Summer Math Reinforcement Packet Students Entering into 5th Grade

Our fourth graders had a busy year learning new math skills. Mastery of all these skills is extremely important in order to develop a solid math foundation. The fifth grade math program will add onto these fourth grade skills, so any time spent learning or reinforcing these concepts will be very beneficial for your child.

Each year builds upon the previous year's skills in math. Any areas your child has difficulty, you may want to give them additional practice. Student mastery of the basic math skills is as important to success in future mathematical procedures and reasoning as learning the alphabet is to reading and writing. Have your child complete one page (one side), three times a week of the math packet. Please return this completed packet the first week of school to your fifth grade teacher.

Your child will receive a grade for this summer math packet. The biggest prize of all is being ready for fifth grade!

After your child has completed the math problems and you feel your child is still struggling on a certain concept and needs further practice, you can visit some of the web sites listed below. You can also make up problems of your own for additional practice.

To get a copy of the math packet you can go on Brockway Elementary website at http://www.brockway.k12.pa.us/Elementary/index.html and print another copy.

Take a little time each day to work on math and enjoy your summer!!

Reminder - Practicing multiplication (up to 12) and division facts are VERY important!

Check out: Study Island, KHAN ACADEMY and ixl.com

FOURTH GRADE

GRADE LEVEL EXPECTATIONS IN MATHMATICS

When entering fifth grade this is what is expected that your child should already know.

- 1. Read and write numbers to 1,000,000.
- 2. Know place value to 1,000,000. Ex. 25,068 is 2 ten thousand, 5 thousand, 0 hundreds, 6 tens and 8 ones.
- 3. List the first twelve multiples of a given one-digit whole number.
- 4. Know some numbers are called prime numbers. Some prime numbers are 2, 3, 5, 7 and 11; have exactly two factors one and itself.
- 5. Add, subtract and multiply whole numbers fluently.
- 6. Divide numbers up to four-digits by one-digit numbers and by 10.
- 7. Use the relationship between multiplication and division to check results and to find the value of the unknowns in equations such as $x \div 10 = 25$, $10 \times 25 = 250$ so x = 250; $125 \div z = 25$, $125 \div 25 = 5$ so z = 5.
- 8. Locate the decimals in tenths and hundredths on a number line.
- 9. Read, write, interpret, and compare decimals up to two decimal places (hundredths).
- 10. Convert decimals in tenths and hundredths to fraction and decimal forms.
- 11. Write improper fractions as mixed numbers and mixed numbers as improper fractions.
- 12. Compare and order up to three fractions with denominators 2, 4, and 8; and 3, 6, and 12.
- 13. Add and subtract fractions,
- 14. Find the value of an unknown in equations such as 1/8 + x = 5/8 or $\frac{3}{4} y = \frac{1}{2}$.
- 15. Add and subtract decimals up to 2 decimal places.
- 16. Multiply and divide decimals up to 2 decimal places by a one-digit whole number.
- 17. Measure area and perimeter for compound shapes (complex figures).
- 18. Calculate conversions from one unit to a larger or smaller unit of measure: meters to centimeters, kilograms to grams, liters to milliliters, hours to minutes, minutes to seconds, years to months, weeks to days, feet to inches, ounces to pounds.
- 19. Identify and draw perpendicular, parallel and intersecting lines.
- 20. Find the side of a square or rectangle given its perimeter or area and possibly one side.
- 21. Identify basic geometric shapes including isosceles, equilateral and right triangles.
- 22. Identify and count faces, edges, and vertices of basic three-dimensional solids including cubes, rectangular prisms and pyramids.
- 23. Recognize plane figures that have line symmetry. (Where you can divide a shape in half and both halves are exactly the same.
- 24. Construct tables and bar graphs from given data.
- 25. Find the median and range of a set of data.

TERMS

Edges: This is all the straight lines of a figure. Like the edge of a desk.

Faces: This is the flat surface of a figure. **Vertex:** This is all the corners of a figure.

Right angle: An angle at 90° like a corner of a piece of paper.

Acute angle: An angle smaller than a right angle. Obtuse angle: An angle larger than a right angle.

Perimeter: You add up <u>all</u> the sides. (You are adding all lengths of the outer edges together.)

Area: *Area of a square or rectangle = length(1) x width(w) answer is written in "square inches"

(or whatever the measurement is).

*Area of a parallelogram is length x height.

Answer written in "square inches" (or whatever measurement)

Length | height

*Area of a triangle is ½ base x height. Answer written in "square inched" (or whatever measurement).

Perpendicular lines: 2 lines form a right angle.

Parallel lines: 2 lines that will never cross each other.

Intersecting lines: 2 lines that cross each other but do not form a right angle.

Mean: This is average. You add the set of number values and divide it by how many numbers you have.

Median: Arrange numbers from smallest to largest. What number is in the <u>middle?</u>
That is the Median number.

Mode: What number occurs most often? This number is the mode.

Range: Subtract the largest number in the group from the smallest number in the group.

This number is the range.

Equilateral triangle is where all 3 sides of the triangle measure the same length. Isosceles triangle is where only 2 of the sides of a triangle are equal in length.

Conversion:

60 seconds = 1 minute 24 hours = 1 day 52 weeks = 1 year 60 minutes = 1 hour 7 days = 1 week 12 months = 1 year

12 inches = 1 foot 10 millimeter = 1 centimeter (approx. 3 ½ centimeters = 1 inch)

3 feet = 1 yard 100 centimeter = 1 meter (approx. 1 meter = 1 yard)

<u>Summer Lesson 1</u>

Write: five hundred seventy six in standard form.	60,000 + 5000 + 90 + 7 in standard form
Write: 51,564 in expanded form	Write: 205,049 in expanded form
Given: 658,974 What is the place and value of the 9? Place: Value:	Given: 1,254,730 What is the place and value of the 2? Place: Value:
Order the following from least to greatest: 31,452; 31,425; 31,115, 31,568	Order the following from least to greatest: \$25.10;\$52.10;\$51.20
Round 8,954 to the hundreds place.	Round 54,954 to the ten thousands place.

176 + 24 + 369 + 51 =	902,005 - 63125 =
\$78.25 + \$29.25 =	\$5 4 2.65 - \$66.25 =
23589 + 5689	65489 - <u>989</u>
5687 568	500.00
<u>+ 478</u>	<u>- 89.45</u>
Mary bought a shirt for \$23.56 and a skirt for \$29.66. How much did she spend? If she paid with a \$100, then how much change did she get back?	John spent \$80.56 at the store. He purchased two items. The shirt he purchased cost \$30.86. How much with the price of the second item?

.

Write a multiplication sentence for the	Complete each multiplication or use mental math.
problem. Bryce has 5 bags of marbles. Each bag	7 x 4 tens =
contains 23 marbles. How many	/ X 4 Terrs =
marbles does Bryce have?	6 x 2 hundred =
网络拉拉斯斯斯斯斯 加度斯斯斯斯斯斯斯 数 数 医	5 x 2 thousands =
网络沙西西斯特特克 医阿西格克斯皮勒氏 医 歷 選	700 40
x=	<u>x 8</u> <u>x 9</u>
Multiply with regrouping.	Estimate to the largest place and multiply.
54 78	593 1,473
<u>x 8</u> <u>x 3</u>	x 4 x 6
Multiply 3 digit numbers by 1 digit.	Multiply money and write the decimal point and dollar sign.
528 842	
<u>x 6</u>	\$7.32 \$6.15
	<u>x 4</u> <u>x 18</u>
Multiply 4 digit numbers by 1 digit.	Estimate each product by rounding each factor to the greatest place.
6287 3254	31 \$5.67
<u>x 3</u> <u>x 7</u>	31 \$5.67 <u>x 36</u> <u>x 24</u>
	<u> </u>
Multiply by 2 digit numbers.	Multiply with 3 digit numbers.
22 81	923 403
<u>x 34</u>	<u>x 37</u> <u>x 56</u>

