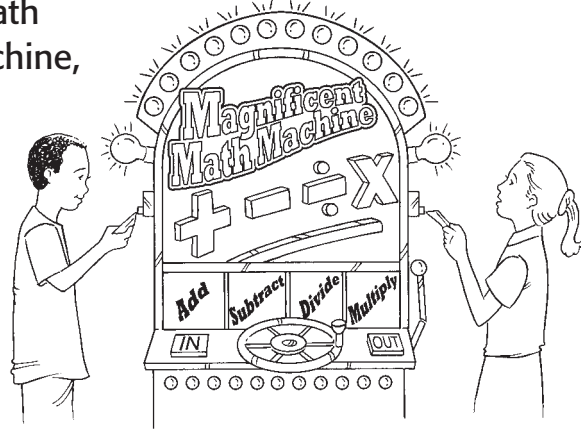


Enrich*Manny and Maxine's Magnificent Math Machine*

This is Manny and Maxine's Magnificent Math Machine. Manny puts a number in the machine, turns the crank, and then a new number comes out of the machine.

The numbers put into the machine are in the left row of the chart. The numbers that came out are in the right row.



- Write the numbers that belong in the chart's blank spaces.

- Write what you think happens to the numbers when they are in the machine.

- Tell what other pattern you see when you look from left to right at the numbers in the chart.

- Write what you think the next two sets of numbers in the chart will be.

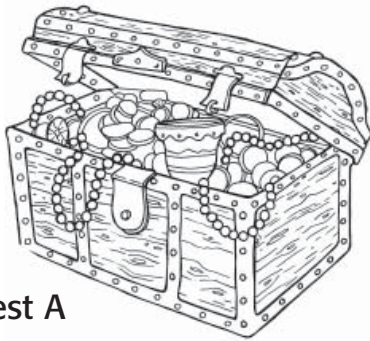
- Choose your own numbers to feed into the machine. Make a chart to show which numbers went in and which numbers came out.

Input	Output
5	10
7	12
9	14
11	16
13	
	20

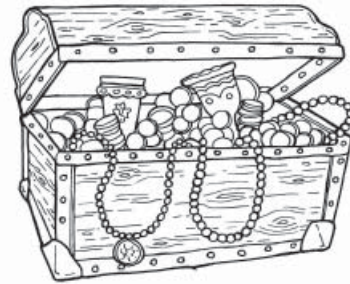
Enrich*Treasure Chests*

Each treasure chest holds a different number of gold coins. Read the clues. Write a number for how many coins each chest holds. Under each number, write the number in expanded form.

Hint: Expanded form shows the place value parts of a number that are added together to make the number. For example, 25 in expanded form is $20 + 5$.



chest A



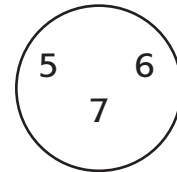
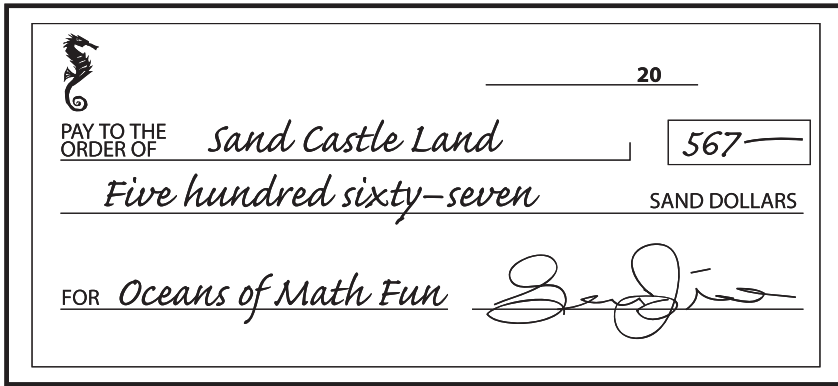
chest B

<p>1. The number of coins in chest A has two digits. Each digit is the same as the other. If you add one to this number there will be a 1 in the hundreds place. What is the number?</p> <p>_____</p> <p>_____</p>	<p>2. The number of coins in chest B has three digits. It is the greatest number you can make using these rules: The digit 5 is in the tens place. None of the other digits is a 5. None of the digits is a 9. What is the number?</p> <p>_____</p> <p>_____</p>
<p>3. The number of coins in chest A uses a 0 as a placeholder in the tens place. It is the least number you can make using these rules: There is a digit less than 5 and greater than 1 in the hundreds place. The digit in the ones place is not a 0. What is the number?</p> <p>_____</p> <p>_____</p>	<p>4. This is your treasure chest! Use three of the digits that were not used in the other chests. What is the number? Write it in words.</p> <p>_____</p> <p>_____</p> <p>_____</p>

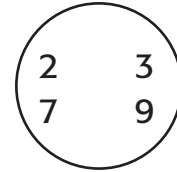
Enrich

Check It Out

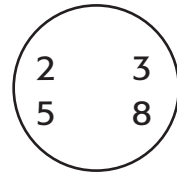
A check is a form of payment that uses digits and words. The digits in the box are the number value for the check. The words for that number are written on the line below the box.



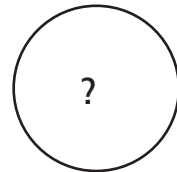
1. What is the greatest amount that you can write using the digits in the circle? What would you write in the box on the check? What would you write on the line below that?



2. Use the digits in the circle. Write a check for a four-digit number that is less than 5,000 with a 2 in the tens place.



3. A check should be written for $7,000 + 60 + 1$ dollars. Under the question mark, write the digits that belong in the circle for a check with this value. How would you fill out the box and the line below it on a check for this value?



Enrich*Make Your Own Numbers*

Use the numbers in the box below to answer the following questions about place value.

4, 1, 8, 2, 6, 7

- 1.** Write the greatest six-digit number you can with the numbers in the box. Explain your steps.

- 2.** How did you know which number to put in the hundred thousands place?

- 3.** How did you know which number to put in the ones place?

- 4.** Now write the least number you can make with these same numbers.

Enrich*Coin Questions*

Use what you know about the value of coins to solve the exercises below.

1. Tyler has 4 coins in his pocket. The value of the coins is 45¢. Two of the coins are nickels. What are the other two coins?

2. Jennifer has five coins in her pocket. Three are silver in color and two are copper-colored. The coins equal 17¢. What are the coins?

3. Will has 7 coins with the total value of 83¢. What could the coins be?

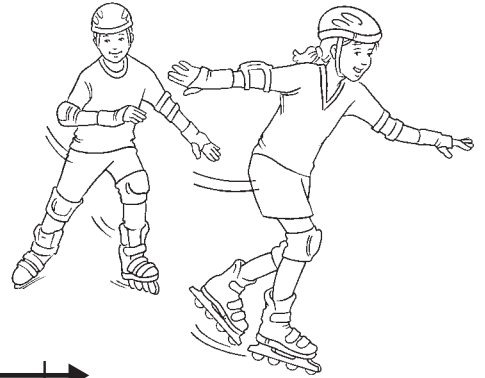
4. What is the least number of bills and coins you can use to buy a notebook that costs \$1.46? List the bills and coins.

5. What is the greatest number of coins you can use to buy a bottle of orange juice that costs \$1.01? Explain your answer.

Enrich

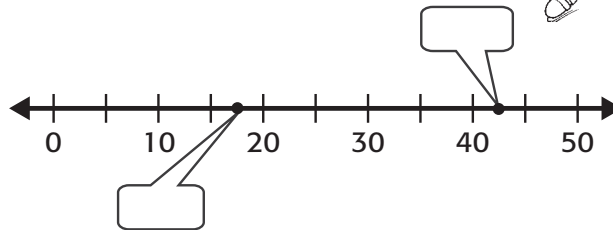
Get It in Line

Use the digits in the boxes to create numbers that fit in the blanks on the number lines. Then answer the questions.



1.

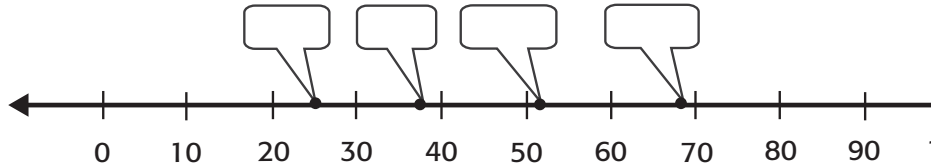
1	3
4	7



Tell which number is greater. _____

2.

2	5
6	8



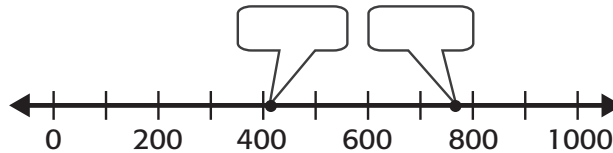
Use the digits from both boxes (Questions 1 and 2) to find the numbers on the number line. Use each digit only once. Write the numbers on the number line.

Which number is the least? _____

Use two digits from the box for each missing number.

3.

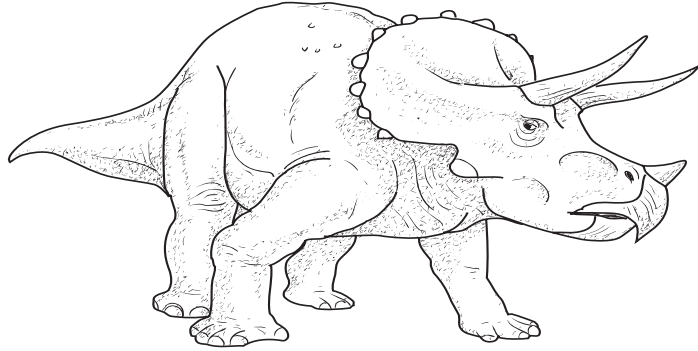
7	4
7	1



Write a sentence that tells which number is first on the number line and why.

Enrich*Dino Wonder Park*

Dino Wonder Park has models and facts about how young dinosaurs might have looked. Here is some information about a few of the dinosaur models.



<p>Tracy Triceratops Weight: 3,499 pounds Length: 84 inches Height: 24 inches</p>	<p>Desi Diplodocus Weight: 10,000 pounds Length: 270 inches Height: 66 inches</p>
<p>Iggy Iguanodon Weight: 2,501 pounds Length: 99 inches Height: 36 inches</p>	<p>Ally Allosaurus Weight: 2,000 pounds Length: 105 inches Height: 39 inches</p>

1. Show the order of the dinosaurs by weight from the one that weighs the *least* to the one that weighs the *most*.

Names _____ , _____ , _____ , _____

Weights _____ < _____ < _____ < _____

2. Jake is a visitor at the park. He is 50 inches tall. Which dinosaur youngster would be taller than Jake?

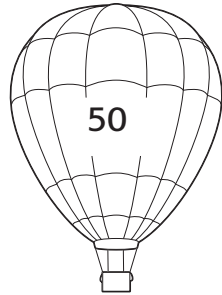
3. List the heights, including Jake's, from *greatest* to *least*.

_____ > _____ > _____ > _____ > _____

Enrich

Up or Down

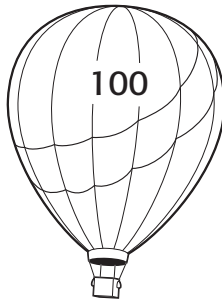
Use the digits in each box to help answer the questions.
Do not use the same digit more than once in a number.



3	4
5	6

- Write four two-digit numbers that can be rounded to the number in the balloon.

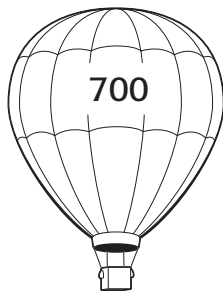
_____ , _____ , _____ , _____



0	1	3
5	7	9

- Write two two-digit numbers and one three-digit number that can be rounded to the number in the balloon.

_____ , _____ , _____



0	6
7	9

- Write six three-digit numbers that can be rounded to the number in the balloon.

_____ , _____ , _____ , _____ , _____ , _____

Enrich*Planet Puzzles*

Use the clues to help you find the diameter of the Earth. Then tell what the number is rounded to the nearest thousand.

1. Earth

- The diameter is between 5,000 and 8,000.
- 926 are the last digits in this number.
- The number is bigger than 7,000.

How many miles is it? _____

What is this number rounded to the nearest thousand? _____

Now find the diameter of other planets.

2. Mercury

- The number is between 1,000 and 4,000.
- The last two digits are 32.
- There is a zero in the hundreds place.
- The number is bigger than 2,999 but less than 3,500

What is the diameter? _____

What is the number rounded to the nearest thousand? _____

3. Mars

- When rounded this number is half of the rounded number for the Earth.
- There is a 4 in the thousands place.
- The sum of its digits is 14.
- There is a 7 in the ones place.
- The digit in the hundreds place is two less than the digit in the thousands place.






What is the diameter? _____

What is the number rounded to the nearest thousand? _____

Enrich

Making Change

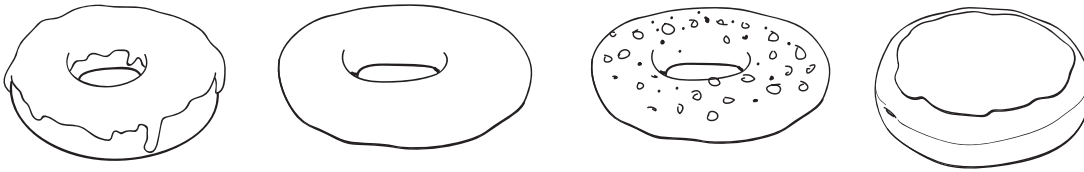
Find the value of the correct change using the fewest bills and coins. Write the number of coins and bills for each amount of change. If an area is shaded, choose a different set of coins or bills.

	Cost of Toy	You Give	Total Change					
1.	Jump Rope \$2.31	\$5.00						
2.	Bouncy Ball \$1.87	\$2.00						
3.	Soccer Ball \$7.95	\$10.00						
4.	Handheld Game \$27.93	\$30.00						
5.	Board Game \$6.45	\$10.00						
6.	Stuffed Animal \$4.14	\$5.00						

Enrich*Filling Doughnut Boxes*

Pat and Matt own a doughnut shop. They have daily specials. However, they do not always agree on the order doughnuts should go into the boxes. Here are some other things you should know:

- When the daily special has more than 13 doughnuts, they use 2 boxes.
- Pat and Matt make only 4 kinds of doughnuts: glazed, cake, blueberry, and cream.

**Follow the directions for each problem.**

1. Monday's special is 8 doughnuts. It is a combination of glazed and cake. Pat arranged the first box. First he put in 5 glazed. How many cake doughnuts did he use to fill the box? Complete the number sentence.

$$5 \text{ glazed} + \underline{\hspace{2cm}} \text{ cake} = 8 \text{ doughnuts}$$

2. Matt puts the cake doughnuts in the box first. Complete the number sentence to show what Matt does. Then tell which property you used.

$$\underline{\hspace{2cm}} \text{ cake} + \underline{\hspace{2cm}} \text{ glazed} = 8 \text{ doughnuts}$$

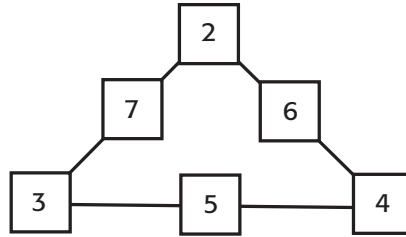
3. Friday is one of a kind day. Complete these number sentences that show how a box will be filled with either 12 glazed or 12 cake doughnuts but not both.

$$\underline{\hspace{2cm}} \text{ glazed} + \underline{\hspace{2cm}} \text{ cake} = 12 \text{ doughnuts}$$

$$\underline{\hspace{2cm}} \text{ cake} + \underline{\hspace{2cm}} \text{ glazed} = 12 \text{ doughnuts}$$

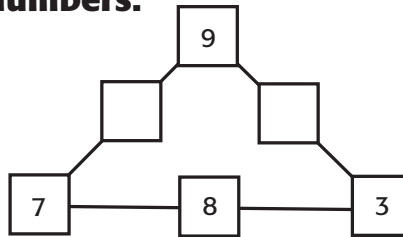
Enrich

Straight Line Sums

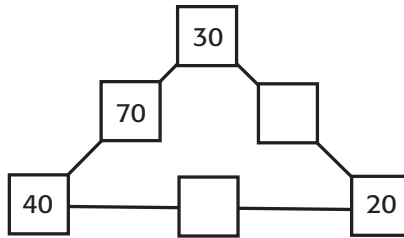


The sum of the numbers in each straight line must be the same. Find the missing numbers.

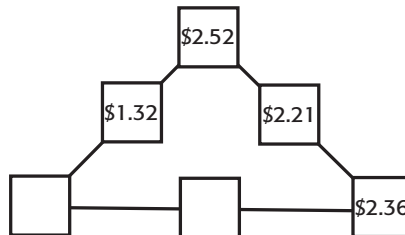
1.



2.



3.



4. Explain the strategy you used to find the missing numbers.

Enrich*About How Much?*

Ted and Jen are helping their teachers plan a field trip to space camp. The teachers want Ted and Jen to help them make estimates. Ted and Jen have different ways of estimating. Ted estimates by rounding. Jen makes front-end estimates.

1. The teachers told Ted and Jen that they think space camp will cost \$390 for the students and \$116 for the adults. About how much will all of the tickets cost rounded to the nearest hundred dollars? Write what Ted and Jen would estimate.

Whose estimate is closer to the actual cost?

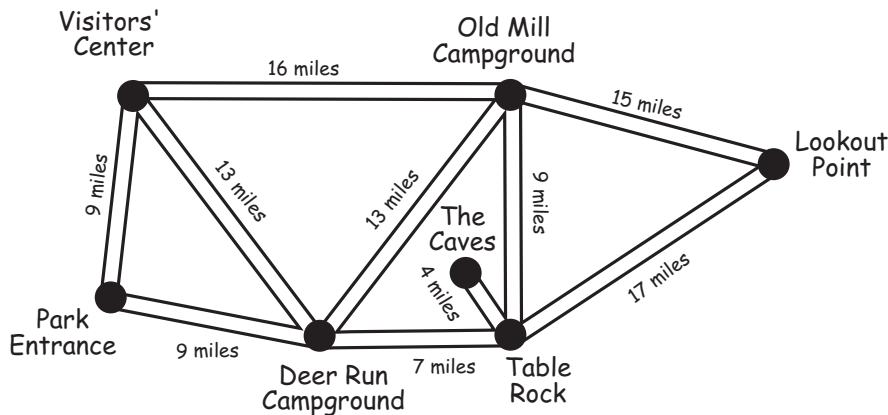
2. The students collected soda cans to recycle to help pay for the trip. One class collected 51 pounds of cans. Another class collected 32 pounds. The third class collected 43 pounds. About how many pounds of cans did the three classes collect? Write what Ted and Jen would estimate.

3. The students also sold raffle tickets to help pay for food and bus costs for the trip. Mr. Lin's class sold 215 tickets. Mrs. Rico's class sold 150 tickets. Ms. Gray's class sold 125 tickets. About how many tickets rounded to the nearest hundred did the three classes sell? Write what Ted and Jen would estimate.

4. Are Jen's estimates usually higher, lower, or the same as Ted's estimates?

Enrich*Miles of Vacation Fun*

Gene's family is visiting Greenway Park for a vacation. This map shows the places they can stop and visit. It also shows where they can camp.



- The family went to the Visitors' Center after entering the park. Then they went to Deer Run Campground by the shortest route. How many miles did they travel from the Park Entrance?

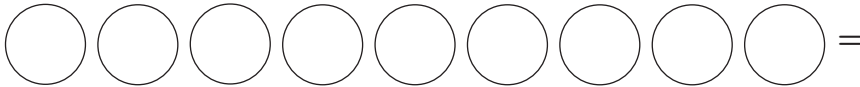
- During their second day in the park, they left the campground. Then they went to Lookout Point after stopping at Table Rock. How many miles did they travel to get to Lookout Point?

- While the family was at Lookout Point, Gene said he wanted to see The Caves before going back to the campground. If they traveled from Lookout Point to The Caves by the shortest route, how many miles did they travel?

