



At Home Learning Resources

Grade 6 - Week 9

Content	Time Suggestions
Reading (Read books, watch books read aloud, listen to a book, complete online learning)	At least 30 minutes daily (Could be about science, social studies, etc)
Writing or Word Work or Vocabulary	20-30 minutes daily
Math	45 minutes daily
Science	25 minutes daily
Social Studies	25 minutes daily
Arts, Physical Education, or Social Emotional Learning	30 minutes daily

These are some time recommendations for each subject.

We know everyone's schedule is different, so do what you can.

These times do not need to be in a row/in order, but can be spread throughout the day.

Teachers will suggest which parts of the packet need to be completed or teachers may assign alternative tasks.

Grade 6 ELA Week 9

Your child can complete any of the activities in weeks 1-8. These can be found on the Lowell Public Schools website: <https://www.lowell.k12.ma.us/Page/3802> Activities in weeks 7 & 8 are focused on nonfiction reading and writing and may have resources you can continue to use in Week 9.

This week completes the focus on informational or nonfiction reading and writing. Your child should be reading, writing, talking and writing about reading, and exploring new vocabulary each week.

Reading: Students need to read each day. They can read the articles included in this packet and/or read any of the nonfiction/informational books that they have at home, or can access online at Epic Books, Tumblebooks, Raz Kids, or other online books. All resources are on the LPS website. There is something for everyone.

Talking and Writing about Reading: As students are reading, they can think about their reading, then talk about their reading with a family member and/or write about their reading using the prompts/questions included.

Writing: Students will finish working on informational writing this week. The resources in this packet are the same as the last two weeks. These resources are charts with examples to help your child write. They are available online in an interactive form with video tutorials here: [Grade 6 Nonfiction Writing Choice Board](#). This writing should occur over multiple days. This is a great opportunity to explore new topics. Students will be planning their writing, then writing, then making it even better by revising, writing some more, and at the end, fixing it up by editing. Your child might write 1 informational book and work to refine it throughout, or might write multiple books, getting better each time. As your child completes their informational writing, they should be making revisions and finally editing for spelling, punctuation, and grammar.

Word Work: Students can work on learning new vocabulary. Students will make inferences and use clues in the text to determine the meaning of new words.

Read the text. Jot what you notice is happening and write about why it is happening. What are the consequences of the actions? What impact is a result of what is happening?

What Is Happening?	Why Is It Happening?	What Are the Consequences?

The Power of Speech

By John Manos

Unifying a Nation

Speeches have tremendous power. A good speaker can move people in a way like no other. Often it is not only the way the speaker delivers a speech that makes it historic, but also the events happening in the world at that time.

Great oration, or speaking, is not a talent of every leader. But one job of elected officials is to unify a nation in a time of crisis. These are times when a whole nation of people needs to draw together. It is in these times that the power of a speech is at its greatest. Throughout history, many memorable speeches have been given in times of **crisis**.

A time known as *The Great Depression* had cost a quarter of Americans their jobs. People thought prosperity would never return. It was during this time that Franklin Delano Roosevelt was elected president. FDR, as he was known, delivered his **inaugural** address on March 4, 1933. It was broadcast across the country. People still quote a single phrase from the speech:

**“the only thing
we have to fear
is fear itself.”**

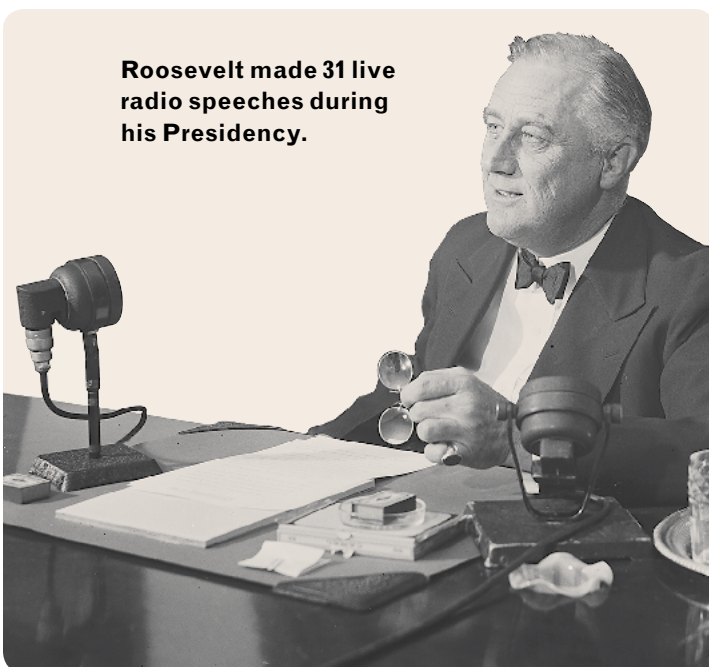


Library of Congress

During the Depression, people stood in long lines for food. One out of every four people was without a job.

FDR combined the power of speech with an important **communication** tool of the day: the radio. Radio use was spreading, and FDR's radio speeches were known as the "Fireside Chats." Americans felt that they knew the President almost as a personal friend. FDR spoke in a way that

brought safety and comfort but also encouraged. FDR asked listeners to communicate to him in response to his speeches. And people did. Millions of letters were sent and received. Roosevelt used the power of his voice and language that everyone could understand. He used stories and analogies. He helped cheer up citizens during a devastating time. And because he took special care in crafting the radio broadcasts, citizens respected him. FDR chose words that gave a sense of national identity, where everyone was on the same team, and people had hope in his words, *"Together we cannot fail."*



Roosevelt made 31 live radio speeches during his Presidency.

