# Welcome to Grade 6 Math

I thank you for your continued dedication to your studies through this past rollercoaster of a trimester. I want you to take some time to mentally and physically relax and enjoy the great weather ahead. However throughout the summer, we have to keep our math skills sharp; so I have attached 6 weeks of work for you to complete.

Your summer math review has 2 parts:

- 84 questions (about 14 problems a week) of pencil and paper review problems
- and 30mins a week of IXL.
    - IXL skills to be practiced over the summer break are listed. You should also work on the recommendations listed on your dashboards from IXL.

All math summer work is due on September 4th.

I look forward to seeing you all in September and hearing all about your summer activities.

If you have any questions, please email me
[jclarke@saintroseschool.com](mailto:jclarke@saintroseschool.com)

Have a great SUMMER!!

# Math 6 Summer IXL checklist of skills

When you log into IXL, under the search for skill enter the numbers and letter combo in parentheses or the common core standard indicated in bold to find these skills.

IXL    Search topics and skills    Q                                    Welcome,

**6.NS.B.2** Fluently divide multiple digit numbers using the standard algorithm

    Division patterns with zeroes (6-C.2)

    Dividing numbers ending in 0 word problems (6-C.3)

    divide whole numbers 2 digit dividers (6-C.5)

    divide whole number 3 digit dividers (6-C.6)

**6.NS.B.3** Fluently add subtract multiply and divide multiple digit decimals using the standard algorithm for each operation

    add and subtract decimal numbers (6-G.1)

    multiply decimals(6-H.2)

    divide decimals by whole numbers(6-H.4)

    multiply and divide decimals by power of 10(6-H.6)

    division with decimal quotients(6-H.7)

    add and subtract multiply and divide two decimals(6-O.4)

    add and subtract multiply or divide to decimal word problems(6-O.5)

**6.NS.B.4** Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two numbers less than or equal to 12.

    identify factors(6-E.4)

    greatest common factor(6-E.7)

    least common multiple (6-E.9)

    find all factor pairs of a number(6-E)

    GCF and LCM word problems (6-E.11)

# Multiplying Whole Numbers

1. Write the problem vertically

2. Multiply the ones digit of the bottom number by each of the digits in the top number, right to left

3. Bring down a zero and then multiply the tens digit of the bottom number by each digit in the top number, right to left

4. Bring down two zeros and repeat with the hundreds digit of the bottom number

5. Add up all of the products

ex: $3,481 \times 142$

$$
\begin{array}{r}
3,481 \\
\times \quad 142 \\
\hline
6962 \\
+ \quad 139240 \\
348100 \\
\hline
494,302
\end{array}
$$

# Dividing Whole Numbers

1. Write out the long division problem with the first number (dividend) underneath the division symbol and the second number (divisor) to the left of the division symbol

2. Divide the divisor into the smallest part of the dividend it can go into and write the number of times it can go in on top of the division symbol

3. Multiply the number on top by the divisor and write the product under the number you divided into in step 2

4. Subtract your product from the number above it

5. Bring down the next digit of the dividend

6. Repeat steps 2-5 until there is nothing left to bring down.

7. If your last subtraction answer is not zero, write the remainder on top

ex: $6,425 \div 21$

$$
\begin{array}{r}
305 \ R\,20 \\
21\overline{)6425} \\
-63 \\
\hline
12 \\
0 \\
\hline
125 \\
-105 \\
\hline
20
\end{array}
$$

Find each product.  Show your work.

| | | | |
|---|---|---|---|
| 1.  238 x 5 | 2.  832 x 156 | 3.  4,899 x 67 | 4.  756 x 300 |
| 5.  19 x 863 | 6.  188 x 732 | 7.  3,249 x 173 | 8.  609 x 840 |

Find each quotient.  Show your work.

| | | | |
|---|---|---|---|
| 9.  876 ÷ 2 | 10.  9,473 ÷ 5 | 11.  396 ÷ 24 | 12.  8,911 ÷ 45 |
| 13.  700 ÷ 12 | 14.  1,065 ÷ 15 | 15.  2,737 ÷ 305 | 16.  4,516 ÷ 22 |

Solve each problem, showing all work.

| | |
|---|---|
| 17.  Mrs. Kleim bought 5 boxes of 15 pencils to give to her students.  If she has 26 students in her class, how many pencils can she give each student?  How many pencils will she have left over? | 18.  Sarah and her 3 friends split a bag of candy evenly.  They each ate 13 pieces of candy and there were 2 pieces leftover.  How many pieces of candy were originally in the bag? |

# Rounding with Whole Numbers & Decimals

| ten-thousands | thousands | hundreds | tens | ones | tenths | hundredths | thousandths |
|---|---|---|---|---|---|---|---|
| — | — , | — | — | — • | — | — | — |

1. Keep all digits to the left of the place you are rounding the same

2. If the digit to the right of the rounding digit is less than 5, keep the rounding digit the same. If it's 5 or greater, increase the rounding digit by 1.

