

W1: APRIL 20TH THRU APRIL 24TH DISTANCE LEARNING ASSIGNMENTS**IMPORTANT:** Pick up Materials for Weeks 2 and 3 on Friday 4/24!

Daily Work Expectation: 2–3 hours per day of school work						SUBMISSION OF WORK FOR GRADES <ul style="list-style-type: none">Digital work can be submitted online immediatelyPaper copies can be scanned or photographed then emailedPaper copies can be dropped off at Poet on designated days
Daily Office Hours: 9am to 9:40am and 1pm to 1:40pm --- Contact email: ejsalazar@tusd.net						
CONTENT AREA & MATERIALS NEEDED	TASKS AND LEARNING OBJECTIVES ✓ when done! <ul style="list-style-type: none">Paper option ✎ use <u>binder paper</u> or PDF or packet picked up on 4/9Digital version 📄					
VIRTUAL MEETINGS	Day	Monday	Tuesday	Wednesday	Thursday	
	Time	11:20	11:20	11:20	11:20	
	Group	A	B	C	D	
MATH	<input type="checkbox"/> 📄 Topic 3 Lesson 1 Expressions and Equations – online lesson with workbook got its and close and check					
DIGITS 📖 workbook	<input type="checkbox"/> 📄 Topic 3 Lesson 2 Balancing Equations – online lesson with workbook got its and close and check					
	<input type="checkbox"/> 📄 Topic 3 Lesson 3 Adding and Subtracting Equations – online lesson with workbook got its and close and check					
	<input type="checkbox"/> 📄 Topic 3 Lesson 4 Multiplying and Dividing Equations – online lesson with workbook got its and close and check					
	<input type="checkbox"/> ✎ Same as above – using W1 PDFs, or W1 packet					
	Note: if you do not have your workbook , you can download the W1 PDF and get the pages there					
ELA	<input type="checkbox"/> 📄 Think of a task or skill that you know how to do well. Write a how-to paper explaining how to do that skill. Use sequence of events and appropriate transition words to connect your ideas. Use 6 th grade conventions for grammar, spelling, capitalization and punctuation. Use office365 and title "YourNameHowTo" share with me, ejsalazar@tusd.net , when finished.					
WRITING	<input type="checkbox"/> ✎ Complete the assignment above on <u>binder paper</u> and submit when finished.					
COMPREHENSION OR STUDY SYNC 📖 workbook Spread SS assignments over the whole week.	<input type="checkbox"/> 📄 ✎ Article "Five Second Rule" <i>Cite Text Evidence</i> with Mon-Thurs Question Sections in W1 PDF or W1 packet					
	<input type="checkbox"/> 📄 ✎ Read <u>Guts</u> pg 11-13 in Study Sync Workbook, then annotate the story using the rubric included in W1 PDF or W1 packet , then answer Think Q#1, and Focus Q#5 found on pages 14 and 15 of the workbook. Use <u>binder paper</u> .					
	<input type="checkbox"/> 📄 Log in to Study Sync and follow the above directions: read, annotate online, answer Think Questions, then submit online. Note: I will not assign a number of annotations needed, you need to follow the rubric to earn your points. Note: if you do not have your workbook , you can download the W1 PDF and get the assignments there					
SCIENCE BODY SYSTEMS	<input type="checkbox"/> 📄 ✎ Digestive System Comprehension Passage – in W1 PDF or in W1 packet students should # the P, read the passage once all the way through, then read the questions and highlight or underline key words , then re-read the passage highlighting or underlining the same key words to answer the questions, note the P# when answering the questions. Note: You will be creating a One Pager project for Body Systems during W4: May 11th thru 15th					
D.E.A.R.	Read 30 minutes (or more!) per day – use the LOG to record your books. Read different types of books, read informational texts, read magazines, read biographies, read poetry... READ A VARIETY of texts! Note: Next week, W2 , you will write a summary of a book you have finished recently – be prepared!					

Week of:

, 2020

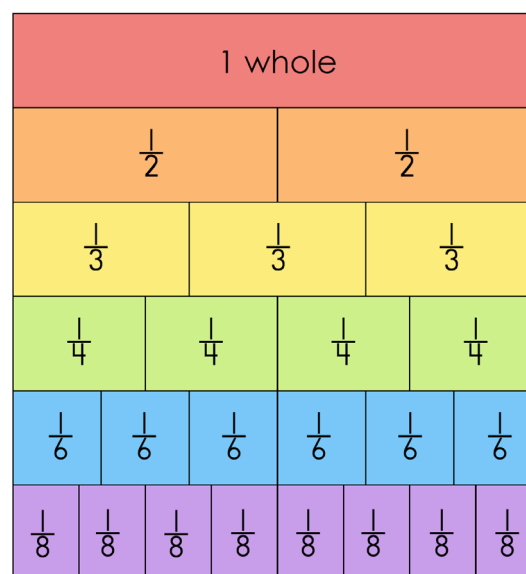
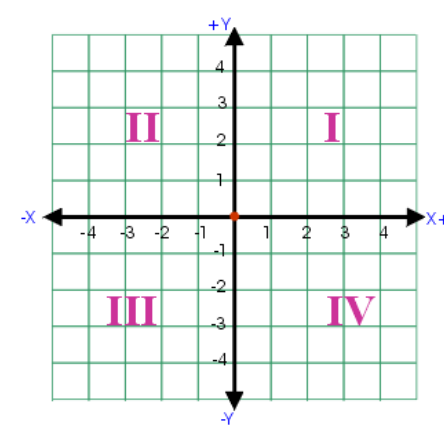
Name/#:

Monday	TITLE: _____ Author: _____	PARENT INITIAL
	Amount of time read today: _____ minutes	
	Pages read: from _____ to _____	
Tuesday	TITLE: _____ Author: _____	
	Amount of time read today: _____ minutes	
	Pages read: from _____ to _____	
Wednesday	TITLE: _____ Author: _____	
	Amount of time read today: _____ minutes	
	Pages read: from _____ to _____	
Thursday	TITLE: _____ Author: _____	
	Amount of time read today: _____ minutes	
	Pages read: from _____ to _____	
Friday	TITLE: _____ Author: _____	
	Amount of time read today: _____ minutes	
	Pages read: from _____ to _____	



Math Resource Page

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144



Area of a triangle: $A = \frac{b \cdot h}{2}$ or $\frac{1}{2} b \cdot h$

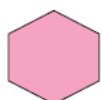
Area of a rectangle: $A = b \cdot h$

Volume of a rectangular prism: $V = l \cdot w \cdot h$

polygons



pentagon



hexagon



heptagon

quadrilaterals



square



rectangle



parallelogram

triangles



equilateral



scalene



isosceles

equation

expression

$$4x + 3^2 = 25$$

term
coefficient & variable

term
constant & exponent

term
constant

An equation is a statement that two things are equal. An equation has an equal sign (=). What is on the left side is equal to what is on the right.

An expression is a group of terms and operators (+, -, x, ÷).

A term is a constant, a variable, or coefficients together with variables.

An exponent tells you how many times to multiply the base.

Evaluate Exponents

6.EE.1 ~ I can evaluate exponents.

Dig 1-5
103

$$8^2 = 8 \times 8 = 64$$

eight squared

Exponential Form

Expanded Form

Standard Form

Word Form

$$5^3 = 5 \times 5 \times 5 = 125$$

five cubed

Exponential Form

Expanded Form

Standard Form

Word Form

$$2^4 = 2 \times 2 \times 2 \times 2 = 16$$

two to the fourth power

Exponential Form

Expanded Form

Standard Form

Word Form

DEFINITION

tells what order to perform the operations
when there is more than one
operation used

Example(s)

$$19 + (14 \div 7) \times 2^2$$

$$19 + 2 \times 2^2$$

$$19 + 2 \times 4$$

$$19 + 8$$

$$= 27$$

Order of Operations

 $\times \div$ $+-$

G E M D A S

Characteristics

Mistake → Did Not
Follow O.O.O.

Non-Example(s)

$$19 + (14 \div 7) \times 2^2$$

$$19 + 2 \times 2^2$$

$$19 + 2 \times 4$$

$$21 \times 4$$

$$= 84$$

ORDER OF OPERATIONS

6.EE.2 21

G grouping symbols () [] | |

parentheses

Brackets

Abs. Value

E exponents

 X^{\square}
base

of times the base is X
by itself.

inverse

M multiply
D divide

 $\begin{matrix} 1 & 2 \\ \bullet & \rightarrow \\ L & R \end{matrix}$

they are co-equal
move from Left to Right

inverse

A add
S subtract

 $\begin{matrix} 1 & 2 \\ \bullet & \rightarrow \\ L & R \end{matrix}$

↓

↓

$$5 \times 9 \div 3 - 3^2$$

$$5 \times 9 \div 3 - 9$$

$$45 \div 3 - 9$$

$$15 - 9$$

$$6$$

$$10 \div (3+2) \times 4^2 - 10$$

$$10 \div 5 \times 4^2 - 10$$

$$10 \div 5 \times 16 - 10$$

$$2 \times 16 - 10$$

$$32 - 10$$

$$22$$

Name: _____

Date: _____

Solving Equations Using Addition and Subtraction

- When solving an equation, you must first ISOLATE the variable.
- To isolate the variable means that you need to get the variable by itself on one side of the eqn.
- To isolate the variable, move numbers to the other side of the equation using inverse operations.
- Inverse means opposite.
- The inverse operation of addition is subtraction.
- The inverse operation of subtraction is addition.
- When solving for a variable it is important to show all your work.
- Once you find the value of the variable, check to make sure your answer is a solution.
- The Addition prop of EQUITY states that when you add the same number to each side of an equation, the two sides remain equal. =
- The Subtraction prop of EQUITY states that when you subtract the same number to each side of an equation, the two sides remain equal. =
- Solve and check the equation below. Be sure to show all work!

