

Math Cure (based on the book *Math Cure*)

(GPN#131 / PBS#1301)

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Program Description: When LeVar helps a friend with a rather disorganized packaging business, he demonstrates that mathematics is a part of many routine tasks and uses his problem solving skills to operate the business more efficiently.

Math Concepts:

- estimation
- time
- sorting
- classification
- measurement
- size relationships
- problem solving
- counting
- graphing
- spatial relationships
- patterns
- fractions

• **Estimation.** Obtain a supply of styrofoam packing peanuts and some boxes or other containers in various shapes and sizes (e.g., oatmeal box, cereal box, aluminum foil box, saltines box, margarine tub, etc.). Have students first estimate the number of peanuts that will fill each container (posing such questions as, “Which container will hold more peanuts—the cereal box or the oatmeal box?”) and then count to determine the accuracy of their estimates.

• **Understanding spatial relationships and reproducing a pattern.** Have students use manila drawing paper that is pre-marked with one-inch squares to create a “tile” picture. Make available construction paper in a variety of colors cut into one-inch squares. Instruct students to reproduce their picture from the squared paper onto another piece of paper using the construction paper squares. Once they have their picture in place, have them glue the squares to the background and display their creations.

- **Making a graph.** Make a birthday pictograph that shows the birthday, by month, of everyone in the class. List the names of the months down the left side of a large sheet of paper. Give each student one of the cake patterns on the reproducible page to cut out and color (or glue their photocopied school picture to). Have each student write her/his name and birth date on the cake and glue it next to the appropriate month. Use the graph data to create math problems, such as “Which month has the most birthdays?” and “Which months have the same number of birthdays?”

- **Creative problem solving.** Place a common object in a box that is not the same shape (if possible) or size. Have students ask math-related questions to determine what the object is. For example, they might ask, “Is the shape round?”, “Is it as long as our math book?”, or “Is it smaller than a lunch box?” Let students take turns putting different objects in the box and have others guess. Pre-determine the number of questions that can be asked before the person holding the box finally reveals the object.

- **Alternative units of measurement.** Divide the students into small groups and have each group search the classroom for items that could serve as units of measurement, such as crayons, pencils, chalk/marker board erasers, paper clips, paper cut into strips, and many other items. Encourage students to be creative in their choices. Then have each group devise two measurement tasks (e.g., the width of the classroom door in paper clips or the distance across the room in math books, etc.) and complete them, first by estimating and then by actually calculating the number of items. (Some of their calculations will require problem solving.) After the groups have finished their problems, have them set up measurement stations containing the items their group used and a sign stating the two tasks. In the days following, have groups visit the different stations and do the tasks.

- **Fractions and measurement through cooking.** Make a fruit pizza with students, using the recipe below. Before cooking, cut out several construction paper circles that are the same size as the pizza pan. Cut some of the circles in eight equal slices and leave the others whole. Give each student a paper slice and display the whole circles on the board. In order to determine how many fruit pizzas the class will need to make so that everyone has a slice (including the teacher), have each student attach a slice to the whole circle. In the case of a fractional pizza, discuss the practicality of the different options (e.g., make one pizza smaller, make a full-sized pizza and share the extra pieces with other school personnel, etc.). When cooking with students, stress the importance of accurate measurement of ingredients, baking time, and temperature.

Fruit Pizza

Mix these ingredients well:

½ cup shortening, part butter

¾ cup sugar

1 egg

Add the following:

1 ½ cups flour

½ tsp baking soda

1 tsp. cream of tartar

dash of salt

Mix all ingredients and pat down into a greased pizza pan. Bake at 400° for 12 minutes until light brown.