Find the value of the variable.	Find the rule and continue the pattern .
8 = 64 ÷ r r =	
0-04-1	6, 12, 18, 24,,, rule:
p x 5 = 30 p =	
56 ÷ f = 8 f=	12, 6, 16, 8, 18,, rule:
Divide to find the 1 digit quotients.	Divide to find the 2 digit quotient.
40.0	01 . 7
42 ÷ 8 =	91 ÷ 7 =
27 ÷ 5 =	83 ÷ 3 =
Divide to find the 3 digit quotient.	Divide with zeros in the quotient.
\$6.25 ÷ 5 =	605 ÷ 6 =
978 ÷ 8 =	734 ÷ 7 =
Divide with larger numbers.	Use the order of operations to solve.
	PEMDAS
	* '
9219 ÷ 3 =	12-4+6x3=
\$87.64 ÷ 7 =	6 × 4 - 12 ÷ 2 =
interpret the remainder to solve.	Interpret the remainder to solve.
Pizzas are to be cut into 8 slices. How many	If a table seats 7, what is the least number of
pizzas are needed to serve one slice to each	tables needed to seat 155 people?
of 185 people?	
pizzas	tables
pizzas	

Write each as a fraction or mixed number .	Write the fraction represented by the A.
Three eighths Four and two tenths	A =
Write whether each fraction is closer to 0, ½,	Write the equivalent fraction
or 1.	Wille the equivalent nachon.
1	<u>4</u> = <u>12</u>
<u>5</u>	<u>2</u> = <u>6</u>
List all the common factors and circle the GCF.	Write each fraction in lowest t erms.
	8 =
8 and 10	8 =
18, 27, and 36	9 =
Compare fractions using <, >, or =.	Write in order from least to greatest.
<u>3</u> <u>14</u> 6 24	<u>1</u> <u>3</u> <u>7</u> 8, 16, 8
<u>7</u> <u>1</u> 8	1 4 5 2, 6, 6
Problem solving .	Problem solving.
Marci ate 1/6 of the apricots, Joe ate 1/2, and Phil ate 1/3. Who ate the most apricots?	Two fifths of the students in Ms. Walsh's third grade class are girls. Are there more girls than boys?



Changing improper fractions to mixed numbers



Change this improper fraction to a mixed number, (Remember you may need to cancel.)

$$\frac{1}{12} = 2 \frac{1}{124} = 2 \frac{1}{4}$$

Change these mixed numbers to improper fractions.

Change these mixed numbers to improper fraction MAD Multiply, Add, Decominate
$$2\frac{3}{4} = \frac{11}{4}$$

$$4\frac{1}{2} = \frac{9}{2}$$

Change these improper fractions to mixed numbers.

$$\frac{25}{3} = \frac{15}{12} = \frac{40}{7} = \frac{40}{7}$$

$$\frac{17}{6} = \frac{11}{2} = \frac{11}{2} = \frac{12}{5} = \frac{12}{5}$$

$$\frac{27}{5} = \frac{26}{3} = \frac{32}{5} = \frac{32}{5}$$

$$\frac{9}{2} = \frac{19}{2} = \frac{15}{4} = \frac{15}{4}$$

$$\frac{30}{4} = \frac{26}{8} = \frac{42}{9} = \frac{42}{9}$$

Change these mixed numbers to improper fractions.

$$4\frac{3}{4} = 9\frac{1}{2} = 12\frac{1}{4} =$$

$$3\frac{2}{3} = 6\frac{3}{4} = 3\frac{9}{10} =$$

$$5\frac{1}{8} = 3\frac{2}{5} = 34\frac{3}{6}\frac{2}{6} = 2$$

$$5\frac{1}{4} = \frac{1}{12} = \frac{3}{8} = \frac{3}{8} = \frac{11}{12} = \frac{11}{12}$$

$$2\frac{7}{10} = \frac{3}{10} = \frac{3}{10}$$

$$7\frac{3}{4} = 8\frac{1}{2} = \frac{1}{12} = \frac{5}{12} = \frac{5}{12}$$

 6
 5

 10
 9

 3
 2

 10
 + 9

Write as a whole number or mixed number in simplest form.

<u>18</u> 4

Find the difference in simplest form.

Find the **sum** in simplest form.

Write the least common multiple or **LCM** for each set of numbers.

Find the **sum** in simplest form.

$$1\frac{5}{9} + 2\frac{1}{9} =$$

Find the difference in simplest form.

$$5\frac{7}{10} - 1\frac{3}{10} =$$

Find the **probability** of each event.

There are 4 red marbles, 2 black marbles, and 2 green marbles in a box.

