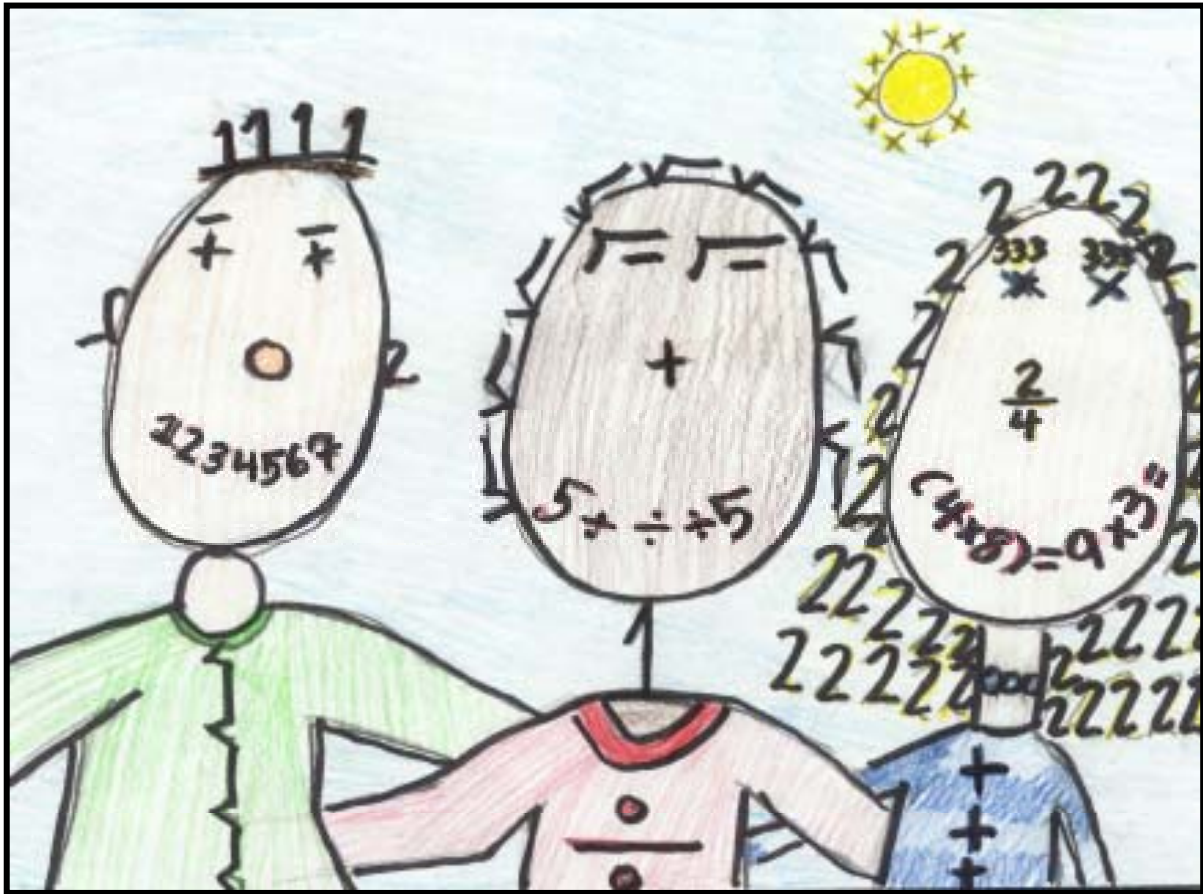


Sail into Summer with Math!



For Students Completing Third Grade

This summer math booklet was developed to provide students in kindergarten through the eighth grade an opportunity to review grade level math objectives and to improve math performance.

Summer 2001

Sail into Summer with Math!

One goal of the Northwest, Poolesville, Quince Orchard, and Seneca Valley clusters of schools is to promote increased math performance at all grade levels. Completing the summer math booklet allows each school, student, and parent within the clusters to work together to achieve this goal. Students who complete the summer math booklet will be able to:

- Increase retention of math concepts,
- Improve and raise the level of math CRT and MSPAP performance,
- Work toward closing the gap in student performance,
- Apply math concepts to performance tasks, and
- Successfully complete Algebra 1 by the end of ninth grade.

