Happy Summer!

In an effort to prevent the dreaded "Summer Slide", we are sending home this math packet for students to work on at their own pace over break.

The topics included are entirely a review of what we learned this past school year. If your child comes across a topic they have forgotten, don't worry! Most pages have a quick refresher at the top to help them get back on track. Students can also search for helpful instructional videos on Khan Academy if they need a little extra guidance through any of the topics.

This complete packet will be due by the end of summer vacation. Keep those math skills strong, and I look forward to seeing your student in the fall!

Have a safe and happy summer!

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Topics for incoming 6th graders include:

- Order of Operations
- Decimals through Ten-Thousandths
- Estimating Sums and Differences
- Adding and Subtracting Decimals
- Multiplying Decimals by Whole Numbers
- Adding and Subtracting Fractions with Unlike Denominators
- Division Word Problems
- Multiplying Decimal Word Problems
- Dividing Decimal Word Problems
- Adding Fraction Word Problems
- Subtracting Fraction Word Problems
- Dividing Whole Number by Fraction Word Problems
- Multiplying Fractions by Fraction Word Problems

Order of Operations

To evaluate expressions, use the order of operations.

Order of Operations
1. Multiply and divide in order from left to right.
2. Add and subtract in order from left to right.

Example **Find the value of $2 \times 8 - 42 \div 7 + 4$.**

$$\begin{aligned} 2 \times 8 - 42 \div 7 + 4 &= 16 - 42 \div 7 + 4 && \textit{Multiply 2 and 8.} \\ &= 16 - 6 + 4 && \textit{Divide 42 by 7.} \\ &= 10 + 4 && \textit{Subtract 6 from 16.} \\ &= 14 && \textit{Add 10 and 4.} \end{aligned}$$

Show your work on this page. No Calculators.

Find the value of each expression.

1) $15 + 4 \times 5 - 6$	2) $9 \times 3 + 3$	3) $18 \div 2 + 9 \times 2$
4) $4 \times 9 - 9 \times 4$	5) $18 + 3 + 15 \div 3$	6) $150 \div 10 - 3 \times 5$
7) $45 - 40 + 1 \times 2$	8) $2 + 4 \times 9 \div 12$	9) $18 \div 2 \times 9$
10) $80 \times 2 \div 40 - 1$	11) $12 \times 2 - 5 \times 4$	12) $25 - 3 \times 4$

Decimals Through Ten-Thousandths

Fraction: $\frac{5,016}{10,000}$ Decimal: 0.5016

Say: five thousand sixteen ten-thousandths

Ones	Tenths	Hundredths	Thousandths	Ten-thousandths
0	5	0	1	6

Here are some other examples.

Fraction	Decimal	Words
$\frac{924}{1,000}$	0.924	Nine hundred twenty-four thousandths
$5\frac{7}{10}$	5.7	Five and seven tenths

Show all work on this page. No Calculators.

Write each fraction as a decimal.

1) $\frac{31}{100}$	2) $\frac{9}{100}$	3) $\frac{4}{10,000}$	4) $\frac{35}{1,000}$
5) $\frac{1,654}{10,000}$	6) $\frac{1}{10}$	7) $\frac{6}{1,000}$	8) $\frac{3}{10}$

Write each expression as a decimal.

9) two hundred fifty-one thousandths	10) one and eleven hundredths
11) eight hundredths	12) seventy and fifty-six thousandths
13) five hundred and two ten-thousandths	14) thirty-six ten-thousandths

Estimating Sums and Differences

Round each number to the same place.

Examples

Round to the nearest ten dollars.	Round to the nearest tenth.	Round to the nearest one.
\$46.90 → \$50	0.693 → 0.7	6.22 → 6
+ 33.27 → + 30	− 0.113 → − 0.1	+ 0.85 → + 1
\$80	0.6	7

Show all work on this page. No Calculators.

Estimate using rounding.

1) 3.856 + 1.675	2) 59.118 - 17.799
3) \$6.63 + 9.29	4) 0.0056 - 0.0028
5) 8.802 – 6.115	6) 4.9 – 1.0984
9) 8.78 – 5.09	10) 67.69 + 7.43

Adding and Subtracting Decimals

To add decimals, line up the decimal points.
Then add the same way you add whole numbers.

Examples **1** Find 0.465 + 0.292.

$$\begin{array}{r} 0.465 \\ +\ 0.292 \\ \hline 0.757 \end{array}$$

2 Find 13.2 + 5.08 + 0.334.

$$\begin{array}{r} 13.200 \\ 5.080 \\ +\ 0.334 \\ \hline 18.614 \end{array}$$

Annex zeros if necessary.