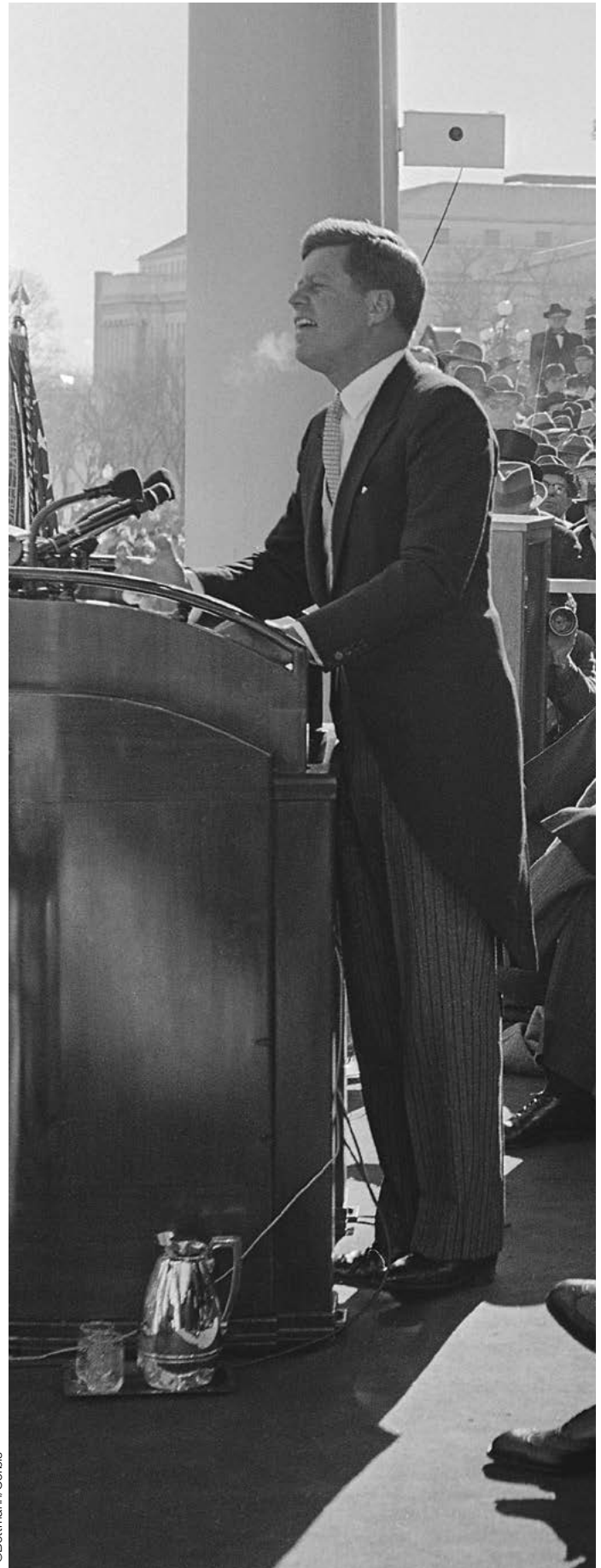
Library of Congress

Speeches can also unify in times of celebration. Such speeches often focus on a shared sense of purpose. Many speeches that are given to **commemorate** an event become a rallying cry for an entire population. In 1962 at age 43, John Fitzgerald Kennedy became the youngest person ever to be elected president. He brought youthful energy to his inaugural address:

“Let the word go forth from this time and place, to friend and foe alike, that the torch has been passed to a new generation of Americans.”

In his speech, Kennedy described challenges the country faced, and he called upon all to meet those challenges. At the end of the speech, he delivered a line that is often quoted:

**“And so,
my fellow Americans,
ask not what your country
can do for you,
ask what you can do
for your country”**



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National Archives

President Barack Obama

Speeches that unify a nation may bring us together to commemorate historic firsts. On January 20, 2009, Barack H. Obama became the first African American to be elected President of the United States. He spoke to almost two million people in Washington, D.C. that day. He recalled the journey of earlier Americans, and he asked Americans to do the same:

“ . . . it has been the risk-takers, the doers, the makers of things . . . who have carried us up the long, rugged path towards prosperity and freedom. . . . This is the journey we continue today.”

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Human and Civil Rights

Some speeches mark a moment in history, as they do when a new president takes office. A great speech can also change history. This has been especially true in the struggle to achieve human and civil rights.

The “I Have a Dream” speech is considered one of the greatest civil rights speeches in U.S. history. Martin Luther King, Jr. delivered it on August 28, 1963, when African Americans were free from slavery but still denied basic freedoms in many parts of the country. Dr. King offered a vision of hope and change. His speech helped reshape the course of our entire American society:

**“I have a dream
that my four little children
will one day live in a nation
where they will not be judged
by the color of their skin
but by the content
of their character.”**

“I have a dream that one day this nation will rise up and live out the true meaning of its creed: ‘We hold these truths to be self-evident, that all men are created equal.’

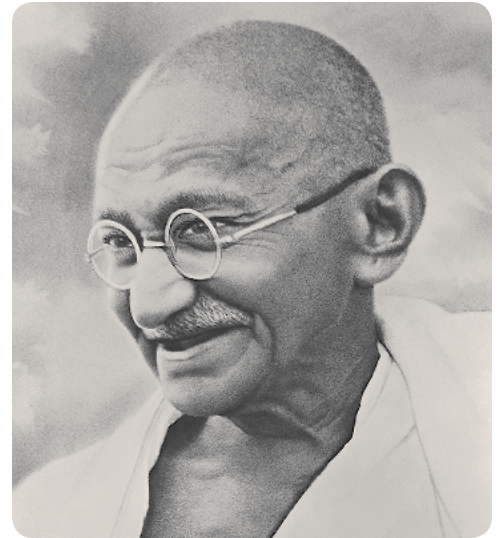
I have a dream that one day on the red hills of Georgia, the sons of former slaves and the sons of former slave owners will be able to sit down together at the table of brotherhood.”



AFP/AFP/Getty Images

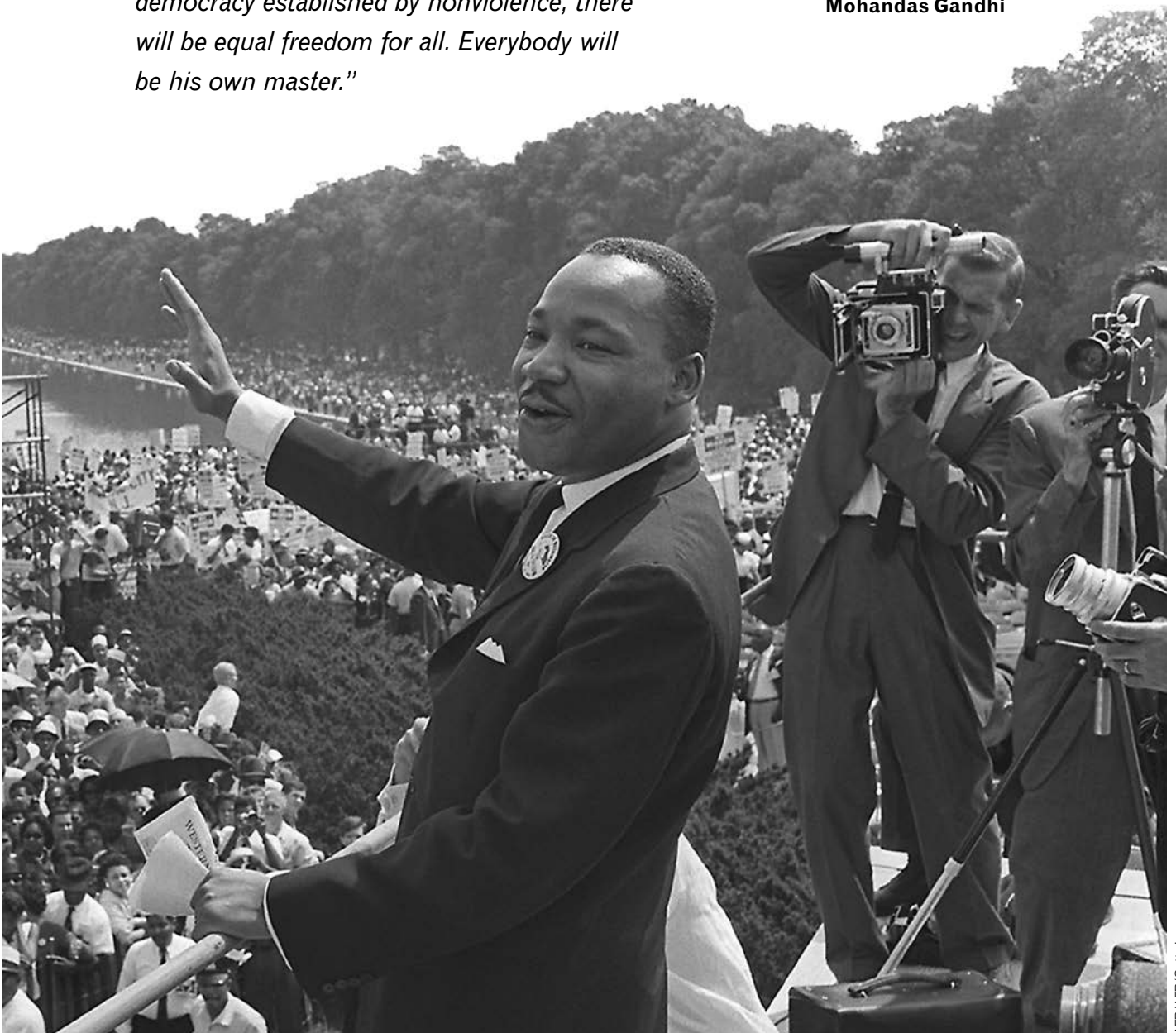
Mohandas Gandhi of India was one of Dr. King's heroes. Gandhi believed that the only way to achieve civil rights was through nonviolent means. On August 8, 1942, in Bombay (now Mumbai) he described his goals:

"Ours is not a drive for power but purely a nonviolent fight for India's independence . . . In the democracy which I have envisaged, a democracy established by nonviolence, there will be equal freedom for all. Everybody will be his own master."



