# Summer Reading Assignment

*Welcome to middle school! For summer reading this year, please choose books to read off of the 2019-2020 Battle of the Books list! Read as many as you can, and choose ONE book to complete the following project below. Projects will be due by Friday, September 6, 2019 and will be used as a project grade during the first quarter. Use the rubric to help guide your work.*

<table>
<tr><th colspan="2">Two Part Book Project</th></tr>
<tr><th>Part I: Written Book Review</th><th>Part II: Visual Display</th></tr>
<tr><td>Imagine you are writing a book review for Amazon about your favorite summer reading book. Your written book review must include:<br>• Book Details:<br>  ○ Title and Author<br>  ○ Genre<br>• Analyze the Elements of Fiction (5 paragraphs total):<br>  ○ Write one paragraph describing the main setting. Use details to help paint a picture of when and where your story takes place.<br>  ○ Write one paragraph explaining how your story progresses through the stages of plot. These are the main events in the story. Write about what happens at the beginning, middle, and end of the story. Include textual evidence to support your paragraph.<br>  ○ Choose at least two main characters and write a paragraph about each character. Describe their characteristics (what is their personality like, what do they look like) and explain how they interact with other characters.<br>  ○ Write one paragraph about the theme using textual evidence to justify your answer. What is the author trying to teach us about human nature?</td><td>Create a visual display of some kind that represents your book. You are welcome to come up with your own way to display the book, but if you are struggling, here are some ideas:<br>• Tee Shirt: Use markers, paints, glues, and anything else to design a t-shirt to represent the characters, settings, plot, and information from your book. Include at least 10 visuals on the t-shirt. Additionally, on a separate sheet of paper, identify the visual and explain how it relates to the text. Use textual evidence to support your response.<br>• Poster Board Collage: Use magazines, newspapers, and any other media to create a collage to represent the characters, settings, plot, and information from your book. Your entire poster board must be filled! Include at least 10 visuals on the poster board. Additionally, identify the visual and explain how it relates to the text. Use textual evidence to support your response.<br>• Book Bag: Place items that represent your book in a bag (shopping bag, book bag, any bag will do). Include toys, models, actions figures, written notes, or anything else that represents the characters, settings, plot, and information from your book. Include at least 10 items in the bag. Additionally, on a separate sheet of paper, identify the object and explain how it relates to the text. Use textual evidence to support your response.<br>• Book Mobile: Hang descriptions and images that represent the characters, setting, plot, and information from your book from a clothing hanger (or a hook, just make sure we can hang and display). Include at least 10 visuals on the mobile. Additionally, on a separate sheet of paper, identify the visual and explain how it relates to the text. Use textual evidence to support your response.<br><br>Your visual must include:</td></tr>
</table>

| | |
|---|---|
| • **Rank or Recommend:**<br>  ○ Give this book 1, 2, 3, 4, or 5 stars. 5 means the book is SUPER GREAT, a MUST READ, while 1 means the book was AWFUL.<br>  ○ Explain to your audience in a minimum of 5 sentences why you do or do not recommend this book. Be sure to use specific reasons or evidence from your reading. | • Title and Author<br>• Genre<br>• Main characters or persons (if nonfiction)<br>• Setting<br>• Plot or major events<br>• Illustrations/visuals (at least 10)<br>• Creativity and Color |

# Battle of the Books List 2019-2020: Middle School

*To read about the book or to order from Amazon, click the title below. You may also order the book from any book retailer or check them out from the Charlotte-Mecklenburg Library System.*

| Title | Author |
|---|---|
| Serafina and the Black Cloak | Robert Beatty |
| Insignificant Events in the Life of a Cactus | Dusti Bowling |
| The War that Saved My Life | Kimberly Brubaker Bradley |
| Gym Candy | Carl Deuker |
| The Ruins of Gorlan | John Flanagan |
| The Boys Who Challenged Hitler | Phillip Hoose |
| House Arrest | K.A. Holt |
| Cracker! The Best Dog in Vietnam | Cynthia Kadohata |
| To Kill a Mockingbird | Harper Lee |
| Legend | Marie Lu |
| Greenglass House | Kate Milford |
| A Monster Calls | Patrick Ness |
| A Night Divided | Jennifer A. Nielsen |
| The First Rule of Punk | Celia C. Perez |
| Ghost Boys | Jewell Parker Rhodes |
| Harry Potter and the Sorcerer's Stone | JK Rowling |
| Bomb | Steve Sheinkin |
| I'll Be There | Holly Goldberg Sloan |
| The Bitter Side of Sweet | Tara Sullivan |
| The Running Dream | Wendelin Van Draanen |
| Crow | Barbara Wright |
| I Am Malala<br>*(Young Reader's edition with Patricia McCormick)* | Malala Yousafzai |