To subtract decimals, line up the decimal points. Then subtract the same way you subtract whole numbers.

Examples **3** Find \$155.36 − \$24.17.

$$\begin{array}{r} \$155.36 \\ -\ 24.17 \\ \hline \$131.19 \end{array}$$

4 Find 0.56 − 0.0277.

$$\begin{array}{r} 0.5600 \\ -\ 0.0277 \\ \hline 0.5323 \end{array}$$

Annex zeros if necessary.

Show all work on this page. No Calculators.

Add or subtract.

1) 0.352 + 0.365	2) 78.158 - 17.326	3) \$9.63 + 7.29
4) 0.0123 - 0.0028	5) 2.011 + 5.852	6) \$13.67 - 7.19
7) 9.054 − 4.038	8) 5.014 + 12.3 + 0.4	9) 216.8 − 34.055

Multiplying Decimals by Whole Numbers

When you multiply a decimal by a whole number, multiply as with whole numbers. The product must have the same number of decimal places as the decimal factor.

Examples **1** **Find 6×5.43.**

$$\begin{array}{r} 5.43 \\ \times\ \ 6 \\ \hline 32.58 \end{array}$$

← *two decimal places*

← *two decimal places*

2 **Find 120×0.056.**

$$\begin{array}{r} 0.056 \\ \times\ 120 \\ \hline 1\,120 \\ 5\,6 \\ \hline 6.720 \end{array}$$

← *three decimal places*

← *three decimal places*

Show all work on this page. No Calculators.

Multiply.

1) $\begin{array}{r} 0.7 \\ \times\ 9 \end{array}$	2) $\begin{array}{r} 0.78 \\ \times\ 17 \end{array}$	3) $\begin{array}{r} 1.39 \\ \times\ 101 \end{array}$
4) $\begin{array}{r} 6.2 \\ \times\ 12 \end{array}$	5) $\begin{array}{r} 4.12 \\ \times\ 22 \end{array}$	6) $\begin{array}{r} 10.4 \\ \times\ 36 \end{array}$
7) 131.5×55	8) 75×1.02	9) 9×5.05

Dividing Decimals

When you divide a decimal by a whole number, place the decimal point in the quotient above the decimal point in the dividend. Then divide as with whole numbers.

Examples

Place the decimal point above the decimal point in the dividend.

$12\overline{)38.4}$

Divide as with whole numbers.

$$\begin{array}{r} 3.2 \\ 12\overline{)38.4} \\ -\,36 \\ \hline 24 \\ -\,24 \\ \hline 0 \end{array}$$

$8\overline{)6.48}$

$$\begin{array}{r} 0.81 \\ 8\overline{)6.48} \\ -\,64 \\ \hline 8 \\ -\,8 \\ \hline 0 \end{array}$$

Show all work on this page. No Calculators.

Find each quotient.

1) $48\overline{)110.4}$	2) $39\overline{)66.3}$	3) $17\overline{)146.2}$
4) $11\overline{)102.3}$	5) $223.2 \div 31$	6) $2.95 \div 5$

Adding & Subtracting Fractions - Unlike Denominators

To find the sum or difference of two fractions with unlike denominators, write equivalent fractions with a common denominator. Then add or subtract.

Examples **1** **Find $\frac{3}{4} + \frac{5}{6}$.**

$$\frac{3}{4} + \frac{5}{6} = \frac{9}{12} + \frac{10}{12}$$
$$= \frac{9 + 10}{12}$$
$$= \frac{19}{12} \text{ or } 1\frac{7}{12}$$

The LCM of 4 and 6 is 12. Rename the fractions with 12 as the denominator.

2 **Find $\frac{2}{3} - \frac{3}{5}$.**

$$\frac{2}{3} - \frac{3}{5} = \frac{10}{15} - \frac{9}{15}$$
$$= \frac{10 - 9}{15}$$
$$= \frac{1}{15}$$

The LCM of 3 and 6 is 15. Rename the fractions with 15 as the denominator.

Show all work on this page. No Calculators.

Add or subtract. Write each answer in simplest form.

1) $\frac{1}{4} + \frac{7}{8}$	2) $\frac{9}{10} - \frac{3}{5}$	3) $\frac{1}{9} + \frac{1}{6}$
4) $\frac{1}{2} - \frac{2}{5}$	5) $\frac{2}{3} + \frac{1}{2}$	6) $\frac{7}{8} - \frac{4}{9}$

Division Word Problems

Show all work on this page. No Calculators.