© Corbis

Mohandas Gandhi



AFP/AFP/Getty Images



Sandra Day O'Connor

Great Feats and Broken Barriers

Accomplishments, important events, and falling barriers all lead to great speeches. We commemorate the achievements through speeches as they occur and afterward in remembrances.

In 1981, President Ronald Reagan nominated Sandra Day O'Connor as the first female Supreme Court Justice in U.S. history. In 2004, O'Connor described herself as “a cowgirl from Eastern Arizona” and explained that the nomination “ . . . was about women everywhere. It was about a nation that was on its way to bridging a chasm between genders that had divided us for too long.”



Some barriers are physical as well as political. For example, the Berlin Wall was built on April 13, 1961, during a time known as *The Cold War*. On June 12, 1987, President Ronald Reagan delivered a speech in front of the main gate in the Berlin Wall. He spoke to people behind the Wall who could only hear his speech **transmitted** through illegal radio broadcasts. He called on the leader of the Soviet Union, Mikhail Gorbachev, to make a profound change announcing, "*General Secretary Gorbachev, if you seek peace, if you seek prosperity for the Soviet Union and Eastern Europe, if you seek liberalization: Come here to this gate!*"

Reagan's speech signaled the beginning of the end of communism in Europe. Two years later, the Wall came down.

**“Mr. Gorbachev,
open this gate!
Mr. Gorbachev,
tear down
this wall!”**



Theirein/ulstein bild via Getty Images

Women's Voices

Throughout history, great speeches inspired many to celebrate or act in a new way. Many of these speeches were given by men. But many were also given by women, and not only those who held political positions. Women who were common citizens made history communicating in their own style.

Sojourner Truth was born into slavery and when she was finally free, she spoke often about the rights of all people, particularly women. In 1851, she gave an unplanned speech at a convention for women's rights. One issue of the day was whether women should be able to vote in a political election.

After a life of hard work in fields, Sojourner Truth knew she had abilities equal to men. *"Look at me! Look at my arm!"* she said. *"I have ploughed and planted, and gathered into barns, and no man could head me!"* This meant that no man could outdo her. At the time, if women were allowed to vote, there was the concern that only white women would be able to do so. Sojourner Truth wanted to communicate that all women, white and black, should have the right to vote. She added thoughtfully, *"And ain't I a woman?"*



Library of Congress

Sojourner Truth

President Obama nominated Hillary Rodham Clinton to the role of U.S. Secretary of State in 2009. Before she played this role, Clinton had been a First Lady and a U.S. Senator. One of the Secretary of State's duties is to speak to international leaders and diplomats. In so doing, the Secretary of State delivers the United States' messages and policies around the world. In the first three years as Secretary of State, Clinton traveled

to over 90 countries, speaking often about the welfare of women and girls. In 2011, at a meeting focused on women, peace, and safety, Clinton said, *"Many of us have tried to show the world that women are not just victims of war; they are agents of peace."* In this speech, Clinton used her role as a diplomat to educate and inform. She has stated that women are critical to making changes that improve life for all people.

“ . . . when women organize in large numbers, they galvanize opinion and help change the course of history.”

Hillary Rodham Clinton



U.S. Department of State

Words Today & Tomorrow

The spoken word has the power to move us. Speeches can persuade, entertain, inform, and inspire. As in the past, great moments of the future will be made memorable through the words of future leaders and ordinary people who are devoted to making life better for others.



“Women must try to do things as men have tried. When they fail, their failure must be but a challenge to others.”

—**Amelia Earhart**, aviator

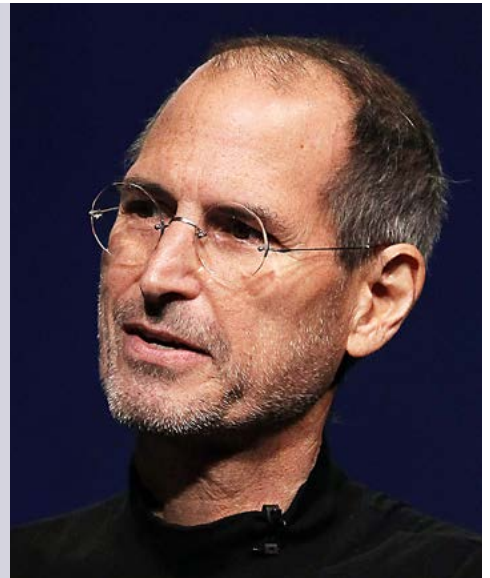
“... you can have a dream, you can have struggles, but you can overcome those struggles through perseverance and the right mentors in your lives and (by) making good decisions.”

—**John Herrington**, astronaut



“Your work is going to fill a large part of your life, and the only way to be truly satisfied is to do what you believe is great work. And the only way to do great work is to love what you do.”

—**Steve Jobs**, technology developer



Justin Sullivan/Getty Images

“If you get, give.
If you learn, teach.”

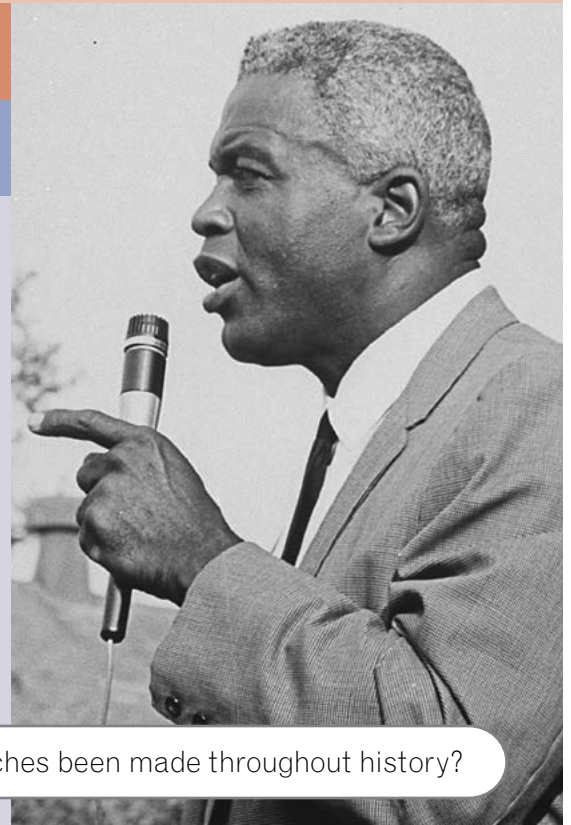
—**Maya Angelou**, poet



National Archives

“Life is not a spectator sport. . . . If you’re going to spend your whole life in the grandstand just watching what goes on, in my opinion you’re wasting your life.”