# Sedgefield Middle School Summer Reading Assignment Rubric (2019-2020)

**Student Name:** _____

| CATEGORY | 15-20 points | 10-14 points | 5-9 points | 0-4 points |
|---|---|---|---|---|
| **Setting** | The setting is described in one full paragraph (minimum of 5 sentences). The reader can imagine the setting because it is explained in detail. | The setting is partially described. Some description is used. | The setting is described with minimal detail. | The setting is not described. |
| **Plot** | The plot is described in full detail where the reader is able to follow along. A minimum of 5 sentences are used to describe the plot. Textual evidence is used. | The plot is described in some detail. Some details are missing. Textual evidence is used. | The plot is described in some detail. Some details are missing. No textual evidence is used. | The plot is not explained. |
| **Characters** | Two characters are identified and details are used to describe the characters. Two paragraphs are written (1 paragraph per character). The writer explains how the characters interact with other characters. | Two characters are identified and some details are used to describe the characters. | One character is identified and details are used to describe the character. | One character is identified with some details or no characters are identified. |
| **Theme** | A theme is identified and textual evidence is used to support the theme. | A theme is identified with minimal textual evidence. | A theme is identified with no textual evidence. | No theme is identified. |
| **Book Recommendation** | The reader ranked the book and provided a minimum of 5 sentences justifying their answer. Specific reasons or evidence is used. | The reader ranked the book and provided a minimum of 5 sentences justifying their answer. | The reader ranked the book. | No ranking is provided. |
| **Visual Display** | The visual display contains at least 10 visuals. A paragraph explains how each visual relates to the text. The display includes the title, author, genre, main characters/persons, setting, and plot events. | The visual display contains at least 8 visuals. A paragraph explains how each visual relates to the text. The display includes the title, author, genre, main characters/persons, setting, and plot events. | The visual display contains at least 5 visuals. A paragraph explains how each visual relates to the text. The display includes the title, author, genre, main characters/persons, setting, and plot events. | The visual display contains less than 5 visuals, or there is no paragraph explaining how each visual relates to the text. |
| **Conventions and Neatness** | The written assignment and visual display is neat. No spelling or grammar issues. | The written assignment and visual display is neat. Some spelling or grammar issues. | The written assignment and visual display is difficult to read/not neat. Spelling and grammar issues. | The written assignment and visual display is sloppy with lots of spelling and grammar issues. |

**Total Number of Points:** _____

**Comments:** _____

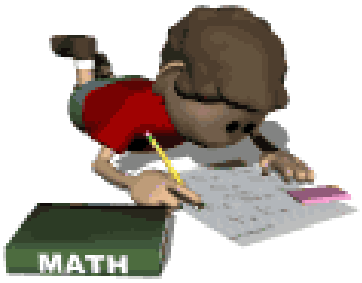
_____

_____

# Sixth Grade Summer Enrichment Math Packet 2019-2020

## *Note to the Student*

You learned so much in Grade 5! It is important that you keep practicing your math skills over the summer to be ready for your 6th grade math class. In this packet, you will find weekly activities for the summer break. The packet is broken down by weeks. At the end of the week, have your parent/guardian initial that you have completed the assignment.




**Directions:**

- Create a personal math journal by stapling several pieces of paper together or use a notebook or binder with paper.
- Each journal entry should:
  - Have the week number and the problem number.
  - Have a clear and complete answer that explains your thinking.
  - Be neat and organized.
- *Pay attention to the gray boxes that you see at the beginning of each week's activities. Those boxes indicate the Common Core domain and standard that the subsequent activities address. If you see a NON-CALCULATOR SYMBOL*  *next to a gray box, then do not use a calculator for the activities in that section!*

# Where to Go to Get Help … or Practice!

During the course of your math work this summer, you may need some assistance with deepening your understanding of the skills and concepts. You also might want to get some more practice. Here are some sites you can visit online:

To get the exact definition of each standard, go to www.corestandards.org and search for the content standard (for example, *7.NS.1a*).

***LearnZillion*** has video lessons on every Math standard. Go to www.LearnZillion.com and search for any math topic or standard.

***Khan Academy*** has helpful videos and self-guided practice problems for every grade level. Go to www.khanacademy.org to get started.

# Math 6

## WEEK 1 || Number & Operations in Base Ten Standard

Our place value system is structured like this:

| Thousands | Hundreds | Tens | Ones | Decimal | Tenths | Hundredths | Thousandths |
|---|---|---|---|---|---|---|---|
| 7 | 3 | 5 | 4 | ▪ | 6 | 8 | 8 |

The system is set up in "base ten." So, each place is ten times as large as the place to its right.

For example, in the number **330**, there are 3 hundreds and 3 tens. So, the 3 in the hundreds place has 10 times the value of the 3 in the tens place, because 30 x 10 = 300.

***Can you advance through the three levels of the Base Ten Bonanza? Good Luck!***

## LEVEL 1

Compare the values of the digits in the number below.

Then choose **True** or **False** for each statement.

# 2.22

a.) 0.02 is 10 times 0.2. True False

b.) 2 is 10 times 0.02. True False

c.) 0.2 is 10 times 0.02. True False

d.) 0.2 is $\frac{1}{10}$ of 2. True False

e.) 0.02 is $\frac{1}{10}$ of 0.2. True False

f.) 2 is $\frac{1}{10}$ of 0.2. True False

# LEVEL 2

Fill in the number that correctly completes each statement.

a.) 500 is 10 times larger than _____.

b.) 500 is 10 times smaller than _____.

c.) 62 is $\frac{1}{10}$ of _____.

d.) 62 is 10 times larger than _____.

e.) 8.9 is $\frac{1}{10}$ of _____.

f.) 8.9 is 10 times larger than _____.

g.) 7.1 is 10 times larger than _____.

h.) 7.1 is 10 times smaller than _____.

# LEVEL 3

For each number in the table, write a phrase from the box to make the correct comparisons.

| Number | Phrase |
|---|---|
| 7 | |
| 0.7 | |
| 700 | |
| 0.07 | |
| 70 | |

- Is $\frac{1}{10}$ of 700
- Is $\frac{1}{10}$ of 7
- Is $\frac{1}{10}$ of 0.7
- Is 10 times as much as 70
- Is 10 times as much as 0.7

**BONUS LEVEL** (Culminating Question):

Explain the relationship (how many times greater or less one number is than the other) between the two 5's in the number 455,721.

Parent/Guardian Initial

_____

**WEEK 2 || Number & Operations in Base Ten Standard:** Read, write, and compare decimals to thousandths.

Did you know that you can take a number and *E-X-P-A-N-D* it? Well, you can!
For example, let's say you want to take the number **743.86** and *E-X-P-A-N-D* it.

You can do so by breaking down the number using the base 10. Like this:

**743.86 is composed of:**

*whole number parts*: 700 + 40 + 3
***and***
*decimal parts*: 0.8 + 0.06

***In table form using decimals, it looks like this:***

| | | |
|---|---|---|
| 700 | → | 7 x 100 |
| 40 | → | 4 x 10 |
| 3 | → | 3 x 1 |
| 0.8 | → | 8 x 0.1 |
| 0.06 | → | 6 x 0.01 |
| 743.86 | | |

***Using fractions, the expanded form of the number is:***

$7 \times 100 + 4 \times 10 + 3 \times 1 + 8 \times \frac{1}{10} + 6 \times \frac{1}{100}$

Using fractions like the example above, write the following numbers in expanded form:

| |
|---|
| 1) 6.741 |
| 2) 98.48 |
| 3) 473.9 |
| 4) 9.1042 |
| 5) 76.07 |
| 6) 20.001 |

# Math 6

Choose the correct expanded form of the number given:

7) 80.03

a. $8 \times 10 + 3 \times \frac{1}{10}$

b. $8 \times \frac{1}{10} + 3 \times \frac{1}{100}$

c. $8 \times 10 + 0 \times 1 + 0 \times \frac{1}{10} + 3 \times \frac{1}{100}$

d. $8 \times 1 + 3 \times \frac{1}{100}$

8) 2.728

a. $2 \times 1 + 7 \times \frac{1}{10} + 2 \times \frac{1}{100} + 8 \times \frac{1}{1000}$

b. $2 \times \frac{1}{10} + 7 \times \frac{1}{10} + 2 \times \frac{1}{100} + 8 \times \frac{1}{1000}$

c. $2 \times 1 + 7 \times \frac{1}{10} + 8 \times \frac{1}{1000}$

d. $2 \times 1 + 7 \times \frac{1}{10} + 2 \times \frac{1}{1000} + 8 \times \frac{1}{10000}$

**Culminating Question**

9) Which of the following expressions show the values of the digits in four hundred fifty-three and forty-eight hundredths? Circle all that apply.

