

## 2017 Summer Math Packet

Dear parents as we continue to grow and strengthen our school's math program, we have decided that we will begin to provide our students with a tool to review and prepare for the following math grade level expectations. As you know summer readings have been in placed for a while. This year we are extending the summer experience to include math skills. We encourage you to continue to foster a belief in the importance and enjoyment of mathematics at home. Being actively involved in mathematical activities enhances learning. In preparation for the 2017-2018 school year, each student from Kindergarten to 8th grade is required to complete a summer math review packet. Each packet correlates to the standards of learning as identified and approved by the Diocese of Paterson and the Department of Education. As the packets are aligned to the Terranova Standardized testing, they focus on the prerequisite concepts and skills necessary for student success in each math class. During the first week of school, students will be required to turn in their packets for a grade. Review Skill worksheets will receive an assessment grade and Choice Board Activities will receive a project grade.

- ❖ Skills worksheets: Complete the packet, show work when necessary.
- ❖ Choice Boards:
  - Choose 1 project from the "Board"- Grades 1 to 4
  - 2 - 3 project "Boards" will be assigned - Grades 5 to 8
  - All packets will be available for download at the Holy Spirit website.

The work was designed to support instruction in the new curriculum in both its content and presentation. Activities may be done independently or with a parent, guardian or older brother or sister. Talking about the problem can be an important part of completing some activitie

### How Holy Spirit's Summer Math Program Works:

- Students set their own goals for completing math activities.
- Students use the math packet to complete and record responses for the activities.
- Summer Math Packet is returned to school during the week of September 11th-15th.
- Students completing the Summer Math Packet will:
  - Receive a summer math certificate.

Summer Packet may have all or some to the following major content areas:

Standard 1: Operations and Algebraic Thinking Activity

Standard 2: Number and Operations

Standard 3: Measurement and Data

Standard 4: Geometry

The purpose of the summer math packet is to make sure students are prepared to start the year by understanding the prerequisite skills. We understand that summer is a busy time for families. If possible, the math department recommends that the packet is completed towards the end of the summer to ensure the skills are secured for the start of the year. The administration and the Math teachers wish you and your family a safe, happy, healthy and mathematically thrilling summer!

Thank you for your continued support,

*Fr. Marie Antonelli* M.F.P.  
Principal

*Faculty of Holy Spirit School*

# Math Review Packet for 5th - 6th Grades



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

**Rounding with Whole Numbers & Decimals**

- Keep all digits to the left of the place you are rounding the same.
- If the number to the right of the rounding digit is big than 5, keep the rounding digit the same. If it's 5 or greater, increase the rounding digit by 1.
- Change all places to the right of the digit you are rounding to 0. (Rounding zeros after the decimal are unnecessary.)

ex: Round 52,493 to the nearest tenth.

ten-thousands	5
thousands	2
hundreds	4
tens	9
ones	3
tenths	
hundredths	
thousandths	

52,490

**Word Form & Expanded Form**

- Write the whole number in word form. Insert 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.
- Expanded form: write the value of each non-zero digit separately with addition signs between them.

ex: 209,315  
two hundred nine thousand three hundred fifteen thousandths

209,315 = 200,000 + 9,000 + 300 + 10 + 5

**Comparing & Ordering Decimals**

- Compare whole number portions of numbers. If they are different write > for greater than or < for less than.
- If the whole numbers are the same, compare each digit to the right of the decimal point, one at a time until you find one that are different. If necessary, add zeros to the end of a decimal.

ex: 13,702 < 13,74  
13,702 < 13,74

**Find each product. Show your work.**

1. $4.2 \times 3.75$
2. $2.8 \times 1.5$
3. $1.2 \times 0.8$
4. $0.9 \times 0.5$
5. $1.5 \times 0.4$
6. $0.7 \times 2$
7. $1.2 \times 0.3$
8. $1.05 \times 0.8$
9. $1.2 \times 0.1$

