Grade 6 Curriculum 2019-2020

Concepts covered for the 6th grade.

Chapter 1: Number properties and decimals.

- Properties of operations
- Order of operations
- Understanding decimals
- Adding and subtracting decimals
- Multiplying decimals
- Dividing decimals

Chapter 2: Expressions and Equations.

- Variables and expressions
- Writing algebraic expressions
- Solving addition equations
- Solving subtraction equations
- Solving multiplication and division equations

Chapter 3: Number theory.

- Divisibility
- Exponents
- Prime numbers and prime factorization
- Greatest common factor
- Least common multiple
- Distributive property
- Simplifying algebraic expressions

Chapter 4: Fraction operations.

- Adding fractions and mixed numbers
- Subtracting fractions and mixed numbers
- Multiplying fractions and mixed numbers
- Dividing fractions and mixed numbers
- Equations with fractions

Chapter 5: Ratios and percent.

- Ratios
- Unit rates
- Equivalent ratios and rates
- Using ratios to convert measurements
- Understanding percent
- Percent, fraction, decimal
- Finding percent of a number
- Finding the whole

The Common Core State Standards identify a limited number of topics at each grade level, allowing enough time for students to achieve fluency, if not mastery of these concepts. The subsequent year of study builds on the concepts of the previous year.
Students are expected to have achieved fluency with the following:

- Times tables
- Operations with Whole Numbers (+,-, * × , ÷)
- Operations with Decimals (+,-, × , ÷)
- Operations with Fractions (+,-; ×,÷)

I have attached some worksheets involving decimals and fractions. The students will be given a diagnostic test upon arrival in 6th grade to assess the above skills. I will not be assessing operations with whole numbers since those skills are involved with operations with decimals. Students should have mastery of their times tables.

If a student needs more practice mastering the above skills, he/she should use the Khan Academy Program to improve those abilities. They can access these in their Khan Class with the link below. After going to the link enter the Class Code. Please login using your school Google Account. If you don't have one yet or don't know it I can be reached at msylvester@sfxacushnet.com to help you in the process.

www.khanacademy.org/join

Class Code: D3K3QWBB

Chapter 6: Integers and rational numbers.

- Exploring Integers
- Comparing and ordering integers
- Rational numbers
- Comparing and ordering rational numbers
- Inequalities
- Solving one-step inequalities

Chapter 7: The Coordinate Plane.

- Points in the coordinate plane
- Polygons in the coordinate plane
- Functions
- Graphing functions
- Functions in the real world

Chapter 8: Geometry and Measurement.

- Areas of parallelograms and triangles
- Areas of polygons
- Three-dimensional figures
- Surface area of prisms and pyramids
- Volumes of rectangular prisms

Chapter 9: Data and Graphs.

- Finding the mean
- median and mode
- Frequency tables and dot plots
- Box and whisker plots
- Histograms
- Variability of data
- Shape of distribution
- Statistical questions

Name:_____ Homework Decimals and adding fractions

Answer the following. Show your work.

(1) 8.3 + 212.45 + 9

(2) 54 - 8.7

(3) 413.9 - 8

(4) 3.9 × 0.54

(5) 2.8 × 7

(6) 0.015 × 0.16

(7) 29.6 ÷ 8

(8) 107.5 ÷ 0.25

(9) 4 ÷ 0.002

(10) $8\frac{1}{6}+5\frac{1}{3}$

(11) $6+2\frac{5}{9}$

(12) $4\frac{3}{4}+3\frac{4}{5}$

(13) $1\frac{5}{6}+5\frac{3}{4}$

(14) $\frac{7}{9}+\frac{8}{12}$

(15) $2\frac{3}{7}+9\frac{2}{3}$

(16) $8\frac{4}{5}+5\frac{1}{3}$

(17) $9\frac{1}{10}+\frac{6}{7}$

(18) $3\frac{3}{8}+4\frac{7}{9}$

(19) $5\frac{3}{5}+2\frac{7}{8}$

(20) $9\frac{1}{2}+10\frac{1}{2}$

Name:_____ Homework Decimals and +, - fractions

(2)

Answer the following. Show your work.