3. Change all places to the right of the digit you are rounding to 0. (Trailing zeros after the decimal are unnecessary)

ex: round 52.943 to the nearest tenth

52.9(4)3

less than 5, so the 9 stays the same

52.900

don't need trailing zeros after the decimal

52.9

# Word Form & Expanded Form

1. Word Form: write the whole number in word form, translate the decimal to "and", & write the decimal as if it were a whole number, followed by the name of the place of the last digit

2. Expanded Form: write the value of each non-zero digit separately, with addition signs between them

ex: 209.315

two hundred nine and three hundred fifteen thousandths

$200 + 9 + 0.3 + 0.01 + 0.005$

# Comparing & Ordering Decimals

1. Compare the whole number portions of the numbers. If they are different write > for greater than or < for less than.

2. If the whole numbers are the same, compare each digit to the right of the decimal point, one at a time until you find digits that are different. (If necessary, add zeros at the end of a decimal.)

ex: $13.702 \bigcirc 13.74$

$13 = 13$

$13.7 = 13.7$

$13.70 < 13.74$

So, $13.702 < 13.74$

Round the number 21,498.2536 to the nearest indicated place.

| 19. tenth | 20. hundred | 21. thousandth | 22. one |
|---|---|---|---|
| 23. thousand | 24. hundredth | 25. ten | 26. ten-thousand |

Complete the chart below.

| Standard Form | Expanded Form | Word Form |
|---|---|---|
| 3.962 | 27. | 28. |
| 29. | 100 + 2 + 0.09 | 30. |
| 31. | 32. | Five thousand six hundred eighty-five and twelve hundredths |
| 8,770.006 | 33. | 34. |
| 35. | 900 + 10 + 4 + 0.3 + 0.02 + 0.008 | 36. |
| 37. | 38. | Two thousand nine and thirty-five thousandths |

Compare each pair of numbers by writing <, >, or = in the provided circle.

| 39. 0.046 ◯ 0.13 | 40. 9.52 ◯ 90.13 | 41. 24.13 ◯ 24.130 | 42. 15.96 ◯ 15.906 |
|---|---|---|---|
| 43. 0.964 ◯ 1 | 44. 6.83 ◯ 6.825 | 45. 7.256 ◯ 7.24 | 46. 32.9 ◯ 3.290 |

Order the numbers from least to greatest.

| 47. 6.86, 6.8, 7, 6.9, 6.827 | 48. 12.03, 1.2, 12.3, 1.203, 12.301 |
|---|---|

# Adding & Subtracting Decimals

1. Write the problem vertically, lining up the decimal points

2. Add zeros, if necessary

3. Add or subtract the numbers as if they were whole numbers

4. Bring the decimal point straight down

ex: $12.8 - 1.52$

$$12.\overset{7}{\cancel{8}}\overset{1}{0}$$
$$-\quad 1.52$$
$$\boxed{11.28}$$

# Multiplying Decimals

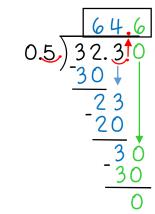1. Write the problem vertically with the numbers lined up to the right (decimals do NOT need to be lined up)

2. Ignore the decimal points and multiply the numbers as if they were whole numbers

3. Count the total number of decimal places in the two factors and put a decimal point in the product so that it has that same number of decimal places

ex: $3.24 \times 0.8$

$$\begin{array}{r} \overset{1}{\phantom{0}}\overset{3}{\phantom{0}} \\ 3.24 \\ \times \quad 0.8 \\ \hline 2592 \end{array}$$

3.24 → 2 decimal places
0.8 → 1 decimal place
        + 
        3 decimal places

$$\boxed{2.592}$$

# Dividing Decimals

1. Write the dividend under the division symbol and the divisor in front of the division symbol

2. Move the decimal in the divisor after the number and then move the decimal in the dividend the same number of places and bring it up

3. Ignore the decimal point and divide as if whole numbers

4. If there is a remainder, add a zero to the end of the dividend, bring it down, and then continue dividing until there is no remainder

ex: $32.3 \div 0.5$

$$\begin{array}{r} 64.6 \\ 0.5\overline{)32.3\,0} \\ -30 \\ \hline 23 \\ -20 \\ \hline 30 \\ -30 \\ \hline 0 \end{array}$$