**Find each quotient. Show your work.**

1. $4.2 \div 3$
2. $2.8 \div 1.5$
3. $1.2 \div 0.8$
4. $0.9 \div 0.5$
5. $1.5 \div 0.4$
6. $0.7 \div 2$
7. $1.2 \div 0.3$
8. $1.05 \div 0.8$
9. $1.2 \div 0.1$

**Round the number given to the nearest indicated place.**

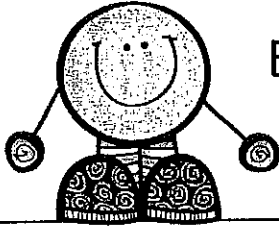
1. Round to the nearest hundredth.
2. Round to the nearest thousandth.
3. Round to the nearest tenth.
4. Round to the nearest hundred.
5. Round to the nearest thousand.

**Write the missing information in the chart.**

Expanded Form	Word Form
$20 + 4 + 0.08$	
$100 + 20 + 9 + 0.1 + 0.07 + 0.008$	
$450 + 200 + 100 + 10 + 5$	
$700 + 400 + 0.05 + 0.01 + 0.005$	

**Use the number line to compare the numbers.**

1. $0.45$ and $0.5$
2. $0.7$ and $0.75$
3. $0.1$ and $0.100$
4. $0.05$ and $0.005$
5. $0.001$ and $0.0001$
6. $0.0001$ and $0.00001$



# Equivalent Fractions Choice Board \* Choose 2 \*

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## Poster

Create a poster for a younger student teaching them what equivalent fractions are. Give a definition, at least 5 examples with pictures, and an explanation on how to find equivalent fractions giving step-by-step directions.

## Match Three

Create a matching game using 30 cards, with 10 matching sets with 3 cards in each set.  
Card 1: a fraction (not reduced in lowest terms)  
Card 2: the matching reduced fraction  
Card 3: a picture of the reduced fraction

## Real World Connections

Create a poster on how we use equivalent fractions in the real world. Give specific examples and include pictures.

## Flashcards

Create a set of 20 flashcards using common equivalent fractions. On one side, write the fraction. On the other side, write the reduced fraction.

## Video

Create a video showing and explaining how to find equivalent fractions and how to reduce fractions. Include examples and step-by-step directions.

## Foldable

Create a foldable on equivalent fractions. Include a definition and several examples, giving step-by-step directions.

## Game

Design and create a game on equivalent fractions. Include pictures. Include the game rules, question cards, and an answer key. Be creative!

## Quiz

Create a 10-question quiz on equivalent fractions. Include reducing fractions and the opposite. Include an answer key.

## Computer Project

Design a computer project that explains how to find equivalent fractions. Show at least 2 ways. Include step-by-step directions and pictures.

## 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

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

ex:  $6,425 \div 21$

## 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

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

ex:  $3,481 \times 142$

Find each product. Show your work.

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

Find each quotient. Show your work.

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

Solve each problem, showing all work.

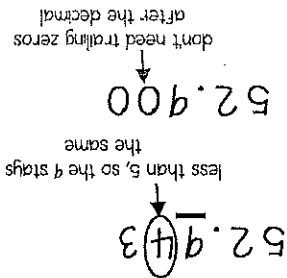
17. Mrs. Kleim bought 5 boxes of 15 pencils to give to her students. If she has 26 students in her class, how many pencils can she give each student? How many pencils will she have left over?	18. Sarah and her 3 friends split a bag of candy evenly. They each ate 13 pieces of candy and there were 2 pieces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



## 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

$$13 = 13$$

$$13.7 = 13.7$$

$$13.70 < 13.74$$

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. $0.046 \bigcirc 0.13$	40. $9.52 \bigcirc 90.13$	41. $24.13 \bigcirc 24.130$	42. $15.96 \bigcirc 15.906$
43. $0.964 \bigcirc 1$	44. $6.83 \bigcirc 6.825$	45. $7.256 \bigcirc 7.24$	46. $32.9 \bigcirc 3.290$