(1) $54.39 + 8 + 2.7$

(6) 0.045×0.09

(2) $34 - 0.34$

(7) $6.46 \div 1.9$

(3) $72 - 9.306$

(8) $6.3 \div 0.45$

(4) 4.23×79

(9) $18 \div 0.005$

(5) 6.2×0.58

(10) $8\frac{4}{7} + 2\frac{2}{3}$

(11) $5\frac{1}{2}+3\frac{5}{8}$

(12) $9+\frac{7}{8}$

(13) $7\frac{3}{4}-2\frac{1}{6}$

(14) $12\frac{1}{7}-8\frac{2}{3}$

(15) $4-\frac{3}{5}$

(16) $6\frac{3}{8}-4$

(17) $23\frac{2}{9}-8\frac{5}{6}$

(18) $7\frac{6}{11}-2\frac{1}{3}$

(19) $8\frac{4}{7}-3\frac{8}{9}$

(20) $5\frac{5}{9}-1\frac{7}{8}$

Name:_____ Homework Decimals and +, - , × fractions

3

Answer the following. Show your work.

(1) 9.4 + 312 + 24.16

(2) 83.2 - 4.95

(3) 7 - 0.7

(4) 2.9 × 3.4

(5) 5.36 × 8

(6) 1.38 ÷ 2.3

(7) 58.8 ÷ 0.14

(8) $3\frac{5}{8}+2\frac{3}{4}$

(9) $7\frac{1}{9}+2\frac{2}{3}$

(10) $8\frac{1}{5}-2\frac{5}{6}$

(11) $14-7\frac{3}{7}$

(12) $8\frac{2}{5}\times\frac{15}{24}$

(13) $2\frac{2}{3}\times2\frac{1}{4}$

(14) $3\frac{1}{5}\times\frac{3}{8}$

(15) $2\frac{2}{7}\times1\frac{3}{4}$

(16) $\frac{15}{16}\times1\frac{3}{5}$

(17) $1\frac{1}{6}\times\frac{5}{7}$

(18) $5\frac{2}{3}\times1\frac{1}{2}$

(19) $4\frac{1}{2}\times1\frac{2}{5}$

(20) $3\frac{1}{4}\times2\frac{2}{3}$

* Solving Strategy Review Sheets *

Adding and Subtracting Decimals.

When adding decimals, line up the decimal points first.

Then add 0's to make the same amount of columns.

(ex) Find the sum of 2.37 + 145.8 + 9.4

Line up points	add zeros	add columns
2.37	002.37	002.37
145.8	145.80	145.80
+ 9.4	+ 009.40	+ 009.40
		157.57

When there is no point on the number, it is at the end of the number.

(ex) Find the sum of 8.64 + 37.2 + 4. the point is at the end of the 4

Line up points	add zeros	add columns
8.64	08.64	08.64
37.2	37.20	37.20
+ 4.	+ 04.00	+ 04.00
		49.84

(ex) Find the difference of 212.3 - 8.75

Line up points	add zeros	subtract columns
212.3	212.30	$2\overset{0}{1}\overset{11}{2}.\overset{12}{3}\overset{10}{0}$
- 8.75	- 008.75	- 008.75
		203.55

When there is no point on the number, it is at the end of the number.

(ex) Find the difference of 6. - 0.718

Line up points	add zeros
6.	$5\overset{9}{6}.\overset{9}{0}\overset{9}{0}\overset{10}{0}$
- 0.718	- 0.718
	5.282

Multiplying decimals.

When multiplying decimals, do not line up the points. Just multiply the numbers.

Then count how many numbers are after each point.