$ \begin{array}{r} x + 4 = 12 \\ -4 \quad -4 \\ \hline x = 8 \end{array} $	<p>Check:</p> $ \begin{array}{r} x + 4 = 12 \\ x = 8 \\ 8 + 4 = 12 \\ 12 = 12 \quad \checkmark \end{array} $
$ \begin{array}{r} x - 5 = 25 \\ +5 \quad +5 \\ \hline x = 30 \end{array} $	<p>Check:</p> $ \begin{array}{r} x - 5 = 25 \\ x = 30 \\ 30 - 5 = 25 \\ 25 = 25 \quad \checkmark \end{array} $

Solving Equations Using Multiplication and Division

1. When solving an equation, you must first isolate the variable.
2. The inverse operation of multiplication is division.
3. The inverse operation of division is multiplication.
4. Once you find the value of the variable, check! to make sure your answer is a solution.
5. The Multiplication Property of EQUITY states that when you multiply each side of the equation by the same number, the two sides remain equal. Whatever I do to one side of an equation, I must do to the other!
6. The Division Property of EQUITY states that when you divide each side of the equation by the same number, the two sides remain equal.
7. Two different ways to write division: fraction and \div

$$\frac{37}{24} = 24 \overline{)37}$$

$$37 \div 24$$

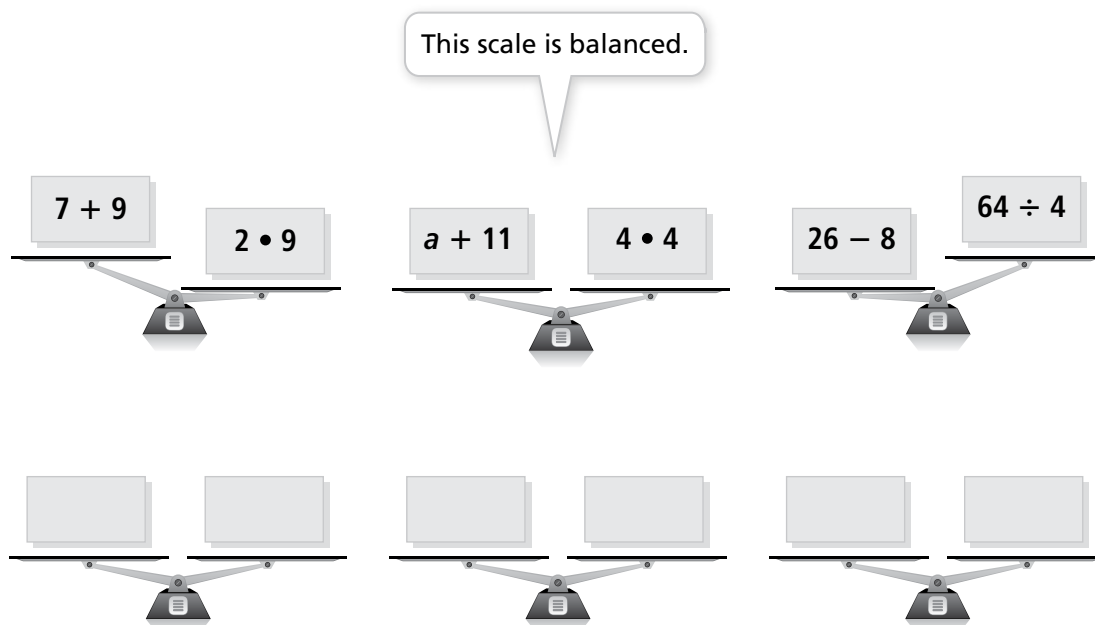


CCSS: 6.EE.A.2: Write, read, and evaluate expressions in which letters stand for numbers.
6.EE.B.5: ... Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

Launch

© MP2, MP5

Shuffle the expressions in the top row of scales so that all of the scales in the bottom row balance.



Reflect What does it mean for two sides of the scale to be balanced?

Got It?

PART 1 Got It



Which are equations?

I. $t + 5 = 17$

II. $3c$

III. $10y = 13d$

PART 2 Got It (1 of 2)



Which expressions are equal?

I. 16×2

II. $24 + 8$

III. 4×4

Got It?