1) The 6th graders go to Outdoor Ed. For the safety of the kids, each teacher is responsible for 24 kids. If 336 kids participate, how many teachers need to go?	2) A elephant eats 17 pounds of hay each day. If the zoo got a delivery of 357 pounds of hay, how long will that food last one elephant?
3) Sam collected 900 baseball cards. He made a collection of books with 25 baseball cards in each book. How many books of baseball cards did Sam have?	4) A tray can hold 234 cupcakes. If there are 18 rows of cupcakes on a tray, how many cupcakes are in each row?

Multiplying Decimals Word Problems

Show all work on this page. No Calculators.

1) Francisco ordered 9 pizzas. Each pizza costs $13.95. How much does he need to pay for the pizzas (not including tip)?

2) Owen buys frozen yogurt at Sweet Frog 5 times this week. Each time his yogurt weighed exactly the same amount, 8.93 ounces! How many ounces of frozen yogurt did Owen eat this week?

3) To find the area of a rectangle you multiply the base times the height. What is the area of a rectangle with a base of 7.34 inches and a height of 8 inches?

4) Camryn and Hayden are in the same class. Camryn's home is 6.87 miles away from school. Hayden's home is 4 times as far as Camryn's home. How far is Hayden's home from the school?

Dividing Decimals Word Problems

Show all work on this page. No Calculators.

1) Catherine split a rope that was 49.2 inches long into 4 equal parts. What is the length of each part?	2) Sameeha paid $37.38 for 6 pounds of gummi bears. How much does each pound of gummi bears cost?
3) Lilly McGilly's sells 12 cupcakes for $70.68 (without tax). What is the cost of each cupcake?	4) The area of a rectangular poster is 55.64 inches^2. What is the height of the poster if the base is 13 inches long?

Adding Fractions Word Problems

Show all work on this page. You can use models if needed.
No Calculators. Write your answers in simplest form.

1) Peter uses glue to fix a bamboo rod. One piece measures $1\frac{1}{5}$ meters and another piece measures $2\frac{2}{3}$ meters. What is the total length of the bamboo rod after it has been glued together.

2) Keyan drinks $2\frac{5}{6}$ liters of water during the first half of soccer practice and $1\frac{3}{4}$ liters during the second half of practice. How many liters of water does Keyan drink during the entire practice?

3) Rachel runs $7\frac{3}{8}$ miles and bikes $15\frac{3}{4}$ miles on Saturday. Find the total distance that Rachel covered.

4) Justin worked $8\frac{1}{5}$ hours on Saturday and $7\frac{5}{6}$ hours on Sunday. How many hours does he work in both days?

Subtracting Fractions Word Problems

Show all work on this page. You can use models if needed.
No Calculators. Write your answers in simplest form.

1) Dave is building a deck. He has a piece of wood that is $8\frac{2}{3}$ meters long. He cuts the wood into two pieces. The length of one piece is $3\frac{1}{2}$ meters. What is the length of the second piece of wood?

2) The Frost Talent Show lasts a total of $2\frac{5}{6}$ hours. Intermission is held after $1\frac{3}{5}$ hours. How much of the talent show will take place after intermission?

3) Jordyn bought jelly beans and M&M's at Candy Kitchen. The total weight of her candy was $10\frac{5}{8}$ pounds. If she bought $5\frac{1}{6}$ pounds of jelly beans, what was the weight of the M&M's?

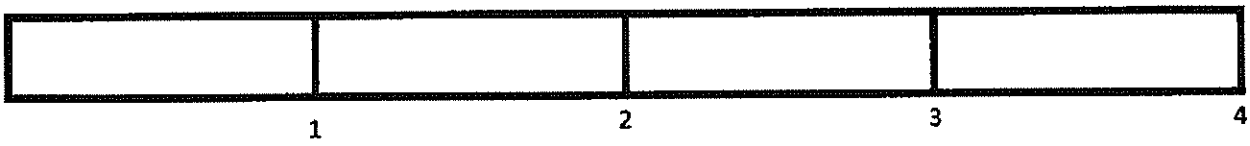
4) Teddy played a movie in the DVD player. The total length of the movie is $2\frac{3}{5}$ hours. Due to a power failure, Teddy managed to watch only $1\frac{1}{4}$ hours. How much time is left to finish the movie?