Mix together:

8 oz. softened cream cheese

½ cup sugar

1-2 tbsp. fruit juice or water

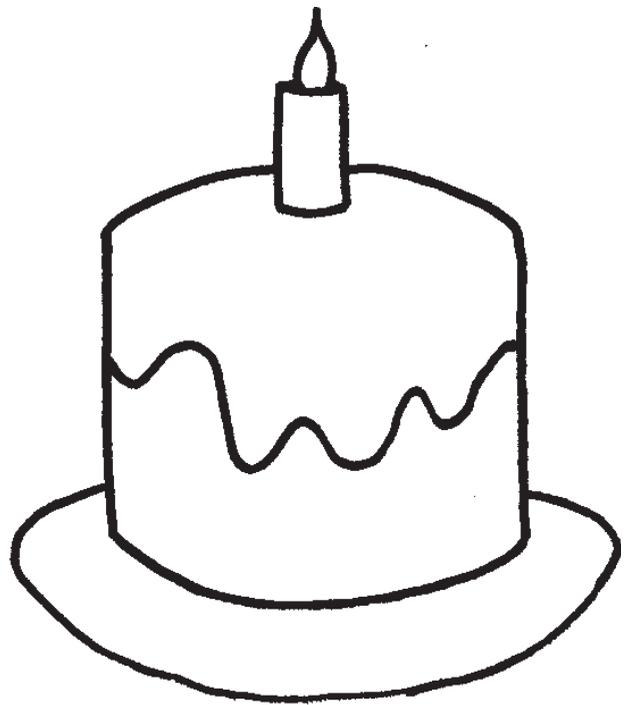
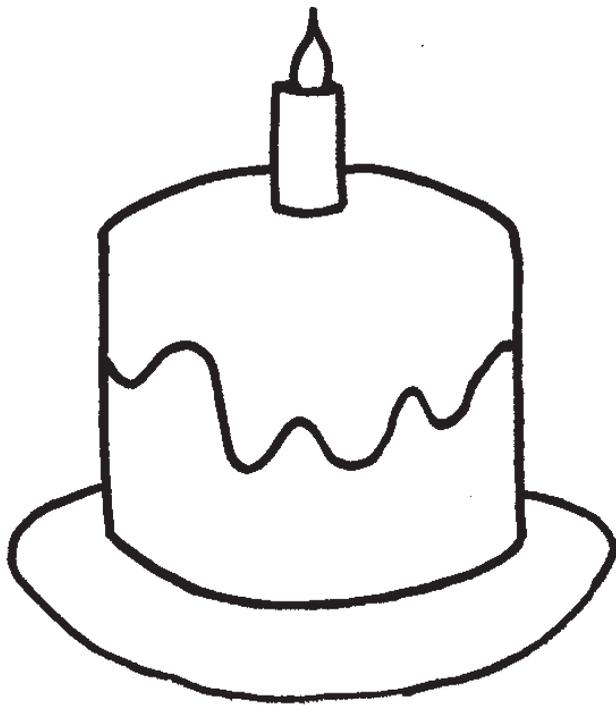
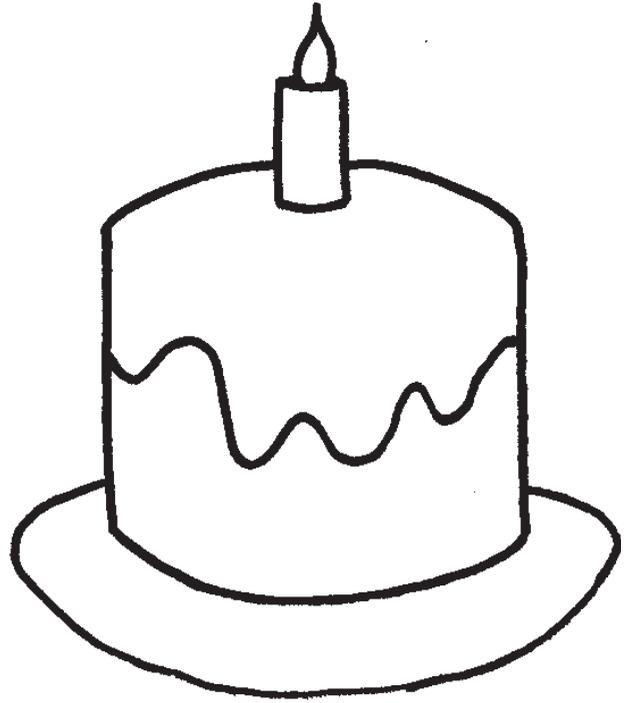
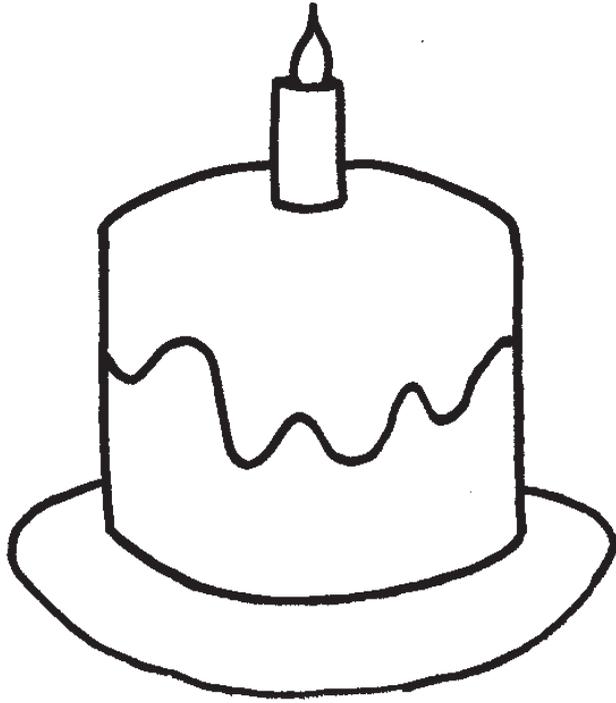
Frost the pizza with cream cheese mixture then decorate with fruit toppings, such as strawberries, pineapple, mandarin oranges, bananas, kiwi, grapes, etc.

