Summer Math Reinforcement Packet

Students Entering 6th Grade

Our Fifth 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 sixth grade math program will add onto these fifth grade skills, so any time spend learning or reinforcing these concepts will be very beneficial to your child. Each year builds upon the previous year's skills in math. If your child has difficulty in any areas, you may want to give them additional practice, including mastery of the multiplication tables. **Student mastery of the basic math skills is as important to success in further mathematical processes and reasoning as learning the alphabet is to reading and writing.**

Please have your child complete this packet to the best of his/her ability, using the sample problems to assist them in their **daily** practice.

After your child has completed the math packet, if you feel your child in struggling with a certain concept and needs further practice, you can visit some of the websites listed below. I realize not all sites work on all computers. You may reach me at grade5@olsss.org . Thank you and I hope you have a happy, healthy, and holy summer.

Grace and Peace,

Mrs. Rawlings

www.khanacademy.org

www.IXL.com

www.wildmath.com

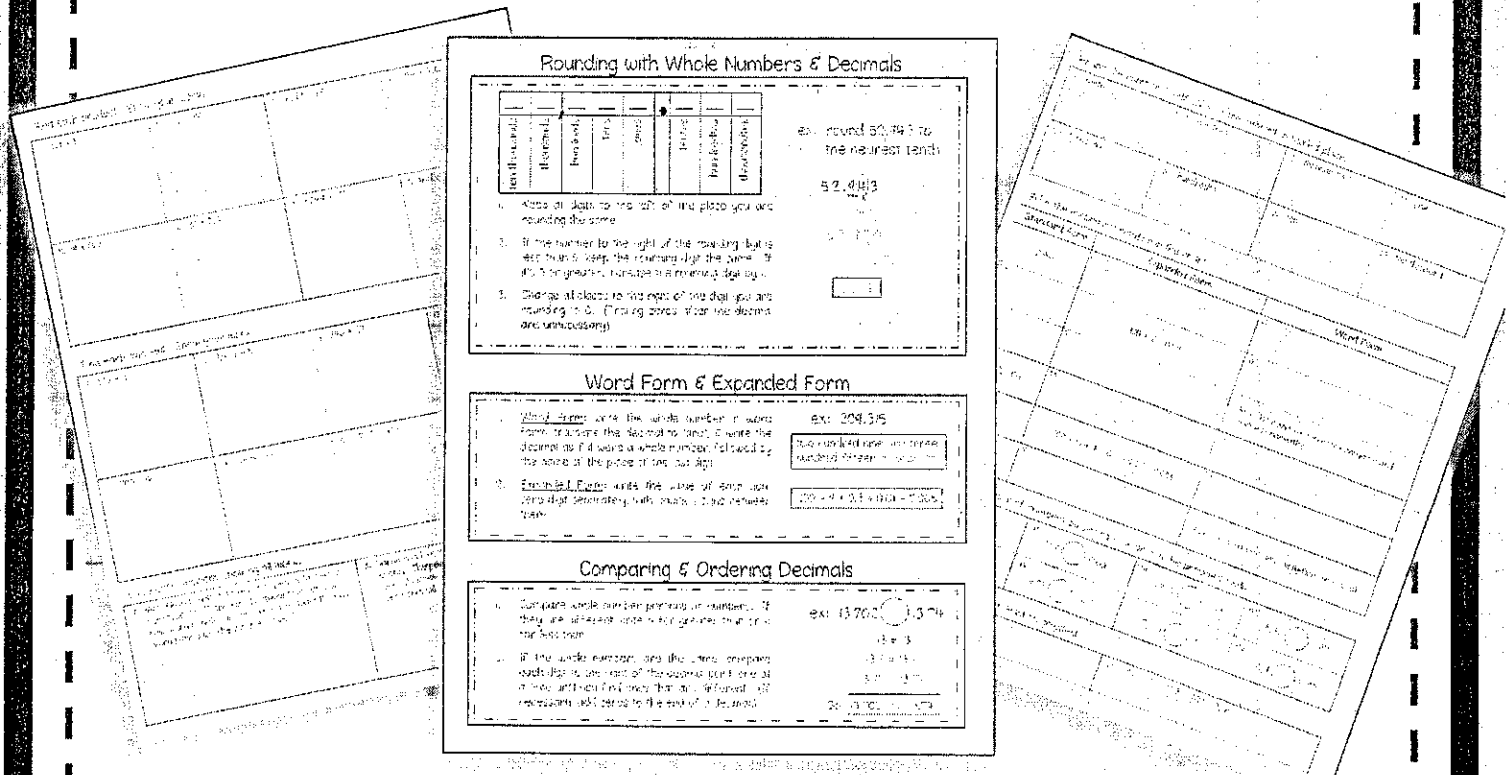
www.harcourtschool.com

www.aplusmath.com

www.mathisfun.com

www.aaamath.com

Math Review Packet for 5th – 6th Grades



Multiplication, Division, Decimals, Fractions, Metric & Customary Measurements, & Volume