Find the part of each number.

$$\frac{2}{5}$$
 of 20 = _____

Problem solving.

Of 32 apples 1/4 are red. How many are NOT red?

____apples

Converting fractions and decimals



Write these fractions as decimals.

Write these fractions as decimals.

$$\frac{7}{10} = 0.7$$

$$0.2 = \frac{2}{10} = \frac{1}{5}$$

"say "seem froths"

$$\frac{3}{100} = 0.03$$

$$0.47 = \frac{47}{100}$$

Write these fractions as decimals. (Say 14)

$$\frac{3}{10} =$$

$$\frac{7}{10} =$$

$$\frac{9}{10} =$$

$$\frac{2}{10} =$$

$$\frac{1}{10} =$$

$$\frac{6}{10} =$$

$$\frac{1}{2} =$$

$$\frac{8}{10} =$$

$$\frac{4}{10} =$$

Write these decimals as fractions.

$$0.1 = \frac{1}{}$$

$$0.2 = \frac{2}{1} = \frac{1}{1}$$
 $0.3 = \frac{3}{1}$

$$0.3 = \frac{3}{1}$$

$$0.4 = \frac{4}{100} = \frac{2}{100}$$
 $0.5 = \frac{5}{100} = \frac{1}{100}$ $0.6 = \frac{6}{100} = \frac{3}{100}$

$$0.5 = \frac{5}{1} = \frac{1}{1}$$

$$0.6 = \frac{6}{} = \frac{3}{}$$

$$0.7 = \frac{7}{100}$$

$$0.8 = \frac{8}{70.0} = \frac{4}{200}$$
 $0.9 = \frac{9}{100}$

$$0.9 = \frac{9}{1}$$

Change these fractions to decimals.

$$\frac{1}{100} =$$

$$\frac{3}{100} =$$

$$\frac{7}{100} =$$

$$\frac{15}{100} =$$

$$\frac{25}{100} =$$

$$\frac{49}{100} =$$

$$\frac{24}{100}$$
 =

$$\frac{56}{100} =$$

$$\frac{72}{100} =$$

Change these decimals to fractions.

$$0.39 =$$

$$0.47 =$$



Adding fractions

Write the sum in the simplest form.

$$\frac{1}{8} + \frac{3}{8} = \frac{4}{8} = \frac{1}{2}$$

$$\frac{1}{8} + \frac{3}{8} = \frac{4^{\frac{24}{3}}}{8^{\frac{24}{3}}} = \frac{3}{5} + \frac{3}{5} = \frac{6}{5} = 1 \cdot \frac{1}{5}$$

Write the sum in the simplest form.