PART 2 Got It (2 of 2)



Are the expressions $12a + (6 + 3a)$ and $3(5a + 2)$ equivalent? Explain.

PART 3 Got It



Which equation(s) have a solution of 12?

I. $17 - m = 5$

II. $k - 12 = 0$

III. $12 + z = 24$

Close and Check



Focus Question

© MP6, MP7

What is an equation? How is an equation with variables different from the equations you've seen in the past?



Do you know HOW?

1. Complete the equation.

$$x(17 - 8) = \boxed{} x - 8 \boxed{}$$

2. Match each expression with an equivalent expression.

A. $\frac{18w}{6}$ $\boxed{}$ $7w + 8w$

B. $20w + 12w$ $\boxed{}$ $10w \cdot 2$

C. $10w + 10w$ $\boxed{}$ $4w(5 + 3)$

D. $10w + 5w$ $\boxed{}$ $50w - 25w$

E. $25(2w - w)$ $\boxed{}$ $18w \div 6$

3. Circle the equations for which 5 is a solution.

$$3x = 15$$

$$12 - a = 6$$

$$35 \div 7 = r$$

$$f + 9 = 14$$



Do you UNDERSTAND?

4. **Vocabulary** Tell which of the following is an *expression* and which is an *equation*. Explain.

$$4t = 28$$

$$8c + 7$$

5. **Error Analysis** Your friend applied the Distributive Property to conclude that $8(x + 2)$ is equivalent to $8x + 2$. Describe your friend's error and give an expression that is equivalent.

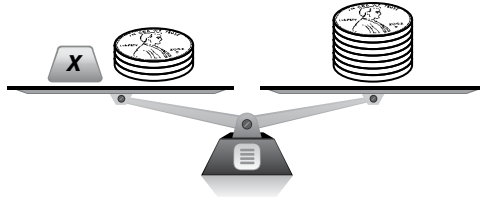


CCSS: 6.EE.A.2: Write, read, and evaluate expressions in which letters stand for numbers.

Launch

This scale is balanced. How could you keep the scale balanced if the left side changes to Box X and 5 pennies?

MP3, MP5

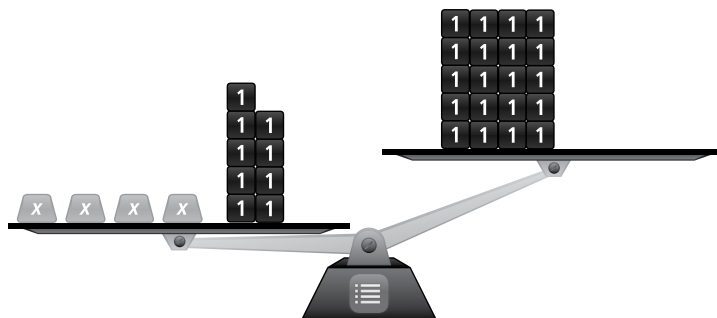


Reflect How can you change the sides of a balanced scale and keep it balanced?

Got It?

PART 1 Got It

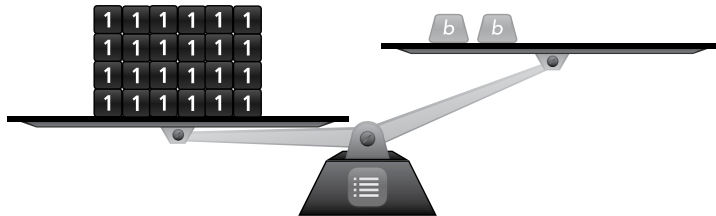
- ▶ The scale balances with $4x$ on one side and 20 on the other. What must you do to the scale below to make it balanced?



Got It?

PART 2 Got It

- The scale balanced with 24 on the left and $6b$ on the right. What must you do to rebalance the scale?



PART 3 Got It

- The solution of $17 + t = 25$ is $t = 8$. Which equation is equivalent to $17 + t = 25$?
- I. $17 + t = 25 + t$ II. $3 + 17 + t = 3 + 25$ III. $17 + t + t = 25 + 25$

Discuss with a classmate

Choose one of the equations that you did NOT select as equivalent.
Explain to your classmate what part(s) of that equation failed to make it equivalent to the original equation $17 + t = 25$.

Close and Check



Focus Question

© MP1, MP3, MP8

How is it possible for two different equations to describe the same situation?
What does it mean for two equations to be equivalent?



Do you know **HOW**?

