

**HOME LINK**  
**10•1**

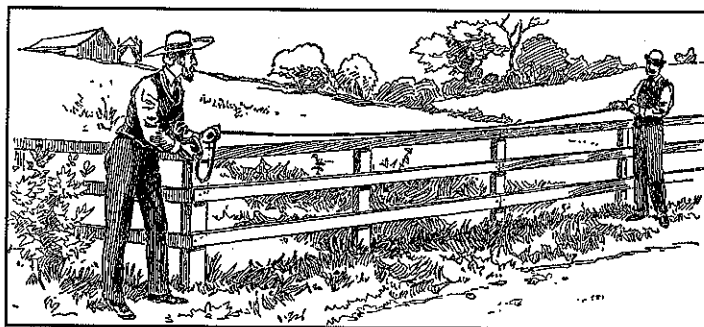
# Old-Fashioned Equivalencies

**Family Note**

Here is a page from a third-grade math book published in 1897. These are the kinds of measurement problems children were expected to do more than 100 years ago. The rod is a unit that is not often used today. It was used to measure land.

*Please return this Home Link to school tomorrow.*

Solve the problems yourself. Write your answers on the "slate."



$$12 \text{ inches (in.)} = 1 \text{ foot (ft.)}$$

$$3 \text{ feet} = 1 \text{ yard (yd.)}$$

$$16\frac{1}{2} \text{ feet} = 1 \text{ rod (rd.)}$$

$$5\frac{1}{2} \text{ yards} = 1 \text{ rod}$$

$$320 \text{ rods} = 1 \text{ mile (mi.)}$$

- How many inches are there in 5 ft.? in 8 ft.?
- How many yards are there in 27 ft.? in 36 ft.?  
in 51 ft.?
- How many feet are there in 2 rd.? in 2 yd.?  
in 4 yd.?
- How many rods are there in 33 ft.? in 66 ft.?  
in 99 ft.?
- What part of a yard is  $1\frac{1}{2}$  ft.? What part of a  
mile is 1 rd.? 40 rd.? 80 rd.? 160 rd.?
- How many inches are there in  $7\frac{1}{2}$  ft.? in  $12\frac{2}{3}$  ft.?  
in  $9\frac{3}{4}$  ft.?

*Graded Work in Arithmetic: Third Year by S. W. Baird, 1897.*

1. \_\_\_\_\_ in.

\_\_\_\_\_ in.

2. \_\_\_\_\_ yd

\_\_\_\_\_ yd

\_\_\_\_\_ yd

3. \_\_\_\_\_ ft

\_\_\_\_\_ ft

\_\_\_\_\_ ft

4. \_\_\_\_\_ rd

\_\_\_\_\_ rd

\_\_\_\_\_ rd

5. \_\_\_\_\_ yd

\_\_\_\_\_ mi

\_\_\_\_\_ mi

\_\_\_\_\_ mi

\_\_\_\_\_ mi

6. \_\_\_\_\_ in.

\_\_\_\_\_ in.

\_\_\_\_\_ in.

**HOME LINK**  
**10•2**

# Exploring the Volume of Boxes

**Family Note**

To explore the concept of volume, our class built open boxes out of patterns like the ones in this Home Link and then filled the boxes with centimeter cubes. Your child should try to calculate the volume of the boxes he or she builds on this Home Link by imagining that it is filled with cubes. Then have your child check the results by pouring a substance from one box to the other, as described below.

*Please return this Home Link to school tomorrow.*



1. Cut out the patterns. Tape or glue each pattern to make an open box. Find boxes that have the same volume.
2. How did you figure out your answer?