—**Jackie Robinson**,
baseball player and civil rights activist



Time Life Pictures/Pix Inc./The LIFE Picture Collection/Getty Images

Check In

For what reasons have speeches been made throughout history?

Grades 5 & 6 Nonfiction Writing Choice Board - Visit the online option for an interactive board with tutorials. Use the anchor charts to help you write your own informational book that teaches others.

Research a New Topic...

Plan chapters before you write them.

• Think of the questions people will ask, and answer them.

Writers plan how their book will go!

How to Write a Nonfiction Chapter Book

WRITERS SHARE A VARIETY OF INFORMATION

Revise

Edit!

Organize your information: make a table of contents.

Writing Information Texts Well

Table of Contents
1. Introduction
2. Chapter 1
3. Chapter 2
4. Chapter 3
5. Conclusion

What? Why? Where? Who?

Think of a topic.

Things I could write about:

- Basketball
- Traveling
- Video games
- Cooking
- the environment
- Social Media

Traveling

- Italy
- Cambodia
- Spain
- Portugal

Research a New Topic...

Build up background knowledge.

Record important facts (exact names, places, numbers)

Capture quotes and, if possible, the context in which they were said.

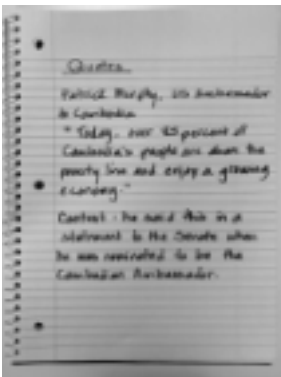
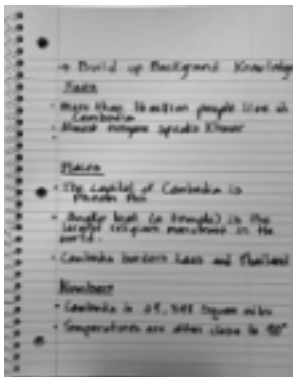


TABLE OF CONTENTS	
ANGKOR WAT	4
LOCATION	6
LANDSCAPE AND CLIMATE	8
WILDLIFE	10
PEOPLE	12
COMMUNITIES	14
CUSTOMS	16
SCHOOL AND WORK	18
PLAY	20
FOOD	22
CELEBRATIONS	24
TIMELINE	26
CAMBODIA FACTS	28
GLOSSARY	30
TO LEARN MORE	31
INDEX	32

Organize your information: make a table of contents.

Contents	
Where is Cambodia?	4
The Land	6
The Tonle Sap	8
Wildlife	10
The People	12
Daily Life	14
Going to School	16
Working	18
Playing	20
Food	22
Holidays	24
Angkor Wat	26
Fast Facts	28
Glossary	30
To Learn More	31
Index	32

Preview texts to identify repeating subtopics.

Synthesize across texts.

COMMON STRUCTURES FOR INFORMATION/NonFICTION TEXTS

- **PROBLEM/SOLUTION**
(CHAPTERS ON THE PROBLEM, CHAPTERS ON THE SOLUTION)
- **CHRONOLOGY**
(WHAT HAPPENED FIRST, NEXT, WHAT COULD HAPPEN IN THE FUTURE)
- **LIST/BOXES AND BULLETS**
(WRITE ABOUT ONE PERSON/PROJECT AFTER ANOTHER, PRESENTING EXAMPLES SEPARATELY)
- **CLASSIFICATION**
(PROPOSE THAT THERE ARE DIFFERENT KINDS OF A THING, DIFFERENT CATEGORIES, THEN DISCUSS EACH)
- **DEFINITION**
(CLAIM THAT SOMETHING IS A WORD (OR A WORD) GIVE EXAMPLES, CONTRAST WITH NON-EXAMPLES, IS THERE YOUR POINT)



Plan chapters before you write them.



More than 16 million people in Cambodia live. Most Cambodians belong to the Khmer ethnic group. The Khmer came to Cambodia from the north over a thousand years ago. The Khmer are a majority group in Cambodia. They mostly live in villages along the Mekong and Tonle Sap rivers. Cambodia is also home to small groups of people from China and Vietnam.



- Think of the questions people will ask, and answer them.



WRITING INFORMATION CHAPTERS

- **WRITE IN PARAGRAPHS.**
- **CITE EXAMPLES FROM THE TEXT, QUOTING PARTS OF THE TEXT.**
- **BE SURE TO GIVE SEVERAL PIECES OF EVIDENCE FOR A POINT.**
- **ONCE YOU INCLUDE EVIDENCE, REFLECT ABOUT THE WAYS THAT EVIDENCE SUPPORTS YOUR POINT.**

According to Kristin Lewis, you've got to be ready for granted.

One example...
Another example...
Also, ...



Information Writers Combine a Variety of Information

- Explanations
- Descriptions
- Quotations → from other texts or experts
- Vocabulary Words in **bold**
- Definitions • Glossary
- Maps and Photographs
- Text boxes
- Statistics
- Observations
- Lists
- Diagrams With Labels

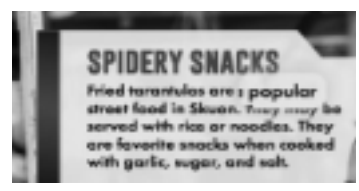
Revise

Define key terms and use technical vocabulary



Western-style clothing is common in Phnom Penh. But older Cambodians tend to dress more **traditionally**. Many wear sarongs, or large rectangular pieces of cloth that are wrapped around the waist.

Provide a surprising fact or statistic



Include a glossary to define key terms.

GLOSSARY

tarantula a very large hairy arachnid insect that has a venomous bite
venomous a tropical plant with sticky white latex
venom a liquid that is secreted by a snake or other animal and is used to kill or injure its prey
spider an eight-legged arachnid animal that spins webs to catch its prey
spider a small insect that is often found in large numbers in rice paddies and other wetlands
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Revise

In Cambodia, people often eat noodles for breakfast. These are called *nom banh chok*. They eat lots of vegetables, too. They eat green beans and cucumbers. The biggest meal of the day is dinner and that is usually rice and soup, sometimes with meat. For snacks, people sometimes eat fried tarantulas with rice or noodles. Or they cook the tarantulas with garlic, sugar, and salt.

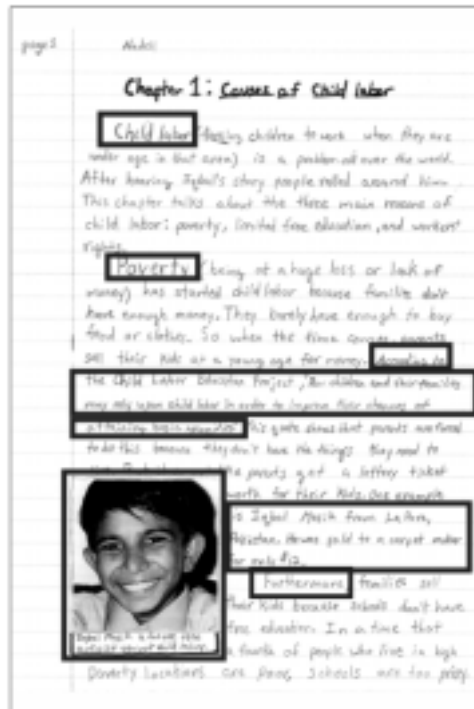
make sure to list



Most Cambodians start the day with *nom banh chok*, or Khmer noodles. This includes rice noodles with a fish gravy and fresh vegetables such as green beans and cucumbers. Dinner is the biggest meal of the day. People usually eat rice and soup. Sometimes, these are combined with vegetables or meat. Dishes like *loc loc*, a stir-fried beef with a sweet sauce, are common.

Writing Information Texts Well

- Build a logical structure, so the progression from one part to the next makes sense.
- Write with a variety of specific, concrete information.
- Glue the bits of information and discussion together with transition words.
- Elaborate with details that bring the text to life (examples, statistics, stories, facts, your subject's own words).
- Make your sentences more complex so you sound more authoritative.
- Use text features purposefully, to teach information in new and special ways.
- Craft introductions that frame each chapter and the whole book.
- Incorporate quotations to:
 - Bring a person to life
 - Build an idea
 - Highlight information
 - Give authority to your writing
- Lead into and out of quotations and introduce the source.



Questions to Ask Yourself as You Edit

1. Does this make sense? Are any words or parts missing?
2. Are all my sentences complete? Have I checked for run-ons and fragments?
3. Have I used correct capitalization (for names and the beginning of sentences)?
4. Have I used commas and quotation marks for dialogue?
5. Have I checked to see that all my verbs and subjects agree? Are my verbs in the right tense (past, present, future)?
6. Do the words all seem to be spelled right? Do they look right? Have I checked any I'm uncertain of?
7. Have I checked for frequently confused words (*to, too, two; there, their*)?
8. Have I paragraphed and indented?



Today there are more than 16 million people live in Cambodia. ?

The largest religious site in the world is the temple of Angkor Wat in Siem Reap. ?

There are many different kinds of interesting animals in Cambodia. ?

Name _____

Date _____

Word	Inferred Meaning	Clues	Sentence

Learning Goals for May 18th-22nd

Students will be able to...

- read, write, and evaluate algebraic expressions
 - *6.EE.A2*
- identify when two expressions are equivalent by combining like terms
 - *6.EE.A4*
- apply the distributive property to produce equivalent expressions
 - *6.EE.A3*

SUGGESTED SCHEDULE

Monday	Tuesday	Wednesday	Thursday	Friday
5-A-Day Math Review	5-A-Day Math Review	5-A-Day Math Review	5-A-Day Math Review	Just for Fun
Writing expressions and equations.	Writing algebraic expressions	Simplifying algebraic expressions	Distributive Property	Distributive Property and Factoring.
				Challenge

Clue Words

<p><u>Adding</u></p> <p>Sum Gain Increased More Altogether Plus Total Combined Perimeter</p>	<p><u>Multiplying</u></p> <p>Product Of Distribute Twice (x2) Double (x2) 7n 7(6) (per/each)</p>	<p><u>Answer</u></p> <p>Solve Find Express Evaluate Calculate Model Solution Simplify</p>
<p><u>Subtracting</u></p> <p>Difference Bigger Elapsed Smaller Deduct Shorter Used Taller Less Longer Minus Loss Passed Least Remain Has left Exceed Decreased</p>	<p><u>Dividing</u></p> <p>Quotient Division Average Factor Share Half ($\div 2$) 12/2 (per/each)</p>	<p><u>Equal</u></p> <p>Is Was Were Have Has</p> <hr/> <p><u>Reverse the order</u></p> <p>Than From</p>

5-A-Day Math Review: Week 3

Monday

- ① Express the ratio in three different ways (total to white).



$\frac{\square}{\square}$ \square to \square \square : \square

②

Integer	Opposite	Absolute Value
0		
2		
5		

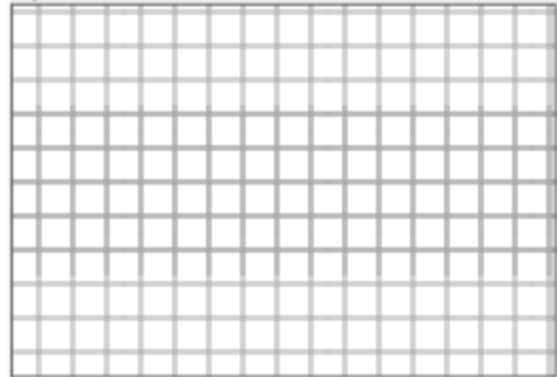
- ③ Write an expression to represent:

"The product of 12 and the number n"

- ④ Solve. Show your work.

$153.1 + 12.43 =$	$22.98 - 1.8 =$
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- ⑤ $4,160 \div 65 =$ $648 \times 365 =$



Tuesday

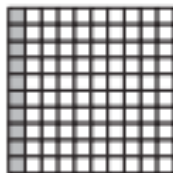
- ① 30 miles in 5 hours

rate = _____ unit rate = _____

- ② Fraction: _____

Decimal: _____

Ratio: _____ Percent: _____



- ③ 10 is 20% of what?

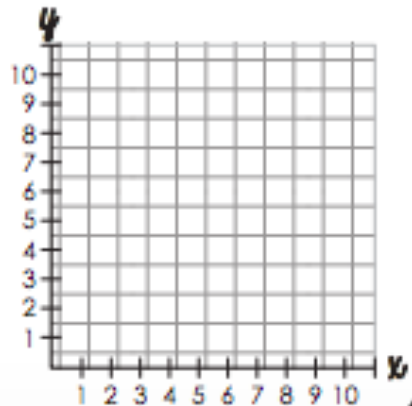
part \rightarrow $\frac{\square}{\square} = \frac{\square}{100}$ \leftarrow percent
 whole \rightarrow $\frac{\square}{\square} = \frac{\square}{100}$ \leftarrow

- ④ Maria has twice as many crayons as Corinne. Write an algebraic expression to represent the number of crayons that Maria has.

- ⑤ Complete the table and then graph the coordinates.

$y = x - 3$

x	y
10	7
9	
8	

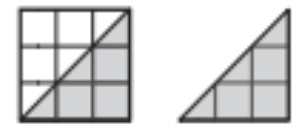


5-A-Day Math Review: Week 3

Wednesday

① Simplify. Show your work.
 $(7 - 4) \times 5 \div 3 = \underline{\hspace{2cm}}$

③ Based on the diagram, describe how a quadrilateral and triangle are related.



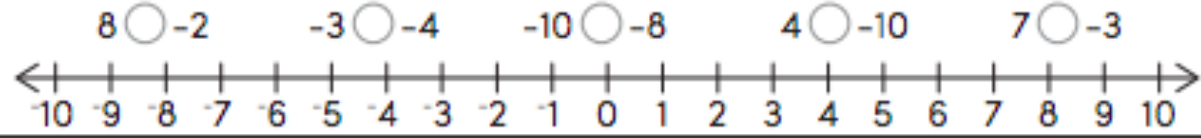
② Model and solve. $5 \div \frac{2}{3} =$



④ Solve $\frac{1}{4} \times 8 = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square} =$

$12 \times \frac{1}{6} = \frac{\square}{\square} \times \frac{\square}{\square} = \frac{\square}{\square} =$

⑤ Write > or < to make each statement true. Use the number line for help.



Thursday

① Use substitution to match these solutions to their equations.
{7, 8, 0, 6}

$12 - a = 4, a = \underline{\hspace{1cm}}$
 $b - 5 = 2, b = \underline{\hspace{1cm}}$
 $c - 0 = 6, c = \underline{\hspace{1cm}}$

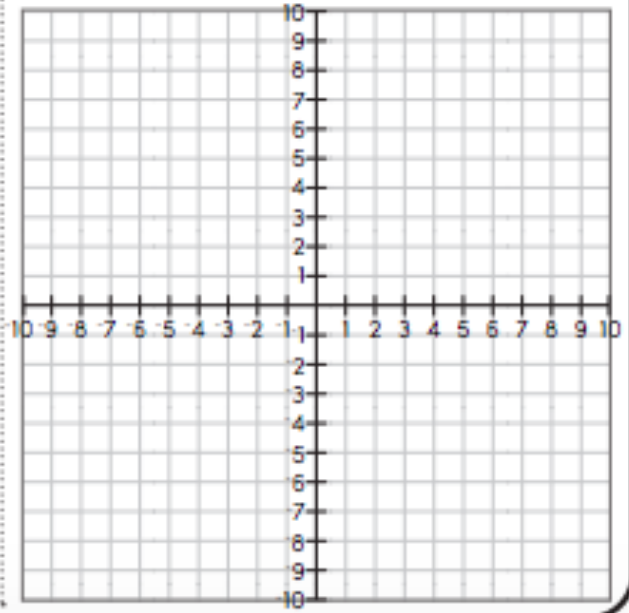
② Use the distributive property write an equivalent expression.

$5 \cdot (6 + 9) =$

③ Identify if the question is statistical or non statistical.
"How many students at your school play soccer?"

④ Graph and label the polygon:
(2, -3), (2, -5), (9, -3), (9, -5)

⑤ Graph and label the polygon:
(-1, -6), (-9, -6), (-7, -3), (-3, -3)



REVIEW: Writing Expressions and Equations

Key Concept and Vocabulary

Phrase: Two more than a number

Expression: $2 + n$

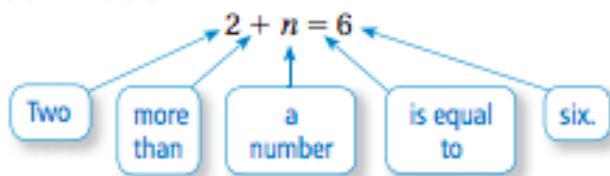
Sentence: Two more than a number is equal to six.

Equation: $2 + n = 6$



Name _____

Visual Model



Skill Examples

1. Five times a number: $5n$
2. Six less than three times a number: $3n - 6$
3. The sum of a number and one: $n + 1$
4. A number divided by three: $n \div 3$

Application Example

5. Write an equation for the following.
"The price of \$15 is the wholesale cost plus a markup of fifty percent."

Let C be the wholesale cost.

50% of C is $0.5C$.

❖ An equation is $15 = C + 0.5C$.

PRACTICE MAKES PURR-FECT™



Check your answers at BigIdeasMath.com.

Write the verbal phrase as a mathematical expression.

6. The product of a number and two

8. 19 less than twice a number

10. Five times the sum of a number and two

7. 10 subtracted from a number

9. The sum of a number and three, divided by four

11. Seven less than four times a number

Write the sentence as an equation.

12. Three times a number equals nine.

14. Twelve divided by a number is four.

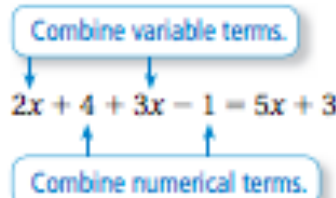
13. The difference of a number and nine is four.

15. The sum of a number and seven is eighteen.

REVIEW: Simplifying Expressions

Name _____

Key Concept and Vocabulary



Visual Model



Skill Examples

- $2x + 5x = 7x$
- $1 + n + 4 = n + 5$
- $(2x + 3) - (x + 2) = x + 1$
- $2(y - 1) + 3(y + 2) = 5y + 4$

Application Example

- The original cost of a shirt is x dollars. The shirt is on sale for 30% off. Write a simplified expression for the sale cost.

30% Off

$$x - 0.3x = 0.7x$$

• The sale cost is $0.7x$.



PRACTICE MAKES PURR-FECT™

Check your answers at BigIdeasMath.com.

Simplify the expression. (Remove parentheses and combine like terms.)

- $4x + 6x =$ _____
- $9x + 3 - 6x - 2 =$ _____
- $7m - 2m + 5m =$ _____
- $(3x + 6) - x =$ _____
- $(x + 6) - (x + 6) =$ _____
- $(5x + 4) - 2(x + 1) =$ _____
- $3n + 5 - 2n =$ _____
- $3(x + 2) =$ _____
- $2 - (x + 1) =$ _____
- $5 - (1 - n) =$ _____
- $(4x - 2) + 3(x + 1) =$ _____
- $5(x + 2) - 2(x + 2) =$ _____

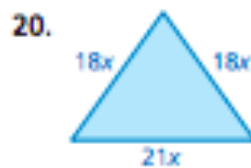
Write a simplified expression for the perimeter of the rectangle or triangle.



Perimeter = _____



Perimeter = _____



Perimeter = _____

Simplifying Expressions

~ Combining Like Terms ~

$$7b - 4b + 3y + 15 - y - 8$$

Vocabulary Word

Definition

Example

Like Term

Terms that have either the same letter
OR
no letter at all (numbers)

7b and 4b OR 3y and y
15 and 8

Simplify

when no other terms can be combined

3b + 2y + 7

~~~~~

$$2x + 3x = 5x$$

## Equivalent Terms

both sides the equal sign have the same value

Let's try some...

1)  $x + 10x =$  \_\_\_\_\_

2)  $4a - a =$  \_\_\_\_\_

3)  $2w + 2w + 2w =$  \_\_\_\_\_

4)  $5m + m - 2m =$  \_\_\_\_\_

5)  $3b + 2b - c + 3 =$  \_\_\_\_\_

6)  $3b^2 + 2b - c + 3 =$  \_\_\_\_\_

# Challenge

Kiran, Mai, Jada, and Tyler went to their school carnival. They all won chips that they could exchange for prizes. Kiran won  $\frac{2}{3}$  as many chips as Jada. Mai won 4 times as many chips as Kiran. Tyler won half as many chips as Mai.

1. Write an expression for the number of chips Tyler won. You should only use one variable:  $J$ , which stands for the number of chips Jada won.
2. If Jada won 42 chips, how many chips did Tyler, Kiran, and Mai each win?

## CAN YOU SOLVE THIS?



$$\text{Chrome} + \text{Chrome} + \text{Chrome} = 24$$

$$\text{Firefox} + \text{Firefox} + \text{Chrome} = 20$$

$$\text{Firefox} \times \text{Mini} - \text{Mini} = 10$$

$$\text{Chrome} + \text{Firefox} \div \text{Mini} = \square$$

$$1 + 4 = 5$$

$$2 + 5 = 12$$

$$3 + 6 = 21$$

$$8 + 11 = \square$$

## JUST FOR FUN!

$$\text{Coke} + \text{Coke} + \text{Coke} = 24$$

$$\text{Coke} + \text{Burger} + \text{Burger} = 18$$

$$\text{Burger} + \text{Fries} + \text{Fries} = 13$$

$$\text{Coke} + \text{Burger} \times \text{Fries} = \text{Pizza}$$

$$\text{Miffy} \text{ (who ate my pizza?) } + \text{Pizza} = \square$$





## Writing Algebraic Expressions

An expression is a mathematical phrase or grouping of numbers. An expression does not include an equal sign.

The product of four and eleven

$$4 \times 11$$

A number increased by six

$$x + 6$$

A number divided by two

$$y \div 2 \text{ or } \frac{y}{2}$$

Twice a number decreased by one

$$2a - 1$$

Use numbers and symbols to translate the problems.

1. Five less than a number

\_\_\_\_\_

2. Three times the sum of a number and twelve

\_\_\_\_\_

3. Ten more than the quotient of  $c$  and three

\_\_\_\_\_

4. Two increased by six times a number

\_\_\_\_\_

5. Two-thirds of a number minus eleven

\_\_\_\_\_

6. Twice the difference between  $c$  and four

\_\_\_\_\_

7. The product of nine and a number, decreased by seven

\_\_\_\_\_

8. Six times a number plus seven times the number

\_\_\_\_\_

9. A number increased by twice the number

\_\_\_\_\_

Name: \_\_\_\_\_ Date: \_\_\_\_\_ HR: \_\_\_\_\_

## Distributive Property - Multiplication

Three times the sum of ten and five can be written as  $3(10+5)$

you can find the answer (SOLVE) in two ways:

### Order of Operations

$$\begin{aligned} &3(10+5) \\ &3(15) \\ &45 \end{aligned}$$

### Distributive Property

$$\begin{aligned} &3(10+5) \\ &3 \times 10 + 3 \times 5 \\ &30 + 15 \\ &45 \end{aligned}$$

You can also SIMPLIFY expressions involving **variables** using the distributive property

$$\begin{aligned} &3(a+b) \\ &3 \times a + 3 \times b \\ &3a + 3b \end{aligned}$$

$$\begin{aligned} &4(2y+3z) \\ &4 \times 2y + 4 \times 3z \\ &8y + 12z \end{aligned}$$

Solve or simplify the following expressions using the distributive property

$$4(10+5)$$

$$18(9+8)$$

$$7(22+6)$$

$$9(3 - w)$$

$$8(5v - 2)$$

$$15(2x + 3y)$$

## Distributive Property - FACTORING

Like terms in an expression can be combined (like term - same variable)

$$\begin{aligned} &2a + 3a \\ &(a+a) + (a+a+a) \\ &5a \end{aligned}$$

|                                                                                                                                    |                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| whole # example:<br>common factor = <b>5</b><br>**divide each term by 5**<br>rewrite as: <u>    </u> ( <u>    </u> + <u>    </u> ) | $15 + 5 = 20$<br>$5 \times 3 = 15$ and $5 \times 1 = 5$<br>$15/5 = 3$ and $5/5 = 1$<br>$5(3 + 1) = 20$ |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|

In the expression  $2a + 3a$ , the variable **a** is common to both terms, so **a** is a common factor of  $2a +$

3a. Therefore, we can **factor out** or rewrite the expression using the distributive property.  $2a + 3a = a(2+3) = 5a$

Exercise A - Identify the **common factor** in each expression

$2a + 5a$  \_\_\_\_\_

$-10e + 4e$  \_\_\_\_\_

$6b - 2b$  \_\_\_\_\_

$\frac{3}{5}w + \frac{1}{3}w$  \_\_\_\_\_

$5f + 5s$  \_\_\_\_\_

$2z + 4q$  \_\_\_\_\_

Exercise B - Use the distributive property to factor each expression

$4x + 4y$

Common factor \_\_\_\_\_

Divide:

rewrite as  $\_\_\_ (\_\_\_ + \_\_\_)$

$5y + 5w$

Common factor \_\_\_\_\_

Divide:

rewrite as  $\_\_\_ (\_\_\_ + \_\_\_)$

$3a - 3b$

Common factor \_\_\_\_\_

Divide:

rewrite as  $\_\_\_ (\_\_\_ + \_\_\_)$

$tp + tr$

Common factor \_\_\_\_\_

Divide:

rewrite as  $\_\_\_ (\_\_\_ + \_\_\_)$

$bx + by$

Common factor \_\_\_\_\_

Divide:

rewrite as  $\_\_\_ (\_\_\_ + \_\_\_)$

$15r + 15$

Common factor \_\_\_\_\_

Divide:

rewrite as  $\_\_\_ (\_\_\_ + \_\_\_)$

$40v - 16$

Common factor \_\_\_\_\_

Divide:

rewrite as  $\_\_\_ (\_\_\_ - \_\_\_)$

$30x + 15z$

Common factor \_\_\_\_\_

Divide:

rewrite as  $\_\_\_ (\_\_\_ + \_\_\_)$

$13a - 39z$

Common factor \_\_\_\_\_

Divide:

rewrite as  $\_\_\_ (\_\_\_ + \_\_\_)$

Name: \_\_\_\_\_

Date: \_\_\_\_\_

HR: \_\_\_\_\_

### Distributive Property - Multiplication/ Factoring

Use the distributive property (*multiplication*) to simplify each expression

$$2(5 + 7)$$

$$(\underline{\quad} \times \underline{\quad}) + (\underline{\quad} \times \underline{\quad})$$

$$(\underline{\quad}) + (\underline{\quad})$$

$$\underline{\hspace{2cm}}$$

$$10(5 + 4)$$

$$5(7 - 3)$$

$$n(8 + 4)$$

$$(\underline{\quad} \times \underline{\quad}) + (\underline{\quad} \times \underline{\quad})$$

$$(\underline{\quad}) + (\underline{\quad})$$

$$\underline{\hspace{2cm}}$$

$$x(9 - 5)$$

$$x(y + z)$$

Use the distributive property (*factoring*) to simplify each expression

$$3m + 3b$$

Common factor \_\_\_\_\_

Divide:

rewrite as  $\underline{\quad}(\underline{\quad} + \underline{\quad})$

$$4c - 5c$$

$$2xy + 2xb$$

$$3n - 27$$

Common factor \_\_\_\_\_

Divide:

rewrite as  $\underline{\quad}(\underline{\quad} + \underline{\quad})$

$$4b + 8c$$

$$40g - 50h$$

Sam's calss schedule has him taking 4 classes before lunch and 3 classes after lunch. Allow  $c$  to represent classes. Use the distributive property to write an expression that shows the number of classes Sam takes.

re-write as : \_\_\_\_\_ ( \_\_\_\_\_ )      4 classes and 3 classes      common factor = \_\_\_\_\_



# SAFE LANDING

## CHALLENGE SHEET



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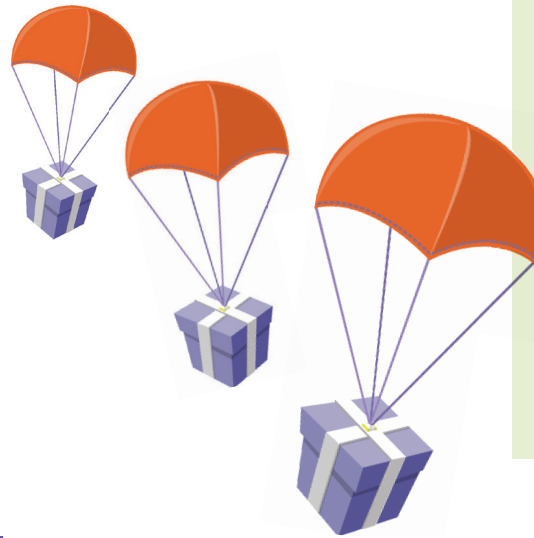
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## YOUR CHALLENGE

Design and build a way to protect a container so its contents aren't damaged when dropped to the ground.

## DEFINE THE NEED

In some situations, the only way for people to get essential supplies like food and medicine is when they are **airdropped** (dropped to the ground from a plane). Can you think of situations when an airdrop might be necessary? The job of an engineer is to make sure that containers of important supplies aren't damaged when dropped from great heights.



## MATERIALS (per person)

- 1 or 2 pieces of cardboard
- 1 small paper or plastic cup
- 1 Ping Pong ball
- scissors
- masking tape
- ruler

### You'll need some but not all of these materials:

- a plastic shopping bag
- string
- index cards
- plastic straws
- cotton balls
- rubber bands

## BRAINSTORM & DESIGN

You are challenged to build and design a way to protect a Ping Pong ball inside of a cup as it's dropped from a height of at least 1 foot/30 centimeters. Think of the Ping Pong ball as medicine or other important supplies and the cup as your container. To succeed:

- the cup must land upright
- the ball can't fall out
- you can't make a cover for the cup!

Here are some ways an engineer might protect a container that's dropped to the ground.

