Lesson Plans: Math

Measuring
Grade Level: 3-4
Activity Type: Math
Activity Size: Small

Objective:
The students will identify equivalents among 1 cup, 1/2 cup and 1/4 cup.
The students will identify objects that represent 1 cup, 1/2 cup and 1/4 cup.

Description:
Measurement

Rationale:
Reinforce the different ways that servings of various foods are measured. The measurements differ and present a challenge as the students learn what equals 1 serving. They will also learn how to add servings to reach their goal of eating 5 fruits and vegetables each day.
This activity will help students to relate everyday objects to these specific amounts, and will give them hands on activity with fractions.
Serving sizes are important in calculating the amounts of fruits and vegetables that add up to a serving.
1 serving can be any of these.
3/4 cup of 100% juice
1 cup of leafy greens, such as lettuce, spinach, collards, kale
1/2 cup canned or cooked vegetables such as peas or corn
1/2 cup canned fruit, such as pineapple chunks
1/4 cup dried fruit, such as raisins

Materials:
1, 1/2, and 1/4 cup measuring cups for each group.
Various foods to measure -- check with your food service director
For 100% juice -- water (or juice)
For leafy greens -- any green leaves (outer lettuce leaves)
For dried fruit -- use raisins
For canned fruit -- any canned fruit chunks (pineapple)
For cooked vegetable -- shredded carrots, canned peas
Everyday objects representing the amounts of 1, 1/2, and 1/4 cups (see activity)

Introduction:
1. Show students different size measuring cups (1 cup, 1/2 cup, and 1/4 cup), and the foods they will be measuring.
2. Determine which foods should be placed into which measuring cup to make 1 serving. For instance.
Use the 1 cup to measure 1 serving of leafy greens
Use the 1/4 cup to measure 1 serving of dried fruit -- raisins
Use the 1/2 cup to show 1 serving of a canned fruit or cooked vegetable
Use a 1 cup liquid measuring cup to measure 3/4 cup juice (or water)
3. Fill each measuring cup with the appropriate fruit or vegetable.
4. Discuss with students the fact that fruits and vegetables, do not take the shape of the container, but juice (a liquid) does.

5. Show everyday objects representing 1 cup, 1/2 cup, and 1/4 cup to which students can relate. (Small box of raisins, milk carton from
cafeteria, small juice glass that holds 6 oz.)

Group Activity:
Give each group measuring cups of 1 cup, 1/2 cup, and 1/4 cup. Have the students answer the following questions by testing equivalents using raisins, water, or material in the classroom, such as aquarium gravel, or any other appropriate material.
1. How many 1/2 cups = 1 cup? _____
2. How many 1/4 cups = 1 cup? _____
3. How many 1/4 cups = 1/2 cup? _____
4. How many 1 cups = 2 cups? _____
5. How many 1/4 cups = 2 cups? _____
6. How many 1/2 cups = 2 1/2 cups? _____
7. How much is a handful of raisins? _____
8. If a handful of raisins is one serving, how many servings would 2 handfuls be? _____

Individual Activity:
Have a contest to see who can bring in objects closest to 1 cup, 1/2 cup, and 1/4 cup. (Nothing breakable)!

Related Activities:
Follow this activity with making the Fruit and Juice Breakfast Shake from the Kids Cookbook. This recipe requires measurements of 3/4 cup,1/2 cup and 1 banana. Have the students determine how much of each ingredient will be needed for this activity and have kids bring the ingredients. Ask the food service director to help with the mixing -- do this activity in the school cafeteria.
Have the food service director at school arrange for a juice snack where kids measure 1 serving of juice for themselves. This could be done at tables; have students measure and serve their classmates. To make 1 serving, students could use a measuring cup to measure the appropriate amount, then pour that amount into a juice glass or even a water glass to see how much of the glass is filled. (Drinking a large water glass of 100% juice would be more than 1 serving, how many servings would it be?)
Extend equivalents to include teaspoons and tablespoons, cups, pints, quarts, ounces, pounds, etc.
Have the class participate in setting up a salad bar.
Invite the school's food service staff to give a demonstration using different techniques of measurement.

Students' Reactions: