

LETTER HOME

Using Patterns

Dear Family Member:

Your child will look for patterns in data and use these patterns to make predictions in a variety of ways. To prepare for later work with algebra, students will write rules for these patterns. Two experiments will set the stage for much of the unit's work. During the *Volume vs. Number* lab, students will use patterns to predict the volume of a given number of marbles. During the *Sandwich Mass* lab, students will use graphs and tables to predict the number of bites it takes to eat a sandwich.

As an extension of the volume investigation, students will also look at patterns represented in tables to convert one unit of measure to another, for example, milliliters to liters or inches to feet.

Students write rules for number patterns created by "function machines." Your child will use machines such as the "doubler" to predict what happens when a number is entered into the machine. For example, the "doubler" will multiply a number by two ($2 \times N$).

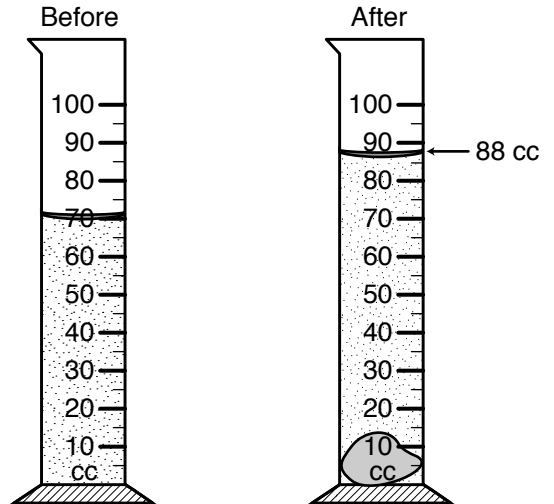
To help your child at home:

Measure Volume. Ask your child to explain the pictures. The picture on the left shows a graduated cylinder with water in it. The picture on the right shows the same graduated cylinder after a lump of clay has been added. Why is the water level higher in the picture on the right? What is the volume of the clay?

Compare Units. Encourage your child to explore units used to measure volume. For example, find the number of cups in a gallon by filling a measuring cup with water and using it to fill an empty gallon container.

Send a Sandwich. Please have your child bring a sandwich to school when we begin the *Sandwich Mass* lab.

Play Guess My Rule. One player is the Function Machine and chooses a rule but does not share the rule with the other players. The other players, the Guessers, try to guess the rule by giving an input. The Function Machine player responds with a corresponding output. This is repeated until the Guessers figure out the rule for the Function Machine. Directions are in Unit 5 Lesson 6 in the *Student Guide*.



Students learn about measuring volume with graduated cylinders.



Guesser

If the input is 4...

Input	Output
3	6
4	8
5	10
100	200
n	$n \times 2$

...the output is 8.



Function Machine

What is the rule? (Multiply the input number by 2.)

Sincerely,