Student Responsibilities



Students will be able to improve their own math performance by:

- Completing the summer math booklet
- Reviewing math skills throughout the summer, and
- **Returning the math booklet to next year's math teacher.**

Student Signature

Grade

Date

Parent Responsibilities

Parents will be able to promote student success in math by:

- Supporting the math goal of the cluster of schools,
- Monitoring student completion of the summer math booklet,
- Encouraging student use of math concepts in summer activities, and
- **Insuring the return of the math booklet to school in the fall.**



Parent Signature

Date

The "Rea Sail into Summer with Math!" booklets were developed by:
K – Susan Springer, 1 – Sharon Thorne, 2 – Lynne Todd, 3 – Aphy Lennon,
4 – Sandy Holmes, 5 – Jennifer Roy, 6 – Michelle Ronan and Linda Verde,
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A special thanks to Don Kress (Community Superintendent) and Cynthia Rattley (Performance Director) for their help and support with this project.

The cover of the 2001 Third Grade summer math booklet was created by
Ginger Liau, a Third Grade student at
Darnestown Elementary School.

Summer Mathematics Packet

Dear Parents and Students,

In this booklet you will find math activities that will help to review and maintain math skills learned in third grade and prepare your child for fourth grade. These activities are varied and meant to show how much fun and relevant math can be in everyday life. There are activities that can be done throughout vacation, at the pool, at a restaurant, on the beach, etc. (If an activity has an asterisk *, it indicates a more challenging problem.)

At least four activities should be done each week. The activities should be done in a small notebook or on separate sheets of paper organized in a folder. Memorization of basic facts in addition, subtraction, multiplication, and division is important for continued success in math and should be practiced during the summer. Parents and students should discuss the activities, and parents should check to see if the activities have been completed correctly.

All work should be returned to your child's fourth grade teacher. Have a great time "sailing into summer with math!"



Week 1

1. Use this little rhyme to help remember the rules for rounding:

*Zero, one, two, three, four, Round down to the ten/hundred before,
Five, six, seven, eight, nine, Round up to the next in line.*

Round each number to the nearest ten

78 _____

42 _____

38 _____

55 _____

63 _____

21 _____

95 _____

14 _____

87 _____

66 _____

Round each number to the nearest hundred. (*Hint – If the tens digit is 0-4, the hundreds digit remains the same. If the tens digit is 5-9, the hundreds digit is increased by one.*)

432 _____

538 _____

724 _____

426 _____

250 _____

673 _____

768 _____

335 _____

977 _____

475 _____

2. Find at least **five different combinations of coins** that total \$0.80.
3. Use **mental math** to solve. Write answers only.

$300 + 200 =$	$900 - 500 =$	$1300 - 400 =$
$1400 - 800 =$	$800 + 700 =$	$500 + 900 =$
$1200 - 200 =$	$700 + 200 =$	$1100 - 700 =$
$800 + 900 =$	$600 + 700 =$	$1500 - 700 =$
$1800 - 900 =$	$400 + 800 =$	$1200 - 900 =$

4. **Collect data** from 20 friends and/or family members about their favorite summertime activities. Make a **table** and use **tally marks** to record your data. Be sure to title and label your table.

Write two statements using the data from your graph.

5. Find 6 four-digit numbers in old magazines, catalogs, or the newspaper and cut them out (do not use prices that include cents).
Paste them down in order from smallest to largest.
Put a star by the number in your list that is closest to 4,000.
Circle in red the number(s) that has the greatest digit in the hundreds place.
Circle in blue the number(s) that has the smallest digit in the tens place.

6. Write the **dates using numerals** only.

July 4, 1994	February 20, 1996	March 8, 1964
August 30, 1992	December 31, 1967	January 1, 2000
April 1, 1993	November 15, 1990	June 17, 1999
September 21, 1985	October 31, 1973	May 10, 1975

Week 2

1. Round each number to the nearest ten.

429 _____	632 _____	708 _____	523 _____
838 _____	352 _____	578 _____	191 _____
214 _____	974 _____	347 _____	618 _____
	503 _____	442 _____	

Now try these!

4,812 _____	7,947 _____	3,669 _____	2,582 _____
6,735 _____	1,457 _____	3,443 _____	8,328 _____
	5,293 _____	5,997 _____	

Bonus! Circle the palindromes.

2. **Estimate** which sums will be greater than 900 by circling those problems. Then solve **all problems** to find the **actual sum**.

372	475	406	790	468	384	279	128	845	216
<u>+478</u>	<u>+292</u>	<u>+231</u>	<u>+429</u>	<u>+278</u>	<u>+576</u>	<u>+875</u>	<u>+876</u>	<u>+97</u>	<u>+584</u>

Write an addition story to go with one of these problems.

3. Go on a **Shape Hunt**. Find circles, squares, rectangles, and triangles. Make a table to show the shapes, the names of the objects you found, and the total number of objects for each shape. Be sure to include a title on your table.

Bonus! Try to find pentagons, hexagons, octagons, rhombi, and ovals.

4. Choose one day this week and make a record of your daily activities. Record the time in five-minute and/or one-minute intervals **AND** use **A.M.** and **P.M.** Example: 7:00 a.m. – Woke up!
7:30 a.m. – Breakfast at McDonald’s
8:15 a.m. – Swim team practice

5. The ice cream truck has just arrived. Ashley has \$0.90 in her swim bag. An ice cream sandwich costs \$0.65. How much change will she get back? **Draw and label the coins.**

6. Write addition/subtraction **fact families** for 17, 13, 16, and 15.

A fact family look like this:

$4 + 7 = 11$	$11 - 4 = 7$
$7 + 4 = 11$	$11 - 7 = 4$

Week 3

1. **Estimate** which differences are less than 600 by circling those problems. Then solve **all problems** to find the **actual difference**.

$$\begin{array}{r}
 441 \\
 - 362 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 438 \\
 - 259 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 860 \\
 - 98 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 800 \\
 - 194 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 750 \\
 - 134 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 501 \\
 - 17 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 915 \\
 - 288 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 666 \\
 - 195 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 402 \\
 - 154 \\
 \hline
 \end{array}$$

Write a subtraction story to go with one of these problems.

2. Fill in the dates on the July calendar using **Roman Numerals**. Make sure you are beginning July on the correct day.

Use your July calendar to answer these questions.

- What is the date of the second Wednesday?
- What is the date of the fourth Friday?
- List all of the dates for the third week in July.

July

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday

3. What unit of measurement would be used to measure the following objects (use units in the **customary system** – inch, foot, yard)?

The width of a yo-yo

The length of the swimming pool

The width of the sandbox

The height of a two-scoop ice cream cone

The height of a roller coaster

The width of a squirt gun

The length of a hot dog

The height of the slide at the playground

Now do the same using units in the **metric system** – centimeter and meter.

Use a ruler to measure four to these objects. Use the **customary system** and then use the **metric system**.

4. Carlos and Scott decide to put their money together to buy an ice cream treat to share. The twin popsicle costs \$0.75. Carlos has \$0.45 and Scott has \$0.40. Do they have enough money? **Explain** how you got your answer.

5. Total the following groups of coins and/or bills. Use the **dollar sign and decimal point** to record your answer.

2 quarters, 1 dime, 1 nickel

1 quarter, 2 dimes, 3 nickels, 4 pennies

3 quarters, 3 nickels, 3 pennies

2 half dollars, 2 quarters, 3 dimes, 5 pennies

4 one-dollar bills, 3 quarters, 4 nickels, 3 pennies

1 five-dollar bill, 5 one-dollar bills, 2 quarters, 8 pennies

6 quarters, 5 dimes, 8 nickels, 13 pennies

1 five-dollar bill, 2 one-dollar bills, 4 quarters, 2 dimes, 7 pennies

6. Mary has 3 friends coming over for lunch. Mary orders a large pizza which is cut in twelve pieces. All of the girls eat the same amount. Draw a picture to show how much pizza each girl ate. Now write a **fraction** to show how much pizza each girl ate. Can you write an equivalent fraction for the amount that each girl ate (*Hint: equivalent fractions are fractions that name the same number of amount. Example: $\frac{1}{2}$ and $\frac{2}{4}$ are equivalent fractions*).

For dessert, Mary has a large chocolate bar. The bar is divided into 8 pieces. Draw a picture to show how much of the candy bar each girl will get. Now write a **fraction** to show how much each girl will get. Can you write an equivalent fraction for the amount that each girl will get?

Week 4

1. Conduct a soft drink **survey**. **Collect data** from 20 people about their favorite soft drinks – cola, orange, ginger ale, root beer, grape, or other. **Record** the data in a table using **tally marks**. **Construct** a pictograph, bar graph, glyph, line graph, or circle graph to share your findings. Be sure to include a title, a key (if needed), and label all necessary parts of your graph.

Write two statements using the data from your graph.

2. Keisha and Tyler want to make some spending money for their vacations. They decide to sell lemonade to their friends and neighbors. Keisha’s mom agrees to buy the lemonade. Tyler’s mom gives them 25 cups and ice.
 - What should they charge for a cup of lemonade?
 - How many cups will they sell?
 - What is the total amount of money they will make?
 - How much spending money will each of them have if they share their total earnings equally?

3. Solve each problem. Use the **dollar sign and decimal point** in your answer.

$\$8.25$	$\$6.25$	$\$5.47$	$\$9.85$	$\$4.05$	$\$10.86$	$\$50.00$
$+ \underline{3.75}$	$- \underline{3.77}$	$+ \underline{3.59}$	$+ \underline{6.79}$	$- \underline{.99}$	$- \underline{8.27}$	$- \underline{6.49}$

Write a money story to go with one of these problems.

4. Amanda is planning to have a swimming party during the month of July. Use the **July calendar** to decide which days she can have her party. The following information will help you.

The swimming pool is closed every Monday.

Amanda’s family is going to visit her grandma the week of July 8-14.

Amanda wants both of her parents to be at the party.

Her dad will be out of town on a business trip from July 23-25.

Amanda’s mom will be visiting a friend for the weekend of July 28th.

Amanda is going to King’s Dominion on July 31st.

Make a **list of the dates** that Amanda **can** have her swimming party.

5. **Estimate** which product will be the greatest. Circle that problem. Then solve **all problems** to find the **actual products**.

$$\begin{array}{r} 23 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 54 \\ \times 2 \\ \hline \end{array} \quad \begin{array}{r} 42 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 63 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 423 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 456 \\ \times 1 \\ \hline \end{array} \quad \begin{array}{r} 923 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 813 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 504 \\ \times 2 \\ \hline \end{array}$$

6. Use a **clock** to help you solve these problems.

The movie is two hours long. It starts at 2:15 p.m. What time will the movie end?

You were one hour late for the party. You arrived at 3:00 p.m. What time did the party start?

Your piano lesson is usually scheduled for 11:30 a.m. Your teacher would like to come 2 hours earlier this week. What time will he expect you?

Dad said you could spend $2\frac{1}{2}$ hours at the pool this afternoon. You arrive there at 1:15 p.m. What time will it be when you leave?

You waited all afternoon for the washer repairperson to arrive at your house. She finally came at 4:30. She was 3 hours late! What time was she expected to arrive?

Week 5

1. Katie bought a different treat at the swimming pool each day for 5 days. Katie has \$0.50 to spend each day. On Monday, she bought gum for \$0.32; on Tuesday, chips for \$0.45; on Wednesday, a candy bar for \$0.20; on Thursday, a soda for \$0.25; and on Friday, popcorn for \$0.29. Show how much change she received each day. Draw and label the coins. At the end of the week, what was the total amount of money she had left?

2. **Estimate** which product will be the greatest. Circle the problem. Then find the **actual products** for each problem.

$$\begin{array}{r} 204 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 306 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 585 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 398 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 406 \\ \times 4 \\ \hline \end{array} \quad \begin{array}{r} 942 \\ \times 9 \\ \hline \end{array} \quad \begin{array}{r} 492 \\ \times 8 \\ \hline \end{array} \quad \begin{array}{r} 590 \\ \times 7 \\ \hline \end{array} \quad \begin{array}{r} 459 \\ \times 3 \\ \hline \end{array}$$

Write a multiplication story to go with one of these problems.

3. Draw pictures to show the following **fractions**. Label each picture with the correct fraction.

$$\frac{1}{2} \quad \frac{2}{3} \quad \frac{2}{4} \quad \frac{7}{10} \quad \frac{1}{4} \quad \frac{3}{4} \quad \frac{3}{10} \quad \frac{4}{4} \quad \frac{1}{10} \quad \frac{1}{3}$$

4. For her birthday, Megan received a \$10.00 gift certificate to the Clown Store. Name **four different combinations** of items that she could buy. Show how much each set would cost.

The Clown Store		
Funny Nose - \$2.00	White Make-up - \$3.62	Rubber Chicken - \$4.99
Goofy Teeth - \$1.50	Juggling Balls - \$7.00	Squirting Flower - \$2.75

5. Write multiplication/division **fact families**. The first multiplication number sentence is given. You must write the second multiplication number sentence and the division number sentences for the family.

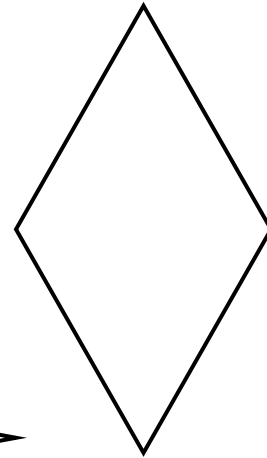
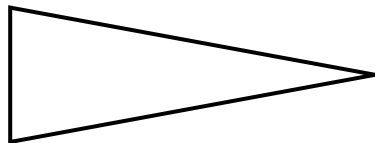
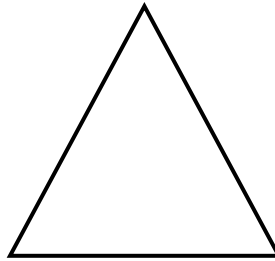
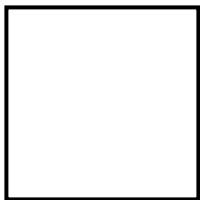
Example: $3 \times 2 = 6$ $2 \times 3 = 6$ $6 \div 2 = 3$ $6 \div 3 = 2$

$4 \times 3 =$ $6 \times 3 =$ $4 \times 6 =$ $9 \times 3 =$ $9 \times 4 =$

$3 \times 7 =$ $7 \times 4 =$ $4 \times 8 =$ $6 \times 6 =$ $7 \times 6 =$

What did you notice about the number sentence 6×6 ? **Explain.**

6. Use a centimeter ruler to measure the **perimeter** of each shape. *Reminder – perimeter is the distance around any figure.*



Week 6

1. It's time for a picnic. Kevin invited 3 friends to come and eat hot dogs. Kevin ate two hot dogs. Tom ate only one, Bill ate four hot dogs, and Jerome ate three. If one package contains ten hot dogs, what **fractional part** of the package did each boy eat? Use pictures and fractions to show your answer. Were there any hot dogs left? **Explain** your answer.
2. Write a **postcard** about a real or imaginary trip. Include at least four of the numbers below (or you can use your own). *Numbers can be used for routes, distances, temperatures, heights, weights, etc.* **Be sure the numbers in your postcard show correct number sense.**

98 2,568 35 82 576 650 87 100 983 1,745 295 59

3. Enjoy a **fraction** treat. You will need 12 edible items (for example, m&m's, crackers, raisins, pieces of cereal). Arrange your 12 edible items into thirds. Draw a picture to show how you did this. Use your picture to answer these questions. What is $\frac{1}{3}$ of 12? What is $\frac{3}{3}$ of 12? What is $\frac{2}{3}$ of 12?