1. A scale is balanced with $3a$ on one side and 9 on the other. What must you do to keep the scale balanced?

$$3a - 5 = 9 - \boxed{}$$

2. Use the information on the scale to complete the equivalent equation.



$$\boxed{} b = 77$$

3. Which equation is equivalent to $5c + 2 = 12$?

- I. $5c + 2 = 12 + 2$
II. $5c + 2 - c = 12 - c$
III. $2(5c + 2) = 2(12)$

- A. I and II
B. I and III
C. II and III
D. all of them



Do you **UNDERSTAND**?

4. **Reasoning** Why is it important to do the same thing to both sides when balancing an equation?

5. **Error Analysis** Describe and correct the error in writing an equivalent equation.

$$\begin{aligned} r + 6 &= 16 \\ r + 6 - 5 &= 16 + 5 \end{aligned}$$

Solving Addition and Subtraction Equations

CCSS: 6.EE.B.7: Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers.



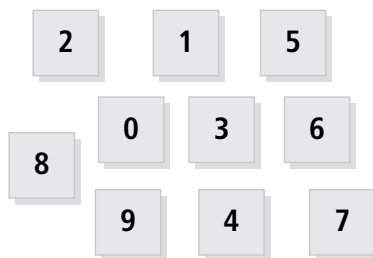
Launch



Each row, column, and diagonal in the number square has the same sum.

MP1, MP7

a	7	2
1	5	b
8	c	4



Find the values of a , b , and c .

$a =$

$b =$

$c =$

Explain.

Reflect Did you use addition or subtraction to find each missing value? Could you use either operation?

Got It?

PART 1 Got It



Solve the equation $8 + x = 36$.

PART 2 Got It



Each equation shows an operation. For which equation(s) is addition the inverse operation?

I. $b + 27 = 78$

II. $25 = g - 19$

III. $18 + v = 19$

PART 3 Got It



Write a simpler, equivalent equation to solve $d - 29 = 85$.

Close and Check



Focus Question

© MP2, MP7

How do you use addition and subtraction to undo each other? Why might this be helpful in balancing equations?



Do you know HOW?

1. Solve the equation.

$$7 + w = 23$$

$$w = \boxed{}$$

2. Write the inverse operation for each equation shown in the table below. Use **S** for subtraction and **A** for addition.

Equation	Inverse Operation
$12 + r = 47$	<input type="text"/>
$d - 15 = 4$	<input type="text"/>
$14 - s = 10$	<input type="text"/>
$t + 7 = 23$	<input type="text"/>
$56 + w = 92$	<input type="text"/>
$y - 8 = 61$	<input type="text"/>

3. Circle the equation that has a solution of 16.

$$x + 6 = 22$$

$$x - 6 = 22$$



Do you UNDERSTAND?

4. **Vocabulary** What are inverse operations? Give an example.

5. **Error Analysis** Identify the error in solving the equation and give the correct answer.

$$\begin{aligned} 5 + 7 + z &= 33 \\ 12 + z &= 33 \\ 12 + 12 + z &= 33 + 12 \\ z &= 45 \end{aligned}$$

Solving Multiplication and Division Equations



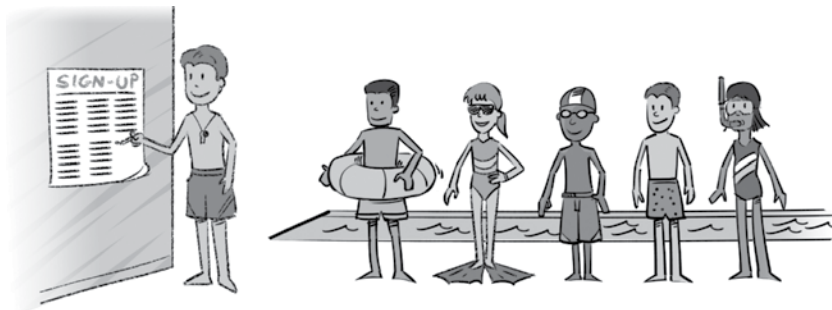
CCSS: 6.EE.B.7: Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers.

Launch

© MP4, MP6

Some students sign up for summer swim classes. The swim coach splits them evenly to form 13 classes with 8 students in each class. How many students sign up for swim class?

Show how to solve the problem using division and multiplication.



Division

Multiplication

Reflect Could you have solved the problem using only division and not any multiplication? How?

Got It?

PART 1 Got It



Solve the equation $5s = 30$.

PART 2 Got It



Each equation shows an operation. For which equation(s) is division the inverse operation?

I. $m \div 3 = 27$

II. $39 = h \cdot 13$

III. $10 \cdot z = 120$

PART 3 Got It



Solve the equation $m \div 15 = 25$.

Close and Check



Focus Question

© MP2, MP7

How do you use multiplication and division to undo each other? Why might this be helpful in balancing equations?



Do you know HOW?