Find each sum or difference.  Show your work.

| 49.  8.74 + 10.36 | 50.  37.4 − 8.55 | 51.  12.9 + 105.67 | 52.  450.89 − 213.33 |
|---|---|---|---|
| 53.  24.1 + 3.74 | 54.  14.76 − 9.8 | 55.  622.85 + 53.49 | 56.  67 − 14.06 |

Find each product or quotient.  Show your work.

| 57.  4.5 x 6 | 58.  144.8 ÷ 4 | 59.  2.7 x 0.8 | 60.  6.2 ÷ 0.04 |
|---|---|---|---|
| 61.  8.9 x 2.5 | 62.  15.8 ÷ 0.5 | 63.  14.8 x 0.12 | 64.  16.2 ÷ 1.2 |

Solve each problem, showing all work.

| 65.  Ryan spent $3.25 on lunch every day, Monday through Friday.  If he had $20 at the start of the week, how much money did he have left after Friday? | 66.  Three friends went out to lunch.  The bill came to $47.31.  If they split the bill evenly, how much money does each friend owe? |
|---|---|

# Adding & Subtracting Fractions

1. Rename the fractions to equivalent fractions with common denominators

2. Add or subtract the numerators and keep the denominator the same

3. If mixed numbers, add or subtract the whole numbers

4. If possible, simplify the answer & change improper fractions to mixed numbers

ex: $4\frac{4}{9} + \frac{2}{3}$

$$4\frac{4}{9} \quad \begin{array}{c} \times 1 \\ = \\ \times 1 \end{array} \quad \frac{4}{9}$$

$$+ \quad \frac{2}{3} \quad \begin{array}{c} \times 3 \\ = \\ \times 3 \end{array} \quad \frac{6}{9}$$

$$4 \quad \frac{10}{9} = \boxed{5\frac{1}{9}}$$

# Multiplying Fractions

1. Turn a whole number into a fraction by giving it a denominator of 1

2. Cross-simplify the fractions if possible

3. Multiply the 2 numerators and the 2 denominators

4. If possible, simplify the answer & change improper fractions to mixed numbers

ex: $6 \times \frac{2}{3}$

$$\frac{\overset{2}{\cancel{6}}}{1} \times \frac{2}{\underset{1}{\cancel{3}}} = \frac{4}{1}$$

$$= \boxed{4}$$

# Dividing Fractions

1. Turn a whole number into a fraction by giving it a denominator of 1

2. Keep the 1st fraction the same, change the division symbol to multiplication, and flip the 2nd fraction to its reciprocal

3. Multiply the 2 fractions

4. If possible, simplify the answer & change improper fractions to mixed numbers

ex: $12 \div \frac{1}{2}$

$$\frac{12}{1} \div \frac{1}{2}$$

$$\frac{12}{1} \times \frac{2}{1} = \frac{24}{1} = \boxed{24}$$

Find each sum or difference. Show your work.

| | | | |
|---|---|---|---|
| 67. $\frac{7}{8} + \frac{5}{6}$ | 68. $\frac{9}{10} - \frac{1}{2}$ | 69. $\frac{3}{11} + \frac{2}{3}$ | 70. $\frac{11}{12} - \frac{13}{18}$ |
| 71. $4\frac{5}{9} + 7\frac{1}{3}$ | 72. $12\frac{9}{14} - 9\frac{3}{7}$ | 73. $3\frac{3}{5} + 2\frac{3}{4}$ | 74. $2\frac{2}{15} - 1\frac{2}{3}$ |

Find each product or quotient. Show your work.

| | | | |
|---|---|---|---|
| 75. $\frac{1}{6} \times \frac{3}{4}$ | 76. $6 \div \frac{1}{3}$ | 77. $15 \times \frac{2}{3}$ | 78. $\frac{1}{2} \div 3$ |
| 79. $\frac{1}{6} \times 10$ | 80. $\frac{1}{4} \div 2$ | 81. $\frac{5}{9} \times \frac{3}{20}$ | 82. $4 \div \frac{1}{5}$ |

Solve each problem, showing all work.

| | |
|---|---|
| 83. Jacqui ran 1 $^1/_2$ miles on Monday, Wednesday, and Friday and $^3/_4$ mile on Tuesday and Thursday. How far did she run in all? | 84. Tyrell gave 3 packs of baseball cards to his friends. He gave each friend $^1/_3$ of a pack. How many friends got baseball cards? |