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
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## Adding & Subtracting Decimals

$$\begin{array}{r} 12.\overset{1}{8}0 \\ - 1.52 \\ \hline 11.\overset{1}{2}8 \end{array}$$

ex:  $12.8 - 1.52$

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

## Multiplying Decimals

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

ex:  $3.24 \times 0.8$

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

$$\boxed{2.592}$$

3 decimal places

2 decimal places  
+  
1 decimal place

## Dividing Decimals

$$\begin{array}{r} 64.6 \\ 0.5 \overline{)32.310} \\ \underline{30} \phantom{0} \\ 23 \phantom{0} \\ \underline{20} \phantom{0} \\ 30 \phantom{0} \\ \underline{30} \phantom{0} \\ 0 \phantom{0} \end{array}$$

ex:  $32.3 \div 0.5$

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



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. $4.5 \times 6$	58. $144.8 \div 4$	59. $2.7 \times 0.8$	60. $6.2 \div 0.04$
61. $8.9 \times 2.5$	62. $15.8 \div 0.5$	63. $14.8 \times 0.12$	64. $16.2 \div 1.2$

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?
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## 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

$$\frac{4}{4} \times \frac{1}{1} = \frac{4}{4} \quad + \quad \frac{2}{3} \times \frac{2}{2} = \frac{4}{6}$$

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

$$4 \frac{4}{10} = \frac{5}{1} \frac{4}{10}$$

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

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

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

$$= \frac{24}{1} = 24$$

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

$$\frac{6}{1} \times \frac{3}{2} = \frac{18}{2}$$

$$= 9$$

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 $1\frac{1}{2}$ miles on Monday, Wednesday, and Friday and $\frac{3}{4}$ 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 $\frac{1}{3}$ of a pack. How many friends got baseball cards?
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# 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.

Kilo-	Hecto-	Deca-	Base Units	Deci-	Centi-	Milli-
			meters/ liters/ grams			

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

ex: 23 m = \_\_\_\_\_ cm

23.00

= 2,300 cm

# The Customary System

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

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

ex: 18 c = \_\_\_\_\_ pt

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

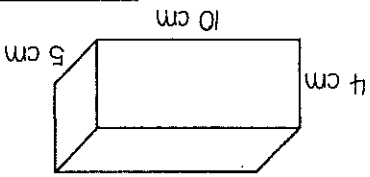
18 ÷ 2 = 9 pints

# 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

$$V = 4 \times 10 \times 5 = 200 \text{ cm}^3$$

Convert each Metric measurement. Show your work.

85. $1.9 \text{ km} = \underline{\hspace{2cm}} \text{ m}$	86. $23 \text{ g} = \underline{\hspace{2cm}} \text{ mg}$	87. $350 \text{ ml} = \underline{\hspace{2cm}} \text{ kl}$
88. $0.07 \text{ kg} = \underline{\hspace{2cm}} \text{ cg}$	89. $6 \text{ cm} = \underline{\hspace{2cm}} \text{ m}$	90. $35 \text{ ml} = \underline{\hspace{2cm}} \text{ l}$

Convert each Customary measurement. Show your work.

91. $48 \text{ in} = \underline{\hspace{2cm}} \text{ ft}$	92. $6 \text{ pt} = \underline{\hspace{2cm}} \text{ c}$	93. $3 \text{ T} = \underline{\hspace{2cm}} \text{ lb}$
94. $1.5 \text{ mi} = \underline{\hspace{2cm}} \text{ ft}$	95. $32 \text{ pt} = \underline{\hspace{2cm}} \text{ gal}$	96. $32 \text{ oz} = \underline{\hspace{2cm}} \text{ lb}$

Find the volume of each figure. Show your work.

<p>97.</p>	<p>98.</p>
<p>99.</p>	<p>100.</p>