1. Write and solve the modeled equation.

42						
x	x	x	x	x	x	x

x =

x =

2. Write the inverse operation for each equation shown in the table below. Use **A** for addition, **S** for subtraction, **M** for multiplication and **D** for division.

Equation	Inverse Operation
$36 = 12r$	
$d \div 15 = 4$	
$5 + f = 13$	
$56 = 7t$	
$14 \div s = 2$	
$63 - p = 46$	



Do you UNDERSTAND?

3. **Writing** Draw and explain a model of the equation $3x = 18$.

4. **Reasoning** A teacher has 72 pencils to split among 24 students. She asks the class to write an equation to figure out how many each gets. Student A writes: $72 \div 24 = x$ Student B writes: $24x = 72$ Who is correct? Explain.

Marking the Text Rubric



1	2	3	4
Little evidence of interaction with the text:	Evidence of some interaction with the text:	Evidence of strong interaction with the text:	Evidence of thorough interaction with the text
<ul style="list-style-type: none"> Lots of underlined text or highlighting (coloring) Margin notes are minimal Questions and observations reflect rushed or superficial commentary (simple “why?” “how?” without thought) Stray marks, doodles 	<ul style="list-style-type: none"> Identifies and defines some unknown or important vocabulary Identifying some key vocabulary Makes few margin notes Questions and observations reflect rushed or superficial commentary (can be answered by reading the passage closely) 	<ul style="list-style-type: none"> Identifies and defines unknown or important vocabulary Identifies patterns or high-frequency words (key vocabulary) Makes margin notes as assigned Questions and comments reflect delving deeper (cannot be answered by reading the text) Claim is identified Identifies evidence that supports the claim Makes thoughtful connection between the text and self, other text 	<ul style="list-style-type: none"> Identifies and defines unknown or important vocabulary Identifies patterns or high-frequency words (key vocabulary) and connects with central idea Makes margin notes as assigned Questions and comments reveal high level thinking to understand the text. Identifies claim accurately Identifies and distinguishes between facts/details that support the claim. Meaningful connection made with other world events

Symbols

Expectations and Markings:

?	<p>This is confusing... or I have a question...</p> <p>Write the question in the margin</p>
!	<p>This is surprising!</p> <p>Write what you thought before or how your thinking was changed</p>
CV	<p>Content vocab I need to know to understand what I’m reading</p> <p>Write the definition in the margin</p>
∞	<p>I can make a connection to this. Text to: SELF, TEXT, WORLD</p> <p>Write your connection in the margin</p>
C	<p>Claim is <u>underlined</u>/highlighted and marked with a “C”</p>
*	<p>Mark Key Facts or Details that supports the Claim</p>
①②③	<p>Number each paragraph on the left</p>

Read

From Chapter 1: Heart Attacks, Plane Crashes and Flying

Perhaps the single most **catastrophic** event in Brian's life in *Hatchet* is when the pilot dies of a heart attack. This forces Brian to fly the plane and land—in little more than an “aimed” crash—in a lake, where he swims free and saves himself.

Before I was fortunate enough to become successful as a writer, I worked at home, writing as much as I could between construction jobs. Because I had so much downtime, I added my name to a list of volunteers available to answer emergency ambulance calls. My wife and I lived then in a small prairie town in the middle of farm country, near the **confluence** of two major highways. The volunteer service was small, and all we had was one old ambulance donated by a city that had bought new ones. But we were the only service available for thousands of square miles.

We answered calls to highway wrecks, farm accidents, poisonings, gunshot accidents and many, many heart attacks. I would go out on the calls alone or with another man who also worked at home.

I saw at least a dozen heart attack victims in the first year. Sadly, most of them were dead before I arrived. The distances we had to cover were so great that we simply could not get there in time to save them. If we did arrive before they died, we had to wait an hour or more for the “flight for life” chopper from the nearest city. Often it arrived too late.

When I came to write *Hatchet*, I remembered one call to a small ranch some sixty miles northeast of Colorado Springs. It was early in the morning when the siren cut loose, and I ran half-dressed for my old truck, drove to the garage where the ambulance was kept and answered the phone hanging on the wall.

“Please come quick!” a woman said. “It’s my Harvey. He’s having chest pains.”

She gave me the location of the ranch and I took off. It should have taken me a full twenty minutes to get there because of the roughness of the gravel roads but I arrived in fourteen by driving like a maniac.

It was just getting light as I ran into the house carrying our emergency bag, and I could smell what was happening as soon as I entered the kitchen. The lights were on and a man of about fifty was sitting at the kitchen table. His face was gray and he was holding his left shoulder with his right hand. He looked at me and smiled **sheepishly**, as if to apologize for the **inconvenience**, and started to say something but then stopped and looked again at the floor in what soldiers call the thousand-yard stare. His wife, a thin woman in jeans and a sweatshirt, stood by him, and she gave me what we called the Look—an **expression** that meant *Thank God you’re here please save him please save him please save him*.