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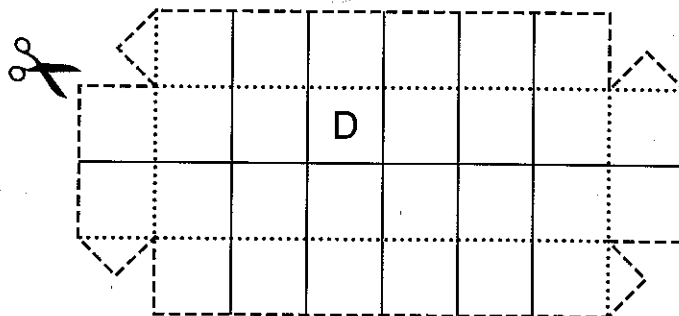
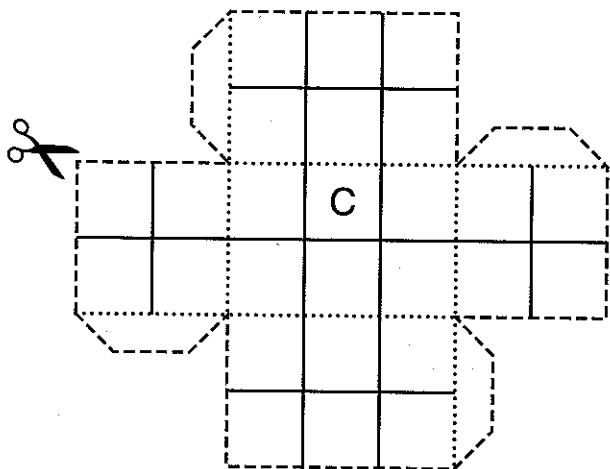
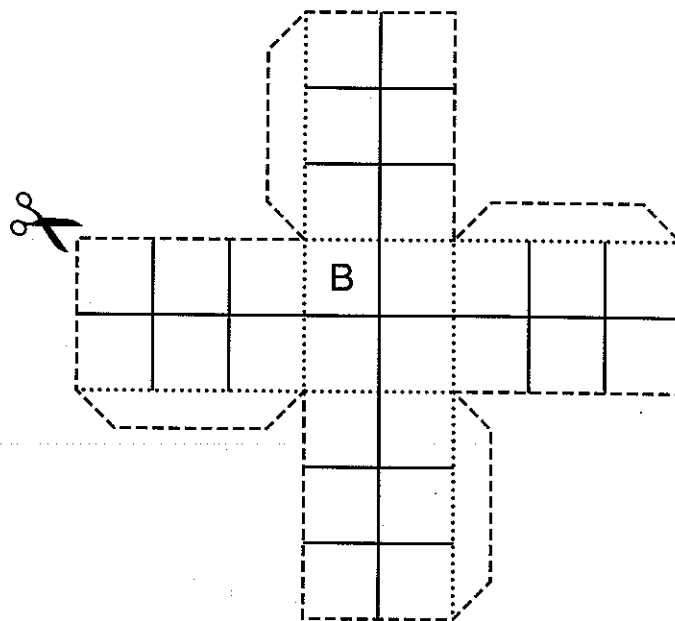
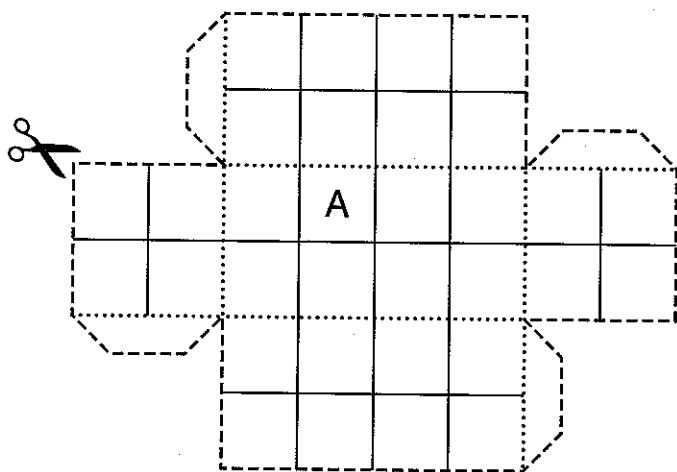
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3. Check your answer by pouring rice, dried beans, or sand into one of the boxes. Fill the box to the top and level it off with a straightedge like an index card or a ruler. Then pour it into another box. Explain how you know when the boxes have the same volume.