A. $4 \times \frac{1}{100}$ B. $8 \times \frac{1}{100}$ C. $50 \times 10$ D. $8 \times 100$ E. $4 \times 100$

F. $5 \times 10$ G. $3 \times 10$ H. $3 \times 1$ I. $4 \times \frac{1}{10}$

# Math 6

When comparing decimals, use a place-value chart to line up the decimal places and ensure that each decimal is given the same number of places.

For example: Race Car Driver 1 completed a lap in 28.9 seconds and Race Car Driver 2 completed a lap in 28.889 seconds. Which driver took less time to complete a lap?

| | Tens | Ones | Decimal | Tenths | Hundredths | Thousandths |
|---|---|---|---|---|---|---|
| **Driver 1** | 2 | 8 | . | 9 | 0 | 0 |
| **Driver 2** | 2 | 8 | . | 8 | 8 | 9 |

Add zeros after the 9 to have the same decimal places as Driver 2

In comparing the numbers, Driver 2 completed the lap in slightly less time than Driver 1 – just 0.011 seconds!

Drag racers are super-fast race cars! The winning times of drag races are usually under 10 seconds and the difference between the finishing times of cars is frequently very small!

It's your job to use the <, >, or = symbol to compare each pair of times. The lesser time wins the race! *Add placeholder zeros to help you compare!*

***Example:***

4.2 ____ 4.203

4.200 ____ 4.203

4.200 is less than 4.203, so 4.200 __<__ 4.203

1) 8.01 ___ 8.1

2) 2.025 ___ 2.205

3) 10.12 ___ 10.012

4) 9.75 ___ 9.755

5) 8.091 ___ 8.291

6) 6.2 ___ 6.200

7) 9.9 ___ 9.899

8) 8.99 ___ 8.991

# Math 6

9) Compare each number to **635.49**. *Add placeholder zeros to help you compare!*
Then, write each number in the correct column.

| | | |
|---|---|---|
| 636.0 | 635.4955 | 635.409 |
| 635.4 | 635.04 | 635.490 |

| Less Than 635.49 | Equal to 635.49 | Greater Than 635.49 |
|---|---|---|
| | | |

10) Use the digits from the box for each decimal to make the number sentence true. The digits may be used more than once. Each of your answers should be different.

A. 71.531 > 71.5 __ __

B. 71.531 > 71.5 __

| | | | |
|---|---|---|---|
| 1 | 3 | 7 | 9 |

C. 71.531 < 71.5 __ __

D. 71.531 < 71.5 __

**Culminating Questions**

11) At a gas station, you see the prices 2.449 and 2.429 listed for different types of gasoline. Which price is greater? Explain your choice.

12) In a 50-meter sprint, Patrick had a time of 5.75 seconds. Carl ran the same distance in 5.9 seconds. Who had the better time in the race? Explain your choice.

Parent/Guardian Initial

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# Math 6

**WEEK 3 || Number & Operations in Base Ten Standard:** Use place value understanding to round decimals to any place.

Do you remember your rounding rules? Here is one song that teaches the rounding rules:

*Find your place (Circle the place of the number you're rounding)*
*Look RIGHT next door*
*Five or greater, add one more*
*Four or less, stays the same*
*Numbers behind, zero's your name.*

When you round a number, you are finding a number that is close to the given number.

**Example:**
Round **8.526** to the nearest:

- **Whole number** (Look RIGHT next door: The *5* in the tenths place tells you to round the *8* in the ones place up to a *9*) *Answer →* ***9***
- **Nearest tenth** (Look RIGHT next door: The *2* in the hundredths place tells you to keep the *5* in the tenths place) *Answer →* ***8.5***
- **Nearest hundredth** (Look RIGHT next door: The *6* in the thousandths place tells you to round the *2* in the hundredths place up to a *3*) Answer → ***8.53***

1) **1.8453**

Round the above number to the:

Nearest whole number _____ Nearest tenth _____

Nearest hundredth _____ Nearest thousandth _____

2) **13.2607**

Round the above number to the:

Nearest whole number _____ Nearest tenth _____

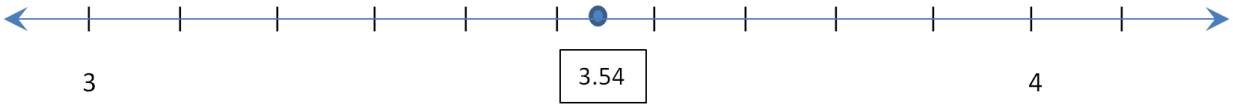
Nearest hundredth _____ Nearest thousandth _____

