Students complete the Metacognitive Strategy (attached). Students share their metacognition.</p>
<p>Review the triangle congruence theorems previously taught by soliciting them from students.</p>	<p>Students respond to teacher’s question.</p>

<p>Explain that now we will use these theorems to prove angles and segments of overlapping triangles congruent.</p> <p>Using questioning techniques lead students to make connections between the persistence and overlapping figures exercises to what we are about to do.</p> <p>Model an example.</p> <p>Put another problem on the overhead.</p> <p>Ask for volunteers to share.</p>	<p>Students listen, take notes, and respond questions.</p> <p>Students work in pairs to solve the problem.</p> <p>Students share.</p>
Clarify and elaborate as necessary	
Ask: What attributes of persistence did you find yourself or your partner using?	Students respond.
Assign problems for completion. Monitor, question, and encourage.	Students work alone or in pairs.
Metacognition: Use the Metacognitive Strategy to close and assess the lesson.	Metacognition: Students complete and share the Metacognitive Strategy.

**RESOURCES/MATERIALS:**

Metacognitive Strategy and Overlapping Figures exercise adapted from Critical Thinking Books & Software, Math Ties Book A1.

Habits of Mind Framework adapted from Dr. Art Costa workshops.

Content Examples and Problems taken from University of Chicago School Mathematics Project Geometry.