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**HOME LINK**  
**10•2****Exploring the Volume of Boxes** *cont.*

**HOME LINK**  
**10•3**

# The Meaning of Weight

**Family Note**

Today the children discussed weight. They examined different scales, discussed objects that might be weighed with each kind of scale, and read weights on scales.

*Please return this Home Link to school tomorrow.*



Which do you think weighs more: a pound of feathers or a pound of books? Explain your reason.

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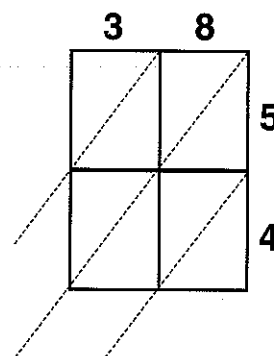
**Practice**

Solve each problem using the partial products and lattice algorithms.

1. partial products:

$$\begin{array}{r} 38 \\ \times 54 \\ \hline \end{array}$$

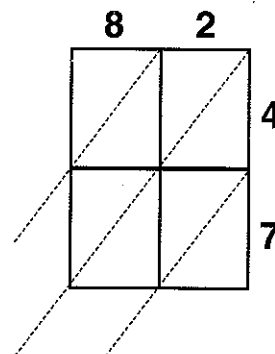
lattice:



2. partial products:

$$\begin{array}{r} 82 \\ \times 47 \\ \hline \end{array}$$

lattice:



**HOME LINK**  
**10•4**

# Collecting Food Container Labels

**Family Note**

Today our class measured the weight and volume of several objects. We tried to decide whether an object that weighs more than another object always has the greater volume. Ask your child, "Which takes up more space, a pound of popped popcorn or a pound of marbles?"

Help your child practice multiplication facts by playing the game *Multiplication Top-It*. Directions for the game are below.

*Please send the collected food labels to school tomorrow.*



- A.** Ask someone at home to help you find food containers showing nutritional information. For example, you might look on canned goods, cereal boxes, bags of cookies, or bottles of cooking oil. Bring the labels or empty containers to school. Be sure they are clean.
- B.** Play a game of *Multiplication Top-It* with 1 or 2 people at home. *Multiplication Top-It* is similar to the card game *War*.

**Directions**

- 1.** Remove the face cards from a regular deck of cards. The aces are the 1-cards.
- 2.** Shuffle the cards. Place the deck facedown on a table.
- 3.** Each player turns over two cards and calls out the product of the numbers. The player with the higher product wins the round and takes all the cards.
- 4.** In case of a tie, each player turns over two more cards and calls out the product. The player with the higher product then takes all the cards from both plays.
- 5.** Play ends when not enough cards are left for both players to turn over two cards. The player with more cards wins.

**Example** Colleen turns over a 6 and a 2. She calls out 12.  
Danny turns over a 10 and a 4. He calls out 40.  
Danny has the higher product. He takes all 4 cards.

**HOME LINK**  
**10•5****Matching Units of Measure****Family Note**

Today our class explored units of capacity—cups, pints, quarts, gallons, milliliters, and liters. For the list below, your child should choose an appropriate unit for measuring each item. Some of the items refer to capacity, but units of length, weight, area, and volume are also included. Do not expect your child to know all of the units. Remind your child that *square units* refer to area measurement and *cubic units* to volume measurement.

Please return this Home Link to school tomorrow.