# Math 6

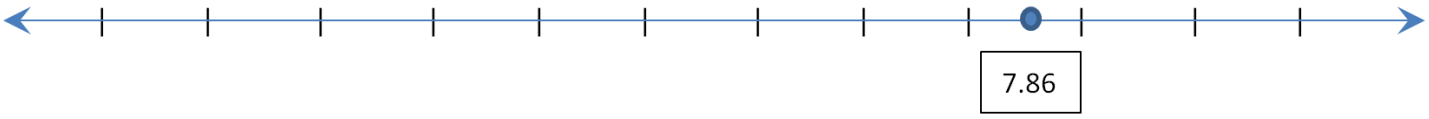
**What Could My Number Be?**

| | |
|---|---|
| 3) My number rounded to the nearest tenth is 8.1. What could my number be? | 4) My number rounded to the nearest hundredth is 16.63. What could my number be? |
| 5) My number rounded to the nearest tenth is 0.8. What could my number be? | 6) My number rounded to the nearest thousandth is 5.738. What could my number be? |

7) Use the number line below to round 3.54 to the nearest tenth. _____




8) Use the number line below to round 7.86 to the nearest tenth. _____




**Culminating Question**

9) Choose *non-zero* numbers to fill in each blank: ___ . ___ ___ ___

Now round your number to the:

Nearest whole number _____ Nearest tenth _____

Nearest hundredth _____ Nearest thousandth _____

Parent/Guardian Initial

_____

# Math 6

**WEEK 4 || Number & Operations in Base Ten Standard:** Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

**Directions:** Perform the operation indicated. Show your process. Use estimation to check the reasonableness of your answer. NO CALCULATOR should be used.

The answer for each problem corresponds to a letter. Each letter should be placed in a blank that corresponds to a problem number to answer this riddle:

***What blew the flags at the beach?***

| | | |
|---|---|---|
| 1) 64.32 + 18.94 | 2) 48.3 + 37.91 | 3) 25 + 60.62 |
| 4) 79.6 – 45.9 | 5) 23 – 7.55 | 6) 51.68 – 30.29 |
| 7) 72.6 – 28.49 | 8) 8.3 x 4.9 | 9) 6.08 x 3.45 |
| 10) 0.5 x 17.64 | 11) 58.8 x 19.3 | 12) 87 x 0.28 |

| | | | |
|---|---|---|---|
| 20.976 → U | 40.67 → O | 15.45 → G | 24.36 → N |
| 85.62 → S | 1134.84 → T | 33.7 → D | 21.39 → A |
| 44.11 → I | 83.26 → F | 8.82 → U | 86.21 → W |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ |
| 6 | 10 | 5 | 9 | 3 | 11 | 8 | 1 | 2 | 7 | 12 | 4 |

Parent/Guardian Initial

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# Math 6

**WEEK 5 ||** Number & Operations – Fractions Standards: Use equivalent fractions as a strategy to add and subtract fractions.

**Perform the indicated operation(s).**

| | | |
|---|---|---|
| 1) $\frac{1}{3} + \frac{1}{4} + \frac{1}{6}$ | 2) $\frac{1}{3} + \frac{5}{6} + \frac{1}{12}$ | 3) $3\frac{5}{9} + 2\frac{1}{6}$ |
| 4) $4\frac{3}{10} + 6\frac{1}{3}$ | 5) $10\frac{1}{2} - 8\frac{2}{9}$ | 6) $3\frac{8}{9} - 2\frac{5}{12}$ |
| 7) $\frac{1}{2} + \frac{1}{3} - \frac{1}{4}$ | 8) $\frac{1}{8} + \frac{3}{4} - \frac{2}{3}$ | |

# Math 6

**Let's Get Active!!!**

9) Krissy swam $\frac{2}{3}$ of a mile on Monday and $\frac{3}{4}$ of a mile on Wednesday.

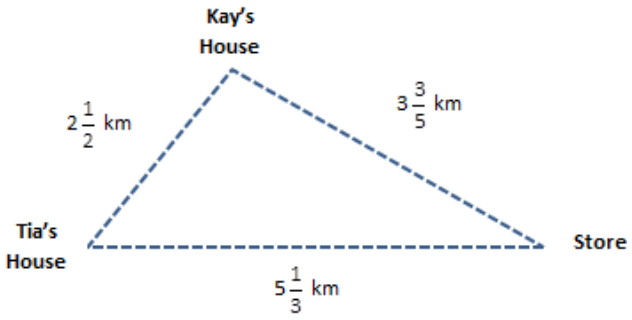
- How many miles did she swim over the two days?
- If she wants to swim a total of 3 miles before Friday, how much farther does she need to swim?