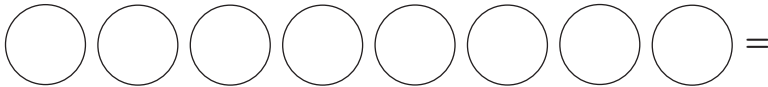
Enrich*Mystery Money*

Read the clues for each problem. Tell what each coin is worth by writing the amount on a circle. Then add the value of the coins. If the total is 99 cents or less, use a cent sign (¢). If the value is more than 99 cents, use a \$ and a decimal point. For example, if the total is 34 cents write 34¢; if the total is 134 cents, write \$1.34 for 1 dollar and 34 cents.

1. Pete collects dimes, nickels, and pennies. He has twice as many nickels as dimes. He has 4 more pennies than nickels. How much money does Pete have?



2. Misty has eight coins. One is a quarter. The rest are pennies, nickels, and dimes. She has twice as many nickels as pennies. She has twice as many pennies as quarters. How much money does she have?



3. Tyrone has six coins that total 60¢. His coin with the greatest value is a quarter. His coin with the least value is a nickel. Three of his coins have the same value. What are the values of his coins?



Enrich*Palindrome Addition*

A palindrome number is one that reads the same forward and backward. For example, 171 is a palindrome.

→ 171 171 ←

For each problem, reverse the digits of the given number. Add the reversed number to the given number. Check the sum. If it is a palindrome, circle the sum and stop. If it is not a palindrome, keep adding reversed numbers until you get a palindrome number.

Example: $75 + 57 = 132$; $132 + 231 = 363$

1. 58

2. 77

3. 497

4. What would happen if you tried to subtract rather than add numbers that were the reverse of the given numbers? Do you think you would ever get to a palindrome answer? Why?

Enrich*Stamp Collecting*

Jean, Pedro, and Betsy belong to a stamp collecting club. Club members must have at least 225 stamps to join. Jerrad is thinking about joining and is waiting for an order of new stamps to arrive. The chart shows how many stamps each club member has.

1. Find a total number of stamps for the three members. First, add Jean's and Pedro's. Then add their total to Betsy's. How many stamps do the current members have all together?

Stamp Collector	Stamps Collected
Jean	352
Pedro	496
Betsy	247
Jerrad	

Show how you would add using regrouping.

2. Betsy ordered 159 more stamps. After her order arrives, will she have more or less stamps than Jean?

3. Jerrad currently has 136 more stamps than Pedro. Write a number sentence that shows how many stamps Jerrad has now.

Which columns needed regrouping to solve the problem?

Enrich*Magic Grid Addition*

Use the Puzzle Numbers below to complete the Magic Grid. The numbers in each row and in each column must add together to equal 3,000. Use each number only once. One square in the grid is done for you. (Hint: Try using sticky notes with the numbers on them to guess and check your choices. Remember to regroup when adding.)

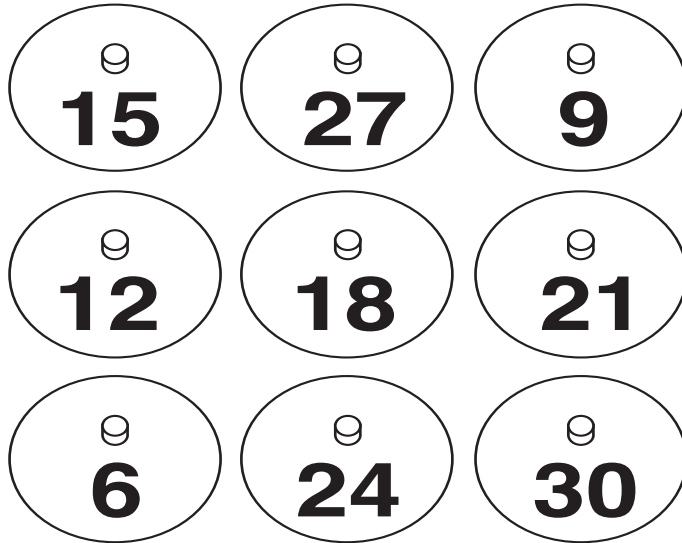
Puzzle Numbers

996, 997, 998, 999, 1,000, 1,001, 1,002, 1,003, 1,004

	1,001	

Enrich*Ring Toss*

Solve each word problem. Numbers can be ringed only once.



1. Byron threw two rings. The difference between the numbers is 12. The lesser number is 15. What is the greater number?

2. Jennifer threw two rings. The difference between the numbers is 6. The lesser number is greater than 21. What two numbers did Jennifer ring?

_____ and _____

3. Adam threw two rings. The difference between the numbers is 3. The greater number is even and less than 21. The lesser number is more than 9. What two numbers did Adam ring?

_____ and _____

4. Randi threw two bean bags. The difference between the numbers is 15. One of the numbers is not a 12, 9 or 6. What two numbers did Randi ring?

_____ and _____

Enrich*All About Bill and Jill*

Bill and Jill estimate in two different ways. Bill rounds up or down to the nearest ten, hundred, or thousand. Jill uses front-end estimation. She looks at the digit that has the highest place value in a number.

For example, Bill rounds 75 to 80 when rounding to the nearest ten. Jill rounds 75 to 70 by using the digit at the front end of the number. She rounds to the tens place, which has a 7.

Round and estimate the following numbers the way Bill and Jill would. Then complete the subtraction problems.

1. Round to the nearest **ten.**

$$\begin{array}{r} 94 - 56 \\ \downarrow \quad \downarrow \end{array}$$

Bill _____

Jill _____

2. Round to the nearest **hundred.**

$$\begin{array}{r} 374 - 294 \\ \downarrow \quad \downarrow \end{array}$$

Bill _____

Jill _____

3. Round to the nearest **ten.**

$$\begin{array}{r} 736 - 92 \\ \downarrow \quad \downarrow \end{array}$$

Bill _____

Jill _____

4. Round to the nearest **thousand.**

$$\begin{array}{r} 4,598 - 2,874 \\ \downarrow \quad \downarrow \end{array}$$

Bill _____

Jill _____

5. Round to the nearest ten, and then to the nearest hundred. In which way would Bill and Jill come up with the same answer?

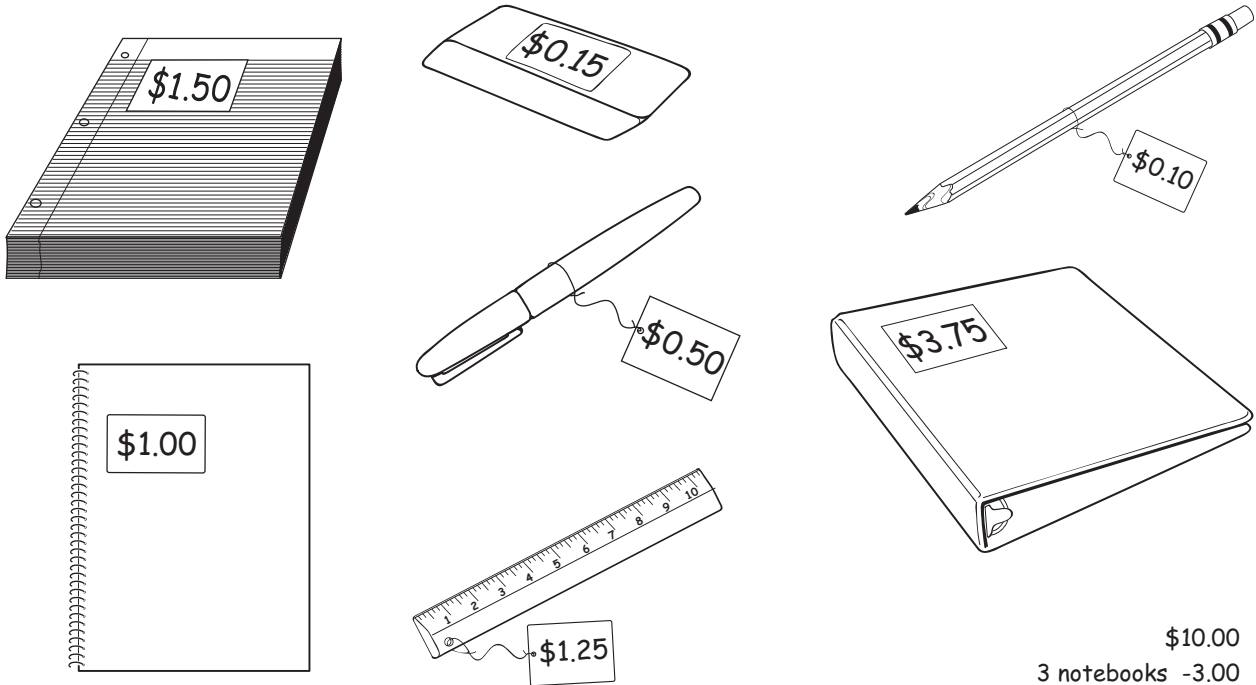
$$\begin{array}{r} 7,506 - 932 \\ \downarrow \quad \downarrow \end{array}$$

Bill _____

Jill _____

Enrich

Shopping for School Supplies



Jennifer had \$10 to buy school supplies. To keep track of what she spent, she subtracted the cost of each item as she put it in her basket. She kept subtracting prices from her total so that each time she subtracted, she got a new total. First, she put 3 spiral notebooks and 6 pencils in her basket. Then she put in an eraser and a packet of notebook paper. She then bought three more items. After shopping, she did not have any money left. What three items did she purchase?

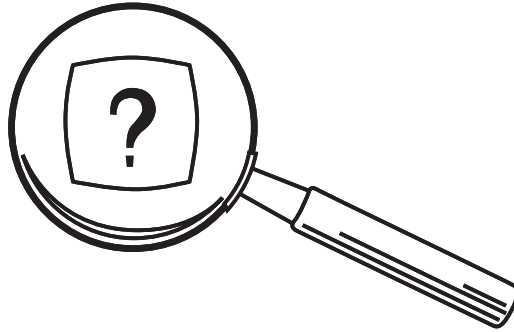
	\$10.00
3 notebooks	-3.00
	\$7.00
6 pencils	-0.60
	\$6.40
Eraser	-
	-
Notebook paper	-
	-
1. _____	-
	-
2. _____	-
	-
3. _____	-
	\$0.00

Enrich*Find the Missing Digits*

Use what you know about addition and subtraction fact families to find the missing digits. You may need to regroup.

$$\begin{array}{r} 1. \quad 4 \square 6 \\ - 28 \square \\ \hline \square 4 3 \end{array}$$

$$\begin{array}{r} 2. \quad \square 0 7 \\ - 3 \square 5 \\ \hline 29 \square \end{array}$$



3. Explain how you could solve these kinds of problems when there are digits missing.

$$\textcircled{7} + \textcircled{5} = 12 \quad \underline{\hspace{2cm}}$$

$$\textcircled{7} - \textcircled{5} = 2 \quad \underline{\hspace{2cm}}$$

Write a number inside each shape to make each number sentence true.

$$\begin{array}{l} 4. \quad \textcircled{} + \textcircled{} = 15 \\ \textcircled{} - \textcircled{} = 5 \end{array}$$

$$\begin{array}{l} 5. \quad \triangle + \textcircled{} = 17 \\ \triangle - \textcircled{} = 9 \end{array}$$

$$\begin{array}{l} 6. \quad \square + \triangle = 79 \\ \square - \triangle = 33 \end{array}$$

$$\begin{array}{l} 7. \quad \textcircled{} + \textcircled{} = 419 \\ \textcircled{} - \textcircled{} = 215 \end{array}$$

8. Why must the order of the shapes be the same when solving both the addition and subtraction problems?
- _____

Enrich*Feeding the Bears*

Brownie is a brown bear and Ben is a black bear. They are rescued bears that live at a wild animal park. Both eat a special mix of vegetables and dry dog food every day. The park starts each week with 800 pounds of food for each animal. Then it keeps track of how much Brownie and Ben eat. Use the chart to help you answer the questions. (Hint: Be sure to use regrouping when you subtract.)

Bears	Food for the Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Brownie	800 pounds	92	95	87	88	90	86	93
Ben	800 pounds	80	82	83	85	84	79	79

1. How much more food did Brownie eat than Ben ate from Sunday to Tuesday?

2. How much food did each bear have left after Saturday's feeding?

Brownie had _____

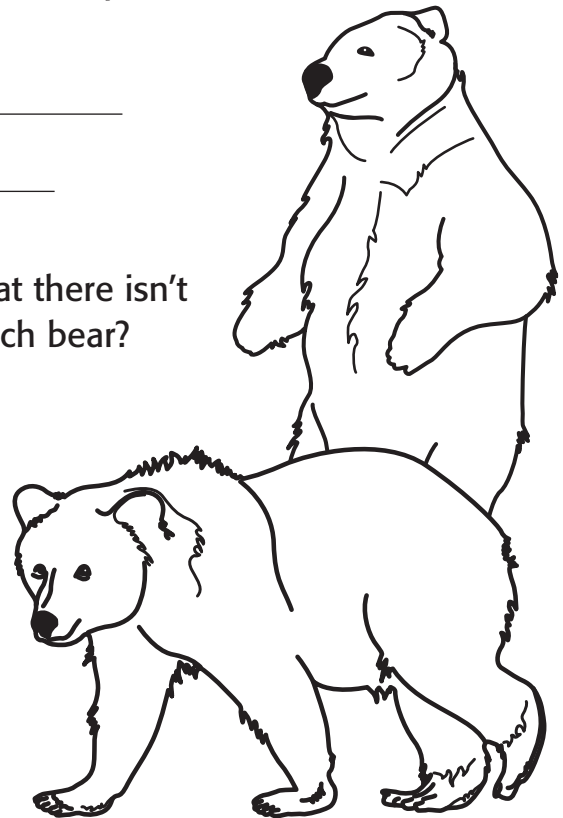
Ben had _____

3. The park wants to buy just enough food, so that there isn't any left over. How much food will it buy for each bear?

For Brownie _____ pounds

For Ben _____ pounds

4. What is the difference in the amount the two bears ate by the end of this week?



Enrich*Problem-Solving Investigation: Choose a Strategy*

There are four boys in the Branch family. The chart below shows how much money each boy earned each week for three weeks.

	Week 1	Week 2	Week 3	Week 4
Brad	\$2	\$6	\$3	
Bart	\$4	\$3	\$1	
Burt	\$5	\$2	\$3	
Brent	\$4	\$5	\$3	

Circle the statement that is reasonable.

1. Burt and Brad are comparing how much money they made over three weeks.
Burt said, "I made about \$10 more than Brad."
Brad said, "We both made about the same amount of money."

Explain your thinking: _____

2. Bart and Brent are thinking about how much money Brad made for weeks 2 and 3.
Bart said, "Brad made about \$3 less in Week 3 than in Week 2."
Brent said, "Brad made about \$2 less in Week 3 than in Week 2."

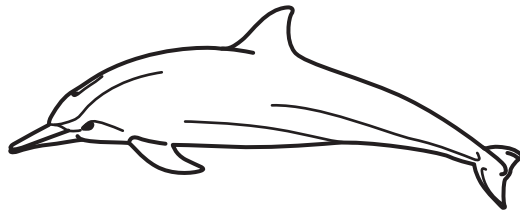
Explain your thinking: _____

3. Brad and Brent plan to make the same amount of money in Week 4 that Brad made in Week 2. They are thinking about who will have made the most money after four weeks.
Brad says, "I will have made more money."
Brent says, "I will have made more money."

Explain your thinking: _____

Enrich*What Do They Weigh?*

Sand and Sea Park is checking the weight of its animals. The chart shows which animals they have. It also shows which ones they have weighed and how many pounds each weighs. The walrus and sea lion have not been weighed. Answer the questions and complete the chart.



Animal	dolphin	harbor seal	killer whale	polar bear	walrus	sea lion
Weight	573	375	8,356	1,342	_____	_____

- The walrus weighs 5,619 pounds less than the killer whale. How much does it weigh?
_____ pounds
- The sea lion weighs 610 pounds less than the polar bear. How much does it weigh?
_____ pounds
- What is the difference in weight between the animal that weighs the least and the animal that weighs the most?
_____ pounds
- What is the difference in weight between the sea lion and the walrus?
_____ pounds
- How much more does the sea lion weigh than the dolphin?
_____ pounds

Enrich

Subtraction Pinwheels

Find the missing numbers in each subtraction pinwheel.
Remember to regroup when subtracting across zeros.

<p>1.</p> <div style="text-align: center;"> <div style="border: 1px solid black; width: 60px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">83</div> <div style="border: 1px solid black; width: 60px; height: 30px; margin: 5px auto; display: flex; align-items: center; justify-content: center;">B</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px;">A</div> <div style="border: 1px solid black; padding: 5px;">297</div> <div style="border: 1px solid black; padding: 5px;">400</div> <div style="border: 1px solid black; padding: 5px;">C</div> <div style="border: 1px solid black; padding: 5px;">302</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="border: 1px solid black; width: 40px; height: 40px; transform: rotate(45deg); display: flex; align-items: center; justify-content: center;">E</div> <div style="border: 1px solid black; width: 40px; height: 40px; transform: rotate(45deg); display: flex; align-items: center; justify-content: center;">55</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; width: 40px; height: 40px; transform: rotate(45deg); display: flex; align-items: center; justify-content: center;">123</div> <div style="border: 1px solid black; width: 40px; height: 40px; transform: rotate(45deg); display: flex; align-items: center; justify-content: center;">D</div> </div>	<p>2.</p> <div style="text-align: center;"> <div style="border: 1px solid black; width: 60px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">G</div> <div style="border: 1px solid black; width: 60px; height: 30px; margin: 5px auto; display: flex; align-items: center; justify-content: center;">5,268</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px;">2,019</div> <div style="border: 1px solid black; padding: 5px;">F</div> <div style="border: 1px solid black; padding: 5px;">7,000</div> <div style="border: 1px solid black; padding: 5px;">6,173</div> <div style="border: 1px solid black; padding: 5px;">H</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="border: 1px solid black; width: 40px; height: 40px; transform: rotate(45deg); display: flex; align-items: center; justify-content: center;">286</div> <div style="border: 1px solid black; width: 40px; height: 40px; transform: rotate(45deg); display: flex; align-items: center; justify-content: center;">I</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; width: 40px; height: 40px; transform: rotate(45deg); display: flex; align-items: center; justify-content: center;">J</div> <div style="border: 1px solid black; width: 40px; height: 40px; transform: rotate(45deg); display: flex; align-items: center; justify-content: center;">574</div> </div>
<p>3.</p> <div style="text-align: center;"> <div style="border: 1px solid black; width: 60px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">17</div> <div style="border: 1px solid black; width: 60px; height: 30px; margin: 5px auto; display: flex; align-items: center; justify-content: center;">L</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px;">K</div> <div style="border: 1px solid black; padding: 5px;">82</div> <div style="border: 1px solid black; padding: 5px;">503</div> <div style="border: 1px solid black; padding: 5px;">M</div> <div style="border: 1px solid black; padding: 5px;">109</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="border: 1px solid black; width: 40px; height: 40px; transform: rotate(45deg); display: flex; align-items: center; justify-content: center;">O</div> <div style="border: 1px solid black; width: 40px; height: 40px; transform: rotate(45deg); display: flex; align-items: center; justify-content: center;">232</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; width: 40px; height: 40px; transform: rotate(45deg); display: flex; align-items: center; justify-content: center;">417</div> <div style="border: 1px solid black; width: 40px; height: 40px; transform: rotate(45deg); display: flex; align-items: center; justify-content: center;">N</div> </div>	<p>4.</p> <div style="text-align: center;"> <div style="border: 1px solid black; width: 60px; height: 30px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">Q</div> <div style="border: 1px solid black; width: 60px; height: 30px; margin: 5px auto; display: flex; align-items: center; justify-content: center;">436</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px;">1,009</div> <div style="border: 1px solid black; padding: 5px;">P</div> <div style="border: 1px solid black; padding: 5px;">2,008</div> <div style="border: 1px solid black; padding: 5px;">525</div> <div style="border: 1px solid black; padding: 5px;">R</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="border: 1px solid black; width: 40px; height: 40px; transform: rotate(45deg); display: flex; align-items: center; justify-content: center;">208</div> <div style="border: 1px solid black; width: 40px; height: 40px; transform: rotate(45deg); display: flex; align-items: center; justify-content: center;">S</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; width: 40px; height: 40px; transform: rotate(45deg); display: flex; align-items: center; justify-content: center;">U</div> <div style="border: 1px solid black; width: 40px; height: 40px; transform: rotate(45deg); display: flex; align-items: center; justify-content: center;">709</div> </div>

5. Match the difference with a number shown under the lines below. Write the letter of the difference from the box on the line to write a mystery message.

