Dear Parent(s)/Guardian(s) and In-Coming 6th Grade Student,

With the introduction of the common core standards throughout the nation, students will be expected to demonstrate an in-depth understanding of mathematical concepts. The goal is for students to master skills and apply knowledge to real-world situations.

Studies have shown that many school-aged children experience learning losses during the summer months. In order to promote the retention of the material learned in 5th grade, we are asking each incoming 6th grader to complete the attached summer math packet.

The packet contains material that has been previously taught. Examples are provided to refresh students' memories and assist in the completion of the packet. The student's math teacher will review the completed packet during the first weeks of school.

You may also access the following websites to assist in completion of the packet:
- ➤ www.khanacademy.org
- ➤ www.kutasoftware.com
- ➤ www.purplemath.com
- ➤ www.edhelper.com
- ➤ www.math.com

Thank you for your cooperation, and we look forward to working with you this upcoming school year.

Sincerely,

Northeast Middle School Math Department
Bethlehem Area School District

Understanding Whole Numbers

Standard Form: Uses digits and place value

Hundred Millions	Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones

Write each number in words.

1. 30,987 _____

2. 145,675 _____

Write each number in standard form.

3. one thousand six _____

4. five million, twenty-five thousand, forty-two _____

Use < , >, or = to complete each statement.

5. 54,001 _____ 54,901

6. 29,286 _____ 29,826

Write the numbers in order from least to greatest.

7. 20,403; 23,404; 23,040 _____

8. 17,444; 17,671; 17,414 _____

Rounding

Look at the number next door on the right.

5 or above, give it a shove

4 or below, let it go

Round 1,586 to the nearest hundred.

1,586

Round to the underlined digit.

1. 45,899 _____   **2.** 1,542 _____   **3.** 221,399 _____

4. 1,265, 783 _____   **5.** 5, 999, 820 _____

Whole Numbers – Adding and Subtracting

$451 + 23 + 659$

$$\begin{array}{r} {}^{1\ 1}451 \\ 23 \\ +\ 659 \\ \hline 1134 \end{array}$$

$700 - 128$

$$\begin{array}{r} {}^{6}\cancel{7}\ {}^{9}\cancel{0}\ {}^{10}\cancel{0} \\ -1\ 2\ 8 \\ \hline 5\ 7\ 2 \end{array}$$

Show all work. No calculators!

1. 623 + 433 + 56 =

2. 1,987 + 3, 258 =

3. 439 + 53 =

4. 893 − 395 =

5. 196 − 129 =

6. 2,304 − 927 =

7. 98 + 45 − 32 =

8. 65 − 32 + 77 =

9. 763 − 492 + 157 =

Whole Numbers – Multiplying and Dividing

653 x 29

$$\overset{\overset{1}{4}\overset{}{2}}{653}$$
$$\underline{\times\ 29}$$
$$5877$$
$$\underline{+13060}$$
$$18937$$

1820 ÷ 28

$$\begin{array}{r} 65 \\ 28\overline{)1820} \\ -168 \\ \hline 140 \\ -140 \\ \hline \end{array}$$

Show all work. No calculators!

1. 975 x 8 =

2. 109 x 7 =

3. 23 x 15 =

4. 981 x 65 =

5. 2970 ÷ 5 =

6. 32,751 ÷ 9 =

7. 2,124 ÷ 4 =

8. 5472 ÷ 19 =

9. 3348 ÷ 31 =

Place Value – Decimals

Ten Thousands	Thousands	Hundreds	Tens	Ones	.	Tenths	Hundredths	Thousandths	Ten Thousandths	Hundred Thousandths	Millionths
					"and"						

Write each decimal in words.

1. 2.3 _____

2. 6.02 _____

3. 0.006 _____

Write each decimal in standard form.

4. forty and nine thousandths _____

5. sixty-four hundredths _____

6. nine and two tenths   _____

Write each decimal in expanded form.

7. 41.003 _____

8. 0.287   _____

9. 192.17 _____

Ten Thousands	Thousands	Hundreds	Tens	Ones	. "and"	Tenths	Hundredths	Thousandths	Ten Thousandths	Hundred Thousandths	Millionths

Round each decimal to the underlined place.