But the smell of methane was very strong and the gray look was very bad and as I reached for him to put him on his back, he jolted as if hit by electricity, stiffened in the kitchen chair and fell sideways to the floor. His eyes looked into mine. Directly into my eyes.

“Call the hospital and tell them to bring the chopper now,” I said, and knelt

to help him, but he was hit with another jolt that stiffened him and his eyes opened wide and the smell grew much stronger and I knew he was gone. There was, of course, hope—there is always hope. Even when I was called to car accidents and saw children I knew were dead, I would keep working on them because I could not bring myself to accept their death—the hope would not allow it—and I worked on this man now though the smell came up and the skin grew cold. I kept at the CPR because the woman kept giving me the Look and I could not give up hope. But minutes passed and then half an hour before I heard the sound of the rotors—which was very good time, though much too late for this man—and I kept working on him though I knew he was dead and I had seen him die, seen him move from his life into his death, and though I had seen death many times before, I had not seen it in this way. Not in the way his eyes looked into mine while the life left him.

Years later, when I came to write *Hatchet* and the scene where the pilot is dying, I remembered this man of all the men I saw dead from heart attacks and car wrecks and farm accidents. I remembered him and his eyes and I put him in the plane next to Brian because he was, above all things, real, and I wanted the book to be real. But I did not sleep well that night when I wrote him into the book and I will not sleep well tonight thinking of his eyes.

Excerpted from *Guts: The True Stories Behind Hatchet and the Brian Books* by Gary Paulsen, published by Laurel-Leaf Books.

Annotations



Guts: The True Stories behind Hatchet and the Brian Books

Think Question 1

What does the excerpt tell you about Gary Paulsen's life before he became a successful writer? Cite textual evidence in your answer.

Focus Question 5

How is the event at the ranch near Colorado Springs significant for Paulsen, and how does it become a turning point in his life? Highlight evidence from the text to support your answer and annotate to explain your ideas.

Name:

Nonfiction: Cite Textual Evidence – Q1:2

Date:

As you answer this week's questions, highlight your evidence in the text.

The Five-Second Rule

According to the "5-second rule," food that is dropped on the floor is okay to eat so long as it's picked up within 5 seconds. But should fallen food really be going into the trash instead of into our mouths? Scientific research has put the 5-second rule to the test, and the answer is...it depends.

The length of time food spends on the floor isn't the only determining factor when it comes to food safety. Researchers at Rutgers University tested four different types of flooring (stainless steel, ceramic tile, wood, and carpet) and four different foods (watermelon, plain white bread, buttered bread, and gummy bears). They coated the surface of each flooring with bacteria. Then, they dropped each food sample on each type of flooring and left it there for four different time increments: less than one second, five seconds, 30 seconds, and 300 seconds. With all the varying factors, there were 128 possible combinations. On top of that, the



researchers repeated each combination 20 times, which means they conducted a total of 2,560 experiments. That might seem excessive, but the more times an experiment is replicated, the more accurate the results. When compared to multiple experiments, **anomalies** (irregular results) stick out and can be discounted when evaluating the data.

When the researchers analyzed each dropped food sample, they found that, indeed, the longer food spent on the floor, the more contaminated with bacteria it became. However, even food that was in contact with the floor for less than a second still had some degree of bacterial contamination. There is no 5-second grace period before which bacteria get on food. Bacteria transfer occurs instantly.

Make a quick prediction as to which food type you think would pick up the most bacteria: watermelon, gummy bears, bread, or buttered bread?

The food that showed the highest amount of bacterial contamination was...watermelon, followed by buttered bread, bread, with gummy bears having the least. Researchers concluded that a food's moisture content affects how much bacteria it picks up. The wetter the food, the greater the bacteria transfer. Bacteria get soaked up by the moisture in the food. That's why the food with the most water content, watermelon, had the greatest bacterial contamination.

Which flooring type do you hypothesize led to the least amount of bacteria transfer: carpet, wood, stainless steel, or ceramic tile?

The answer is...carpet. Stainless steel and ceramic tile consistently yielded the greatest bacterial contamination. The results from wood were **inconsistent**, showing varying levels of contamination. Stainless steel and ceramic tile are non-absorbent surfaces, while carpet is porous. A porous surface absorbs moisture, while non-porous surfaces, like stainless steel and ceramic tile, do not. On the carpet, the food became less wet because the carpet absorbed the moisture of the food. And as previously stated, the dryer the food, the fewer bacteria it picks up.

