Learning Objectives

Students will

1) Learn different methods for solving mathematical problems.
2) Discover different ways to organize and analyze information.
3) Learn about probability and chance.
4) Understand how geometric shapes can be manipulated to fit a certain area.
5) Understand percentages, fractions, and mental math.

Anticipatory Set

Before watching the video and completing the following activities, ask students if they have ever built anything, tried to assemble a toy, or even put together a puzzle. Challenge students to think about how they use math in these situations.

Suggested Enrichment Activities

1) **Comparison Chart.** Ask students to imagine that the PTA has donated money for a new piece of playground equipment. Working in small groups, students should come up with different ideas for the piece of equipment they would like to purchase. Have students make a chart comparing the different pieces of equipment, coming up with their own parameters for comparison. Once each group makes their decision, have them present it to the class. You can further analyze by making a class comparison chart using the "winners" from each group.
2) **Using Graphs.** The kids in the video used bar graphs to help determine reasons that kids were not coming to the skate park. Ask your students to make a bar graph to analyze something important to them (you can get them started with brainstorming ideas for their bar graph). Next, explain to students that a graph can also show how things change. If the kids in the video had wanted to, they could have made a line graph showing when people stopped coming to their skate park. Have your students brainstorm information that they could record using a line graph.

Assessment Activities

Students will have watched the program before completing the following activities. Skills needed for these math applications: using percentages, fractions, scale, and probability as they relate to examples in the video.

1) **Practicing percentages.** In the video, Miguel and Divina use mental math to figure out percentages. You can help students make the leap to mental math by giving them a hands-on experience with percentages. Have each student cut out a large circle of construction paper and decorate it as either a pizza, a pie, or a cookie. Next, ask students to fold their pie in half, then in half again, and once again. Then cut the circle apart on the folded lines. Have students assemble their circles as "whole". Challenge students to serve 50% of their circle, 25% of their circle, etc. Practice slicing and serving different parts of the circles as a class or with a partner.
2) **Scale and Patterns.** Explain to students that sometimes it is not possible to move large objects around to see how they will fit, so you make them on a smaller scale and experiment. Ask students to measure your classroom, major pieces of furniture, and the desks. Have students draw the classroom and cut out scale size models of all moveable furniture. Ask students to experiment with "rearranging" the classroom. Discuss as a class – is there a better layout? What works, what doesn't?
3) **Probability.** Working in pairs, have students experiment with probability. First, have students flip a coin, record on paper how many times they flip "heads" and how many times they flip "tails". Next have students draw straws several times – how often does each student get the short straw? Next have students draw names out of a hat (they can make up names, or use numbers) – how often does the same person's name get picked? Does it make a difference if you put the name back into the hat before you draw again? Have students record all of their information and discuss as a class.

Concept Terms

The following terms are not all used within the program, but are concepts covered within the context of the problems and solutions.

These terms are identified for the teacher's use.

List	Table	Chart	Percentage
Scale	Pattern	Measure	Area
Probability	Chance	Mental Math	Compare
Estimate	Fraction	Addition	Graph

Additional Resources

National Council of Teachers of Mathematics
www.nctm.org