$\overline{1,483}$ $\overline{277}$ $\overline{1,732}$ $\overline{1,483}$ $\overline{86}$ $\overline{1,800}$ $\overline{999}$

Enrich*Choose a Sign*

Fill in the missing signs. Write + or – in the box. Write =, <, or > in the circle to make the following number sentences true.

1. $9 \square 5 + 3 \bigcirc 9 - 4$ _____

2. $4,925 \bigcirc 1,679 \square 245$ _____

3. $3 \text{ } \left(\text{Lincoln Penny} \right) \text{ s} + 2 \text{ } \left(\text{Washington Quarter} \right) \text{ s} \bigcirc 1 \text{ } \left(\text{One Dollar Bill} \right)$ _____

4. $100 \square \text{ the number days in a week } \bigcirc 94$ _____

5. $18 \square 27 \square 36 \bigcirc 72 \square 9$ _____

6. $456 \square 25 \bigcirc 25 \square 456$ _____

7. $8,005 \square 5008 \bigcirc 2,997$ _____

8. $87 \text{ rounded } \square 58 \text{ rounded is } \bigcirc 140$.

Write a number sentence to show how you rounded to make the number sentence true.



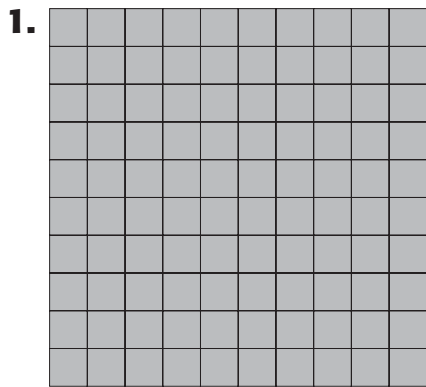
Enrich*Colorful Arrays*

- Choose 4 colors to make arrays.
- Use 2 colors in each array.

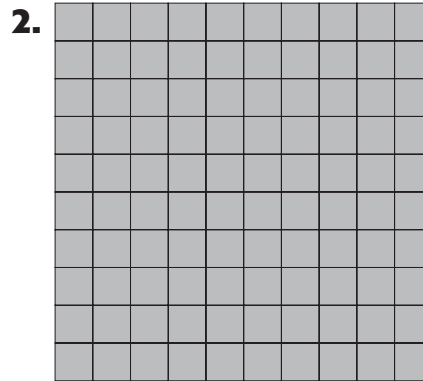
Complete the multiplication sentence under each array.
Color an array to match the sentence. (Hint: The first digit tells how many rows in the array. The second digit tells how many in each row.)

Then use the Commutative Property of Multiplication to write a different multiplication sentence using the same factors. Write that sentence underneath the first set of sentences. The products should be the same.

For example, $3 \times 2 = 6$ and $2 \times 3 = 6$. So, $3 \times 2 = 2 \times 3$.



$$2 \times 7 = \underline{\quad}$$



$$4 \times 5 = \underline{\quad}$$

Enrich

Symbols Puzzler

Each shape stands for a number. See if you can figure out what the numbers are.

$$\text{Heart} \times \text{Heart} = \text{Diamond}$$

$$\text{Hexagon} \times \text{Heart} = 12$$

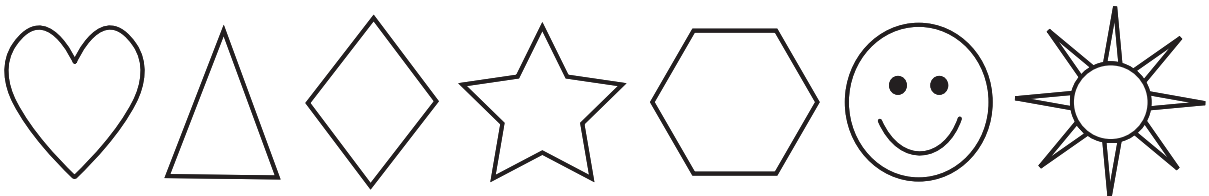
$$\text{Heart} \times \text{Star} = 10$$

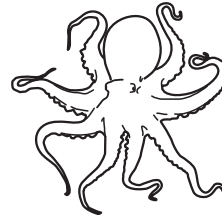
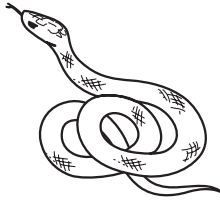
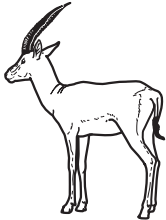
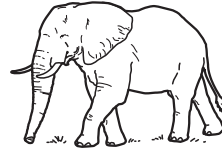
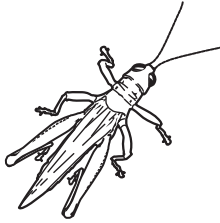
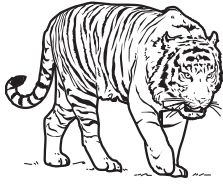
$$\text{Triangle} \times 2 = \text{Hexagon}$$

$$\text{Heart} \times \text{Diamond} = \text{Sun}$$

$$\text{Heart} \times \text{Smiley Face} = 14$$

What digit does each symbol represent?



Enrich*How Many in Zooland?*

Read the questions about the animals. Write a true multiplication sentence for each question.

1. How many wings on 4 grasshoppers? 2. How many trunks on 4 elephants?

_____ wings

_____ trunks

3. How many legs on 4 snakes? 4. How many legs on 4 grasshoppers?

_____ legs

_____ legs

5. How many legs on 9 antelopes? 6. How many arms on 4 octopuses?

_____ legs

_____ arms

7. How many legs on 4 tigers? 8. How many legs on 3 elephants?

_____ legs

_____ legs

CHALLENGE

9. How many legs are on 2 antelopes and 3 elephants? 10. How many legs are on 2 grasshoppers and 2 octopuses?

Enrich*Multiplication Riddles*

Use multiplication facts and strategies to help you find factors and answer the riddles.

1. My factors are between 0 and 7. If you multiply my three factors they have a product equal to $22 + 6$. What are my factors?

2. I am a two-digit number. If you subtract my second digit from my first digit, the difference is 6. The product of my digits is 0. What number am I?

3. When you add two of me together, I equal 8. I have a product of 16 when you multiply me times myself. What number am I?

4. I am a three-digit number. The sum of my digits is 10. The product of my digits 0. My first digit is the same as my last digit. What number am I?

5. Write your own multiplication riddle. Then explain a strategy someone could use to solve it.

Enrich*The Picnic*

Five friends are planning a picnic. You are one of the friends. Each person will bring one, two, or three items to the picnic. The friends will bring enough for five people. Answer the questions to see what each person will bring and how much. Write a number sentence to show how you got your answers.

- 1.** Zoe will bring the chips. She will bring 10 chips for each person. How many chips will Zoe bring?

- 3.** Ali will bring snacks of carrot sticks, celery sticks, and apple slices. He will bring 5 apple slices, 6 celery sticks, and 9 carrot sticks for each person.

How many apple slices does Ali need to bring?

How many celery sticks?

How many carrot sticks?

- 5.** You will bring yogurt. The yogurt is served in 6-ounce cups. How many ounces of yogurt do you need to bring?

- 2.** Phil will bring sandwiches. Each sandwich will have 2 slices of bread, 3 pieces of lunchmeat and 1 slice of cheese.

How many slices of bread does Phil need to make the sandwiches?

How many pieces of lunchmeat?

How many slices of cheese?

- 4.** Shana will bring milk. She will bring 8 ounces for each person. How many ounces of milk does she need to bring?

Enrich*Trivia Tens*

**Write a multiplication sentence for each trivia question.
Then solve.**

- | | |
|--|--|
| <p>1. What is ten times the number of days in the week?</p> <p>_____</p> | <p>2. Ten times what number gives you the number of seconds in a minute or minutes in an hour?</p> <p>_____</p> |
| <p>3. What number times ten gives you the number of days in September, April, June, or November?</p> <p>_____</p> | <p>4. One multiplied by what number tells how many cents are in two dimes?</p> <p>_____</p> |
| <p>5. Ten times what number gives you the number of cents in a half-dollar?</p> <p>_____</p> | <p>6. What number multiplied times itself gives the number of cents in one dollar?</p> <p>_____</p> |
| <p>7. What number multiplied by 10 gives the number years in a decade?</p> <p>_____</p> | <p>8. What number multiplied by ten gives you an answer that is twenty more than sixty?</p> <p>_____</p> |
| <p>9. Look back at your multiplication sentences. Two sentences are missing for all of the numbers 1–10 multiplied by ten. What are they?</p> <p>_____</p> <p>_____</p> | <p>10. What do you notice about the ones place when you multiply a number by 10?</p> <p>_____</p> <p>_____</p> |

Enrich*Drill Team*

Suppose you are the leader of a drill team. There are 20 members on the team. As the team marches in the parade, the members move in different numbers of equal rows or groups. Show four ways to arrange the 20 members to make arrays, equal rows, or groups. Do not use groups of 1 or 20. Write an addition sentence and a multiplication sentence for each arrangement.

1. Addition Sentence _____

Multiplication Sentence _____

2. Addition Sentence _____

Multiplication Sentence _____

3. Addition Sentence _____

Multiplication Sentence _____

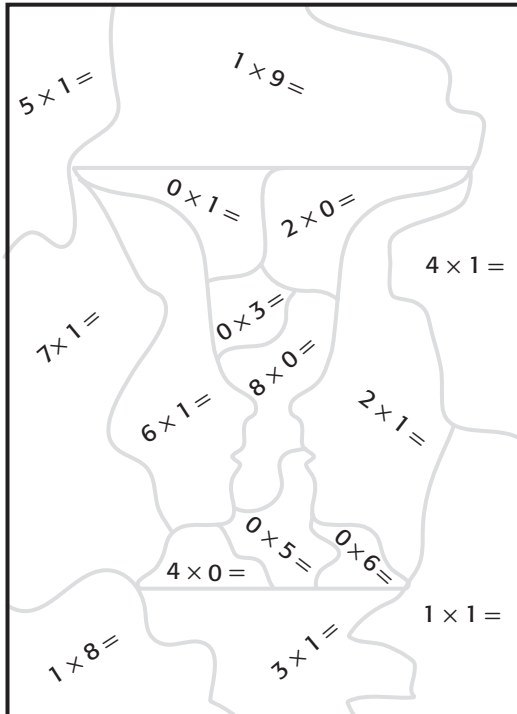
4. Addition Sentence _____

Multiplication Sentence _____

5. How are the arrays for 4×5 and 5×4 alike? How are the arrays different?

Enrich*Multiply by 0 and 1*

Solve the problems in the picture below. If the answer is a number, color that part gray. If the answer is zero, leave that part white.



1. Tell what you see when you look at the picture.

2. What do you notice about the answer in a problem where a number is multiplied by zero?

3. What do you notice about the answer of any number that is multiplied by one?

Enrich*The Birthday Party*

Karlie, Keri, and Kristie are triplets. They are having a birthday party. Read each problem. Draw a picture for each number sentence. Use a separate sheet of paper if you need more room. Then write a number sentence that helps answer questions 1–4.

1. Each girl wants to invite six different friends to the party. How many friends will be invited to the party?

2. The girls' dad is making a jewelry box for each girl. Each box has four sides, a bottom, and a lid that opens. How many sides for the jewelry boxes will he make?

3. Their aunt is knitting sweaters for the girls. She is buying eight flowered buttons to put on each sweater. How many buttons does she need to buy?

4. The girls are going to be 9 years old. They will blow out the candles on their cake together. If their mom wants to buy one set of nine candles for each girl to put on the cake, how many candles does she need to buy?

Enrich*Multiply by 6*

Find the missing factor for each problem. Draw an array or a picture that matches the problem. Then use words to write a number sentence for each drawing.

Find the Factors	Show the Problem	Write It in Words
1. $6 \times \square = 18$		_____
2. $6 \times \square = 30$		_____
3. $2 \times \square = 12$		_____
4. $24 = \square \times 6$		_____
5. $\square \times \square = 36$		_____

Enrich*Favorite Numbers*

	36	80	24	30	63
Carmen					
Zack					
Jenna					
April					
Carlos					

Read each clue. If the answer is “yes,” draw an “O” in the box. If the answer is “no,” draw an “X” in the box. Then fill in the correct answers below.

Carmen’s favorite number is more than $1 \times 6 \times 8$ but less than 8×8 .

Zack’s favorite number is the product of each of these multiplication facts 8×3 , 6×4 , or 2×12 .

Carlos’ favorite number would belong in the patterns 5, 10, 15 . . . and 6, 12, 18 . . .

Jenna’s favorite number is a multiple of 10 that is greater than 5×8 .

April’s favorite number is the product of two factors that when added together equal nine.

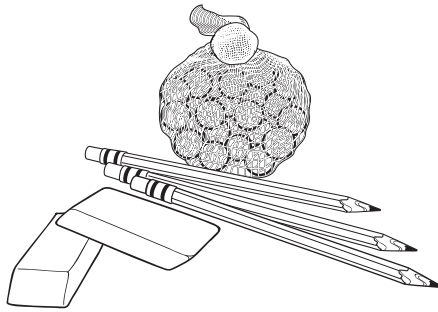
Carmen’s favorite number is _____.

Zack’s favorite number is _____.

Jenna’s favorite number is _____.

April’s favorite number is _____.

Carlos’ favorite number is _____.

Enrich*Lucky Seven Store*

The Lucky Seven Store sells every item in the store for 7 cents each.

1. Alvin wants to buy 3 bags of marbles and 2 pencils. How much will they cost? Write two number sentences to show how much for each.

_____ cents

_____ cents

Write one number sentence to show how much the items will cost in all.

_____ cents

2. Clare bought 7 buttons, a bottle of glitter, and a stuffed toy. How much did they cost? Write three number sentences to show how much for each.

_____ cents

_____ cents

_____ cents

Write one number sentence to show how much the items cost in all.

_____ cents

3. How many items could be purchased with a one dollar bill?

_____ items

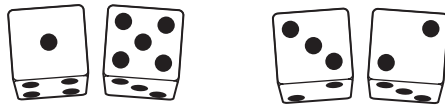
4. How many items could be purchased with a five dollar bill?

_____ items

Enrich*Roll of the Number Cube Times 8*

Four friends are playing a game. Each gets to roll a pair of number cubes. After each roll, they multiply the number on the cubes by 8. They are trying to get to 80 without going over. Each person gets two chances to roll. Look at what each person got on two rolls.

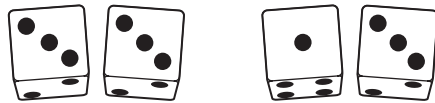
1. Carlos



2. Melanie



3. Eric



4. Marie



5. How much did each person get? (*Hint: Find the value of each roll for each person. Add the total that each person got.*)

Carlos _____

Eric _____

Melanie _____

Marie _____

6. Who won? _____

7. What is a faster way to find out who won without finding each value, adding each person's rolls, and comparing them?

Enrich*Find the Products for the Nines*

Write the products for the 9s. Find each product in the picture. Use a blue crayon or colored pencil to shade or color all the numbers that make up the products of the fact families for the 9s. Shade all other numbers with the colors of your choice.

$9 \times 1 = \underline{\hspace{2cm}}$

$9 \times 6 = \underline{\hspace{2cm}}$

$9 \times 2 = \underline{\hspace{2cm}}$

$9 \times 7 = \underline{\hspace{2cm}}$

$9 \times 3 = \underline{\hspace{2cm}}$

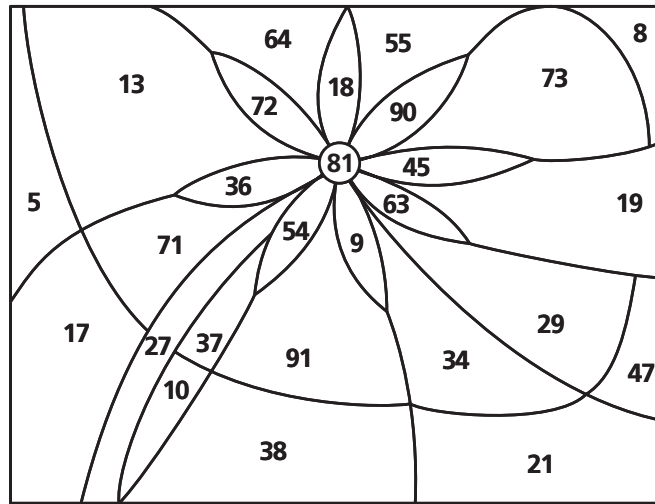
$9 \times 8 = \underline{\hspace{2cm}}$

$9 \times 4 = \underline{\hspace{2cm}}$

$9 \times 9 = \underline{\hspace{2cm}}$

$9 \times 5 = \underline{\hspace{2cm}}$

$9 \times 10 = \underline{\hspace{2cm}}$



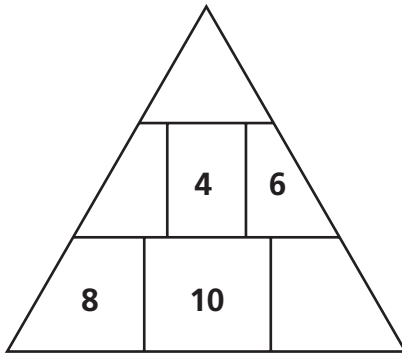
What do you notice about the products of the numbers 1 – 10 multiplied by 9? (*Hint*: look for a pattern.)

If you add the digits of each product you found, what is the sum of each? For example, what is the sum of the digits in 18?

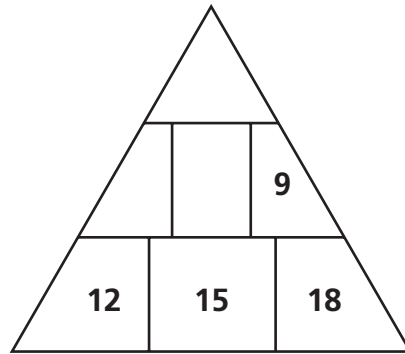
Enrich*Unlock the Pyramids*

Find the missing numbers in the patterns. Then multiply them together to unlock the top number of the pyramid. Under each pyramid, write multiplication sentence to show how you unlocked the pyramid.

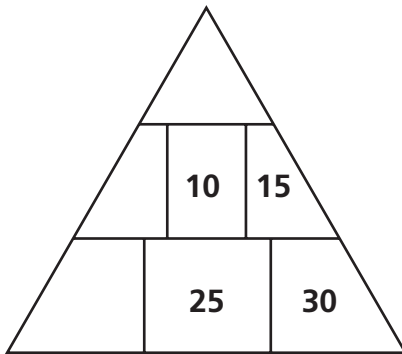
1.



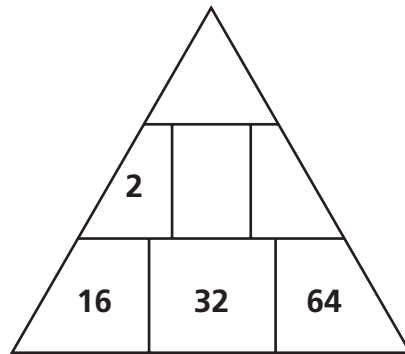
2.



3.



4.