10) Carla is training for a marathon. On Wednesday, she ran $5\frac{3}{8}$ miles for her workout. On Thursday, she ran $9\frac{4}{5}$ miles. How much farther did she run on Thursday than Wednesday?

**Go Carla!**

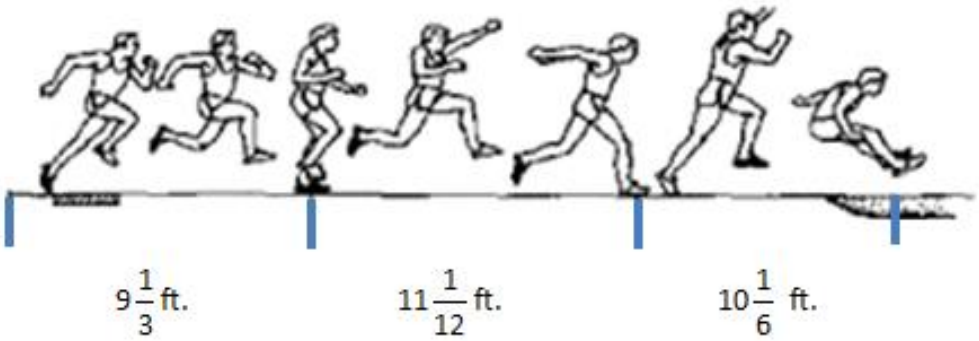
# Math 6

11) From her house, Tia biked to the store and then to her friend Kay's house before returning home, as shown in the diagram to the right. How many total kilometers did Tia bike?




**Culminating Question**

12) In practice, Carson made a triple jump with the segments shown below. What is the combined length of his jumps? Explain how you determined your answer.




Parent/Guardian Initial

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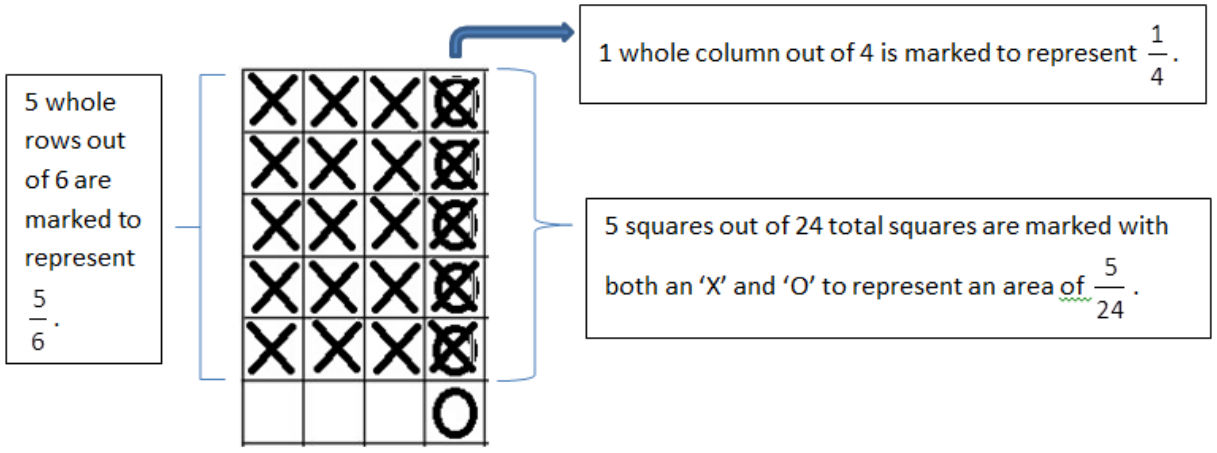
# Math 6

**WEEK 6 || Number & Operations – Fractions Standards:** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
**Number & Operations – Fractions Standards:** Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

One way to visualize multiplying two fractions is to draw a rectangle model that is made of side lengths that are equal to each of the fractions.

**Example:** What is the area of a rectangle with side measurements of $\frac{1}{4}$ and $\frac{5}{6}$?

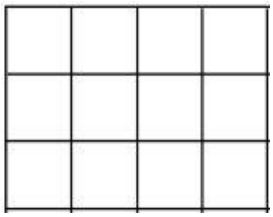
You should know that to find area of a rectangle, multiply the length times the width. To model this, you can create a rectangular grid on which you can represent each side length. Then you can shade the area of the rectangle to represent the expression and confirm your answer by multiplying the fractions.