10. 0.6<u>8</u>3 _____

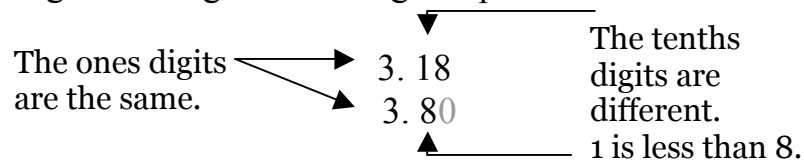**11.** 2. <u>7</u>248 _____

12. 10.9<u>5</u>6 _____

Comparing and Ordering Decimals

Step 1: Line up the decimal points of the numbers. 3. 18

                                                  3. 80 (add zeroes if necessary)

Step 2: Compare the digits starting with the highest place value.

The ones digits are the same.   3. 18   The tenths digits are different.

                                   3. 80   1 is less than 8.

Step 3: 3.18 < 3.8

Use >, <, or =.

1. 0.3 _____ 0.27   **2.** 5.7 _____ 5.70   **3.** 0.601 _____ 0.6

Order each set of decimals from least to greatest.

4. 0.5, 0.7, 0.65 _____

5. 9.2, 9.02, 9.209, 9.024 _____

Operations with Decimals – Adding and Subtracting

Step 1: Line up decimal points.

Step 2: Write zeros so that all of the decimals have the same number of digits to the right of the decimal point.

Step 3: Add or Subtract

Step 4: Bring decimal point straight down into the answer.

$$16 + 7.498$$

$$
\begin{array}{r}
16.\,000 \\
+7.\,498 \\
\hline
23.\,498
\end{array}
$$

Show all work. No calculators!

1. $0.6 + 3.4 =$

2. $6.2 + 0.444 =$

3. $8.001 + 0.77 =$

4. $22.2 - 4.3 =$

5. $9.1 - 6.05 =$

6. $4 - 1.29 =$

Operations With Decimals – Multiplying

1) Line up the digits, starting on the right.
2) Multiply
3) Place the decimal point in the answer by starting at the right and moving a number of places equal to the sum of the decimal places in both numbers multiplied.

$$(6.432)(4.15)$$

```
        6.432  (3 decimal places)
     x  4.15   (2 decimal places)
       32160
       64320
      2572800
     26.69280  (5 decimal places)
```

Find each product. No calculators!

1) 0.27 x 5 =

2) 0.04 x 7 =

3) 1.48 x 3.6 =

4) 191.2 x 3.4 =

5) 0.05 x 3 =

6) 4.42 x 0.9 =

Operations With Decimals – Dividing

1) Divide
2) Place the decimal point in the answer.

$$\begin{array}{r} 5.67 \\ \hline 48.\overline{)272.16} \\ -240 \\ \hline 3{\mid}21 \\ -288 \\ \hline 336 \\ -336 \end{array}$$

Find each quotient. No calculator!

1) $17.92 \div 7 =$

2) $16.5 \div 5 =$

3) $6.984 \div 9 =$

4) $2.24 \div 2 =$

5) $10.53 \div 9 =$

6) $17.52 \div 2 =$

Greatest Common Factor

Find the GCF of 24 and 36.   24: 1, 2, 3, 4, 6, 8, **12**, 24
                                36: 1, 2, 3, 4, 6, 9, **12**, 18, 36   GCF of 24 and 36 is **12**.

Find the Greatest Common Factor, for each set of numbers. Show your work.

1) 36 and 54

2) 32 and 56

3) 21 and 88

4) 28 and 36

5) 14, 21, and 56

Least Common Multiple

Find the LCM of 8 and 12.   8: 8, 16, 24, 32, 40, **48**, 56, . . .
                                   12: 12, 24, 36, **48**, 60, 72, . . .   LCM of 8 and 12 is **48**.

Find the Least Common Multiple for each set of numbers. Show your work.

1) 6 and 8

2) 12 and 18

3) 6 and 9

4) 8 and 10

5) 12, 24, and 48