$$\frac{1}{3} + \frac{1}{3} = -$$

$$\frac{1}{4} + \frac{1}{4} = - = -$$

$$\frac{2}{3} + \frac{2}{3} = \frac{2}{3} = \frac{2}{3} = \frac{2}{3}$$

$$\frac{3}{7} + \frac{5}{7} = -$$

$$\frac{2}{5} + \frac{4}{5} = - = -$$

$$\frac{5}{16} + \frac{7}{16} = - = -$$

$$\frac{3}{8} + \frac{5}{8} = \frac{1}{2} = \frac{1}{2}$$

$$\frac{7}{13} + \frac{8}{13} = - = -$$

$$\frac{5}{16} + \frac{7}{16} = - = -$$

$$\frac{9}{10} + \frac{7}{10} = - = - = -$$

$$\frac{4}{5} + \frac{3}{5} = - = -$$

$$\frac{7}{12} + \frac{5}{12} = - =$$

$$\frac{3}{11} + \frac{5}{11} = -$$

$$\frac{8}{14} + \frac{5}{14} = -$$

$$\frac{2}{9} + \frac{4}{9} = \frac{1}{2} = \frac{1}{2} = \frac{1}{2}$$

$$\frac{5}{7} + \frac{1}{7} = \frac{1}{100}$$

$$\frac{1}{12} + \frac{3}{12} = \frac{1}{12} = \frac{1}{12}$$

$$\frac{5}{11} + \frac{9}{11} = - = \frac{1}{11}$$

$$\frac{5}{18} + \frac{4}{18} = - = -$$

$$\frac{5}{9} + \frac{5}{9} = -$$

$$\frac{4}{15} + \frac{7}{15} = -$$

$$\frac{2}{5} + \frac{1}{5} = -$$

$$\frac{1}{6} + \frac{5}{6} = \frac{1}{4} = \frac{1}{4}$$

$$\frac{3}{4} + \frac{3}{4} = \frac{3}$$

$$\frac{1}{8} + \frac{5}{8} = - = -$$

$$\frac{3}{10} + \frac{9}{10} = - = - = -$$

$$\frac{9}{15} + \frac{11}{15} = \frac{11}$$

$$\frac{1}{20} + \frac{6}{20} = \frac{1}{20}$$

·	
Write: 40 + 2 + .09 + 0.07 in standard form	Write: 205.6 in standard form
Write: 84.73 in expanded form	Write: 53.96 expanded form
Given: 11.38 What is the place and value of the 8? Place: Value:	Given: 170.64 What is the place and value of the 6? Place: Value:
Order the following from least to greatest: 6.7;6.77;6.07;7.67	Order the following from least to greatest: 44; 4.04; 40.4; 44.04
Round 2.20 to the nearest tenth.	Round 71.18 to the nearest one.

0.9 + 2.9 + 2.86 =	10.23 6.84 =
62 + 0.8 + 22.6 =	40.6 - 0.95 =
17.54	92.1
92.3	- 6.54 50
48.05 + 18.39 Val ran the first 100 meters of a 200-	58 - 9.09 Jake was taking a tip from Dallas to
meter dash in 15.34 seconds. She ran the next 100 meters in 16.9 seconds. What was Val's time in the 200 meter dash?	San Antonio. The total distance of the trip is 274 miles. After driving 107 miles he stopped for lunch. How much farther does he have to go to reach San Antonio?

<u>Summer Lesson 5</u>

Write the place and value of the underlined digits.	
PLACE	VALUE
46,2 <u>1</u> 4	
<u>8</u> ,235,214	
5,2 <u>0</u> 0,874	
Write in standard form.	Add/subtract money.
Twenty-one thousand, seven hundred eleven	\$16.90 \$259.65 +\$26.54 -\$ 65.32
8000 + 50 + 3	
Multiply.	Find the number that comes between.
648 x 67 =	50 and 150
45 x 15 =	150 and 250
Given:	Write in expanded form.
6 42	
What is the divisor ?	548,635
What is the dividend ?	
What is the quotient ?	

Add.	Problem solving.
37 3589 65 8336 58 4528 +12 +7361	The orchard has 17 rows of peach trees. There are 16 trees in each row. Does the orchard have more than 300 peach trees?
Compare. Use <,>, or =.	Write in expanded form.
15,45815,587 \$11.52 \$11.25	548,635
Divide and check.	Rounding to the underlined digit.
3 25 7 87	\$ <u>6</u> 5.24 1 <u>4</u> 8,361
Problem solving .	Write in order from least to greatest .
A fence around the orchard is 894 feet long. Every foot of fencing has 3 posts. How many posts are in the fence?	\$24.25; \$24.16; \$24.52; \$24.61
Write the value of the change you would receive.	Estimate by rounding to the greatest place.
Cost: \$2.79 Amount given: \$5.00	42 + 56 =
	5219 - 658 =

<u>Summer Lesson 6</u>

Compare the units of length.	Problem solving .
4 cm 500 mm	Danny has saved \$15.00 for a birthday present for her mother. She spends \$12.76 for earrings. Does she have enough money to buy a gift bag that costs \$2.98?
Round to the underlined digit.	Write the number in written form.
7, <u>8</u> 68 <u>2</u> 34	345, 760
Compare the units of mass.	Multiply.
3 kg 3,600 g	345 <u>x 32</u>
Divide.	Compare the units of measure.
7 546	10 km 1000 cm
Estimate each sum by rounding.	Multiply.
207 \$40.25 +365 +\$12.78	789 <u>x 24</u>

Write the number in expanded form.
4, 827, 100
Find the sum.
. 8 4 5 82 +8 +9 +45
Problem solving.
A box of candy has a mass of 525 g. Would two boxes of candy have a mass that is more or less than 1 kg?
Subtract.
80025 – 987 =
Add:
568 + 125 + 36 + 84 =