5. Create your own pyramid for a friend to unlock.

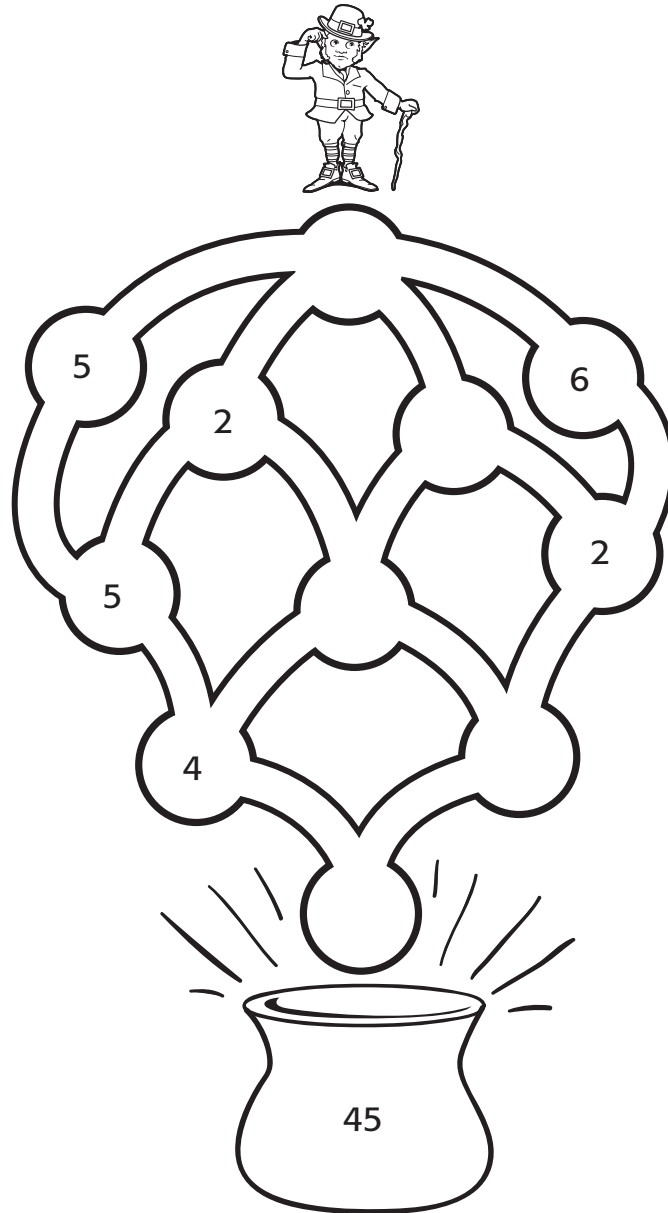
Enrich*What's My Rule?*

Find and extend the rule for each table. Then write a multiplication sentence that tells what completes each table.

<p>1. Rule: Multiply by <input type="checkbox"/></p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tbody> <tr> <td style="width: 15%;">Input</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> <td></td> </tr> <tr> <td>Output</td> <td>0</td> <td>2</td> <td>4</td> <td>6</td> <td></td> </tr> </tbody> </table> <p>_____</p>	Input	0	1	2	3		Output	0	2	4	6		
Input	0	1	2	3									
Output	0	2	4	6									
<p>2. Rule Multiply by <input type="checkbox"/></p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tbody> <tr> <td style="width: 15%;">Input</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td></td> </tr> <tr> <td>Output</td> <td>8</td> <td>16</td> <td>24</td> <td>32</td> <td></td> </tr> </tbody> </table> <p>_____</p>	Input	1	2	3	4		Output	8	16	24	32		
Input	1	2	3	4									
Output	8	16	24	32									
<p>3. Rule Multiply by <input type="checkbox"/></p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tbody> <tr> <td style="width: 15%;">Input</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td></td> </tr> <tr> <td>Output</td> <td>7</td> <td>14</td> <td>21</td> <td>28</td> <td></td> </tr> </tbody> </table> <p>_____</p>	Input	1	2	3	4		Output	7	14	21	28		
Input	1	2	3	4									
Output	7	14	21	28									
<p>4. Rule Multiply by <input type="checkbox"/></p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tbody> <tr> <td style="width: 15%;">Input</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> <td></td> </tr> <tr> <td>Output</td> <td>0</td> <td>3</td> <td>6</td> <td>9</td> <td></td> </tr> </tbody> </table> <p>_____</p>	Input	0	1	2	3		Output	0	3	6	9		
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Enrich*Pot of Gold*

Help the leprechaun find his pot of gold. Start at the leprechaun. Find his path by multiplying numbers as you go. When all the numbers are in the correct path, the product is 45. Shade the path the leprechaun should follow.



Enrich*A Mystery in Six*

Read the clues to find the five mystery numbers. When you know the numbers, solve the mystery of the sixth.

1. This number is less than 5, but more than 1. It is even. This number is the difference between 5 and 3. What is the number?

2. If you multiply the mystery number times itself you get a number that is less than 10 but more than 5. What is the number?

3. You can get this number by multiplying 2 times itself. It is the difference between 21 and 17. What is the number?

4. This number is the number of shoes you would have if you bought 3 pairs of shoes. What is the number?

5. Some people think that cats have this many lives. What is the number?

6. If you divide this number by mystery number 1, you will get 3 multiplied by mystery number 4. Subtract 3 groups of mystery number 2 and you will get 3 multiplied by mystery number 5. What is mystery number 6?

Enrich*Make It Up*

Read the facts. Then write a division story problem to go with the facts. Next, write a division sentence for each set of information. (*Hint*: Circle equal groups to help you.) Check the answer to the division sentence with a multiplication sentence.

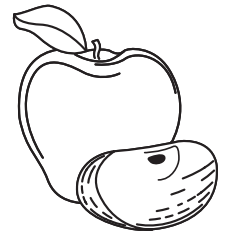
1. 8 hamsters, 4 cages



2. 15 fish, 5 fish bowls

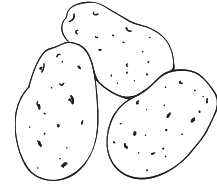
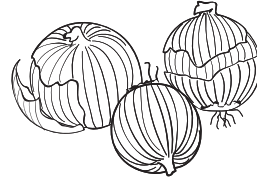
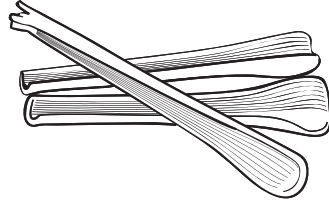
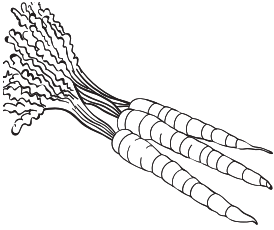


3. 12 apples, 3 friends



4. 16 dog biscuits, 4 dogs



Enrich*Solve It Two Ways*

Some problems can be solved by thinking of them in two ways. You can use a division sentence or a multiplication sentence to solve the same problem. Write one of each for the problems below.

- Mrs. Taylor buys carrots by the bunch and shares them. She gives some to one friend and keeps some for herself. There are 10 carrots in a bunch. If Mrs. Taylor and her friend get the same number of carrots, how many does each person get?

- The market has bags of potatoes on sale today. They have 30 bags to sell. The first 30 customers who came into the store each bought a bag of potatoes. How many bags of potatoes did each customer buy?

- Small onions at the organic market are sold in bags. Each bag has 8 onions. If four friends share a bag of onions, how many will each friend get?

- Farmer Miller grows celery on his farm. He sells his celery in small bundles. Each of his plants has 12 stalks. The smallest bundle he makes has 2 stalks each. How many small bundles can he make out of one plant?

Enrich*Divide by 2*

Solve the division problems. Match the quotients in the boxes with a number under the lines. Write the letter from the box on the line to complete the mystery words.

e $10 \div 2 = \underline{\quad}$	e $18 \div 2 = \underline{\quad}$	t $6 \div 2 = \underline{\quad}$	a $12 \div 2 = \underline{\quad}$
m $8 \div 2 = \underline{\quad}$	k $14 \div 2 = \underline{\quad}$	i $4 \div 2 = \underline{\quad}$	e $16 \div 2 = \underline{\quad}$
v $20 \div 2 = \underline{\quad}$	n $2 \div 2 = \underline{\quad}$		

Message

$\overline{4}$ $\overline{6}$ $\overline{7}$ $\overline{5}$ $\overline{2}$ $\overline{3}$ $\overline{9}$ $\overline{10}$ $\overline{8}$ $\overline{1}$

Find the dividends. Match the dividends in the boxes with a number under the lines. Write the letter from the box on the line to complete the mystery words.

b $\underline{\quad} \div 2 = 6$	d $\underline{\quad} \div 2 = 10$	i $\underline{\quad} \div 2 = 1$	t $\underline{\quad} \div 2 = 4$
y $\underline{\quad} \div 2 = 3$	i $\underline{\quad} \div 2 = 9$	w $\underline{\quad} \div 2 = 5$	e $\underline{\quad} \div 2 = 8$
v $\underline{\quad} \div 2 = 7$	o $\underline{\quad} \div 2 = 2$		

Message

$\overline{10}$ $\overline{2}$ $\overline{14}$ $\overline{18}$ $\overline{20}$ $\overline{16}$ $\overline{12}$ $\overline{6}$ $\overline{8}$ $\overline{10}$ $\overline{4}$

Enrich*Divide by 5 Number Cross*

Find the dividend or the quotient. Use the clues to complete the number cross puzzle.

Across

1. _____ $\div 5 = 12$

2. _____ $\div 5 = 7$

3. _____ $\div 5 = 10$

4. _____ $\div 5 = 3$

5. _____ $\div 5 = 4$

6. _____ $\div 5 = 9$

7. _____ $\div 5 = 14$

8. $60 \div 5 =$ _____

9. _____ $\div 5 = 11$

Down

1. _____ $\div 5 = 13$

2. _____ $\div 5 = 7$

3. _____ $\div 5 = 11$

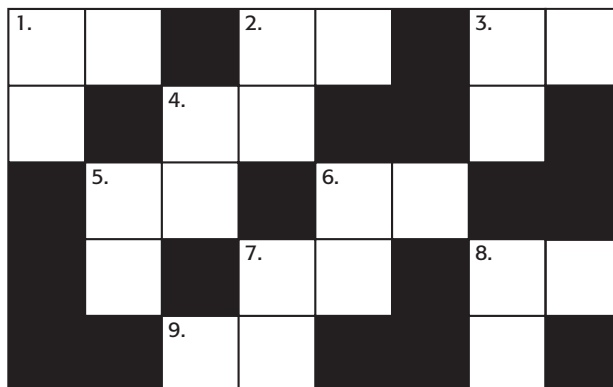
4. _____ $\div 5 = 2$

5. _____ $\div 5 = 5$

6. _____ $\div 5 = 8$

7. _____ $\div 5 = 15$

8. $50 \div 5 =$ _____



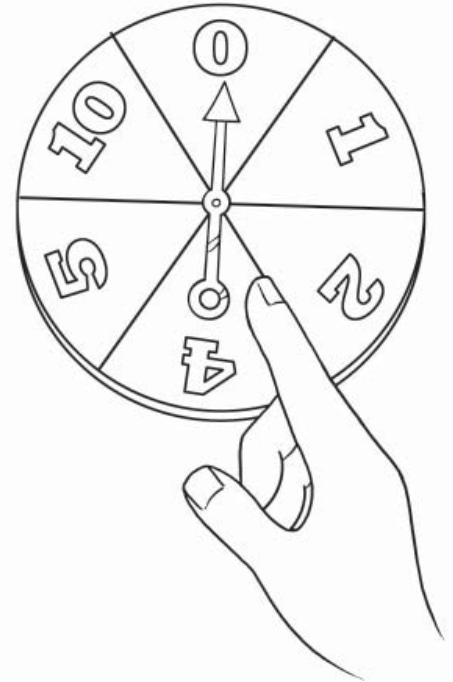
What pattern do you see in the numbers that can be divided by 5 evenly?

Enrich*Spin to Multiply, Divide, and Win*

You will need two spinners. One should have the digits 0, 1, 2, 4, 5 and 10. The other should have the digits 2, 3, 4, 5, 6, 7, 8, 9.

How to Play

- Take turns. Spin each spinner once.
- Player 1. After spinning, use the two numbers as factors to write a multiplication sentence. For example, if you spin a 2 and a 9, you could write $2 \times 9 = 18$. Then use the three numbers as the divisor, dividend, and quotient in a division sentence. For example, $18 \div 2 = 9$. Record your sentences below under the heading for Player 1.
- Player 2. Follow the same instructions as those for Player 1.
- Record 6 pairs of number sentences for each player.
- Add all of the products and dividends for each player. See who has the highest total. The highest total wins.
- Play again. This time add all of the products and quotients for each player. See who has the lowest total. The lowest total wins.



Player 1	1. _____	2. _____	3. _____	Total of Products and Dividends
	4. _____	5. _____	6. _____	
Player 2	1. _____	2. _____	3. _____	Total of Products and Quotients
	4. _____	5. _____	6. _____	

Enrich*Thinking about Dimes*

Middlebury Elementary School is having a fund-raiser. There are booths selling different items for a dime each. People are paying for everything with dimes.



Read each problem. Write a number sentence that shows how to solve each problem. Then show the answer by drawing the amount in dimes for each answer.

- Becky sold 8 bookmarks and collected 80 cents. Peter sold 2 fewer bookmarks than Becky. How much money did Peter collect?

- Curtis, Jamie, and Cody bought cards from the one booth. In all, they spent \$1. Jamie spent 20 cents. Curtis spent 30 cents more than Jamie. How much did Cody spend?

- Julio and Maria are buying a bouquet of flowers for their grandmother. Each flower costs 10 cents. They bought 4 flowers each. How much did they spend?

Enrich*Digits or Zero*

Solve. Write a number sentence to show each quotient.

1. Add the digits in the current year. Divide by 1.

2. $0 \div$ forty thousand.

3. Number of legs on an elephant divided by the number of trunks on an elephant.

4. Number of planets orbiting the sun divided by the number of moons orbiting the Earth.

5. Number of cents in a quarter divided by the number of cents in a penny.

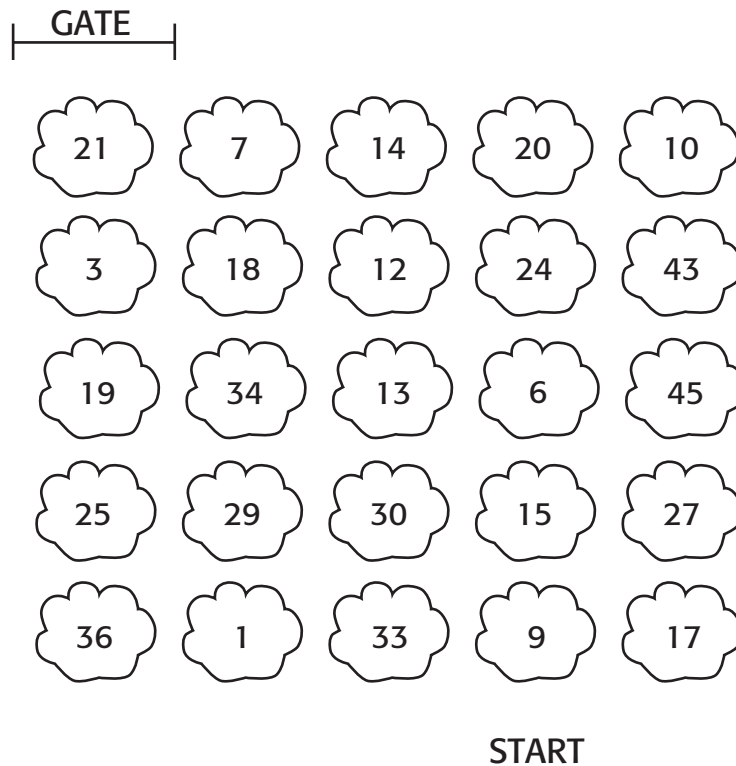
6. Number of legs on five snakes divided by the number of legs on five chickens.

7. Number of eggs in one dozen \div number of beaks on one chicken.

8. Number of flat sides on a rubber ball divided by the number of flat sides on one number cube.

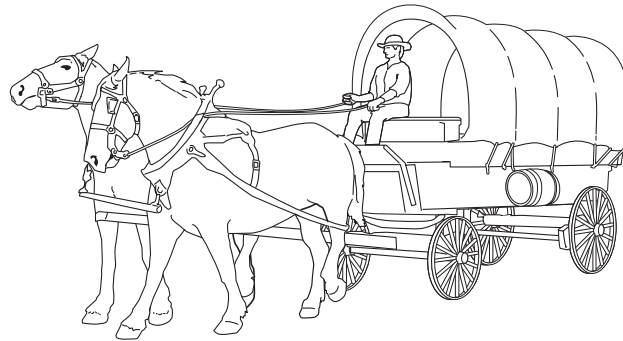
Enrich*Get Gus out of the Garden*

Help get Gus the Rabbit out of the garden with the fewest hops. He needs to hop from one head of cabbage to the next. To find the correct path, Gus needs to hop to cabbages with numbers that can be divided by 3. He can hop up or to the right or left. He cannot jump over any cabbages. He needs to end at a cabbage that is in front of a gate.



Write the numbers of the cabbages Gus hopped on to get out of the garden.

Now write them in order from *least* to *greatest*.

Enrich*Westward Ho!*

The pioneers are getting ready to cross the prairie. Look at the numbers above each part of the story. Use the numbers to fill in the blanks so that each story part makes sense.

4

32

8

1. The blacksmith made _____ new wheels for the wagons.
Each wagon needs _____ wheels. There are _____ wagons
with new wheels.

4

10

40

2. The blacksmith also made _____ horse shoes. Since each
horse gets _____ shoes, _____ horses got new shoes.

36

9

4

3. The pioneers will carry barrels of water on the trip. They
will take a total of _____ gallons of water. There are eight
wagons making the trip. Only _____ of the wagons will carry
water. Each barrel will hold _____ gallons.

Enrich

Crack the Codes

Begin at the top of the center oval. Go clockwise around the oval. Add, subtract, multiply, or divide starting with the answer on the previous problem. When you have made it all the way around the oval, you should have the same number you started with. Move out to the next oval. Always go clockwise around the oval. Find the missing numbers that match the letters.

Unscramble the letters to solve this riddle.

A baker baked 12 little cakes with things he first needed to break.
What did he break?

Start

63

$\times 7$ $- 7$ $\div 7$

Start →

9

$\div 8$ $\div 1$ $\times 9$

$- 6$ $\times 3$ $- 2$

s **g**

$\frac{39}{7 \quad 10 \quad 42 \quad 5 \quad 51}$

$\frac{5 \quad 27 \quad 27 \quad 78}{+ 6}$ $- 3$ $\div 10$

a **d**

$\times 8$ $\div 6$ $\times 6$

$- 12$ $\times 6$ $\div 10$

n **z**

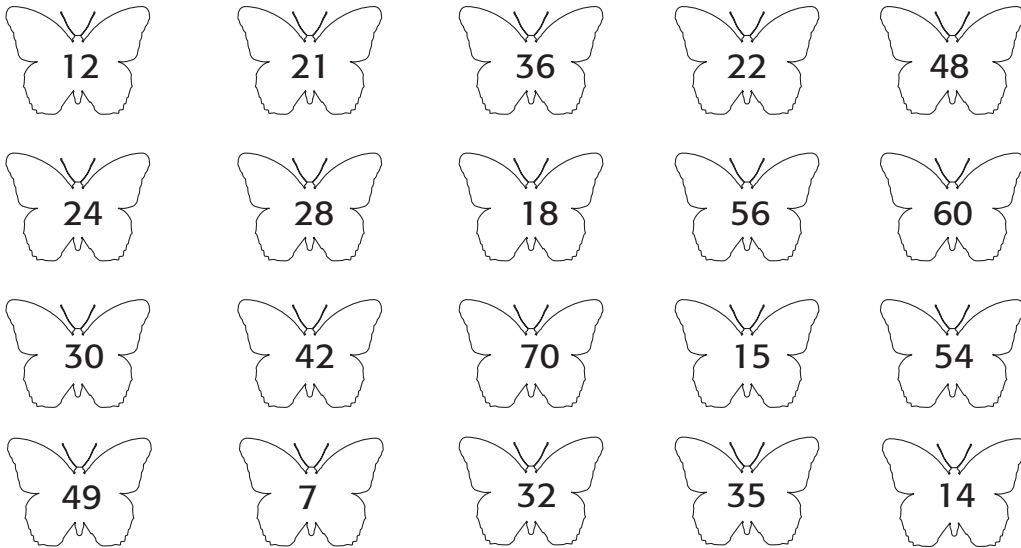
$+ 43$ $- 2$ $\div 5$

Enrich*Divide by 6 and 7*

You will need a blue, yellow, and black crayon or colored pencil. Use **blue** to color all the butterflies with dividends that can be divided by 6.

Use **yellow** to color all the butterflies with dividends that can be divided by 7.

Circle the butterflies with dividends that can be divided by 6 or 7. Draw **black** dots on butterflies that cannot be divided by either 6 or 7.



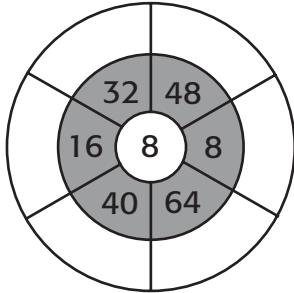
List the dividends divisible by 6 from *least* to *greatest*.

List the dividends divisible by 7 from *greatest* to *least*.

