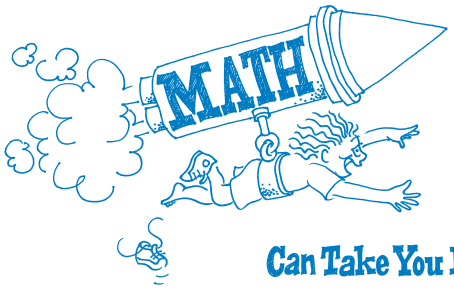

Professional Development Series

Series I
Using Manipulatives

The *Math Can Take You Places* "Using Manipulatives" training is designed to be approximately one hour long. The length can vary according to time constraints and participation.

To begin and end the session, use your own icebreaker/introductory/conclusion activity or choose one from the *Math Can Take You Places* Icebreaker/Introductory/Conclusion Ideas list. You may also want to begin the sessions by sharing an overview of the *Math Can Take You Places* curriculum toolkit.

▶ Materials

- Post-it® notes (3 inch x 3 inch)
- Two sheets of chart paper
- Markers
- Note cards
- A copy of the Using Manipulatives "Video Focus Questions" handout for each participant
- A copy of the Using Manipulatives "Walk-About" handout for each participant
- A copy of the Using Manipulatives "Creative Uses for Everyday Objects" handout for each participant
- *Math Can Take You Places* Professional Development Series "Using Manipulatives" video

Optional

- PDF slideshow "Using Manipulatives in the Mathemathics Classroom"
- Prize for the winner of the "Walk-About" activity if you choose to do the game option
- Actual everyday materials for the participants to see and touch during Group Activity 2

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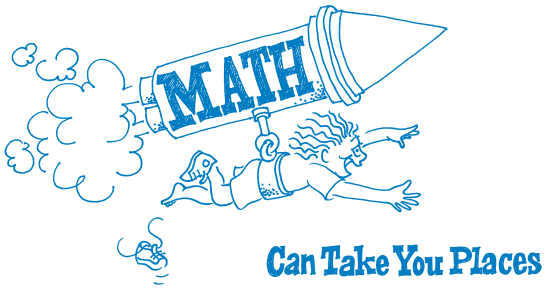


▶ Preparation

- Gather the two sheets of chart paper.
- Label one of the sheets of chart paper "Successes Using Manipulatives." Label the other sheet "Challenges Using Manipulatives."
- Make copies of the three handouts listed above.
- Collect the materials needed for the optional activities listed above if you choose.

▶ **Introductions/Icebreaker** (5-6 minutes) *Slide 2*

▶ **Session Goals** (2 minutes) *Slide 3*

- Investigate the use of manipulatives to teach mathematics.
- Provide tips for instruction/facilitation.
- Plan effective lessons incorporating manipulatives.
- Share professional expertise.

▶ **Focus Statement/Question Group Activity** (15 minutes) *Slide 4*

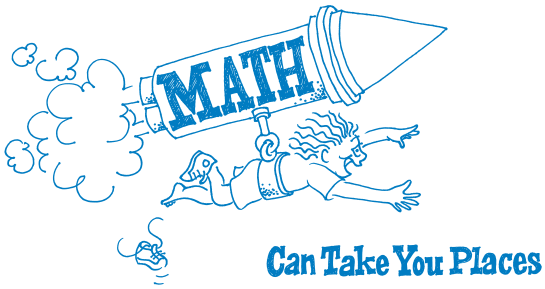
Say to the group, "*Think of a time you used manipulatives to teach a mathematics concept. What made the lesson successful? What made it challenging?*"

Ask the participants to list one idea per Post-it® note. Allow the participants to post their thoughts and review the other responses as they go. After everyone's responses are up, elaborate and discuss the most interesting thoughts if time permits.

▶ **Video Focus** (10 minutes) *Slide 5*

Give each participant the Using Manipulatives "Video Focus Questions" handout.

Say, "Listen for the following ideas presented in the video. How does the teacher prepare his students to work with manipulatives?



How does he check for effectiveness of using the manipulatives? What everyday items can you use as manipulatives to teach mathematics?
What are some classroom management tips the video discusses?"

Show the *Math Can Take You Places* Professional Development Series "Using Manipulatives" video.

Discuss ideas that come from working through the handout.

▶ **Tips for Using Manipulatives** (5 minutes) *Slide 6*

Briefly review tips for using manipulatives from the video.

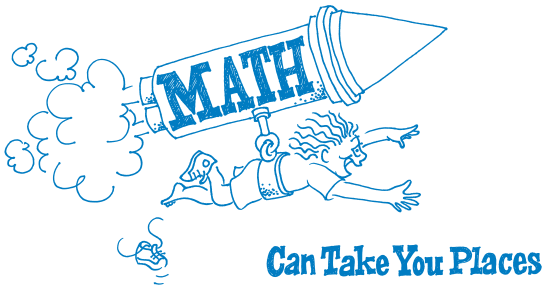
- Students should work in small groups.
- Be patient. The room may not be quiet.
- Help students to realize that math is a process.
- Work from the concrete to give students a working mental picture of concepts.

▶ **Group Activity 1 "Walk-About"** (10 minutes) *Slide 7*

1. Give each participant the "Using Manipulatives Walk-About" handout.
2. Each participant will work to complete their own grid by circulating within the large group, asking the other participants to offer a new tip or implementation strategy for working with manipulatives using the questions on the grid as a guide. Ask participants to have the person who offered the new tip write his or her initials in the square. (Optional: Turn this activity into a game by offering a prize for the person who has all of his or her squares initialed first.)
3. Ask for volunteers to share the most useful tip they received.

▶ **Group Activity 2 "Creative Uses for Everyday Objects"** (10 minutes) *Slide 8*

1. Give each participant the "Using Manipulatives Creative Uses for Everyday Objects" handout.
2. Ask participants to work in pairs or small groups of 3 to 5 to come up with creative ways to use the objects listed in



the mathematics classroom. Have them discuss how each object would be useful for a particular math topic and how the students would use the object.

3. Allow the groups to discuss other objects that they have used that were not listed on the handout. Ask for volunteers to share their favorite creative math-related use for an everyday object.

▶ **Closure** (5 minutes) *Slide 9*

Give each person a note card.

Say, "*Without listing your name on the card, respond to the following questions.*
What new information did you learn today?
What questions or concerns about using manipulatives do you have?"

Collect the cards. Shuffle them and pull out a few to share aloud. Discuss possible solutions to the questions as a group.

▶ **Evaluation** (Optional)