Dividing Whole Numbers by Fractions: Word Problems

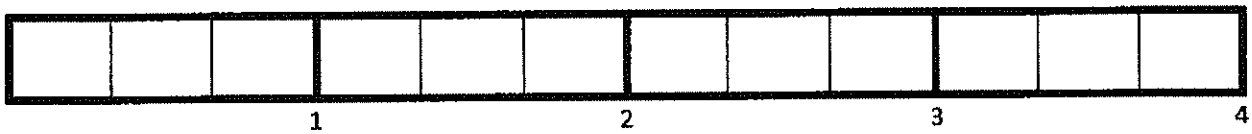
Show all work on this page. Use a tape diagram. No Calculators.

$$4 \div \frac{2}{3}$$

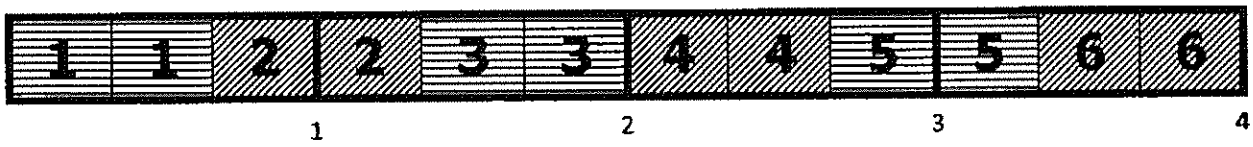
Represent the whole number using a tape diagram. Since the whole number is 4, divide the tape diagram into 4 equal sections.



Divide each section of the tape diagram into thirds.



$4 \div \frac{2}{3}$ means how many groups of $\frac{2}{3}$ are in 4 wholes? So, make groups of $\frac{2}{3}$ to determine your answer.



There are 6 groups of $\frac{2}{3}$ in 4 wholes, so $4 \div \frac{2}{3} = 6$

1) Christina is having a party and bought 5 pints of ice cream? Each guest will be served $\frac{1}{3}$ of a pint. How many people can be served ice cream at Christina's party?

2) Brittany wants to walk 5 miles this week. If she walks $\frac{5}{6}$ miles each day, how many days will it take her to walk 5 miles?

3) How many $\frac{2}{3}$ meter long strips of ribbon can be cut from a ribbon that is 8 meters long?

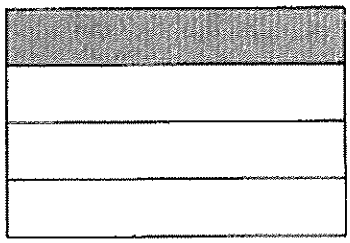
5) Rachel had six bags of Skittles to share. She gave each friend $\frac{3}{4}$ of a bag. How many friends got Skittles?

Multiplying Fractions by Fractions Word Problems

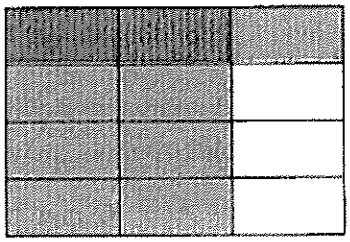
Show all work on this page. Use an area model. No Calculators.

$$\frac{1}{4} \times \frac{2}{3}$$

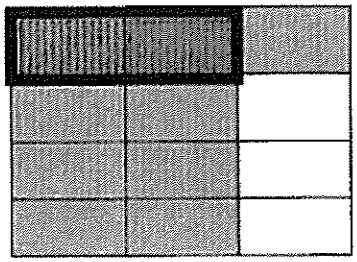
First, divide the height of the rectangle into 4 equal parts. Shade the $\frac{1}{4}$ of the rectangle.



Next divide the width of the rectangle into 3 equal parts. Shade t parts to make $\frac{2}{3}$.



Now you can figure out the product. The part where the shading overlaps represents the numerator. The total number of parts represents the denominator.



There are 12 total parts and 2 of the parts have overlapping shading. The product is $\frac{2}{12}$.

1) Eli has $\frac{1}{4}$ of a pizza left over from dinner. He gives $\frac{3}{4}$ of the leftover pizza to his sister. How much of the whole pizza does Eli give to his sister?

2) There are $\frac{3}{4}$ of a pan of brownies left. I eat $\frac{1}{3}$ of what's left for dessert. How much of the pan of brownies did I have for dessert?

3) Morgan has $\frac{4}{5}$ of a pound of fudge. She gives $\frac{1}{2}$ of the fudge to Emily. How much of the pound of fudge does Emily receive?	
4) $\frac{4}{6}$ of Ms. McGilly's class are girls and $\frac{2}{3}$ of the girls have long hair. What fraction of Ms. McGilly's class have long hair?	
5) There is $\frac{2}{3}$ of a cake left. The remaining cake is shared equally by 5 friends. How much of the original cake does each friend eat?	