

ENRICHMENT MATH WORK
GOLD PAGES
FOR THOSE STUDENT WHO SEEK A
CHALLENGE

Name _____

Enrichment

1-1

Changing Places

Look at the chart. Something has happened to the *place value* of each starting number. Write the part that is missing in each row. Use the sample to help you.

Mental Math

Enrichment 1-1

	Starting Number	Change Place	Ending Number
1.	1,426	2 tens <i>less</i>	1,406
2.	73,458	3 thousands <i>more</i>	
3.		5 ones <i>less</i>	496,350
4.	91,858		91,758
5.	8,537	6 tens <i>more</i>	
6.		4 hundred thousands <i>more</i>	754,311
7.	172,618		102,618
8.	342		9,342
9.		1 ten <i>less</i>	254,008
10.	121,021	11 tens <i>more</i>	
11.	594,637	1 ten thousand <i>more</i>	
12.		3 thousands <i>less</i>	723,432
13.	99,999		100,009

Name _____

Enrichment

2-7

Flying High

Number Sense

	Atlanta					
Boston	946	Boston				
Chicago	606	867	Chicago			
Dallas	721	1,555	796	Dallas		
Denver	1,208	1,767	901	654	Denver	
Detroit	505	632	235	982	1,135	

Use the air distance chart above to write a number sentence for each problem. Then solve.

1. How many more miles does it take to get from Denver to Atlanta than to get from Detroit to Atlanta and Chicago to Atlanta combined?

2. Jorge flew from Dallas to Detroit, from Detroit to Denver, and from Denver back to Dallas. How many miles did Jorge fly altogether?

3. Maria flew from her home city of Boston to Atlanta, back home to Boston, and then back to Atlanta. How many miles did she fly altogether?

4. How many more miles is it to fly round-trip between Dallas and Boston than between Denver and Chicago?

Enrichment 2-7

Name _____

Enrichment

3-1

Hurray Array!

Visual Thinking

You can demonstrate multiplication by showing objects in an array. There are two ways to set up an array with two factors.

For each array given, create a different array that shows the same factors. Then write the multiplication sentence for each picture.

Enrichment 3-1

1. $\begin{array}{cccccc} \circ & \circ & \circ & \circ & \circ & \circ \\ \circ & \circ & \circ & \circ & \circ & \circ \\ \circ & \circ & \circ & \circ & \circ & \circ \\ \circ & \circ & \circ & \circ & \circ & \circ \end{array} =$

2. $\begin{array}{cccccc} \square & \square & \square & \square & \square & \square \\ \square & \square & \square & \square & \square & \square \\ \square & \square & \square & \square & \square & \square \end{array} =$

There are at least two arrays for any product: the product $\times 1$ and $1 \times$ the product. Sometimes there are other possible arrays for a product.

3. Draw the other array for the product 25.
Write the multiplication sentence.

4. Draw the other array for the product 9.
Write the multiplication sentence.

Sometimes there are several different arrays that can be drawn for a product.

5. Draw an array for the product 28 that is not 28×1 , 1×28 , 7×4 , or 4×7 . Write the multiplication sentence for your array.

Name _____

Enrichment

4-1

Babysitting in the Neighborhood

Reasoning

Jennifer babysits for some of the families in her neighborhood. She wants to decide how she can earn the most money. She has made a chart that shows how long she usually babysits for a family and how much she is paid for her job.

Family	Hours	Amount Paid
Roberts	6	\$30
Robinsons	6	\$24
San Giacomos	8	\$40
Lings	5	\$35
Oberlins	7	\$42

Enrichment 4-1

1. Which family pays the most per hour? What is the hourly rate?

2. Which family pays the least per hour?

3. Which would pay more, 8 hours of babysitting for the Oberlins or 7 hours of babysitting for the San Giacomos?

4. On one Friday night, Jennifer is asked to babysit for two different families. The Robinsons need her for 5 hours, and the Lings want her to babysit for 4 hours. If Jennifer can only take one job and wants to make the most money, which job should she take? How much will she earn?

5. On a different Friday night, the Roberts offer Jennifer a 5-hour babysitting job with a \$4 tip, and the Robinsons offer Jennifer an 8-hour babysitting job. Which job should Jennifer take? How much more will she earn?