Fill in the oval to mark the unit best used to measure each object.

|           | <b>Object</b>               | <b>Units</b>                      |  |                                    |
|-----------|-----------------------------|-----------------------------------|--|------------------------------------|
| <b>1.</b> | height of a chair           | <input type="radio"/> mile        | <input type="radio"/> inch             | <input type="radio"/> pound        |
| <b>2.</b> | weight of a penny           | <input type="radio"/> pound       | <input type="radio"/> inch             | <input type="radio"/> gram         |
| <b>3.</b> | area of a football field    | <input type="radio"/> square inch | <input type="radio"/> square yard      | <input type="radio"/> cubic meter  |
| <b>4.</b> | perimeter of your journal   | <input type="radio"/> kilometer   | <input type="radio"/> gallon           | <input type="radio"/> centimeter   |
| <b>5.</b> | diameter of a dinner plate  | <input type="radio"/> foot        | <input type="radio"/> cubic centimeter | <input type="radio"/> inch         |
| <b>6.</b> | amount of juice in a carton | <input type="radio"/> meter       | <input type="radio"/> quart            | <input type="radio"/> square liter |

**7.** About how much water could you drink in 1 day?

☐ 1 cup

☐ 1 milliliter

☐ 1 liter

☐ 1 gallon
**Practice**

Solve.

**8.**  $\begin{array}{r} 35 \\ \times 4 \\ \hline \end{array}$

**9.**  $\begin{array}{r} 62 \\ \times 3 \\ \hline \end{array}$

**10.**  $\begin{array}{r} 27 \\ \times 32 \\ \hline \end{array}$

**HOME LINK**  
**10•6****Mean, or Average, Number of Fish****Family Note**

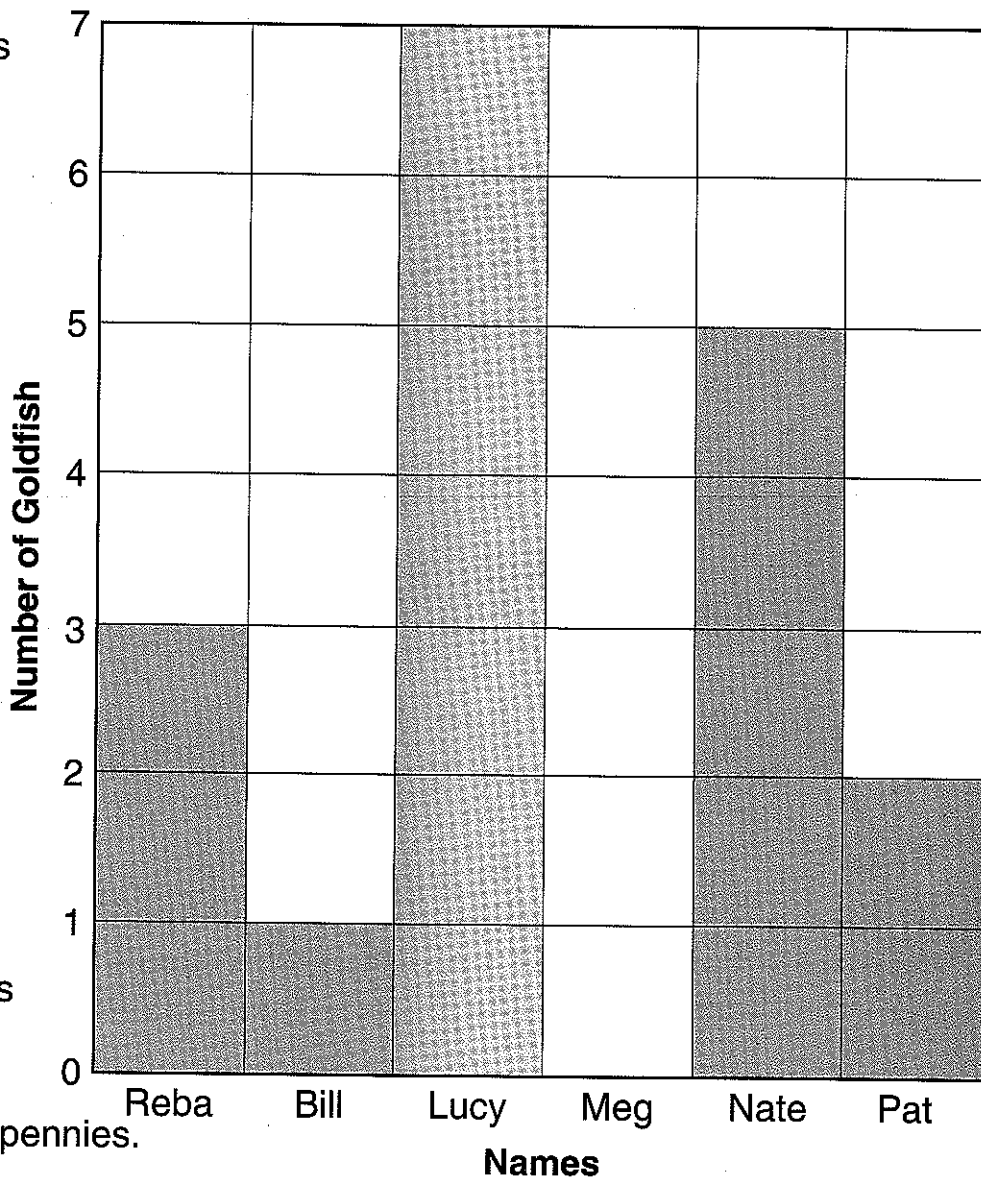
Many of us learned that to find the mean (average) of a set of numbers, we add all the numbers and then divide the total by how many numbers we added. In today's lesson, the class tried a different method of finding the mean. After your child has completed the page, ask him or her to explain how this method works. In the next lesson, we will introduce finding the mean by adding the numbers and dividing to find the answer.