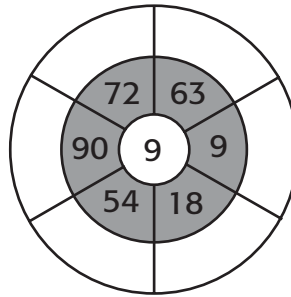
Enrich*Divide by 8 and 9*

Divide the number in the shaded part of the circle by the number in the center. Write the answer in the outer part of the circle.

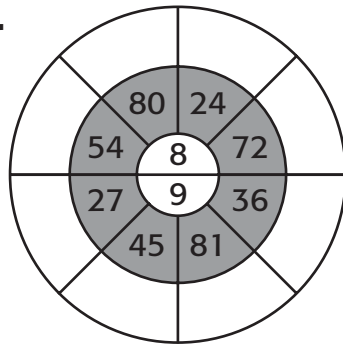
1.



2.



3.



4. How can you check your answers?

Show an example of how to check $72 \div 9$.

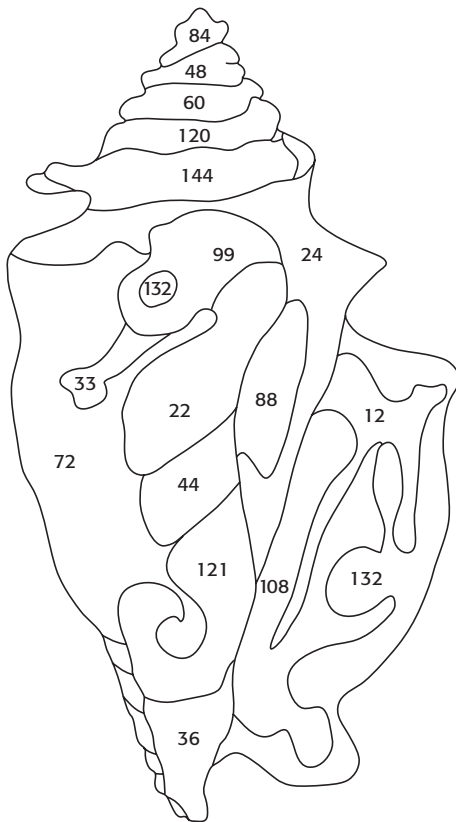
Enrich*Divide by 11 and 12*

You will need **red, yellow, orange, green, blue,** and **purple** crayons or colored pencils.

Color all of the numbers that can be divided by 11 evenly using **red, yellow,** or **orange.**

Color all of the numbers that can be divided by 12 evenly using **green** or **blue.**

Color the areas with no numbers in shades of **purple.**

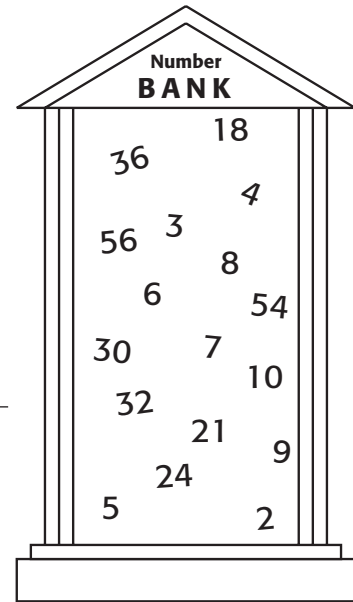


List the numbers from the picture that can be divided evenly by 12.

List the numbers from the picture that can be divided evenly by 11.

Enrich*Number Bank Puzzlers*

Look at the numbers in the number bank. Choose numbers to complete each story so that the stories make sense. You may need to use some numbers more than once. Some of the numbers will not be used at all. Write a number sentence for each story.



- Cory reads his social studies book _____ days during the week. He reads every day. Each day he reads _____ chapters. By the end of the week Cory will have read _____ chapters.

Number sentence: _____
- Anna made _____ key rings. She had _____ keys on each. Anna used all 24 keys.

Number sentence: _____
- Kasey walks his dog _____ days each week. They do not walk every day. They walk _____ city blocks each time they go out. Kasey and his dog walk 54 city blocks each week.

Number sentence: _____
- Miguel and Juanita made 48 pictures to sell at the art fair. They sold half of them to two buyers. Eight people want to purchase the remaining pictures. Each person can purchase _____ pictures.

Number sentence: _____
- Petra bought _____ yards of yarn. She is knitting skinny scarves for some friends. She has more than 4 friends but fewer than 7. She used _____ yards of yarn in each scarf.

Number sentence: _____

Enrich*Number Sentence Sense at Sea Land Park*

Draw a picture that illustrates each problem. Then write as many number sentences as you need to show how you can solve the problem.

1. The Mills and Perez families visited Sea Land Park together. There were 6 adults and 8 children. The children's tickets cost \$6 each and the adults' tickets cost \$10 each. How much did the two families spend altogether for tickets?

2. Mandy Mills and Juanita Perez purchased the same items in the gift shop. Each girl bought a seashell necklace for \$5, a pen shaped like a dolphin for \$3, and a T-shirt for \$8.00. What was the cost of the items for one girl?

3. Mandy gave the sales clerk a \$20 bill to pay for the items she bought in the gift shop. How much change did she receive? Be sure to draw an illustration that correctly shows her change.

4. The trainer at the Marine Mammal Arena starts each show with a bucket of 32 fish. During the noon show, he fed the seals 12 fish and the dolphins 16 fish. How many fish were left in the bucket after the noon show? How many more fish did the dolphins eat than the seals ate?

Enrich*Choose a Sign*

Fill in the missing signs. Write + or – in the box. Write =, <, or > in the circle to make the following number sentences true.

1. $9 \square 5 + 3 \bigcirc 9 - 4$ _____

2. $4,925 \bigcirc 1,679 \square 3,245$ _____

3. $3 \text{ } \left(\text{Quarter} \right) \text{ s} + 2 \text{ } \left(\text{Dime} \right) \text{ s} \bigcirc 1 \text{ } \left(\text{Dollar} \right)$ _____

4. $100 \square$ the number days in a week $\bigcirc 94$ _____

5. $18 \square 27 \square 36 \bigcirc 72 \square 9$ _____

6. $456 \square 25 \bigcirc 25 \square 456$ _____

7. $8,005 \square 5008 \bigcirc 2,997$ _____

8. 87 rounded \square 58 rounded is $\bigcirc 140$.

Write a number sentence to show how you rounded to make the number sentence true.



Enrich*Money Riddles*

Complete the money chart. Then solve the money riddles.

Penny	Nickel	Dime	Quarter	Half-dollar	Dollar
\$0.01					
$\frac{1}{100}$ of a dollar	of a dollar	of a dollar	of a dollar	of a dollar	$\frac{100}{100} =$ 1 dollar

1. What is the least number of coins you can use to buy a pack of pencils for \$0.48 without using a half-dollar and getting change? List the coins.

2. Randy has 9 coins with a total value of \$0.86. What are his coins?

What fraction could you write to show the value in hundredths of a dollar that Randy has?

3. Charlene has 2 quarters, 1 nickel, 2 dimes, and 4 pennies. What fraction could you write to show the value in hundredths of a dollar that Charlene has?

4. Make up your own money riddle. Write the riddle and the answer.

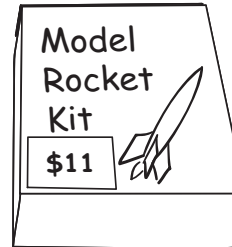
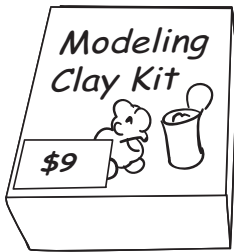
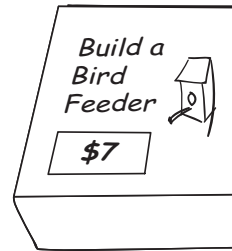
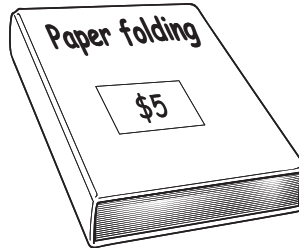
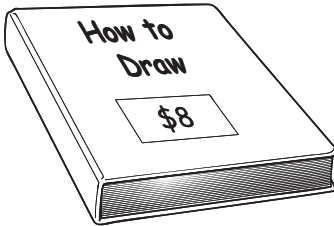
Enrich*What's My Rule?*

Find and extend the rule for each table. Then write a multiplication sentence that tells what completes each table.

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Enrich*Money*

Read what each person says. Then find the book or hobby kit that each person bought.



1. "I gave the cashier \$10. I got back one dollar in change. What did I buy?"

2. "I gave the cashier two \$5 bills. I got back a one-dollar bill, and four quarters in change. What did I buy?"

3. "I gave the cashier three \$5 bills. I got back \$4 in change. What did I buy?"

4. "I gave the cashier ten dimes, four \$1 bills and a \$5 bill. I did not receive any change. What did I buy?"

5. "I gave the cashier a \$5 bill and 8 quarters. The cashier did not give me any change. What did I buy?"

6. "I was the last person to purchase something. I gave the cashier a \$10 bill. What did I buy and how much change did I get back?"

Enrich*Missing Digits*

Some digits are missing from these problems. Use what you know about subtraction to find the missing digits.

Write each missing digit.

$$\begin{array}{r} 1. \quad 25 \square \\ - 132 \\ \hline \square 26 \end{array}$$

$$\begin{array}{r} 2. \quad 369 \\ - 11\square \\ \hline 2\square 5 \end{array}$$

$$\begin{array}{r} 3. \quad 49\square \\ - 174 \\ \hline 3\square 7 \end{array}$$

$$\begin{array}{r} 4. \quad 553 \\ - 2\square 5 \\ \hline \square 28 \end{array}$$

$$\begin{array}{r} 5. \quad 7\square 5 \\ - 332 \\ \hline \square 83 \end{array}$$

$$\begin{array}{r} 6. \quad \square 40 \\ - 12\square \\ \hline 611 \end{array}$$

Enrich*Input/Output Tables*

An input and output table shows how numbers change when you follow a rule.

Rule: Add 105

Input	80	90	95	203	?
Output	185	195	200	?	847

To find a missing output, think: What happens to 203 when you add 105?

$$203 + 105 = 308$$

To find a missing input, think: What number plus 105 would equal 847?

$$? + 105 = 847$$

You can subtract to find an answer: $847 - 105 = 742$

Find the missing input, output, or rule.

1. Rule: Add 172

Input	12	134	548	657	
Output	184	306	720		999

2. Rule: Subtract 268

Input	874	846	818		451
Output	606	578		703	

3. Rule: Add _____

Input	78	283	366	871	
Output	179		467		554

4. Rule: Subtract _____

Input	323	804		478	97
Output	226		126		0

5. Rule: _____

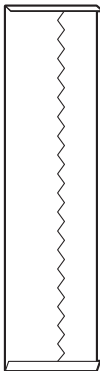
Input	389	650	226	780	
Output	164	425			25


6. Rule: _____

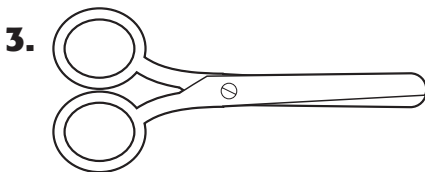
Input		60	112	250	313
Output	395	450			703

Enrich*Measure and Estimate Length*

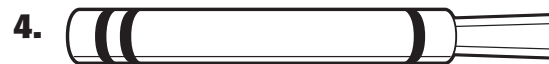
Estimate and measure each item pictured below. Use a sheet of paper or a string to help you measure each item. Compare each item's length to an inch ruler. Round each item to the nearest $\frac{1}{2}$. Tell if you rounded up or down. (Hint: Round up or down depending on how close the item measures to the inch or the $\frac{1}{2}$ inch mark.)

1.  The stick of gum is about _____ inches long.
I rounded _____.

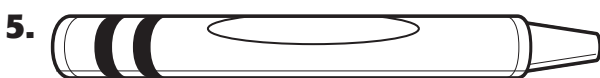
2.  The paper clip is about _____ inches long.
I rounded _____.



The scissors are about _____ inches long.
I rounded _____.



The marker is about _____ inches long.
I rounded _____.



The crayon is about _____ inches long.
I rounded _____.

6. **Circle one of these items that you think is about $7\frac{1}{2}$ inches long. Then tell why you chose that item.**

dollar bill standard toothbrush
sidewalk car key

Enrich*Measure Length and Distance*

- 12 inches (in.) = 1 foot (ft)
- 3 feet (ft) = 1 yard (yd)
- 36 inches (in.) = 1 yard (yd)

A **ruler** measures up to 12 inches or 1 foot.

A **yardstick** measures up to 36 inches, which is 3 feet or 1 yard.

A **tape measure** is used for lengths longer than 3 feet.

Tell which tool would work best for measuring each item. Then tell what unit of length would be used to measure it. Some items may have more than one answer.

1. the top of a student's desk

2. a teacher

3. the height of a flagpole

4. the length of a computer keyboard

5. the length of a pet hamster

6. The length of a shoe

Solve each problem.

7. Maxine is measuring ribbon to wrap a gift. She has 3 feet of red ribbon, 1 yard of blue ribbon, and 18 inches of white ribbon. How many inches of ribbon does she have in all? _____

8. Ben kicked the soccer ball 15 yards. Manuel kicked the soccer ball 50 feet. Who kicked the ball the greater distance?

Explain your answer.


Enrich*Concentration*

Cut out the cards below and mix them up. Turn the cards facedown and spread them out. After you play, make the game more challenging by adding cards of your own.

To Play:

With a partner: Take turns. One player turns over two cards. If they show equal units of length, then they match. Players keep the matches they make. The player with the most cards after all cards have been chosen is the winner.

Think about the strategies you can use to find matching units. Write three things you can do to help you make matches more quickly.



36 inches	3 feet	48 inches	4 feet
1 yard	3 feet	2 yards	6 feet
1 mile	5,280 feet	1 mile	1,760 yards
72 inches	2 yards	24 inches	2 feet
36 inches	1 yard	12 inches	1 foot

Enrich*Metric Measure Me*

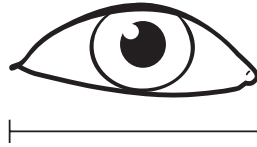
Make an estimate for each body part shown. Then use a metric ruler to find the actual length of your body part. Use the lines next to each part to help you know how to measure.

1. Estimate _____ cm



Actual _____ cm.

2. Estimate _____ cm



Actual _____ cm

3. Estimate _____ cm



Actual _____ cm

4. Estimate _____ cm



Actual _____ cm

Match the following estimates with each item. Draw a line from each item to a reasonable measurement.

5. the height of a third-grader

about 2 millimeters

6. the length of a third-grader's foot

about 10 millimeters

7. the length of a third-grader's arm

about 1 meter 45 centimeters

8. the length of a third-grader's eyelash

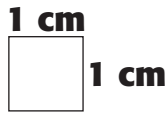
about 40 centimeters

9. the length of third-grader's fingernail

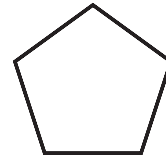
about 20 centimeters

Enrich*All "Around" Fun!*

Perimeter is the distance around the outside of a figure or shape. You can use addition to find the perimeter. Add the lengths of the sides. For example, the perimeter of this square is 4 cm.



1. Perry lays out garden plots. She just bought fencing to go around a garden. The garden is shaped like a pentagon with equal sides. She bought 50 feet of fencing to go around the garden. How much fencing will go on each side?



2. One of Perry's customers wants a garden shaped like an octagon. The sides of the octagon are 10 feet each. What is the total perimeter of the garden?

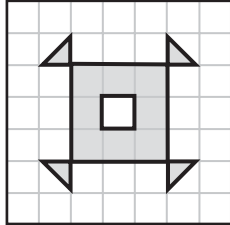
3. Another customer wants a garden with the same perimeter. If the second garden is shaped like a rectangle, what will the length of each side of this garden be if the long sides are 25, 30, or 35 feet?

4. What happens to the short sides as the long sides increase in length?

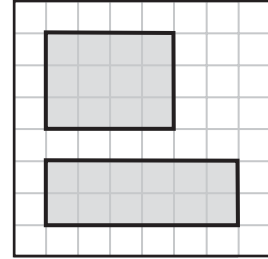
Enrich

Finding Areas

You can find the area of a shape by counting square units. Sometimes you might have to add half-square units to make a whole square unit.



The area of this shape is 10 square units.



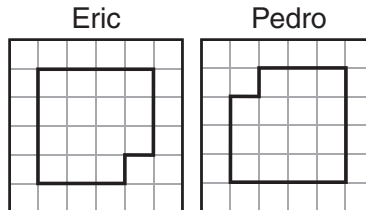
The area of each of these rectangles is 12 square units.

You can also find the area of rectangles and squares by multiplying their

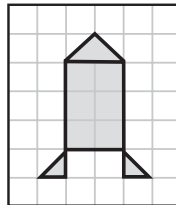
lengths \times their *widths*.

$$\text{Length} \times \text{Width} = \text{Area}$$

- Eric and Pedro are drawing shapes. Each boy draws a shape that has an area of 15 square units. Show a pattern that each boy might have drawn. Shade in the square units.

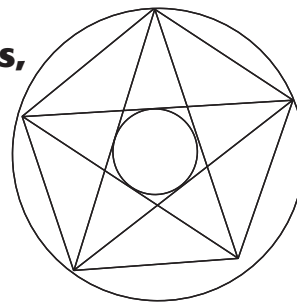


- What is the area of the part of this drawing that is not shaded?



Enrich*What Do You See?*

Play this puzzle game with a partner. Each player looks at the puzzle independently. Players find as many circles, pentagons, triangles, and quadrilaterals as they can. Each player writes an answer for questions 1-4 on a separate sheet of paper. Compare your answers.



1. How many circles do you see? _____
2. How many pentagons do you see? _____
3. How many triangles do you see? _____
4. How many quadrilaterals do you see? _____
5. Did you have the same answer as your partner? _____
How were they alike or different? _____
6. Study the puzzle again. Can you find more triangles and quadrilaterals? If so, change your answers to questions 3 and 4. Compare your answers again. Then score your game.

Scoring the game:

Give each player who said there were 2 circles 2 points.

Give each player who said there were 2 pentagons 2 points.

Subtract one point if you said there were 10 or fewer triangles.

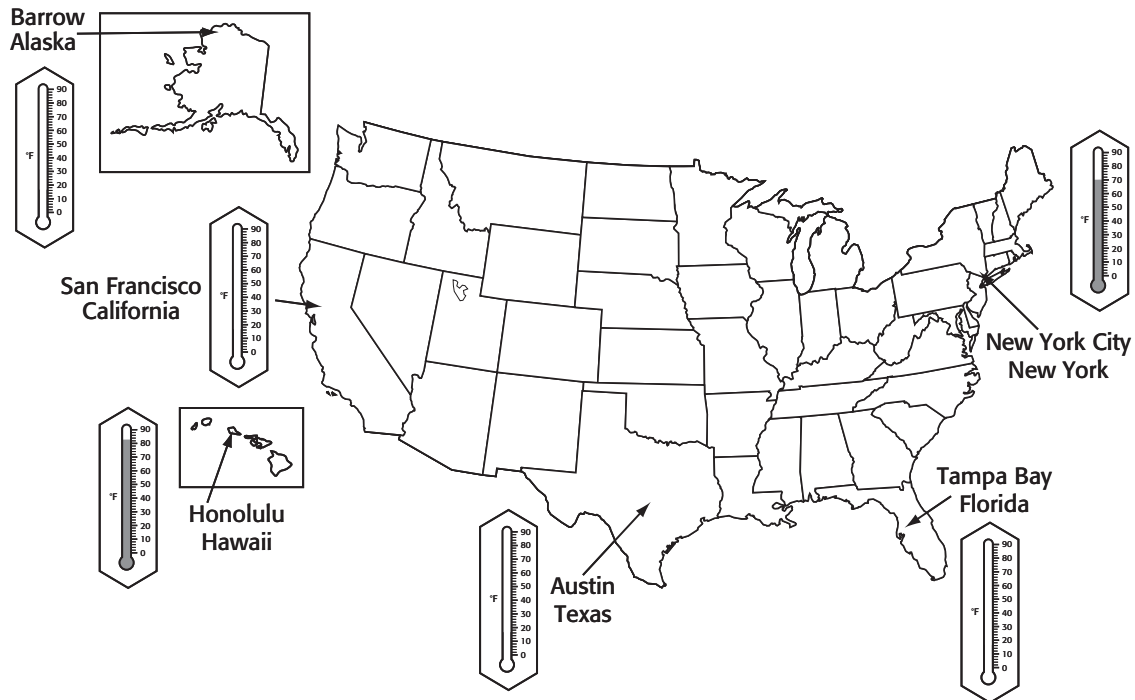
Subtract one point if you said there were 3 or fewer quadrilaterals.