Go backwards that amount of points in your answer,

(ex) Multiply 3.4 × 0.26

Multiply numbers 1 + 2 = 3 Count points ← Go back 3 places in answer.

$$\begin{array}{r} 34 \\ \times\ 26 \\ \hline 204 \\ 68 \\ \hline 884 \end{array}$$

$$\begin{array}{r} 34 \\ \times\ 26 \\ \hline 204 \\ 68 \\ \hline 884 \end{array}$$

answer .884

(ex) Multiply 1.54 × 8

Multiply numbers 2 Count points Go back 2 places in answer.

$$\begin{array}{r} 154 \\ \times\ 8 \\ \hline 1232 \end{array}$$

$$\begin{array}{r} 154 \\ \times\ 8 \\ \hline 1232 \end{array}$$

answer 12.32

(ex) Multiply 0.004 × 0.0009

3 + 4 = 7

Multiply numbers Count points Go back 7 places in answer

$$\begin{array}{r} 4 \\ \times\ 9 \\ \hline 36 \end{array}$$

$$\begin{array}{r} 4 \\ \times\ 9 \\ \hline 0000036 \end{array}$$

answer .0000036

Dividing decimals.

The first number ALWAYS goes "In" the division box.

If there is no decimal point in the "outside" number, do not move the point "inside" the box.

If there is a decimal point in the "outside" number, move the point to the end of the number and move the point the same amount of places for the "inside" number.

(ex) Divide 18.4 by 8

$8\overline{)18.4}$ $8\overline{)18.4}$ $8\overline{)18.4}$

-16

24

-24

0

(ex) Divide 9.72 by 2.7

$2.7\overline{)9.72}$ $2.7\overline{)9.72}$ $27\overline{)97.2}$

-81

162

-162

0

(ex) Divide 46.8 by 0.18

$0.18\overline{)46.8}$ $0.18\overline{)46.80}$ $18\overline{)4680}$

-36

108

-108

0

(ex) Divide 273 by 0.7

$0.7\overline{)273}$ $0.7\overline{)273.0}$ $7\overline{)2730}$

-21

63

-63

0

Divide 2 by 0.25

$0.25\overline{)2}$ $0.25\overline{)2.00}$ $25\overline{)200}$

-200

0

Adding fractions.

Find the Least Common Multiple for the denominators.

Then do any simplifying of the answers.

(ex) Add $8\frac{2}{3}+3\frac{4}{5}$ LCM is 15

$8\frac{2\cdot5}{3\cdot5}=\frac{10}{15}$

$+\ 3\frac{4\cdot3}{5\cdot3}=\frac{12}{15}$

$11\frac{22}{15}=12\frac{7}{15}$

$15\overline{)22}\ 1\frac{7}{15}$, -15, 7

(ex) Add $4\frac{5}{6}+2\frac{3}{4}$ LCM is 12 not 24

$4\frac{5\cdot2}{6\cdot2}=\frac{10}{12}$

$+\ 2\frac{3\cdot3}{4\cdot3}=\frac{9}{12}$

$6\frac{19}{12}=7\frac{7}{12}$

$12\overline{)19}\ 1\frac{7}{12}$, -12, 7

(ex) Add $7\frac{2}{3}+5$

$7\frac{2}{3}$

$+\ 5$

$12\frac{2}{3}$

Subtracting fractions.

Find the Least Common Multiple for the denominators.

(ex) $7\frac{6}{7}-2\frac{1}{3}$ LCM is 21

$7\frac{6\cdot3}{7\cdot3}=\frac{18}{21}$

$-\ 2\frac{1\cdot7}{3\cdot7}=\frac{7}{21}$

$5\frac{11}{21}$

(ex) $5\frac{1}{2}-3$

$5\frac{1}{2}$

$-\ 3$

$2\frac{1}{2}$

Sometimes you need to borrow in subtraction.

(ex) $6\frac{1}{4}-2\frac{3}{5}$ LCM is 20

$5\ \cancel{6}\ \frac{1\cdot5}{4\cdot5}=\frac{25}{20}$ added

$-\ 2\ \frac{3\cdot4}{5\cdot4}=\frac{12}{20}$

Can't subtract. Borrow 1 from the 6 add the 20 and 5

$3\ \frac{13}{20}$

(ex) $9-6\frac{3}{8}$

$8\ 9\frac{8}{8}$

$-\ 6\ \frac{3}{8}$

$2\ \frac{5}{8}$

Borrow from the 9 Make the $1, \frac{8}{8}$

Multiplication of fractions.