Name _____

Enrichment

5-1

In the Blink of an Eye

Patterns

1. You take about 4,000 steps in 12 hours. About how many steps do you take in 8 days? Fill in the table. Look for a pattern.

Time	12 h	24 h	2 days	4 days	8 days
Number of Steps					

2. About how many steps do you take in a 30-day month? Explain how you found your answer.

3. You breathe about 10 times every 30 seconds. About how many times do you breathe in 10 hours? Fill in the table. Look for a pattern.

Time	30 sec	1 min	10 min	1 h	10 h
Number of Breaths					

4. About how many times do you breathe in a day? Explain how you found your answer.

5. Your eyes blink about 150 times in 10 minutes. About how many times do you blink in 3 minutes? Fill in the table. Look for a pattern.

Time	10 min	5 min	4 min	3 min	2 min	1 min
Number of Blinks						

6. About how many times do your eyes blink every 30 seconds? Explain how the table you made can help you find the answer.

Name _____

Enrichment
7-1

The World's Greatest

1 min	=	60 sec	1 year	=	12 months
1 h	=	60 min	1 decade	=	10 years
1 month	=	28-31 days	1 century	=	100 years

Mental Math

Enrichment 7-1

World's sleepest animal

1. A koala sleeps about 20 hours each day. How many hours does it sleep in the month of June?

World's number 1 milk drinking country

2. Each person in Ireland drinks about 700 cups of milk each year. How many cups would each person drink in 5 decades?

World's fastest orbiting planet

3. Mercury orbits the sun in 88 days. The planet travels about 30 miles in 1 sec. How far does the planet travel in 1 minute?

World's busiest airport

4. Hartsfield Atlanta International Airport in Georgia has about 2,000 airplanes depart and arrive each day. How many times do planes land and take off in April?

World's coldest populated place

5. Norilsk is a small city in central Russia. The average temperature is 12.4°F. The city has 5 months without sunlight each year. How many months without sunlight occur in 1 century?

World's heaviest land mammal

6. The African elephant weighs about 14,000 pounds. It eats about 50,000 pounds of twigs, foliage, grasses, and fruit every 3 months. How many pounds of food does it eat in 1 year?

Name _____


Enrichment

8-5

Will They Reach the Top?

Begin at the bottom of each mountain and solve each division problem. **Decision Making**
If there is a remainder, the hiker stops at that problem.
If there is no remainder, the hiker keeps climbing.

1.

Ramona 

$3 \overline{)87}$


$4 \overline{)68}$

$2 \overline{)48}$

$7 \overline{)84}$

$6 \overline{)97}$

2.