Next arrange our 12 edibles into fourths. Draw a picture to show how you did this. What is $\frac{1}{4}$ of 12? What is $\frac{2}{4}$ of twelve? What is $\frac{3}{4}$ of 12?

Now eat $\frac{1}{6}$ of your edibles. How many are left? Eat $\frac{1}{2}$ of the remaining edibles. How many are left? Eat $\frac{1}{5}$ of the remaining edibles. How many are left? Eat $\frac{3}{4}$ of the remaining edibles. How many are left?

4. Find the **quotient**. When you solve these problems write them in working form and show all steps.

Example: $22 \div 2$

$$\begin{array}{r} 11 \\ 2 \overline{)22} \\ \underline{-2} \\ 02 \\ \underline{-2} \\ 0 \end{array}$$

Note: Some problems may have remainders.

$46 \div 2 =$

$80 \div 2 =$

$58 \div 2 =$

$72 \div 2 =$

$31 \div 2 =$

$75 \div 5 =$

$65 \div 5 =$

$42 \div 5 =$

$37 \div 5 =$

$51 \div 5 =$

5. What's for lunch? Here are 4 breads and 3 sandwich fillings. How many **different** kinds of 1-bread and 1-filling sandwiches can you make? Choose a way to find all the combinations.

<i>bagel</i>	<i>wheat bread</i>	<i>pita bread</i>	<i>tortilla</i>
<i>cheese</i>	<i>turkey</i>	<i>ham</i>	

6. **Estimate**. If the sum or difference is **greater than 500**, circle the problem, then solve **all problems** to find the **actual answers**.

841	648	486	876	268	687	851
<u>- 357</u>	<u>- 59</u>	<u>+ 315</u>	<u>- 498</u>	<u>+ 714</u>	<u>- 225</u>	<u>- 590</u>

276	429	500	135	698	833	701
<u>+ 467</u>	<u>+ 634</u>	<u>- 311</u>	<u>+ 358</u>	<u>- 299</u>	<u>- 304</u>	<u>- 44</u>

Week 7

1. Use the digits 3, 7, 4, and 9 to write four different **multiplication** problems (1 digit times 3 digit) as you can using only these four digits. Solve each of your problems.

Bonus! Which of your problems have the greatest **product**? Explain why.

2. Fill in the dates on the August calendar using **Roman Numerals**. Make sure you are beginning August on the correct day.
- Write a **multiplication/division** fact family for the date of the 4th Tuesday in August.
 - List all of the factors for the date of the 2nd Thursday in August.
 - Your family is taking a ten-day trip to the beach. You will leave on August 8. Write the date of your return.

August

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday

3. Find four objects around the house that are **polygons**. Use a ruler to measure the **perimeter** of each polygon in centimeters (*reminder – a polygon is a closed shape formed by line segments. Squares and triangles are two types of polygons.*).
4. How much **change** will you get back from **\$5.00** if you spent each of these amounts? Show your work.

\$0.79 \$4.65 \$2.01 \$4.91 \$3.99 \$2.75 \$3.47

5. **Collect data** about favorite ice cream flavors. Make a **table** of at least 5 different ice cream flavors. Ask 20 people to choose their favorite flavor. Use **tally marks** to **record** the data in your table. Total the results and **construct** a pictograph, bar graph, glyph, line graph, or circle graph to share your findings. Be sure to include a title, a key (if needed), and label all necessary parts of your graph.

Write two statements using the data from your graph.