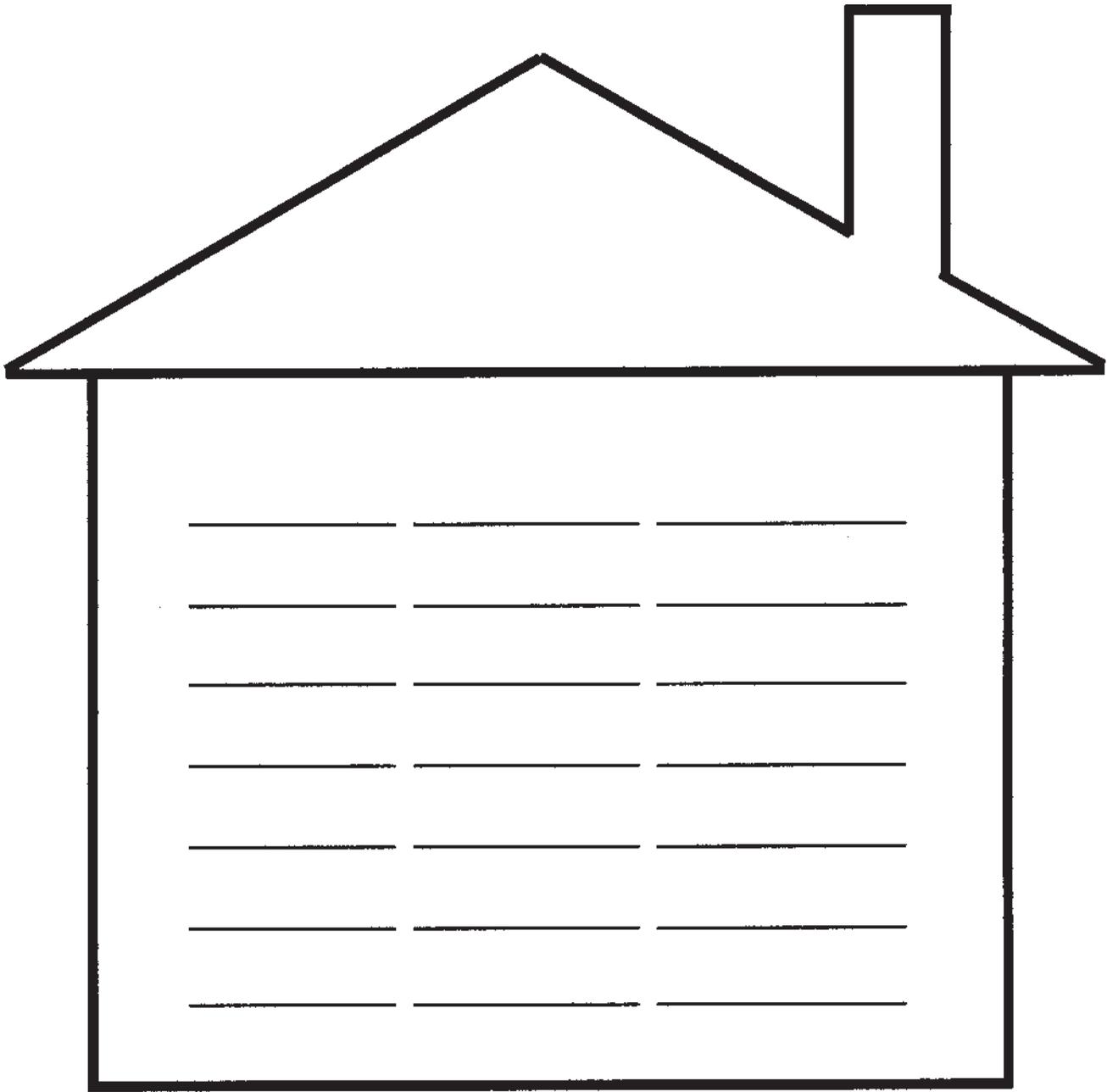
Calculating. Obtain a copy of the book, *Math Curse*, and do some of the math suggested. For example, calculate how many fingers, ears, and tongues there are in the classroom. Also, have students figure out how many days old they are and how many M & Ms tall they are (if an M & M is one centimeter). Invite students to think of additional math problems.