Give each player who said there were more than 10 triangles 5 points.

Give each player who said there were more than 10 quadrilaterals 5 points.

Enrich*Temperature Puzzler*

Use the clues to find each temperature in degrees Fahrenheit. Write the answer after each clue. Then color the thermometer to show each temperature.



1. In Barrow, Alaska, the temperature in May is usually about 5 less than 4×5 .

2. In Honolulu, Hawaii, on Dec. 30, the temperature was 8×10 plus 3.

3. In 1946, New York City recorded its warmest day in December; it was $35 + 35!$

4. In the winter in 1962, Tampa Bay, Florida, saw its lowest temperature. It was 3 degrees above the temperature of what it normally is in Barrow, Alaska, in May.

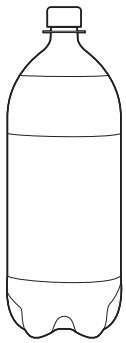
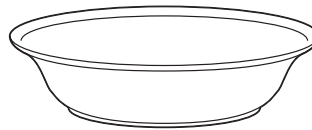
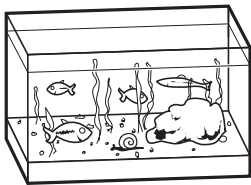
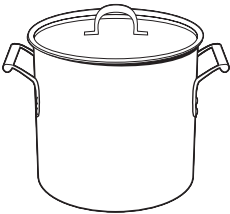
5. In the spring, the average temperature in San Francisco, California, is 7×8 .

Enrich*Matching Capacities*

You will need 5 different colors of crayons or colored pencils. Choose a color to represent each item. Color the item. Give each item two estimated capacities. Use each pair only once.

- 8 ounces = 1 cup
- 2 pints = 1 quart

- 2 cups = 1 pint
- 4 quarts = 1 gallon

**1.** juice bottle**2.** soup bowl**3.** aquarium**4.** pail**5.** large cooking pot

Enrich*The Track Meet*

For each problem, circle the statement that is most accurate. Then, explain your thinking.

- 1.** Courtney brought a liter of water to drink after the 50-yard dash. Preston brought 1 quart of water to drink after the race.

Courtney says, "I have a little more water to drink than Preston."

Preston says, "I have exactly the same amount of water as Courtney."

- 3.** Cory and Martin are teammates. They are getting ready to run a 400-meter relay race. Each will run 200 meters. Their friends Jake and Paula want to know how far in yards the boys will run.

Paula says, "I think 200 meters is about 300 yards."

Jake says, "I think 200 meters is about 200 yards."

- 2.** Jennifer and Katy are watching their friend Jill throw the shot-put ball. Jill said the ball for the elementary school weighs about 3 kilograms. Jennifer and Katy are estimating the customary weight of the ball.

Jennifer says, "I think the ball weighs about 3 pounds."

Katy says, "I think the ball weighs about 6 pounds."

- 4.** Brittany and Timothy are baking a batch of oatmeal-raisin snack bars. They will serve the snacks after the track meet. The recipe calls for at least one cup of raisins.

Brittany says, "We should mix in 8 ounces of raisins."

Timothy says, "We should mix in 8 grams of raisins."

Enrich*Making Sense with Cookies 'n' Punch*

Use the metric capacities in the boxes to fill in the blanks for each part of the recipes. You may use some measurements more than once.

Chocolate Chip Cookies

- 5 mL
 - 240 mL
 - 15 mL
 - 480 mL
 - 180 mL
 - 640 mL
- (Hint: 240 mL = about 1 cup)

1. Combine _____ of flour, _____ of salt, and _____ of baking soda in a small bowl. Set aside.
2. Beat together _____ of softened butter, _____ of brown sugar, and _____ of white sugar. Stir in _____ of vanilla.
3. Add two eggs to butter, sugar, and vanilla mixture. Beat until creamy.
4. Slowly stir in flour, salt, and baking soda mixture.
5. Add _____ of semi-sweet chocolate chips.
Stir in _____ of chopped nuts.
6. Form cookie dough into _____ balls and drop onto cookie sheet.
7. Bake at 190°C for 10 minutes.

Party Punch

- 360 mL
- 1 L
- 710 mL
- 2 L

8. In a large punch bowl, mix together _____ of frozen orange juice concentrate and _____ of water.
9. Stir in _____ of ginger ale.
10. Add _____ of pineapple juice.
11. Mix in _____ of premixed fruit punch.

Enrich*Metric Pet Shop*

Patrick moved from the United States to Great Britain. He is working in a large shop that sells many kinds of pets. He needs to convert customary units to metric units. Help Patrick estimate the weights and sizes of some of the pets for sale.

Complete the conversion chart for Patrick. Match the metric units listed in the boxes to the customary units below. The first two are done for you, use them to guide your estimates.

5 centimeters	181 kilograms
9 centimeters	18 kilograms
10 centimeters	9 kilograms
13 centimeters	5 kilograms
18 centimeters	2 kilograms
20 centimeters	907 grams
30 centimeters	142 grams
33 centimeters	113 grams
60 centimeters	85 grams
1 meter	56 grams
1.2 meters	28 grams

Pet	Customary Units		Metric Units (Estimates)	
	Height or Length	Weight	Height or Length	Mass
Llama	3 feet	40 pounds	1 meter	18 kilograms
Mouse	4 inches (including tail)	2 ounces	10 centimeters	56 grams
Lizard	5 inches (including tail)	3 ounces		
Horse	4 feet	400 pounds		
Rabbit	12 inches	5 pounds		
Goat	24 inches	22 pounds		
Hamster	$3\frac{1}{2}$ inches	5 ounces		
Goldfish	2 inches	1 ounce		
Parakeet	7 inches	4 ounces		
Puppy	13 inches (including tail)	11 pounds		
Kitten	8 inches (including tail)	2 pounds		

Enrich

How Much Does it Weigh?

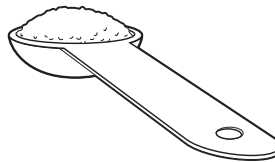
Estimate the weight of each item. Choose an estimated weight from the box and write it under the item you think it matches.

Estimated Weight	
<ul style="list-style-type: none"> • about 20 pounds • about 10,000 pounds • about 2,000 pounds • about 4 ounces 	<ul style="list-style-type: none"> • about 50 pounds • about 10 pounds • less than an ounce • about one ounce

1.



2.



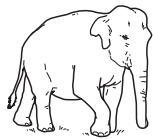
3.



4.



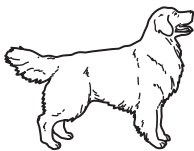
5.



6.



7.



8.



Enrich

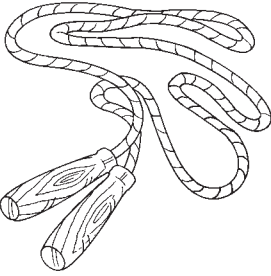
Mass and Sports

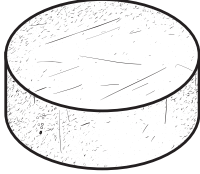
Riddle: What has 18 legs and catches flies?

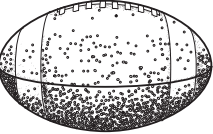
Circle the estimated mass for each sports item. Then write the letters you circled in order on the blank lines below to solve the riddle.


1. 
B 450 g **Z** 45 kg

2. 
S 142 g **T** 1420 mg

3. 
E 113 g **I** 13 mg

4. 
M 500 g **L** 5,000 mg

5. 
L 77 g **C** 7 kg

6. 
N 41 mg **E** 410 g

A _ A _ _ B A _ _ T _ A M

Enrich*Estimating Volumes*

Look at each item. Name which solid shape it resembles. Then choose volume amounts that best match the items.

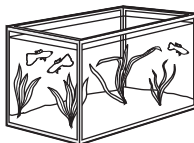
2 quarts or 115 cubic inches	11 ounces or 325 cubic centimeters
6,912 cubic inches or 30 gallons	44 ounces or 80 cubic inches
2 ounces or 60 cubic centimeters	3 ounces or 89 cubic centimeters

(Hint: Rectangular prisms and cubes may be measured in cubic units. They may also be measured in dry or liquid measures, such as ounces, cups, pints, quarts, and gallons.)

1.



2.



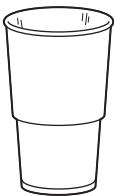
3.



4.



5.



6.

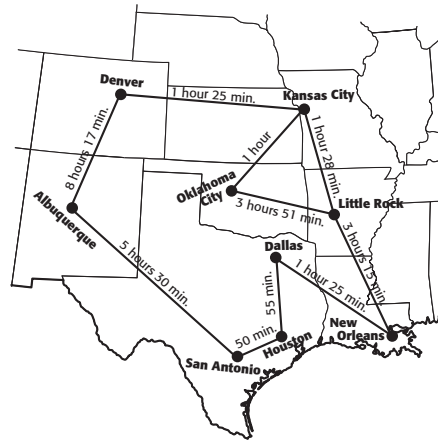


Enrich

Flight and Time

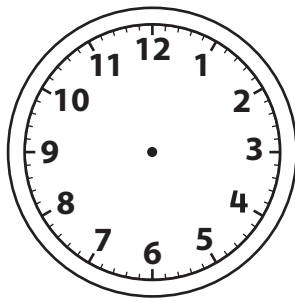
Captain Lucy Maddox is a pilot. She flies her plane along the route shown on the map. The map shows how long it takes to fly from city to city. Use the information on the map to answer the questions and to help you write times on the clocks.

1. If Lucy leaves Kansas City at 6 A.M. and flies first to Oklahoma City and then to Little Rock, what time will she arrive in Little Rock? Write the time on the digital clock. Then circle if the time will be A.M. or P.M.



	a.m.
	p.m.

2. If Lucy flies from New Orleans to Dallas and from Dallas to Houston, when will she arrive if she leaves New Orleans at 11:25 P.M.? Show where the hands on the clock will be when she arrives in Houston. Circle if the time will be A.M. or P.M.

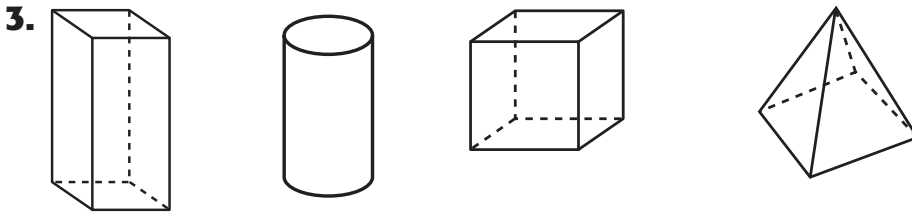
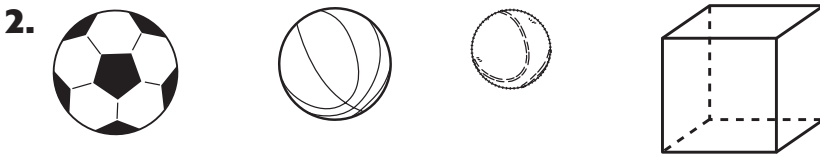
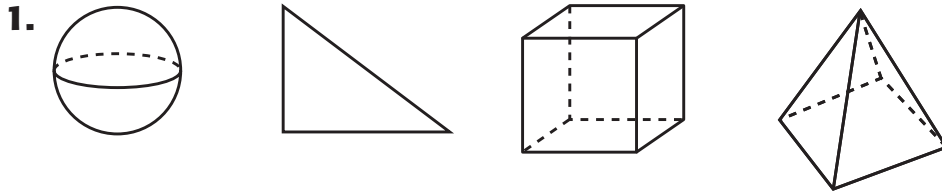


A.M. P.M.

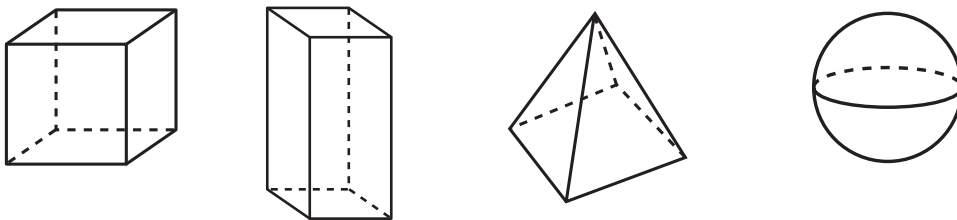
Enrich

Does Not Belong

Write the name of the figure that does not belong. Give a reason.



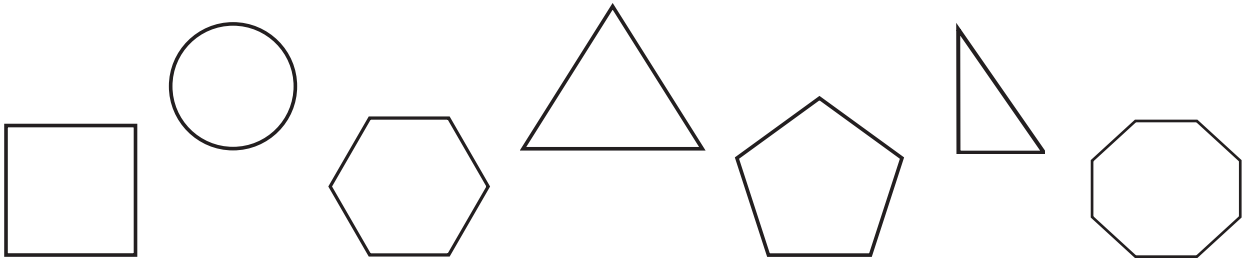
Look at these three-dimensional figures.



4. How is the sphere different from the other shapes shown?

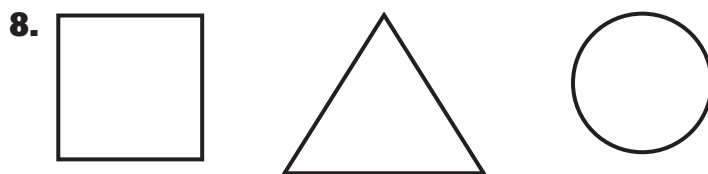
Enrich*Shape Hunt*

You will need colored pencils or crayons. Look at the following shapes. Follow the directions.



1. Color the circle orange.
2. Underline the triangle that has equal sides.
3. Color the octagon blue.
4. Color the square green.
5. Color the pentagon yellow.
6. Outline the sides of the hexagon in red.
7. Color the right triangle purple.

Circle the figure that does not fit the pattern shown in the drawing. Tell one reason why it does not fit.



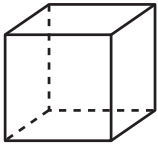
Enrich

Matching Shapes to Nets

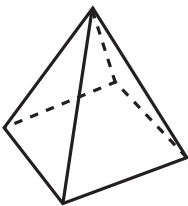
Match each three-dimensional figure to the plans used to make it. These plans are called nets. Hint: there is one more net than figures.

Figures

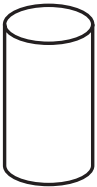
1.



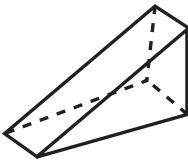
2.



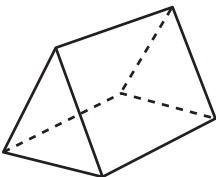
3.



4.

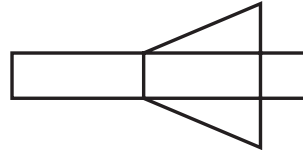


5.

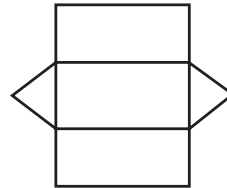


Nets

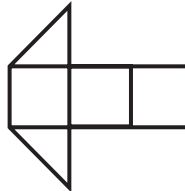
a.



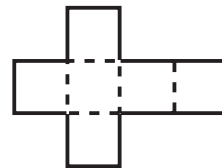
b.



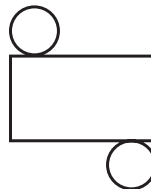
c.



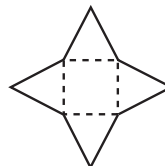
d.



e.



f.



6. Tell how you were able to match each three-dimensional figure to its net.

Enrich

Geometric Pattern Puzzlers

Read each problem and answer the questions. Draw pictures to help explain your answers.

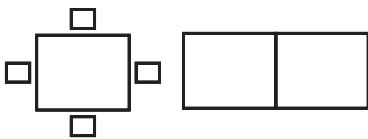
1. If this pattern continues, in what position will the 15th congruent triangle be? _____

In what position will the 20th congruent triangle be? _____



Write a rule that helps you know what the position will be for any triangle.

2. Suppose you have a table with four chairs placed around it. How many chairs can be placed around two tables that are put together like this?



Rule:	Number of Tables	Number of Chairs
	1	4
	2	_____
	3	_____
	4	_____
	5	_____
	6	_____

Copy and complete the chart then complete this rule that helps you know how many chairs would be needed for each time you added a table up to six tables. Multiply the number of tables X _____ and add _____ chairs.

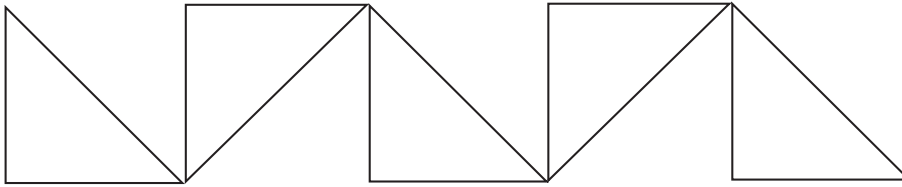
3. Copy this pattern of triangles. Use the number of triangles down the right side of each figure to help you create a rule for how many triangles will be in each new figure in the pattern.

Hint:

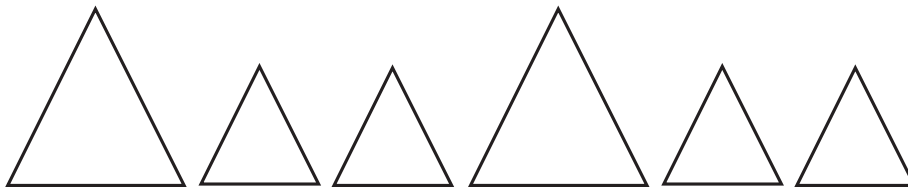
	Number of triangles down one side	Total number of triangles in figure
	2	4
	3	9

Enrich*Congruent and Similar Figures*

This pattern is made from congruent triangles.



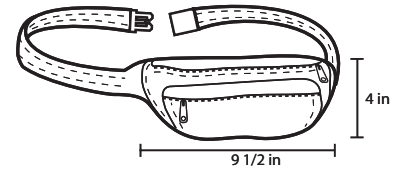
This pattern is made from similar triangles.



1. Choose a shape. Create a pattern using congruent shapes. Draw your pattern below.
2. Choose another shape. Create a pattern using similar shapes. Draw your pattern below.
3. Create a third pattern using shapes that are not congruent or similar. Draw your pattern below.
4. Are all triangles similar? Explain.

Enrich*Hiking Trip Math*

Dustin is going for a day hike. Use the clues to figure out what might be in the small pack he is wearing. Each hiker must take a drink, two snacks, a sandwich, a first aid kit, sunscreen, a camera, and a watch or a compass. Round lengths to the nearest $\frac{1}{2}$ inch.



- Nothing is folded.
- No two items lined up in one row are longer than $9\frac{1}{2}$ inches long.
- The items are in rows of two items in each row.
- The camera is next to the sandwich. The first aid kit is next to the sunscreen.
- The two snacks are side by side.
- The drink is unopened, lying on its side next to the watch or compass.