Gordon 

$3 \overline{)51}$

$4 \overline{)72}$

$6 \overline{)78}$

$5 \overline{)74}$

$5 \overline{)95}$

3. Which hiker made it farther up the mountain?

Enrichment 8-5

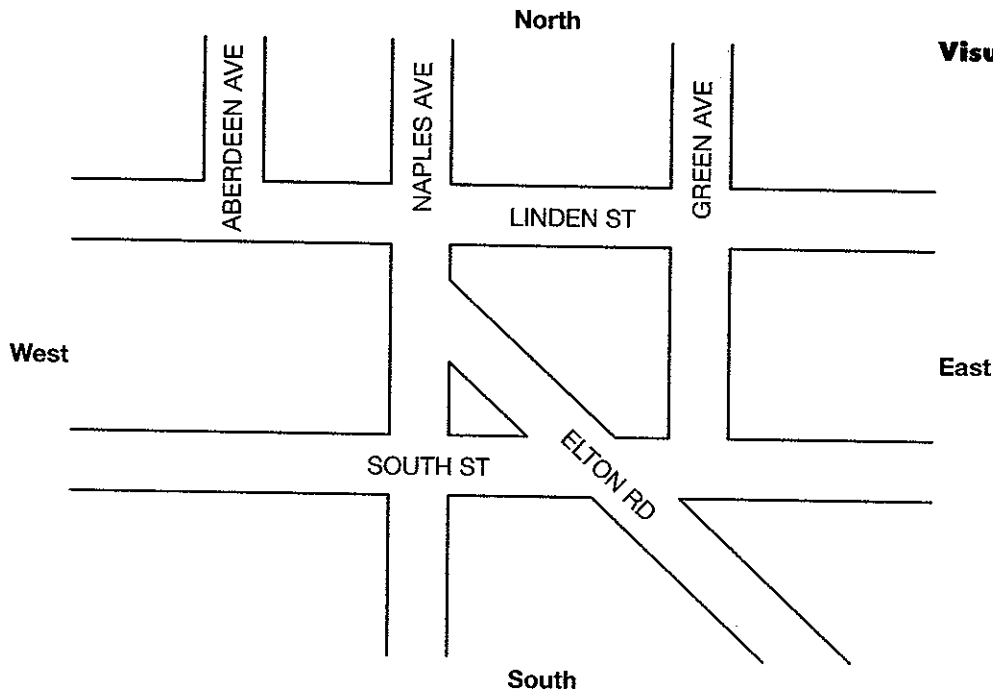
Name _____

Enrichment

9-1

Street Smarts

Visual Thinking



1. Name 2 streets that run north and south, intersect South Street, and are parallel to each other.

2. Name 2 streets that are parallel and run east and west.

3. Name a street that intersects Linden Street at a right angle and intersects no other street.

4. Name a street that intersects South Street, but NOT at a right angle.

5. Three parallel streets intersect an east-west street at right angles. Name the east-west street.

Enrichment 9-1

Name _____

Enrichment
10-4

Playing the Part

Visual Thinking

1. You have 6 tiles. $\frac{2}{6}$ of the tiles are rectangles. The rest of the tiles are triangles. Draw a design using the tiles.
2. You have 10 tiles. $\frac{4}{10}$ of the tiles are rectangles. The rest of the tiles are triangles. Draw a design using the tiles.
3. You have 10 triangular tiles. Use $\frac{8}{10}$ of them to draw a design.

Enrichment 10-4

Students in Jeremy's class are working on 20 projects for the Science Fair.

4. $\frac{1}{5}$ of the projects are about plants. How many are about plants?

5. $\frac{1}{4}$ of the projects are about animals. How many are about animals?

Use the table at the right for Exercises 6 through 8.

6. What fraction of the train cars are tankers? What fraction are flatcars and boxcars altogether?

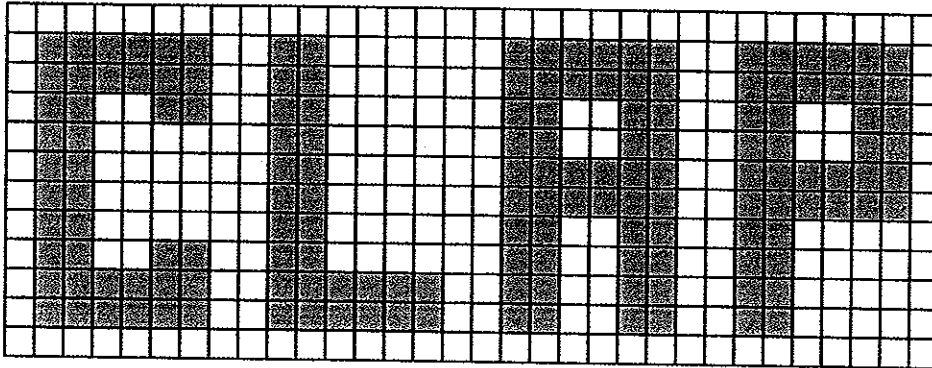
Train Cars	
Number	Cars
7	Flatcar
1	Engine
7	Tanker
9	Boxcar

7. One fourth of the cars are red. How many cars are red?

8. What fraction would represent all the cars in the train?

Applause

Visual Thinking

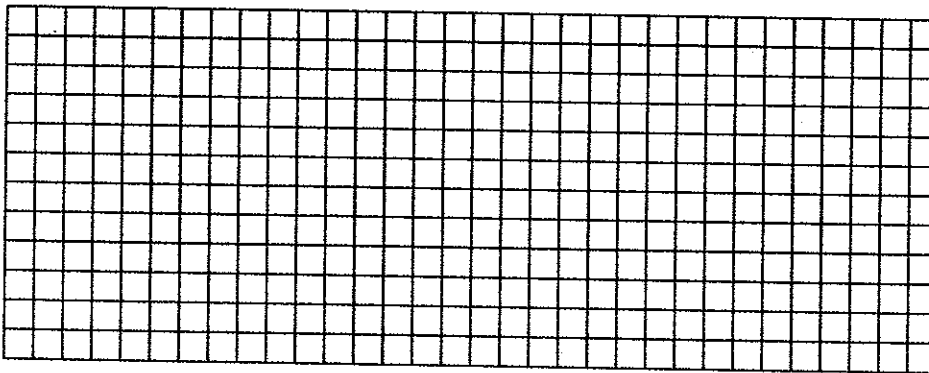


Enrichment 14-3

1. Complete the table below by writing the perimeters and areas of the block letters. (Hint: You can break the areas into smaller parts.)