	1	1
1.	2.	3. Solve the expression. Use
932 ÷ 3 =	121,192	Order of Operations
	•	order or operations
	- 3,485	
		$21 \div 3 + (3 \times 9)$
A List the Continue of	P II I I II II II II	C Name the seale and line the
4. List the factors of:	5. Use the distributive	6. Name the rule and list the
1.0	property to solve:	next three terms in the
12:		pattern.
	7 (0 + 0)	2, 4, 8, 16, 32
	$7 \times (9 + 9)$	2, 4, 0, 10, 32,
30:		
7. Solve.	8. Write the number as	9. Solve:
_	tenths in fraction form and	
$\frac{6}{10} + \frac{5}{10} =$	•	18.237 - 15=
10 10	decimal form.	
	$\frac{40}{100} =$	
	$ \frac{1}{100} = $	
	100	
10 Classify in as many years	11 Company value of 5 an	12 Days d to the page of
10. Classify in as many ways	11. Compare using <, >, or	12. Round to the nearest
possible.	=.	thousand place.
·	12 cups 4 pints	
		4,799
	5 yards 20 feet	
·	J yarus 20 leet	12,200
		15,231
	14. Find the area and	15. On Monday, 395
	perimeter.	students went on a trip to
	15 in	the zoo. All 9 buses were
13.	13 111	
Classify the triangle as acute,	45 :	filled and 8 students had to
obtuse, or right.	15 in	travel in cars. How many
obcuse, or right.		students were in each bus?

Write 90,000,000 + 500,000 + 10 + 7 in standard form.	38.43 <u>x 3</u>
Round \$947.84 to the nearest ten dollars.	80,000 - 47,789 =
Given: 54,842 What is the place and value of the 8? Place: Value:	_6 12 + _3 4
7 x 88 =	What is the period of the underlined digits? 56,784,254
What is the rule for the following pattern? What number comes next? 55, 48, 41, 34, 27,	Find the value of x. $15 - x = 8$

2 546	6 2483
54 <u>x 21</u>	165 <u>x 8</u>
56.25 2.98 + 25.36	\$36 divided by 40
Brenda bought 8 cupcakes at \$1.59 each and 5 pies at \$5.99 each. How much more did he spend on pies than cupcakes?	The times in seconds for the relay race were 9.97,10.15,10.08and 9.99. How long did it take to run the race?
Beth baby-sits for \$4 an hour. She needs \$112 for a new t.v. How many hours does she need to baby-sit?	Chet, Juan, and Ty walked around the track. Chet walked the farthest. If they walked 3 mi, 2 mi, 5 mi. 5 5 10 how far did each boy walk.

1. 527 x 14	2. 338,289 + 3,784	3. Solve the expression. Use Order of Operations $36 \div 9 + 48 - 10 \div 2$
4. Prime or Composite? 9: 33:	5. Use the distributive property to solve: 2 x (3 + 10)	6. Name the rule and list the next three terms in the pattern. 28, 20, 24, 16, 20
7. Order from least to greatest. $\frac{3}{8}, \frac{1}{4}, \frac{1}{2}$	8. Write the number as hundredths in fraction form and decimal form. $\frac{7}{10}$	9. Solve: 348.09 + 0.05 =
10. Classify in as many ways possible.	11. Compare using <, >, or =. 2 tons 4,000 pounds 3 quarts 8 pints	12. How much time has elapsed? 7:20 A.M. to 9:49 A.M.
13. 3 cm Classify the triangle by its sides and angles.	14. Find the area and perimeter. 5 ft 3 ft	15. Ben and Michael are brothers. Ben is four times as old as Michael, and their combined ages is 25. How old is Ben?

582 <u>x 27</u>	5678 <u>x 61</u>
256345 + 8954 <u>8</u>	500871 <u>- 8954</u>
954 x 25 =	Joe went to the store and spent a total of \$37.84. If he paid with a \$50, then how much change did he get back?
The dividend is 456. The quotient is 76. What is the divisor?	<u>9</u> - <u>1</u> 10 2
What is the GCF (greatest common factor) of 24 and 16?	Ann pays \$11.96 for 4 plants. How much does each plant cost?