*Please return this Home Link to school tomorrow.*



The table below lists how many goldfish each child won at the school fun fair.

| Name | Number of Goldfish |
|------|--------------------|
| Reba | 3                  |
| Bill | 1                  |
| Lucy | 7                  |
| Meg  | 0                  |
| Nate | 5                  |
| Pat  | 2                  |



- Put a penny over each shaded square in the bar graph.
- Move the pennies so that each column has the same number of pennies.
- Draw a horizontal line across your graph to show the height of the pennies when all of the columns are the same height.
- The mean (average) number of goldfish won by children at the fun fair is \_\_\_\_\_.

# Finding the Mean

**Family Note**

The median and mean (average) indicate typical values in a set of data. The median is the middle value when the data numbers are listed in order. The mean (average) is found by the process described below. Your child may use a calculator to solve the problems. (In third grade, we ignore any digits to the right of the tenths place.)

*Please return this Home Link to school tomorrow.*

**To find the mean (average):**

1. Find the sum of the data numbers.
2. Count the data numbers.
3. Use a calculator to divide the sum by the number of data numbers.
4. Drop any digits after tenths.

**Example:**

**Basketball Scores:** 80, 85, 76

1.  $80 + 85 + 76 = 241$
2. There are 3 scores.
3.  $241 \div 3 = 80.333333...$
4. Mean: 80.3

**Baseball Home Run Leaders**

|      |                              |    |
|------|------------------------------|----|
| 1998 | Mark McGwire                 | 70 |
| 1999 | Mark McGwire                 | 65 |
| 2000 | Sammy Sosa                   | 50 |
| 2001 | Barry Bonds                  | 73 |
| 2002 | Alex Rodriguez               | 57 |
| 2003 | Jim Thome,<br>Alex Rodriguez | 47 |

1. Mean number of home runs: \_\_\_\_\_

**Baseball Home Run Leaders**

|      |               |    |
|------|---------------|----|
| 1901 | Sam Crawford  | 16 |
| 1902 | Socks Seybold | 16 |
| 1903 | Buck Freeman  | 13 |
| 1904 | Harry Davis   | 10 |
| 1905 | Fred Odwell   | 9  |

2. Mean number of home runs: \_\_\_\_\_

Source: *World Almanac*, 2004

3. List some data for people in your home—for example, their ages, shoe sizes, or heights. Find the median and mean of the data.