Also, more of the food comes into contact with smooth surfaces than rough surfaces, like carpet. When food is on carpet, there are gaps between the individual fibers. The parts of the food over the gaps make no contact, and so can't pick up bacteria. In a similar study conducted by Clemson University, less than 1% of the bacteria on carpet transferred to the fallen food. When the food was on tile, 48% - 70% of bacteria transferred.

Unlike the floors in these experiments, most floors aren't intentionally coated with bacteria right before we drop food on them. High school senior, Jillian Clarke, tested typical flooring for bacteria as part of her six-week internship in the food and science department at the University of Illinois. She swabbed the floors around the college to see how bacteria-laden they really were. She collected samples from hallways, dorm rooms, science labs and the cafeteria. Surprisingly, her swabbed samples showed very little bacteria. She tested the floors again and got the same results.

Meredith Agle, the graduate student who supervised the experiment, offered the following explanation, "I think the floors because floors are dry, and most [bacteria] can't survive without moisture."

Does that mean dry floors are safe to eat off of? Not necessarily. Odds are low that dropped food will land on a dangerous strain of bacteria, but there's always the chance it might. With severe strains of E. coli bacteria, just ten cells or less can make you seriously ill.

However, according to one survey, 87% of people admitted that they would eat food off the floor. Yet 87% of the population isn't rushing to the hospital with food poisoning.

One thing is for certain...evaluating the risk-level of eating food off the floor is more complicated than counting to five.

Name:

Nonfiction: Cite Textual Evidence – Q1:2

Date:

Monday	Tuesday
<p>Before you begin, preview the text. What might you learn from this text?</p> <hr/>	<p>What is the author's purpose in this text? How do you know?</p> <hr/>
<p>Based on the text, what is the 5-second rule?</p> <hr/>	<p>After reading the 2nd paragraph, what can you infer about the researcher's accuracy in the experiments they conducted?</p> <hr/>
<p>What question does this article answer?</p> <hr/>	<p>What evidence from the text helped you answer the previous question.</p> <hr/>
<p>According to the text, what is the meaning of the word anomalies?</p> <hr/>	<p>The author states, there is no amount of time food can be on the floor without bacteria transfer occurring. What can you conclude based on this idea?</p> <hr/>
Wednesday	Thursday
<p>Why did the researchers use different types of food to conduct their experiment?</p> <hr/>	<p>What evidence from the text supports the idea that it is better to drop food on carpet than tile?</p> <hr/>
<p>Based on the text, which scenario below would allow for more bacteria to transfer? <i>an apple on tile flooring</i> or <i>a piece of lunch meat on tile flooring</i></p>	<p>What conclusion can you draw from the testing conducted by Jillian Clarke?</p> <hr/>
<p>What evidence from the text best supports your previous answer?</p> <hr/>	<p>What conclusion can you draw after reading this text?</p> <hr/>
<p>According to the text, what is the meaning of the word inconsistent?</p> <hr/>	<p>What evidence from the text best supports your previous answer?</p> <hr/>

Down the Hatch

Cross-Curricular Focus: Life Science



A car needs energy to get where it's going. Your body must have fuel to do all the things it needs to do so you can grow up healthy and strong. The **digestive** system takes care of the body's need for fuel. It is made up of a group of organs that work together. They pass fuel in the form of food from one organ to the next until the entire process is complete. Waste products then pass out of the body.

The digestive system goes to work the moment you put food into your mouth. Immediately, the salivary glands in your mouth moisten the food. The saliva begins breaking down the food into smaller and smaller pieces. Your teeth also get involved, biting and grinding the large pieces. Finally, the pieces are small enough to swallow. Your tongue is kind of like a traffic director, pushing food around in your mouth to make the most of your saliva and teeth. Then, your tongue pushes your food to the back of your mouth so you can swallow.

As your food leaves your mouth, it enters a tube called the **esophagus**. Gravity and muscles push your food down to the **stomach**. In the stomach it is greeted by strong acids. During the next couple of hours, acids and enzymes break your food into a soupy liquid.

Believe it or not, your body has still not received energy from your food. Your liquefied food finally passes into the small **intestine**. This is a long tube that is coiled back and forth inside your body. The food will remain there for up to six hours. During that time, special chemicals digest the liquid even further. Nutrients your body needs are pulled from it. The nutrients enter your blood through tiny little finger-like projections called villi that line the insides of your small intestine.

What happens to the leftovers? The things your body does not need pass into your large intestine. Water and minerals are absorbed out of the food and into your blood over the next 10-36 hours. After most of the liquid is removed, the rest of the leftover material passes out of your body as solid waste.

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) Explain what happens to food while it is still in your mouth. _____

2) What is the name for the tube from the mouth to the stomach? _____

3) What are villi?

4) At what point during the digestive process does your body begin to receive energy from the food?

5) Where is your food likely to be two hours after you eat?