Possible Item	Length	Weight
Disposal camera	4 inches	11 ounces
Digital camera	$3\frac{1}{4}$ inches	7 ounces
Granola bar (snack)	6 inches	1 ounce
King-sized protein bar (snack)	11 inches	3 ounces
Hard boiled egg (snack)	$2\frac{1}{2}$ inches	3 ounces
Apple (snack)	$2\frac{1}{2}$ inches	4 ounces
Orange (snack)	3 inches	6 ounces
Beef jerky (snack)	11 inches	3 ounces
Sandwich	5 inches	4 ounces
Juice box	4 inches	8 ounces
Bottle of water	$9\frac{1}{2}$ inches	16 ounces
Small first aid kit	$4\frac{3}{4}$ inches	4 ounces
Large first aid kit	7 inches	8 ounces
Tube of sunscreen	4 inches	1 ounce
Bottle of sunscreen	12 inches	3 ounces
Plastic compass	1 inch	$\frac{1}{2}$ ounce
Plastic stopwatch	2 inches	3 ounces

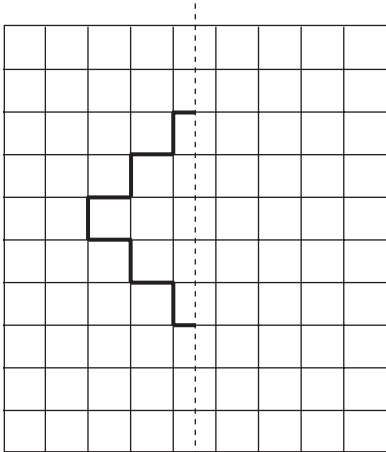
What did Dustin take? How do you know? What strategy or strategies did you use to solve the problem?

Enrich

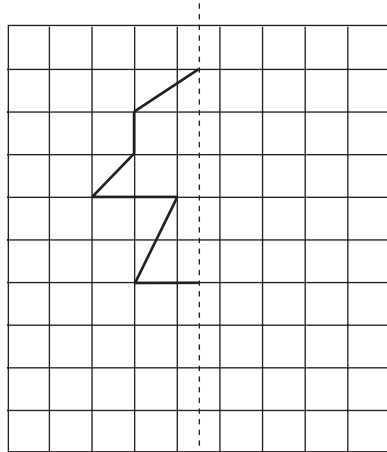
Explore Symmetry

Complete each shape to make it symmetrical.

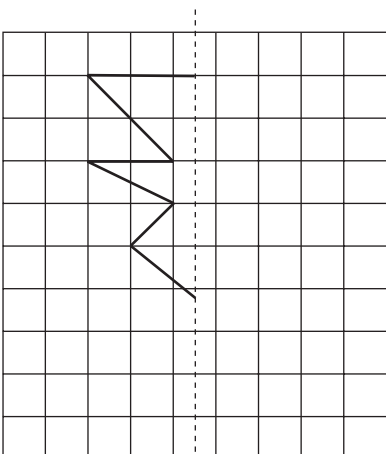
1.



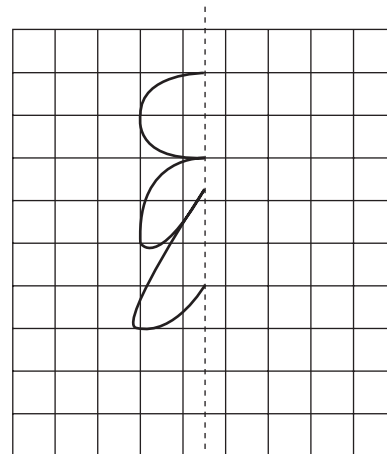
2.



3.



4.

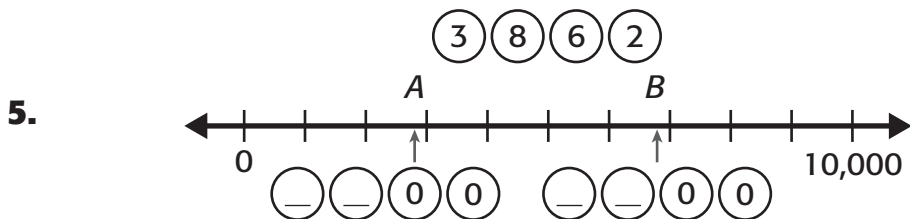
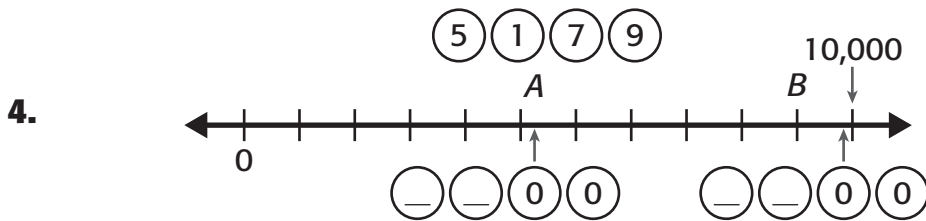
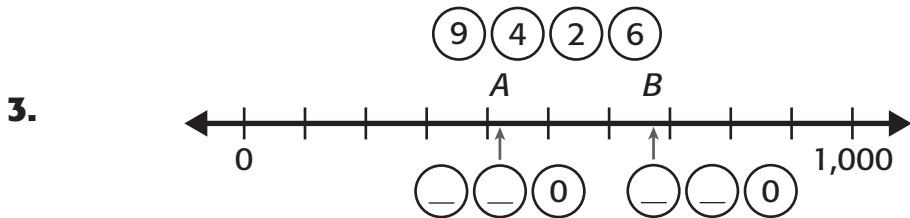
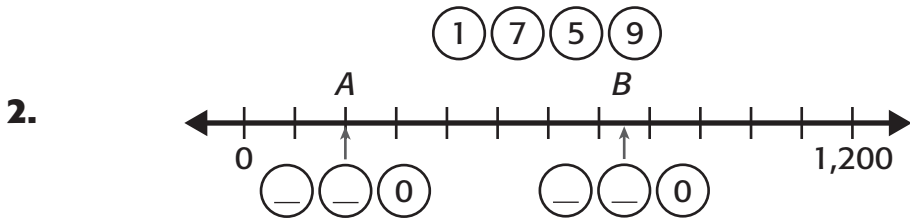
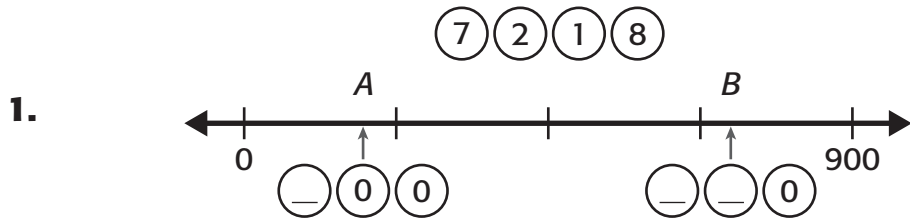


5. How can you prove to another student that each shape is symmetrical?

Enrich

On the Line

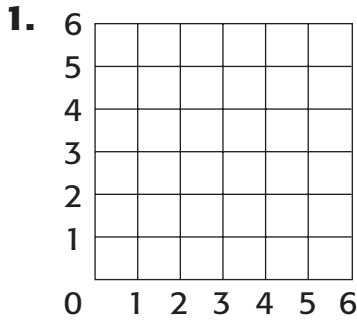
Use the digits from the circles above each number line to make the missing number.



Enrich

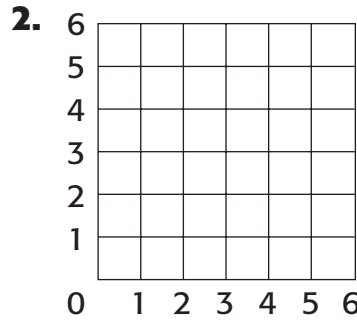
Coordinate Graphs

Use the ordered pairs to find the points on each grid. Then connect the points in the order given. Write the name of each shape that you make.



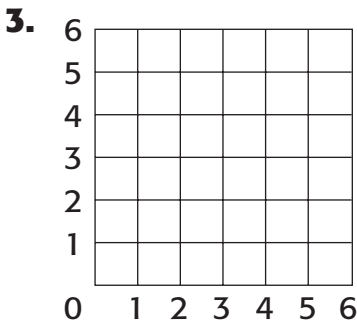
$(0, 0) \rightarrow (0, 4) \rightarrow (4, 4) \rightarrow (4, 0)$

Shape: _____



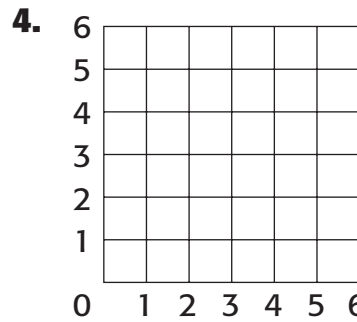
$(3, 0) \rightarrow (1, 1) \rightarrow (1, 4) \rightarrow (5, 4) \rightarrow (5, 1)$

Shape: _____



$(2, 5) \rightarrow (4, 5) \rightarrow (6, 3) \rightarrow (4, 1) \rightarrow (2, 1) \rightarrow (0, 3)$

Shape: _____



$(3, 6) \rightarrow (4, 4) \rightarrow (6, 4) \rightarrow (4, 3) \rightarrow (5, 1) \rightarrow (3, 2) \rightarrow (1, 1) \rightarrow (2, 3) \rightarrow (0, 4) \rightarrow (2, 4)$

Shape: _____

Enrich*Pictograph*

Mr. Lopez surveyed the students in his third grade art classes to find out what their favorite art activities were. Use the data in the table to make a pictograph showing the favorite art activities. Design a symbol to use to represent 4 students. Be sure to include the symbol in the key.

Favorite Art Activity	Number of Students
Watercolor	40
Colored Pencils	38
Collage	14
Found Object Sculpture	32
Crayon	22
String and Yarn Art	4
Acrylic Painting	28

Favorite Art Activity	
Watercolor	
Colored Markers	
Collage	
Found Object Sculpture	
Crayon	
String and Yarn Art	
Acrylic Painting	

Key: Each _____ = 4 students

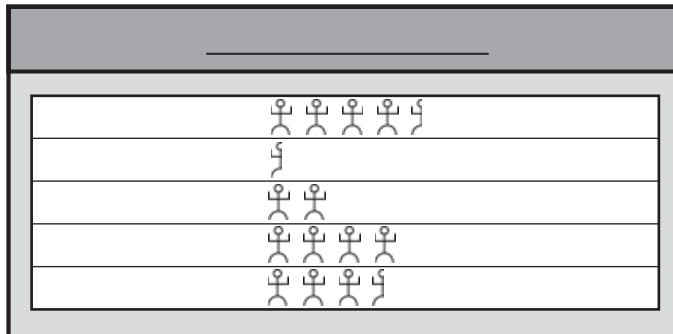
Enrich

Using Pictographs

Look at the incomplete pictograph. Make up a short explanation about what the pictograph represents. Then complete the pictograph. Be sure to include headings and tell what the symbol represents.

Write two questions about the pictograph and have a friend answer them. For example, this pictograph might represent favorite foods and the number of people who like them. Or, it might represent different pets that people have. Be creative.

Explanation:



Key: = _____

Question 1:

Question 2:

Enrich*Thinking about Probability*

Use the hundred chart and the scale for the words ***certain***, ***very likely***, ***likely***, ***unlikely***, or ***impossible*** to describe the probability.

Certain = 99 out of 100 chances

More likely = 60 or greater out of 100 chances

Equally likely = 50 out of 100 chances

Less likely = 40 or less out of 100 chances; Improbable

Impossible = 0 out of 100 chances

×	0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10
2	0	2	4	6	8	10	12	14	16	18	20
3	0	3	6	9	12	15	18	21	24	27	30
4	0	4	8	12	16	20	24	28	32	36	40
5	0	5	10	15	20	25	30	35	40	45	50
6	0	6	12	18	24	30	36	42	48	54	60
7	0	7	14	21	28	35	42	49	56	63	70
8	0	8	16	24	32	40	48	56	64	72	80
9	0	9	18	27	36	45	54	63	72	81	90
10	0	10	20	30	40	50	60	70	80	90	100

Suppose you had the numbers from 1 to 100 on small cards in a bag, and you couldn't see them. Then you took a card from the bag, looked at it, and put it back.

What is the probability that a whole number you chose:

- contains a 1? _____
- is greater than 5? _____
- is greater than 0? _____
- contains a 3, 5, or 7? _____
- is a 2-digit number? _____
- is a 3-digit number? _____
- is a 4-digit number? _____
- is a multiple of 2? _____
- Tell what strategy you used to make your predictions.

Enrich

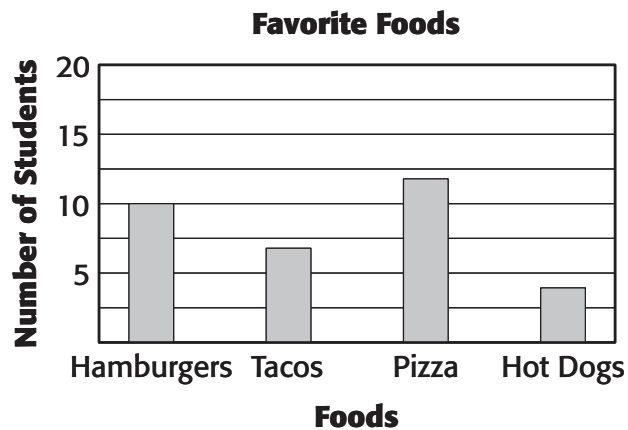
Favorite Foods

Mr. Lin’s class tallied the results of a survey of students’ favorite foods and recorded the data in a chart.

Hamburgers	
Tacos	
Pizza	
Hot Dogs	

Use the tally marks to complete the table. Then complete the bar graph.

Favorite Foods	Number of Students
Hamburgers	
	7
Pizza	
Hot Dogs	



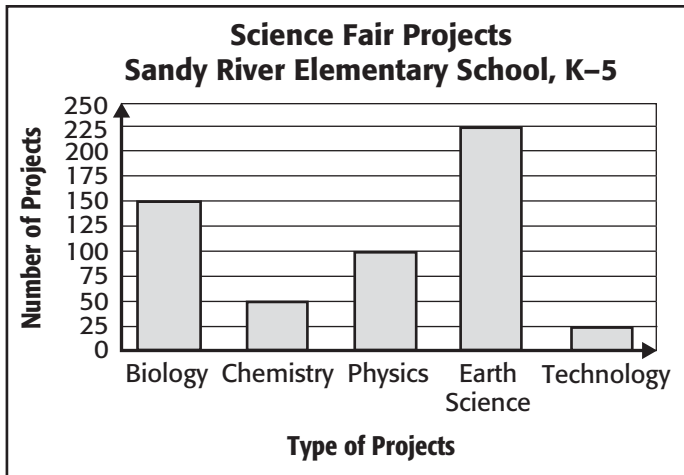
Use the information in the chart and bar graph to answer the questions below.

1. Why are the bars for tacos, pizza, and hot dogs between two lines?

2. Suppose no one liked hot dogs. Instead, those students liked tacos. Where would the top of the bar for tacos be on the chart? Explain.

Enrich*Interpret Bar Graph*

Use the information in the bar graph below to answer the questions.



- What is the order of the types of projects from the *greatest* number to the *least*?

- What was the difference in the number of projects between earth science and physics? Write a number sentence to show how you answered the question.

- How many total projects were entered in the Science Fair? Write a number sentence to show how you answered the question.

- What was the difference in the number of projects between chemistry and technology? Write a number sentence to show how you answered the question.

- What conclusions can you draw about biology and chemistry projects in this science fair from this bar graph?

Enrich*Watching Events Over Time*

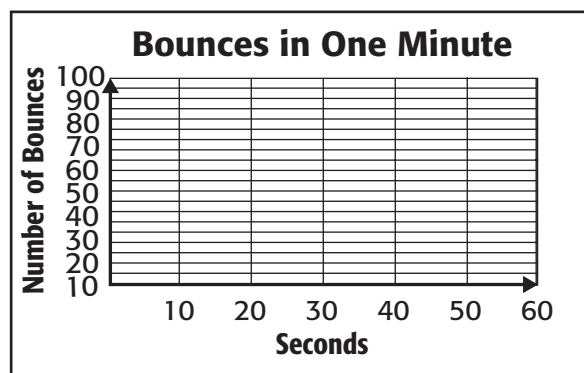
Do your own experiment and make a line graph. You will need a pencil, three friends, a clock or watch with a second hand, and a soft rubber ball. One friend will be the timer. Another will be the counter. The third friend will be the recorder. You will bounce the ball.

Use the table and line chart below.

When the timer says "go," start bouncing the ball. The counter counts the bounces out loud. Every 10 seconds, the timer says "time" and the recorder uses the table to write down the number of bounces.

Time in Seconds	0	10	20	30	40	50	60
Total Number of Bounces	0						

Stop after one minute. Use the data in the table to make a line graph. Plot the total number of bounces you had after 10 seconds, after 20 seconds, and so on. Draw straight lines from point to point.



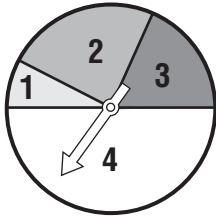
How many total bounces did you have in 60 seconds?

What did you notice about the number of bounces you had over the period of 60 seconds?

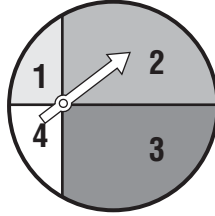
Take turns so that everyone has a chance to bounce the ball.

Enrich*More Probability*

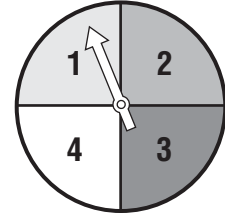
Look at the three spinners below. Then answer questions 1-5 using the words, *certain*, *likely*, *unlikely*, or *impossible*.



Spinner 1



Spinner 2



Spinner 3

If you use Spinner 1,

1. the probability of landing on a 1, 2, 3, or 4, or on a line is _____.
2. the probability of landing on a 0 or 5 is _____.
3. the probability of landing on a 2 or 4 is _____.

If you use Spinner 2,

4. the probability of landing on a 1 is _____.
5. the probability of landing on 3 is _____.

If you use Spinner 3,

6. which number do you think you are most likely to land on?
Explain your answer.

Look at all the spinners.

7. Which one do you think is the most fair? Explain.

Enrich*Number Cube Toss*

This tally chart shows the results of 24 tosses of a number cube with the numbers 1–6 on the faces of the cube.

1	2	3	4	5	6

Toss a number cube 12 more times. Add your results to the chart.

1. How many tallies were there for each number?

1 _____

2 _____

3 _____

4 _____

5 _____

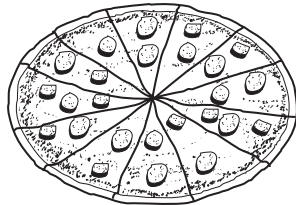
6 _____

2. Which number had the most? _____

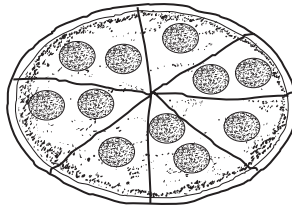
Which had the least? _____

3. Were the results what you expected? Why or why not?

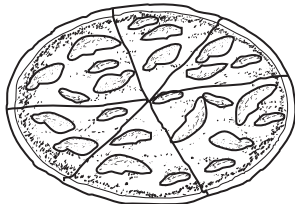
4. If you had more than 6 tallies for one number, would you say that a result like that was certain, very likely, likely, unlikely or impossible?

Enrich*Pizza Party Puzzlers*

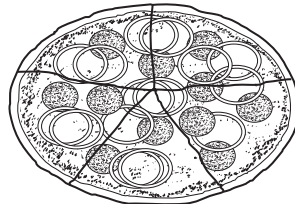
sausage



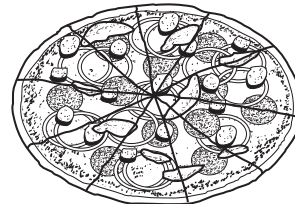
pepperoni



bbq chicken



pepperoni and onion



supreme

Read the pizza clues and answer the questions.

1. Manuel ate 2 pieces of this pizza. He gave Marco and Sam each the same number of pieces he ate. There was one piece left. Which pizza did they eat? Name the fraction that was left.

2. Brenda divided this pizza equally among her 3 friends and herself. Each person had 3 pieces. Which pizza did they eat? Name the fraction that Brenda ate.

3. Carlos and Derek decided to share their pizza with James, Stan, and Evan. If the pizza was cut into large equal pieces and each boy ate one piece, which pizza did they eat? Name the fraction each person ate.

Enrich*Finding Parts of a Set*

WORD	WORD FRACTIONS	FRACTION
Third	$\frac{1 \text{ vowel}}{5 \text{ letters}}$	$\frac{1}{5}$
Grader	$\frac{4 \text{ consonants}}{6 \text{ letters}}$	$\frac{4}{6}$

Write word fractions for each word in the sets below.