Kind of data \_\_\_\_\_

Data \_\_\_\_\_

Median: \_\_\_\_\_ Mean: \_\_\_\_\_



**HOME LINK**  
**10•8**

# Fact Triangles

**Family Note**

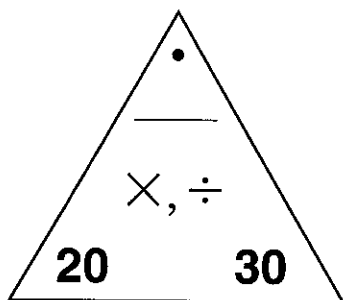
In today's lesson, we learned about the memory keys on our calculators. If you have a calculator, ask your child to show you how to store a number in the calculator's memory. If your calculator is different from the ones we use in class, you might need to help your child figure out how to use it.

In this Home Link, your child is reviewing fact extensions.

*Please return this Home Link to school tomorrow.*

Fill in the missing number in each Fact Triangle. Then write the number families for the three numbers in the Fact Triangle.

1.



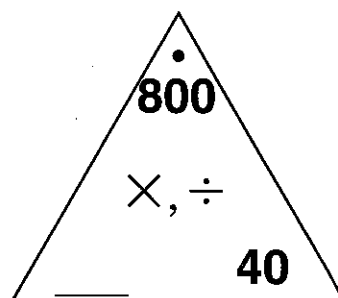

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2.



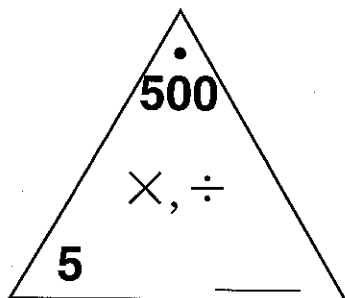

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3.



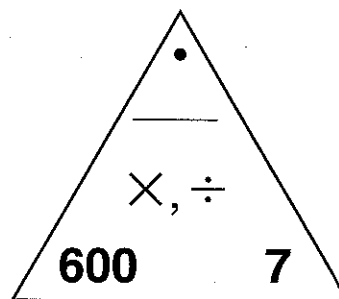

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4.




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# A Frequency Table

**Family Note**

Today we learned how to organize data in a frequency table. For today's Home Link, help your child count the number of electrical outlets in at least 8 different rooms. It would be best if the rooms were all in the same kind of building—for example, rooms in a house or apartment; rooms in the local library; or rooms in a school.

*Please return this Home Link to school tomorrow.*



1. Make a frequency table for the number of electrical outlets in at least 8 different rooms.

**Number of Electrical Outlets**

| Room | Frequency |        |
|------|-----------|--------|
|      | Tallies   | Number |
|      |           |        |
|      |           |        |
|      |           |        |
|      |           |        |
|      |           |        |
|      |           |        |
|      |           |        |
|      |           |        |

2. What is the *median* (middle) number of outlets? \_\_\_\_\_
3. What is the *mean* (average) number of outlets?  
(You may use a calculator to calculate the answer.  
Drop any digits to the right of the tenths place.) \_\_\_\_\_
4. What is the *mode* of the data in the table?  
(*Reminder:* The mode is the number that occurs  
most often in a set of data.) \_\_\_\_\_