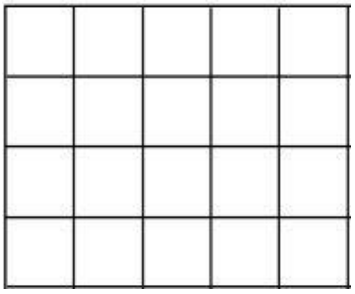

So to find the area of a rectangle with side lengths of $\frac{1}{4}$ and $\frac{5}{6}$, multiply numerators straight across and denominators straight across: $\frac{1}{4} \times \frac{5}{6} = \frac{5}{24}$.

# Math 6

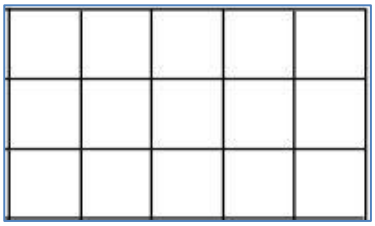
1) Shade the figure and determine the area of a rectangle with side lengths of $\frac{3}{4}$ and $\frac{2}{3}$.



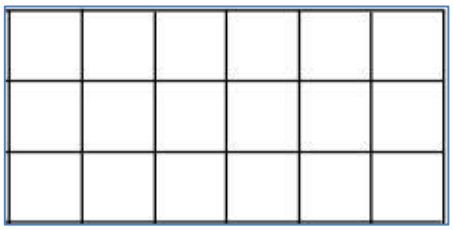
2) Shade the figure and determine the area of a rectangle with side lengths of $\frac{2}{4}$ and $\frac{2}{5}$.



3) Shade the figure and determine the area of a rectangle with side lengths of $\frac{1}{3}$ and $\frac{4}{5}$.



4) Shade the figure and determine the area of a rectangle with side lengths of $\frac{1}{6}$ and $\frac{2}{3}$.



5) In the space below, draw a grid and model the expression $\frac{2}{3} \times \frac{1}{2}$, then check using math.

**Time to Make an Art Project!**

6) Aretha's trip to an art supply store took $1\frac{1}{6}$ hours. Her return trip took only $\frac{5}{7}$ of the time of her trip to the store. How long was Aretha's return trip? What was Aretha's total driving time?

# Math 6

7) Marcus has 36 markers in his case. Of those, $\frac{4}{9}$ are fabric markers.

How many of his markers are not fabric markers? Explain how you determined your answer.

**You Are Doing Home Projects!!**

1) You use $\frac{7}{8}$ of a gallon of paint for one room. How much paint do you need to paint four rooms?

2) One paving stone weighs $21\frac{5}{12}$ pounds. You want to put six paving stones in front of your house.

How many total pounds of stones do you have to buy?

3) A landscaper charges $16 per hour for his services. How much money do you have to pay him if he works $7\frac{3}{4}$ hours fixing up your yard?

# Math 6

4) You bought a 70-pound bag of grass seed and used $\frac{2}{5}$ of it to seed your lawn.

How many pounds of grass seed did you use?

5) You decided to paint the walls of your room. You painted half of one wall red. Then you changed your mind and wanted to paint over it in green. You waited for it to dry and then started covering the red with green paint. At the end of the day, $\frac{2}{3}$ of the original red wall was painted green. At that time, how much of the entire wall had been painted green? Explain how you determined your answer. (*Hint:* Draw a picture to help you understand the problem and the solution.)


**Culminating Question**

6) Write a short real-life scenario that models the equation below and draw a visual representation to show the solution.

$4 \times \frac{3}{4} =$

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# Math 6

**WEEKS 7 & 8 || Number System Standard:** Greatest Common Factor, Least Common Multiple, Distributive Property

## Finding the Least Common Multiple

Strategy: To find the Least Common Multiple (LCM) of two numbers, simply find the multiples of each of the numbers. Then determine the lowest multiple that is shared by both numbers.


**For example:** Find the LCM of 4 and 9.

*Multiples of 4:* 4, 8, 12, 16, 20, 24, 28, 32, ***36***
*Multiples of 9:* 9, 18, 27, ***36***

***The LCM of 4 and 9 is 36.***

You can find the LCM of three numbers using the same method.

Try these:

1) What is the LCM of 6 and 9?

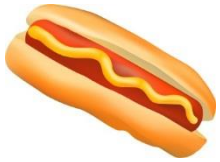
2) What is the LCM of 6 and 10?

3) What is the LCM of 8 and 12?

4) What is the LCM of 5 and 8?

5) What is the LCM of 4, 6, and 9?

6) What is the LCM of 4, 5, and 6?