Change the mixed numbers to improper fractions.

Then do any "cross reducing" of the fractions.

(ex) $2\frac{6}{7}\times2\frac{4}{5}$

$^{4}\frac{20}{7}\times\frac{14^{2}}{5_{1}}=\frac{8}{1}=8$

(ex) $2\frac{1}{10}\times1\frac{1}{14}$

$^{3}\frac{21}{10}\times\frac{15^{3}}{14_{2}}=\frac{9}{4}=2\frac{1}{4}$

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

(ex) $8\times1\frac{1}{2}$

$^{4}\frac{8}{1}\times\frac{3}{2_{1}}=\frac{12}{1}=12$

(ex) $\frac{15}{16}\times1\frac{13}{15}$

$^{1}\frac{15}{16}\times\frac{28^{7}}{15_{1}}=\frac{7}{4}=1\frac{3}{4}$

$4\overline{)\ 7\ }\ 1\ R\ 3$

Name: Date:

Flag

6/16	12/32	3/8	6/16	12/32	15/40	3/8	15/40	15/40	12/32	12/32	6/16	3/8	3/8	1/2	12/24	8/16	8/16	20/40
6/16	6/24	8/32	4/16	2/8	6/24	4/16	4/16	4/32	4/32	5/40	2/16	15/40	12/32	16/32	1/2	4/8	8/16	8/16
6/16	6/24		10/40	4/16	2/8		2/8			12/32	3/8	12/32	6/16	9/24	6/16	12/32	12/32	6/16
6/16	8/32	8/32	6/24		10/40	8/32	6/24	1/8	4/32	12/32	1/8	1/8	2/16	5/40	3/24	4/32	2/16	1/8
3/8	6/24		10/40	10/40	4/16		1/4			15/40								
9/24	6/24	4/16	4/16		10/40	4/16	6/24	3/24	2/16	3/8	3/24	3/24	5/40	5/40	5/40	3/24	5/40	2/16
3/8	4/16	2/8	8/32	8/32	8/32	8/32	4/16			6/16								
15/40	2/16	5/40	2/16	5/40	2/16	3/24	1/8	1/8	5/40	15/40	1/8	4/32	4/32	2/16	4/32	5/40	3/24	3/24
3/8										12/32								
6/16	2/16	5/40	1/8	4/32	2/16	2/16	3/24	5/40	5/40	3/8	2/16	4/32	1/8	4/32	2/16	2/16	4/32	2/16
9/24										12/32								
9/24	2/16	2/16	3/24	2/16	1/8	4/32	5/40	3/24	1/8	6/16	5/40	4/32	1/8	2/16	2/16	5/40	3/24	1/8
12/32										3/8								
9/24	4/32	2/16	2/16	3/24	2/16	5/40	5/40	5/40	2/16	9/24	1/8	5/40	3/24	5/40	2/16	4/32	4/32	4/32
15/40	6/16	15/40	15/40	9/24	3/8	3/8	15/40	12/32	15/40	9/24								
6/16	12/32	16/32	16/32	20/40	12/24	12/24	16/32	4/8	20/40	9/24	4/32	2/16	2/16	5/40	1/8	4/32	2/16	5/40
9/24	3/8	20/40	16/32	12/24	20/40	8/16	12/24	12/24	8/16	9/24								
12/32	6/16	8/16	20/40	16/32	12/24	4/8	16/32	20/40	12/24	6/16	3/8	9/24	9/24	3/8	6/16	6/16	12/32	6/16
3/8	3/8	16/32	16/32	20/40	20/40	4/8	8/16	8/16	8/16	8/16	16/32	1/2	4/8	16/32	16/32	20/40	4/8	8/16
9/24	15/40	16/32	8/16	20/40	20/40	1/2	8/16	12/24	16/32	12/24	20/40	16/32	8/16	20/40	16/32	20/40	12/24	4/8

Key:

Equal to 1/8	Red
Equal to 2/8	Blue
Equal to 3/8	Black
Equal to 4/8	Gray

*Blank squares are white