

*Thinking
strategies
to enhance skills
of analysis,
creativity,
and problem
solving.*

BOOKSHELF FOR THE CLASSROOM

Brief Description of the Lesson: Students work in pairs or small groups to create a new bookshelf for the classroom. The model must be made of the shortest, continuous piece of 3 cm wide paper that can be folded and taped. The bookshelf has no back, with each shelf 4 cm from the next, and one shelf touches the floor.

Pre-assessment/Prior Knowledge:

- Students have indicated a basic understanding of the Decisions and Outcomes strategy through the introductory lesson (p. 41).

SOL/POS Objective:

Math PSA 4

Develop and apply operations and strategies to solve a wide variety of routine and non-routine problems.

Math PSA 5.8

Solve problems by working collaboratively with peers; entertain others' points of view.

Instructional Strategy:

Generating and Testing Hypothesis- Students hypothesize to design and create a model of a functional bookshelf for the classroom.

Materials: Pencil, eraser, ruler, white paper, large drawing paper (or large construction paper), heavy paper for the final model, scissors, tape and/or glue

Enduring Understanding:

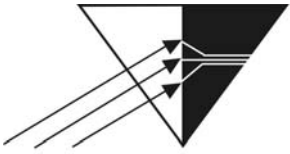
- There are many different ways to view and interpret the world.
- Personal experiences may impact one's perspective.
- An individual's perspective may affect his/her actions.
- Asking questions and listening is the key to understanding others.

Introduction/Essential Questions:

- How do individual perspectives help or hinder the problem solving process?
- How do differing perspectives cause conflicts?
- How can those conflicts be resolved?

Teach and Explore Strategy:

- Discuss the bookshelf and its requirements with the class. Tell the students that they will have to experiment with the pattern, design and shape of the bookshelf.
- Ask students to draw their pattern of the bookshelf on a rectangle with a width of 3cm and then construct the bookshelf using tape or glue.



DECISIONS
&
OUTCOMES

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- When students have a design and pattern that will work, have them transfer their pattern to heavy paper and construct the model of the bookshelf. Students should have a pattern on the rectangle and a heavy paper model when completed.

Assessment Evidence:

- Teacher observations
- Completed products and sharing
- Student discussions

Metacognition:

- How do perspective and thinking about your decisions and outcomes synergistically support each other?
- How do decisions and outcomes produce more or less than I expected?

Extensions:

- Design and construct a bookshelf with 5 shelves.