Letter	Perimeter	Area
C		
L		
A		
P		

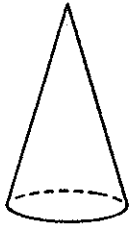
2. Draw your initials in block letters on the grid below and find the perimeter and area of each letter.



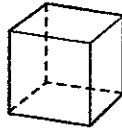
It's Just Solid Fun

Algebra

Enrichment 15-1



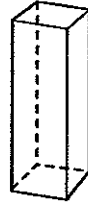
Cone



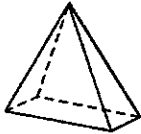
Cube



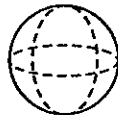
Cylinder



Rectangular prism



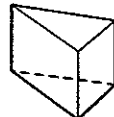
Rectangular pyramid



Sphere



Square pyramid



Triangular prism

Write an equation for each exercise. Use f for the number of faces, e for the number of edges, and v for the number of vertices.

1. In a cube, how does the number of faces compare to the number of edges?
2. What is the relationship of the number of edges and the number of vertices in a cube?
3. Compare the number of faces in a cube to the number of vertices in a cube.
4. In a triangular prism, what is the relationship between the number of faces and the number of edges?
5. What equation could you write to compare the number of faces to the number of vertices in a rectangular pyramid?
6. In a triangular prism, how does the number of faces compare to the number of vertices?
7. What is the relationship between the number of faces in a rectangular pyramid and the number of edges?

Name _____

Enrichment

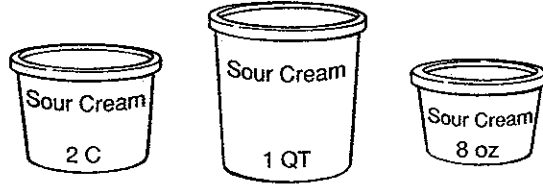
16-2

Can You Substitute?

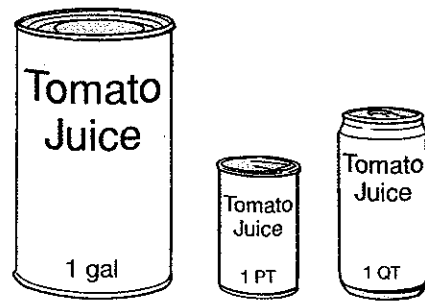
Janice is at the grocery store buying items to do her cooking for the week.

Reasoning

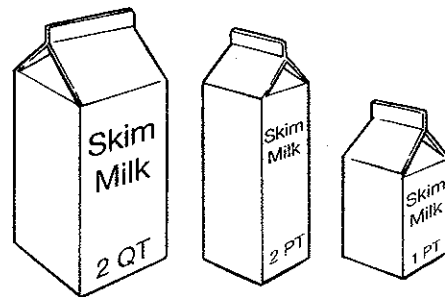
1. Janice needs 1 pt of sour cream. Which container should she buy, and how many of them does she need to purchase?



2. Janice needs 16 oz of tomato juice. Which container should she buy, and how many of them does she need to purchase?



3. Janice needs 4 c of skim milk. Which container should she buy, and how many of them does she need to purchase?



Enrichment 16-2

Name _____

Enrichment
17-1

State Predictions

John and Jessica are assigned to collect data for a school project. They need to find out which of 4 U.S. states the students would like to learn more about: Florida, California, Oregon, or Colorado.

Data

It is impossible to ask all of the 500 students at their school, so they decided to collect some sample data.

- John surveyed 10 students: 7 chose California and 3 chose Florida.
- Jessica surveyed 50 students: 25 chose California, 10 chose Florida, 10 chose Oregon, and 5 chose Colorado.

1. Using John's data, predict the number of students who would choose to know more about each state.

2. Using Jessica's data, predict the number of students who would choose to know more about each state.

3. Which survey do you think is a more accurate prediction of the students' choices? Why?

4. What things might influence the predictions when taking a sample?