Math in the Middle

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 x 142

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

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 ÷ 21

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

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

52.943

52.900

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 ◯ 13.74

13 = 13

13.7 = 13.7

13.7 < 13.7

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

$$\begin{array}{r} 12.80 \\ -\ \ 1.52 \\ \hline \boxed{11.28} \end{array}$$

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 x 0.8

$$\begin{array}{r} 3.24 \\ \times\ \ 0.8 \\ \hline 2592 \end{array}$$

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 ÷ 0.5

$$\begin{array}{r} \boxed{64.6} \\ 0.5\overline{)\,32.30} \\ -30 \\ \hline 23 \\ -20 \\ \hline 30 \\ -30 \\ \hline 0 \end{array}$$

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

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

$+ \quad \frac{2}{3} \cdot \frac{3}{3} = \frac{6}{9}$

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

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. $2\frac{2}{15} - 1\frac{2}{3}$

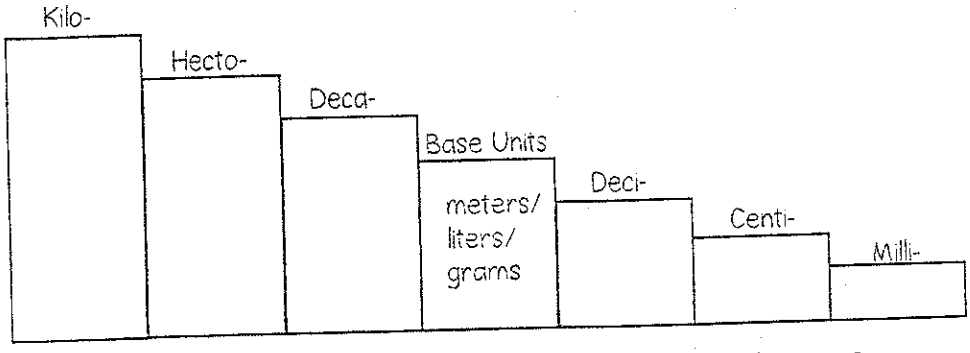
Find each product or quotient. Show your work.

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?

The Metric System



Determine the direction and count the number of steps it takes to get from the starting unit to the unit you are converting to and move the decimal point the same number of places in that direction.

ex: 23 m = ____ cm

going from base unit step to centi- step, so need to move the decimal 2 places right

23.00

= 2,300 cm

The Customary System

Length	Weight	Capacity
1 ft = 12 in 1 yd = 3 ft 1 mi = 5,280 ft	1 lb = 16 oz 1 T = 2,000 lb	1 c = 8 fl oz 1 pt = 2 c 1 qt = 2 pt 1 gal = 4 qt

To convert from a larger unit to a smaller unit, multiply. To convert from a smaller unit to a larger unit, divide.

ex: 18 c = ____ pt

cups are smaller units of measure than pints, so need to divide

18 ÷ 2 = 9 pints

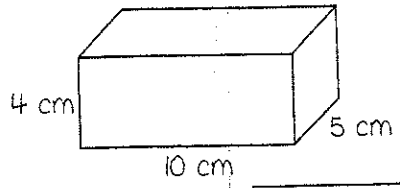
Volume

Volume is the number of cubic units inside a figure.

Volume of Rectangular Prism = length x width x height

Volume of Irregular Figure: count cubic units

ex: find the volume



V = 4 x 10 x 5 = 200 cm^3

Convert each Metric measurement. Show your work.

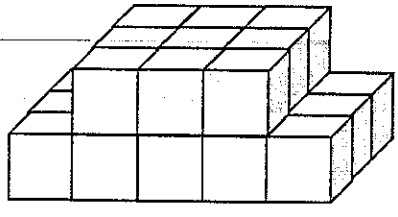
85. 1.9 km = _____ m	86. 23 g = _____ mg	87. 350 mℓ = _____ kℓ
88. 0.07 kg = _____ cg	89. 6 cm = _____ m	90. 35 mℓ = _____ ℓ

Convert each Customary measurement. Show your work.

91. 48 in = _____ ft	92. 6 pt = _____ c	93. 3 T = _____ lb
94. 1.5 mi = _____ ft	95. 32 pt = _____ gal	96. 32 oz = _____ lb

Find the volume of each figure. Show your work.

97.



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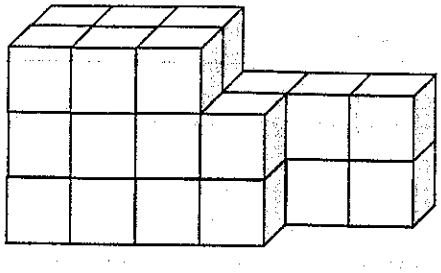

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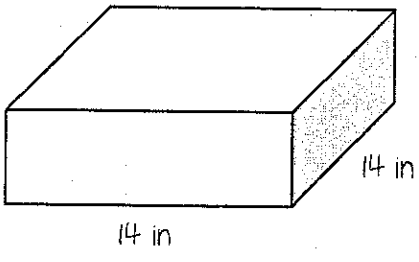

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