

Strategy Scenario #3  
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Using Metacognition in Math

Strategy: Metacognition

Content: Using metacognition in math to understand Algebra

Title: Modeling Math

Number of Participants: 21

Target Audience: High School

Goal of Activity: To increase higher order thinking skills in Algebra

Learning Outcomes:

Gagne's Learning Outcomes- Cognitive Strategies

Bloom's Taxonomy- Knowledge and Comprehension

Learner Characteristics: The learners are high school students.

Entry Skills: PreAlgebra

Setting: Classroom

Media: Chalkboard and chalk

Process:

1. The teacher will introduce a new Algebra concept by writing a problem on the board.
2. As a group the class will apply prior knowledge to solve the problem.
3. The class will discuss several ways to solve the problem
- 4 Out loud the class (guided by the teacher) will solve the problem.
- 5 the students will discuss why the problem was not solved properly.
- 6 the class will "rethink" their approach to solving the problem.
7. Continue to use metacognitive processes, i.e., thinking out loud, self-regulation and

planning until problem is solved.

Strategy Assessment: Using metacognition in mathematics can help student's understand the development of mathematical thinking. Metacognition will allow students to see that mathematics is not formal, but that it derives from discovery.

#### REFERENCES:

Schoenfeld, A.H. (1987) What's All the fuss about metacognition? *Cognitive science and mathematics education* (pp. 189-215). Hillsdale, NJ: Lawrence Erlbaum Associates