6. Find the **pattern** and write the next three numbers.

36, 33, 30, 27, _____, _____, _____. 9, 14, 19, 24, _____, _____, _____.
 5, 6, 8, 11, 15, _____, _____, _____. 1, 1, 2, 2, 4, 4, 8, _____, _____, _____.
 8, 18, 28, 38, _____, _____, _____. 2, 6, 10, _____, _____, _____.
 27, 47, 67, _____, _____, _____.

7. After an afternoon at the pool, Kevin helped his mom wash and dry beach towels. Kevin folded the towels and put them in two stacks in the closet. He put three towels in each stack. He put the green towel under the blue towel. He put the yellow towel on the right side of the green towel. He put the orange towel on top of the blue towel. Finally Kevin put the pink towel between the yellow and the red towel. Where did Kevin put each towel in the closet?

Week 8

1. Out of each group, choose the numbers that when **added** together will equal 1,000.

293, 690, 445, 707, 803	467, 523, 129, 404, 489
620, 597, 182, 403, 712	170, 186, 814, 840, 79
81, 91, 360, 844, 919	417, 318, 308, 417, 275
218, 675, 170, 159, 623	135, 334, 765, 666, 225
222, 199, 316, 721, 684	53, 186, 714, 827, 814

Explain what strategy you used.

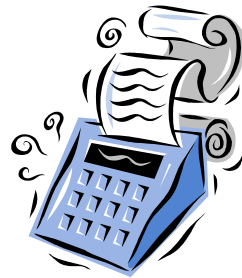
2. Write a **division** problem to find out how many each friend will get (there may be some left over). Write the division problem in working form and show all of the steps.

9 muffins for 4 friends
30 tickets for 5 friends
19 stickers for 9 friends
11 balls for 11 friends
35 bananas for 6 friends
27 oranges for 8 friends

8 apples for 3 friends
10 hats for 5 friends
24 pencils for 10 friends
15 balloons for 6 friends
21 marbles for 6 friends
43 shells for 7 friends

3. Joshua has some pennies, nickels, and dimes in his pocket. He put **three** of the coins in his hand. List or chart all the possible combinations of coins he can have. Be sure you have found all the possible answers. **Explain** how you found your answer.

4. Have some fun with your **calculator**. What is the first thing your calculator would say if it could talk? Press **0 . 7 7 3 4**. After you press these keys in order turn your calculator upside down. It should say "hello." You and your calculator can make lots of words. Make a list of all the words you can come up with. Next to each word, list the keys you used to spell the word.



5. Solve these **multistep** problems.

Sam, Mark, Bob, and Mitchell were playing darts. Sam, Mark, and Bob each scored 85 points in the game. The total score was 328 points. How many points did Mitchell score?

Pete and his dad wanted to take a 45 mile bike trip to Harper's Ferry. They rode for four hours. They rode eight miles each hour. How many more miles do they need to ride to get to Harper's Ferry?

Mrs. Jones gave Tom, Ed, Lisa, and Patty a bag of 64 Jolly Ranchers to share equally. Ed ate 3 of his Jolly Ranchers. He took the rest of them home. How many Jolly Ranchers did Ed take home?

Multistep problems continued

Connie works 25 hours each week at her mom's store. So far this week, she has worked six hours each day for three days. How many more hours does Connie have to work this week?

Brian had 63 nails. He used seven of them. He wanted to build toy planes with the nails he had left. He needed eight nails for each plane. How many planes could Brian make?

6. Draw **clocks** to show these times.

1. 6:30

2. 12:55

3. 4:15

4. 9:40

5. 1:35

6. 3:05

7. 2:20

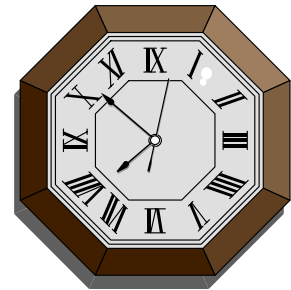
8. 11:10

9. 5:45

10. 7:50

11. 8:55

12. 10:45



Under all the even numbered clocks, write the time it **will be** in two hours.