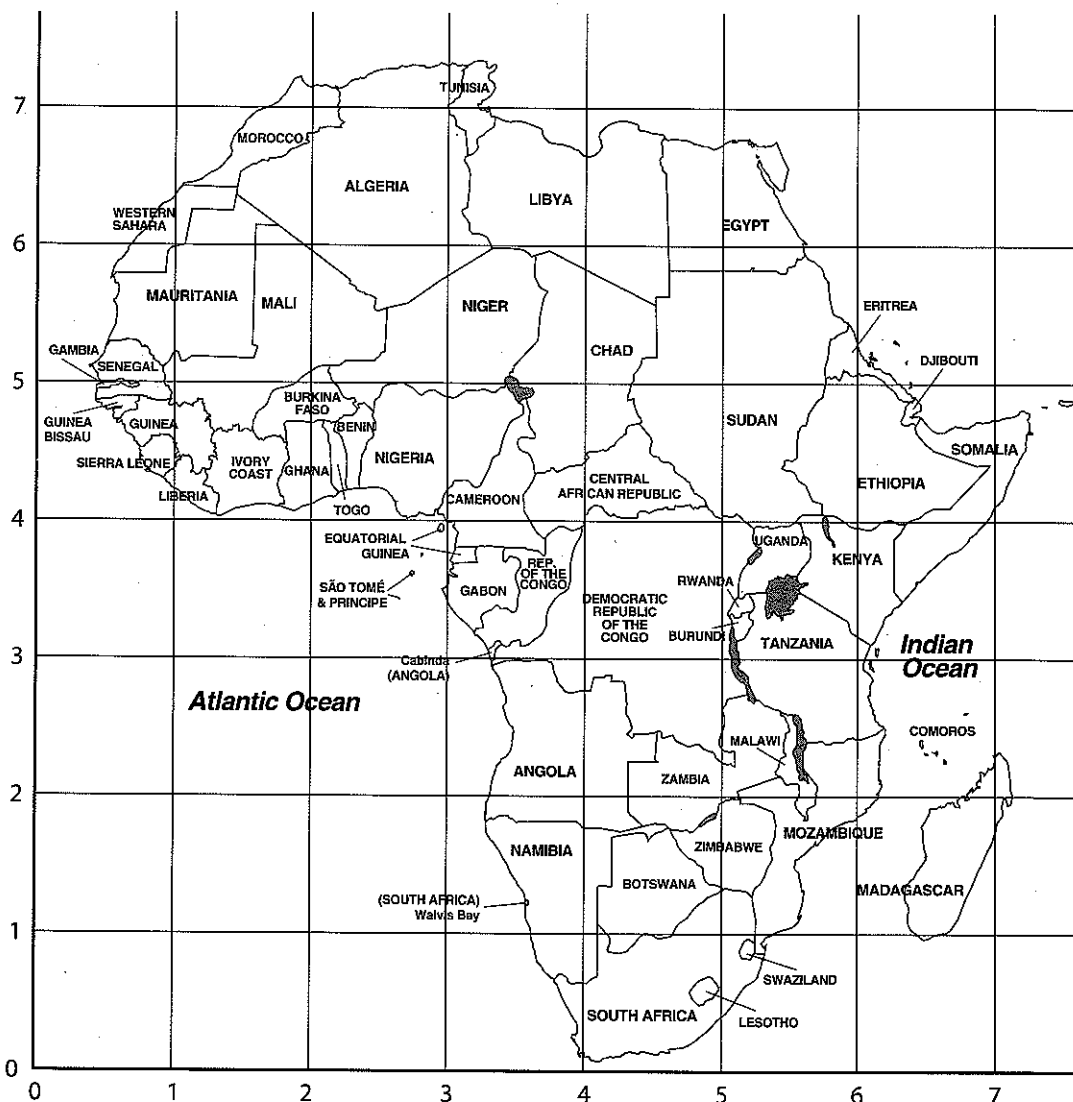
**HOME LINK**  
**10•10**

# Locating Points on a Map



**Family Note** In an ordered pair, such as (3,6), the first number indicates how far the point is to the right (or left) of 0. The second number indicates how far it is above (or below) 0.

*Please return this Home Link to school tomorrow.*



Here is a map of Africa. Write the name of the country in which each point is located.

1. (3,6) \_\_\_\_\_ 2. (6,3) \_\_\_\_\_ 3. (5,5) \_\_\_\_\_

4. (4,5) \_\_\_\_\_ 5. (5,6) \_\_\_\_\_ 6. (4,6) \_\_\_\_\_