7) Hot dogs come in packages of 10 and hot dog buns come in packages of 8. What is the least amount of each product that you need to buy if you want exactly one hot dog for each hot dog bun?

# Math 6

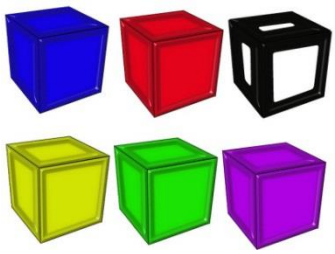
8) A pro baseball team is having a promotion in which every 10th fan that enters the stadium gets a free hat and every 12th person gets a free T-shirt. How many fans will come into the stadium before a fan receives both a hat and a T-shirt?

9) Brandon is thinking of a number that is divisible by 6 and 8. What is the smallest number that Brandon could be thinking of?

10) The school band is playing a piece of music in which the bass drum is struck every four beats and the chimes are struck every 22 beats. What is the number of the first beat in which the bass drum and chimes will be struck on the same beat?

**Greatest Common Factor – Example 1**

Brenda has 54 marbles and 72 cubes to put into bags. She wants each bag to have the same number of each item with nothing left over. What is the greatest number of bags Brenda could make? How many of each item would there be in each bag?



To determine the GREATEST number of bags Brenda could make, you could find the ***greatest common factor*** of the number of marbles (54) and cubes (72). This can be done by listing the possibilities in a table.

| **Number of Bags** | 1 | 2 | 3 | 6 | 9 | **18** | 27 | 54 |
|---|---|---|---|---|---|---|---|---|
| **Marbles in each bag** | 54 | 27 | 18 | 9 | 6 | 3 | 2 | 1 |

| **# of Bags** | 1 | 2 | 3 | 4 | 6 | 8 | 9 | 12 | **18** | 24 | 36 | 72 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Cubes in each bag** | 72 | 36 | 24 | 18 | 12 | 9 | 8 | 6 | 4 | 3 | 2 | 1 |

- The greatest number of bags that is found in ***both*** tables is 18, so 18 is the greatest number of bags Brenda could make. Therefore, 18 is the ***greatest common factor*** for 54 and 72.
- In each bag, there would be 3 marbles and 4 cubes.

**Example 2**

Find the greatest common factor of 12 and 30.

*Strategy*: List the factors of each number.
Identify the greatest factor that both numbers have.

**12:** 1, 2, 3, 4, ***6***, 12
**30:** 1, 2, 3, 5, ***6***, 10, 15, 30

***So, the greatest common factor of 12 and 30 is 6.***

# Math 6

1) Barbara is having a party and wants to pre-make plates of snacks for her guests. She has 90 pretzels and 63 cookies. What is the greatest number of plates she can make with the same amount of pretzels and cookies on each plate and no snacks left over? How many of each item would there be?

2) A farmer is putting apples and oranges into boxes to sell at a market. He has 64 apples and 24 oranges. What is the greatest number of boxes he can make using all of the apples and oranges if each box has identical contents?

3) Melody is making cups of fruit salad. She has 25 grapes, 15 strawberries, and 50 blueberries. How many cups of fruit salad can Melody make if each cup has to have the same amount of each type of fruit and there is nothing left over?

4) Toni is making party bags for her daughter's birthday party. Toni bought 36 party favors, 27 cookies, and 18 lollipops. How many party bags can Toni make if she wants to use all of the materials that she bought and every bag contains the same items?

# Math 6

The ***greatest common factor*** can be used to re-write an expression**.**

**For example:**

*Re-write the expression 44 + 28 as a product using the greatest common factor as a factor multiplying a quantity in parentheses.*

- Think: what is the greatest common factor of 44 and 28?
  - Factors of 44: 1, 2, ***4***, 11, 22, 44
  - Factors of 28: 1, 2, ***4***, 7, 14, 28

  → The greatest common factor of the two numbers is 4.
- Divide both numbers by the GCF.
  - 44 ÷ 4 = 11 and 28 ÷ 4 = 7
- Use the GCF as a factor multiplying a quantity in parentheses:
  - 4(11 + 7)

**Check:**

- 44 + 28 = 72
- Apply the Distributive Property to check:
  4(11 + 7) → 4(18) = 72


*Write the following sums as products using the greatest common factor as a factor multiplying a quantity in parentheses, as in the example above.*

5) 14 + 18 _____

6) 6 + 42 _____

7) 39 + 18 _____

8) 24 + 40 _____

9) 27 + 15 _____

10) 35 + 49 _____

11) 60 + 48 _____

12) 66 + 88 _____

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