Do-At-Home Activity

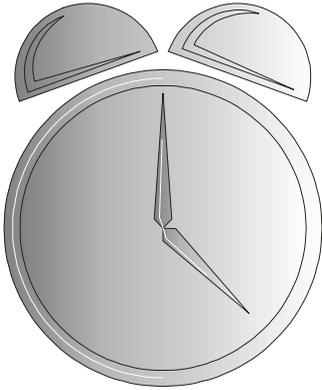
- **Math is everywhere!** Send home the around-the-house reproducible sheet and invite families to look for examples of math inside and outside their homes. Discuss possibilities with students ahead of time. The resulting list, for example, could be quite lengthy and include such items as clocks, timers, calendars, window panes, the house/apartment (or mailbox) number, measuring cups, clothing and shoe sizes, calculators, and many more. Have students return their sheets to school and display them on a "Math Is Everywhere" bulletin board that the class has decorated with magazine and catalog picture cutouts of math-related items.

- **Time.** The little girl in *Math Curse* calculated how long it took her to get ready for school. Have students, with the assistance of their family members, use the "Time for School" reproducible sheet to figure out how long they need to get ready for school. Have them return the sheets to school and compare the figures.





Time for School!



Directions: Please help me time myself getting ready for school.
(Add anything else that I do to this list.)

I get up at _____.

It takes me _____ minutes to get dressed.

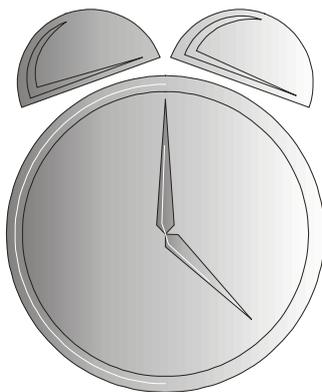
It takes me _____ minutes to eat my breakfast.

It takes me _____ minutes to brush my teeth and comb my hair.

It takes me _____ minutes to gather what I need for school (my backpack, my lunch, my homework, my gym shoes, my library book, and my smile!)

I leave home at _____.

Time for School!



Directions: Please help me time myself getting ready for school.
(Add anything else that I do to this list.)

I get up at _____.

It takes me _____ minutes to get dressed.

It takes me _____ minutes to eat my breakfast.

It takes me _____ minutes to brush my teeth and comb my hair.

It takes me _____ minutes to gather what I need for school (my backpack, my lunch, my homework, my gym shoes, my library book, and my smile!)

I leave home at _____.