VOWELS		
WORD	WORD FRACTIONS	FRACTION
1. giraffe	_____	_____
2. kitten	_____	_____
3. banana	_____	_____

CONSONANTS		
WORD	WORD FRACTIONS	FRACTION
4. house	_____	_____
5. two	_____	_____
6. trick	_____	_____

CHALLENGE

- 7.** If $\frac{2}{6}$ of the letters in a word are vowels, what fraction of the letters in the word are consonants? Give an example.

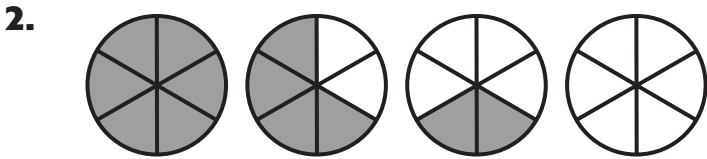
Enrich

Fractions Patterns

Shade what comes next. Write a rule beneath the pattern.



Rule: _____



Rule: _____



Rule: _____

Complete each pattern. Write the rule beneath.

4. $1\frac{2}{4}, 1\frac{1}{4}, 1, \frac{3}{4},$ _____

5. $\frac{1}{10}, \frac{4}{10}, \frac{7}{10},$ _____, $1\frac{3}{10}$

Rule: _____

Rule: _____

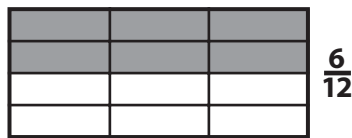
6. Create your own pattern using both a drawing and numerical fractions. Tell what the rule is.

Enrich*Equivalent Fractions*

Equivalent fractions are those that name the same amount.

Shade the amount shown next to each block. You will need to complete the last one on your own. Write *yes* if the two fractions are equivalent and *no* if they are not.

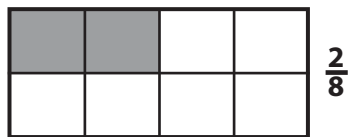
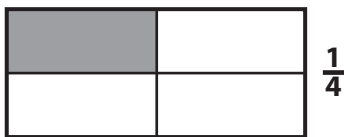
1. $\frac{1}{2}$ and $\frac{6}{12}$



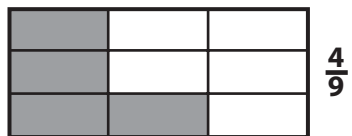
2. $\frac{2}{5}$ and $\frac{3}{6}$



3. $\frac{1}{4}$ and $\frac{2}{8}$

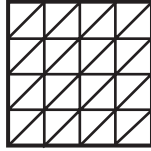


4. $\frac{2}{3}$ and $\frac{4}{9}$



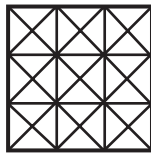
Enrich*Fraction Patterns*

Solve the problems about the fraction patterns. Follow the directions for coloring the triangles. Colors should not overlap.

**Pattern A**

Color $\frac{1}{2}$ of the triangles red. Color $\frac{1}{4}$ of the triangles blue. The remainder of the triangles should be white.

1. What fraction describes how many triangles are red or white?

**Pattern B**

Color $\frac{1}{6}$ of the triangles orange. Color $\frac{1}{2}$ of the triangles yellow. The remainder of the triangles should be green.

2. What fraction describes how many triangles are green?
-
3. Could each of these patterns be colored with equal parts of blue, green, purple, and red? Why or why not?

4. Which pattern could be colored with 12 different colors and have the same number triangles of each color?

Enrich*Fraction Riddles*

Here's a reminder: the **numerator** is how many equal parts are used
the **denominator** is how many total parts in all

Use the chart to answer the riddles.

1/1											
1/3				1/3				1/3			
1/6		1/6		1/6		1/6		1/6		1/6	
1/12	1/12	1/12	1/12	1/12	1/12	1/12	1/12	1/12	1/12	1/12	1/12
1/4			1/4			1/4			1/4		
1/2						1/2					
1/1											

- I am a fraction that is equal to $\frac{1}{6}$. What am I? _____
- I am the greater of these two: $\frac{2}{3}$ or $\frac{2}{4}$? What fraction am I? _____
- I may seem greater but I am the lesser of these two: $\frac{1}{2}$ and $\frac{1}{12}$. What am I? _____
- I am greater than $\frac{1}{2}$. There is a one in my numerator. What am I? _____
- I am slightly less than $\frac{3}{4}$. There is a 6 in my denominator. What am I? _____
- I am less than $\frac{1}{2}$. I have a 5 in my numerator. What am I? _____
- There are three other fractions that are equal to me. They are $\frac{3}{6}$, $\frac{2}{4}$, and $\frac{6}{12}$. What am I? _____
- Explain why your answer to Riddle 7 has three fractions that are equal to itself.

Enrich*Flower Arrangements*

Beau and Angeline are making flower arrangements using flowers from their garden. Each arrangement has twelve flowers in it. No two arrangements are alike. Read the clues. For each arrangement, list the different number of flowers and then write each as a fraction.

1. There are an equal number of daisies, roses, tulips, and snapdragons.

_____ 3 daisies _____
 _____ 3 roses _____
 _____ tulips _____
 _____ snapdragons _____

2. There is one more daisy than there are snapdragons. There is one more tulip than there are roses. There are more roses than daisies.

_____ daisies _____
 _____ roses _____
 _____ tulips _____
 _____ snapdragons _____

3. There are twice as many roses as daisies. There are the same number of tulips as snapdragons.

_____ daisies _____
 _____ roses _____
 _____ tulips _____
 _____ snapdragons _____



4. There are 3 times more daisies than snapdragons. There are 3 times more roses than tulips. There are more daisies than roses.

_____ daisies _____
 _____ roses _____
 _____ tulips _____
 _____ snapdragons _____

Enrich

Learning About Tenths

Fill in the blanks in the chart below.

	Fraction	Decimal	Model	Words
1.	a. $\frac{3}{10}$	b. _____	c.	d. three tenths
2.	a. _____	b. _____	c. 	d. _____
3.	a. _____	b. _____	c.	d. eight tenths
4.	a. _____	b. 0.2	c.	d. _____
5.	a. _____	b. _____	c. 	d. _____
6.	a. _____	b. 0.1	c.	d. _____
7.	a. $\frac{4}{10}$	b. _____	c.	d. _____
8.	a. _____	b. _____	c.	d. five tenths
9.	a. $\frac{7}{10}$	b. _____	c.	d. _____

Complete the number line. The pattern is fraction, decimal, then words.

10.	$\frac{1}{10}$	0.2	three tenths	$\frac{4}{10}$	_____	_____	_____	_____	_____	_____
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Enrich

Space Shuttle

Match the decimals to the word names or fractions below. Write the letters on the line to find the answers to the questions.

T	.41
A	.19
B	.25
R	.06
E	.03
O	.60
C	.59
S	.75
I	.13
N	.97
L	.62
P	.38

1. Who was the first male pilot to fly the Space Shuttle?

$\frac{6}{100}$	six hundredths	twenty-five hundredths	$\frac{3}{100}$	six hundredths	$\frac{41}{100}$	
fifty-nine hundredths	$\frac{6}{100}$	$\frac{13}{100}$	thirty-eight hundredths	$\frac{38}{100}$	three hundredths	$\frac{97}{100}$

2. Who was the first female pilot to fly the Space Shuttle?

$\frac{3}{100}$	thirteen hundredths	sixty-two hundredths	three hundredths	$\frac{3}{100}$	ninety-seven hundredths	
fifty-nine hundredths	$\frac{60}{100}$	sixty-two hundredths	$\frac{62}{100}$	thirteen hundredths	$\frac{97}{100}$	seventy-five hundredths

3. What is the agency that runs the U.S. Space Shuttle Program?

$\frac{97}{100}$	nineteen hundredths	seventy-five hundredths	$\frac{19}{100}$
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Enrich*Problem-Solving Skill: Multi-Step Problems*

Keep dividing to find the answer. Then rearrange the letters after each problem and write them below to spell the answer to the riddle.

Riddle: If you start spelling the words for the numbers, beginning with one, how far would you have to go before you used the letter "a"?

1. $135 \div 3 = \underline{\quad} \div 5 = \underline{\quad} \div 1 = \underline{\quad}$ h

2. $360 \div 4 = \underline{\quad} \div 3 = \underline{\quad} \div 5 = \underline{\quad}$ d

3. $880 \div 2 = \underline{\quad} \div 4 = \underline{\quad} \div 10 = \underline{\quad}$ n

4. $567 \div 9 = \underline{\quad} \div 7 = \underline{\quad} \div 3 = \underline{\quad}$ t

5. $936 \div 4 = \underline{\quad} \div 6 = \underline{\quad} \div 3 = \underline{\quad}$ o

6. $1,000 \div 10 = \underline{\quad} \div 4 = \underline{\quad} \div 5 = \underline{\quad}$ s

7. $672 \div 6 = \underline{\quad} \div 7 = \underline{\quad} \div 8 = \underline{\quad}$ u

8. $345 \div 5 = \underline{\quad} \div 3 = \underline{\quad} \div 1 = \underline{\quad}$ a

Answer: _____

3 9 13 2 5 23 11 6







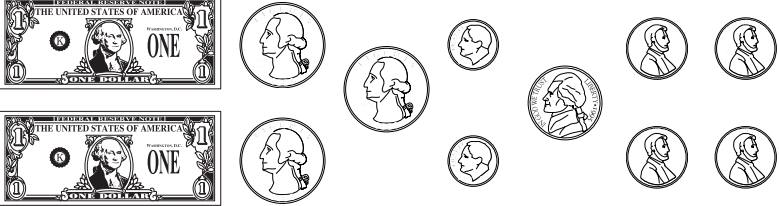

Enrich

Money Match

Our money system is based on the decimal system. The whole numbers are on the left side of the decimal. The tenths and hundredths are on the right.

Match the decimal values with the monetary values below. Write the money value under each picture.

5.34	1.48	2.28	1.11
1.29	1.03	3.04	0.85

<p>1.</p>  <p>_____</p>	<p>2.</p>  <p>_____</p>
<p>3.</p>  <p>_____</p>	<p>4.</p>  <p>_____</p>
<p>5.</p>  <p>_____</p>	<p>6.</p>  <p>_____</p>
<p>7.</p>  <p>_____</p>	
<p>8.</p>  <p>_____</p>	

Enrich*Mystery Cafe*

Read and solve each problem to discover the prices of food items in the Mystery Café. When you discover the prices, write them on the lines next on the line items.

Mystery Café Menu	
Food	Price
Taco	\$ _____
Cheeseburger	\$ _____
Potato wedges	\$ _____
Chicken strips	\$ _____
Salad	\$ _____

- Justin bought 6 tacos. He spent \$5.34. What is the price for each taco? _____
- Blake and Glen bought 2 orders of potato wedges and 4 tacos. They spent \$5.66. What is the price for each order of potato wedges? _____
- Madeline is treating her friends to lunch for her birthday. She bought 8 cheeseburgers. She gave the cashier a \$10.00 and got \$1.28 in change. What is the price for each cheeseburger? _____
- Victor ordered chicken strips and a salad. It cost him \$4.95. The cost of the salad was $\frac{1}{3}$ of the total cost. What is the price of a salad? _____
What is the price of an order of chicken strips? _____

Enrich*Looking for Patterns and Rules*

Look at the patterns. Answer the questions. Then make up a rule that could go with the pattern or answer.

1. 190, _____, _____, 220, 230, 240, _____

What are the three missing numbers in the pattern?

Rule: _____

2.

a.	b.	4,300
c.	5,200	5,300
6,100	d.	6,300
e.	f.	g.

What numbers belong in the boxes?

a. _____, b. _____, c. _____, d. _____, e. _____,

f. _____, g. _____

Rule: _____

3. $5 \times \underline{\quad}$, $\underline{\quad} \times \underline{\quad}$, $\underline{\quad} \times 800$, $\underline{\quad} \times \underline{\quad}$
- \downarrow \downarrow \downarrow \downarrow
 3,000 3,500 4,000 4,500

If the pattern continues, what numbers belong on the lines?

Rule: _____

4.

1	2	3	4	5	6	7
50	100	150	200			350

What two numbers are missing? _____ and _____

Rule: _____

Enrich*Find the Missing Factor*

Rearrange the digits in the boxes to find the missing factor for each multiplication problem.

1. $\boxed{3, 1, 0}$

_____ $\times 7 = 721$

2. $\boxed{5, 1, 3}$

_____ $\times 4 = 540$

3. $\boxed{7, 2, 9}$

$3 \times$ _____ $= 891$

4. $\boxed{2, 7, 6}$

$2 \times$ _____ $= 1,452$

5. $\boxed{6, 5, 4}$

$5 \times$ _____ $= 2,730$

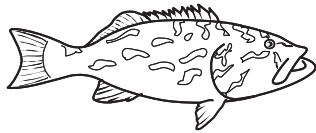
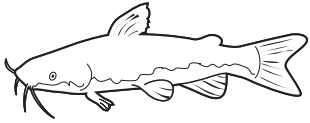
6. $\boxed{7, 5, 3}$

_____ $\times 6 = 2,142$

7. $\boxed{4, 0, 1, 5}$

$3 \times$ _____ $= 3,135$

8. Identify the strategies you used to solve these problems.

Enrich*Fishing Derby*

California held a fishing derby for three teams. Look at the numbers of each kind of fish caught by each team. Find about how many points each team received for the fish they caught. Estimate the fish points to the nearest hundred or thousand and multiply.

Fish	Points
Tuna	= 9,461
Sea trout	= 8,296
Sea bass	= 4,500
Tarpin	= 6,248
Mackerel	= 3,885
Snapper	= 5,420
Catfish	= 3,243
Herring	= 888
Grouper	= 87
Bonefish	= 527
Barracuda	= 7,284

The Trawlers	The Mighty Anglers	The Baiters
1. $9 \times \text{Catfish} = \underline{\hspace{2cm}}$	2. $2 \times \text{Tuna} = \underline{\hspace{2cm}}$	4. $4 \times \text{Herring} = \underline{\hspace{2cm}}$
2. $7 \times \text{Bonefish} = \underline{\hspace{2cm}}$	5. $5 \times \text{Bonefish} = \underline{\hspace{2cm}}$	6. $6 \times \text{Catfish} = \underline{\hspace{2cm}}$
3. $8 \times \text{Grouper} = \underline{\hspace{2cm}}$	6. $6 \times \text{Snapper} = \underline{\hspace{2cm}}$	1. $1 \times \text{Tuna} = \underline{\hspace{2cm}}$
4. $2 \times \text{Barracuda} = \underline{\hspace{2cm}}$	3. $3 \times \text{Sea trout} = \underline{\hspace{2cm}}$	8. $8 \times \text{Sea Trout} = \underline{\hspace{2cm}}$
5. $5 \times \text{Sea bass} = \underline{\hspace{2cm}}$	4. $4 \times \text{Tarpin} = \underline{\hspace{2cm}}$	7. $7 \times \text{Mackerel} = \underline{\hspace{2cm}}$

Who had the most points?

Who came in second?

By about how many points did the highest-scoring team beat the lowest scoring team? Round to the nearest thousand.

Enrich*Backward Birthday Surprise*

Multiply. Then, find the products in the boxes below and shade in those squares. Some shaded digits will overlap. Three boxes are shaded for you.

1. $4 \times 60 = \underline{\hspace{2cm}}$

2. $6 \times 600 = \underline{\hspace{2cm}}$

3. $9 \times 20 = \underline{\hspace{2cm}}$

4. $7 \times 60 = \underline{\hspace{2cm}}$

5. $7 \times 900 = \underline{\hspace{2cm}}$

6. $3 \times 4,000 = \underline{\hspace{2cm}}$

7. $8 \times 80 = \underline{\hspace{2cm}}$

8. $4 \times 8,000 = \underline{\hspace{2cm}}$

9. $1 \times 700 = \underline{\hspace{2cm}}$

10. $5 \times 800 = \underline{\hspace{2cm}}$

11. $8 \times 10 = \underline{\hspace{2cm}}$

12. $6 \times 800 = \underline{\hspace{2cm}}$

13. $7 \times 4,000 = \underline{\hspace{2cm}}$

14. $8 \times 7,000 = \underline{\hspace{2cm}}$

4	4	2	7	1	9	8	7	2	3	2	1	2	9	3	0	4	2	1	1	7	6	1	3	5
3	1	8	3	8	3	0	2	3	1	4	4	6	8	2	7	0	1	5	2	0	3	2	9	6
5	6	0	0	0	6		3	6	0	0	5	2	6	0	3	0	4	7	0	4	0	9	2	0
5	0	0	2	1	2	4	1	4	4	1	1	0	7	0	1	0	3	6	0	8	0	1	7	3
1	2	0	1	6	4	6	1	0	6	1	4	8	0	0	5		7	0	0	7		4	2	0

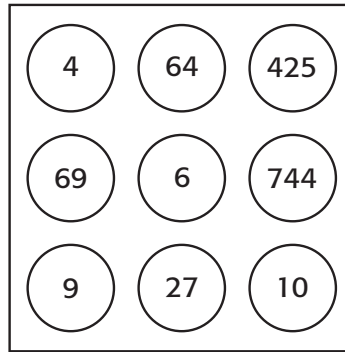
Hold your answer up to a mirror to reveal an important birthday. Whose birthday is it?

Enrich*Bean Bag Toss*

Solve. Use estimating and rounding to help solve problems.
A bean bag can hit the same number more than once.

1. Dean threw two bean bags. One of the numbers he hit is *even* and the other is *odd*. When rounded, the *product* of the two numbers is closer to 700 than 600. What two numbers did Dean hit?

_____ and _____



2. Marcia threw two bean bags. One number she hit is a *common multiple* of 3. When the numbers she hit are multiplied, their *product* rounded to the nearest thousand is 4,000. Both numbers are odd. What two numbers did Marcia hit?
- _____ and _____
3. Tamika threw two bean bags. One number she hit is a *multiple* of the other number she hit. Both numbers are even. The *product* of the two numbers is a 4-digit number. What two numbers did Tamika hit?

_____ and _____

4. Tom threw two bean bags. The product of the two numbers he hit is a *three-digit number*. When rounded to the nearest 10, the *product* would be found on a number line between 590 and 630. What two numbers did Tom hit?

_____ and _____

Enrich*Multiplication Crossmath Puzzle***Multiply. Write the products in the crossmath puzzle.**

1		2		3		4
5	6				7	
			8			
	9				10	
11				12		

Across

1. 4×93 _____

3. 5×43 _____

5. 3×86 _____

7. 4×21 _____

8. 3×27 _____

9. 8×82 _____

11. 2×58 _____

12. 4×39 _____

Down

1. 7×56 _____

2. 8×31 _____

3. 2×14 _____

4. 7×82 _____

6. 6×91 _____

8. 9×96 _____

10. 5×69 _____

Why is it important to write the numbers in straight, vertical columns when solving multiplication problems?

Enrich*Everything in Its Place*

Use place value to help find the products. Complete the chart as you work.

Problem	100s	10s	1s	Add
274×3	$\underline{3} \times \underline{200} = \underline{600}$	$\underline{3} \times \underline{70} = \underline{210}$	$\underline{3} \times \underline{4} = \underline{12}$	$\begin{array}{r} 600 \\ 210 \\ +12 \\ \hline 822 \end{array}$
956×9	____ \times ____ = ____	____ \times ____ = ____	____ \times ____ = ____	$\begin{array}{r} 8,100 \\ 450 \\ +54 \\ \hline 8,604 \end{array}$
341×5	____ \times ____ = ____	____ \times ____ = ____	____ \times ____ = ____	$\begin{array}{r} 1,500 \\ 200 \\ +5 \\ \hline 1,705 \end{array}$
493×2	____ \times ____ = ____	____ \times ____ = ____	____ \times ____ = ____	$\begin{array}{r} 800 \\ 180 \\ +6 \\ \hline 986 \end{array}$
783×8	____ \times ____ = ____	____ \times ____ = ____	____ \times ____ = ____	$\begin{array}{r} 5,600 \\ 640 \\ +24 \\ \hline 6,264 \end{array}$
187×6	____ \times ____ = ____	____ \times ____ = ____	____ \times ____ = ____	$\begin{array}{r} 600 \\ 480 \\ +42 \\ \hline 1,122 \end{array}$

Does using this chart make the multiplication easier or more difficult? Explain your answer.