- Slow the fall with a parachute.
- Cushion the fall with a shock absorber (a device that absorbs shocks and jolts, like the impact of something hitting the ground). Springs and cushions are good shock absorbers.

Brainstorm ways you might use a parachute or shock absorber to protect your cup and ball.



## BUILD, TEST, EVALUATE, & REDESIGN

- Build your design.
- Test it by dropping your design from a height of 1 foot /30 centimeters.
- Use the ruler to measure the height.
- Observe any problems and redesign if needed.
- Once you're successful, try it from an even greater height.



### Problem-Solving Tips

## WHAT IF THE CONTAINER . . .

**. . . tips over when it drops?** Make sure your design is level when you release it. You can also add a cardboard base under the cup to stabilize it. Make sure the cup is centered on the base.

**. . . bounces instead of landing softly?** Add shock absorbers to cushion the fall.

## ENGINEERING AND INVENTION IN ACTION

When Haiti was hit by a massive earthquake in 2010, it was too dangerous for aid workers to bring in supplies. Instead, thousands of pounds of food and clean water were airdropped to the people on the island.

Credit: Sgt James L. Harper, Jr.



An airdrop of humanitarian aid in Haiti.



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the Lemelson foundation  
improving lives through invention

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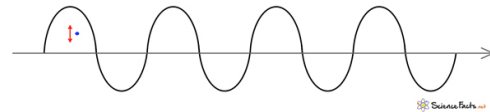
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## Mechanical Waves

**Longitudinal Wave:** Particles vibrate parallel to the direction of propagation of the wave.



**Transverse Wave:** Particles vibrate perpendicular to the direction of propagation of the wave.



Click on this link launch an interactive lesson on mechanical waves. When prompted, choose “Continue as a Guest”. Your teacher will tell you how to submit your work.

<https://mass.pbslearningmedia.org/resource/ilunctv18-sci-ilmechwave/mechanical-wave/>

### “Feel the Wave” Transcript:

Ever been in an earthquake? Although we do get a dozen or so per year in Massachusetts, it’s not an everyday danger here, like it is in other states. But no matter where they hit, and how high up the Richter scale they go, scientists can use the seismic waves earthquakes produce to find out where they began.

Seismic waves are a type of mechanical wave. They carry the earthquake’s energy through the ground. Mechanical waves can also carry energy through the air, or the water.

As long as there’s something – a medium – that they can move through, mechanical waves are behind the energy we hear, ride, feel, and run from.

### Vocabulary

**Amplitude:** A wave’s intensity; the maximum distance a wave carries the particles of a medium from its original position.

**Electromagnetic Wave (or Light Wave):** A disturbance that can carry energy from one place to another through a medium, or through a vacuum.

**Energy:** The ability to do work. Examples of energy include light, sound, heat, and electricity.

**Frequency:** The number of waves produced during a given amount of time.

**Longitudinal Wave:** A wave in which the particles of the medium move in the same direction as the wave itself is moving.

**Mechanical Wave:** A disturbance that carries energy from one place to another through a medium—a liquid, gas, or solid.

**Medium:** Matter—such as a liquid, gas, or solid—that mechanical waves carry energy through.

**Particle:** A tiny portion of matter. When waves carry energy through a medium, the waves move the particles of the medium temporarily.

**Seismic Wave:** A wave that carries energy during an earthquake.

**Transverse Wave:** A wave in which the particles of the medium move in a direction perpendicular to the direction the wave itself is moving.

**Wave:** a disturbance that carries energy from one place to another.

**Wavelength:** The distance between any point on a wave to an identical point on the next wave.

### **“Disturbing Behavior” Transcript:**

Waves are all around us. From the light we see, to the sound we hear, to the earthquake that shakes the ground. And the thing that makes a wave a wave is that it transports energy from one place to another. There are different types of waves (mechanical, electromagnetic) that transport energy through different environments (solid, liquid, gas, vacuum).

Sound, earthquakes, and waves in water are all mechanical waves, meaning they use a medium – actual physical particles – to pass the energy along.

The birth of a mechanical wave starts with a disturbance. Energy is applied to the medium and the particles of that medium bump, push, or pull against one another. These vibrations transfer the energy from one place to another while the medium it is transferred through stays put. Although the particles move back and forth, or up and down, or around in circles, they don't actually change locations. It's only the energy that travels – and it can travel really, really far.

So when you hear that sound from afar, you can thank all the little particles that transferred that wave from here to there.

### **“Measuring Waves” Transcript:**

Mechanical waves carry energy through a medium from one place (source) to another. But depending on the medium, the energy interacts with the particles in different ways.

Waves that move the medium up and down are called transverse waves. And waves that move the medium back and forth are called longitudinal waves.



Each of these waves has characteristics that can be measured to determine the distance between waves (wavelength), how fast the medium vibrates (frequency), and how intense (amplitude) the energy is.

First you have the wavelength, which is a measurement of the distance between one peak – or one compression – to another. Then there is the frequency, which is the measurement of how many waves go by in a period of time. And the amplitude measures how intense the wave is – how far each particle is getting pushed from its original resting place. The higher the amplitude, the more energy the waves are carrying.

So whether it's a loud noise vs. a small or a big ripple vs. a little one, these wave all share certain measurable characteristics.

### **“Seismic Waves” Transcript:**

A great place to see longitudinal and transverse waves in action is during an earthquake. When energy builds up in the earth's crust, it is released during an earthquake by waves of energy traveling through the solid ground. These waves, called seismic waves, are examples of longitudinal and transverse waves and transfer energy in predictable ways.

The first type of wave that occurs and travels faster are called primary or P-waves. P-waves are longitudinal, meaning they compress and stretch the earth to move the energy outward. Then, slower moving secondary, or S-waves, follow. These are transverse waves and transfer energy by moving the earth's layers up and down, while moving the energy outward.

Both of these longitudinal and transverse waves transfer energy over long distances and can be measured (wavelength, frequency, amplitude) to determine the location of the source of the earthquake.

# Physical Features of Central and South Asia

## Oceans, Seas, and Rivers

### Indian Ocean

- The Indian Ocean is the third largest ocean in the world.
- It is geologically the youngest of all the oceans.
- The ocean covers 70,560,000 km squared = 27,240,000 sq mile.
- 19.8% of the Earth's surface water is contained in the Indian Ocean
- Asia is to the north.
- Australia is to the east.
- Africa is to the west.
- Southern Ocean and Antarctica are to the south.
- It was named the Indian Ocean in 1515.
- It was named after the Indus River and India which is located on its northern border.
- It has also been known as the Western Oceans, the Hindu Ocean and the Indic Ocean.
- The Indian Ocean is home to the Red Sea, the Bay on Bengal, the Persian Gulf, and the Arabian Sea.
- The Java Trench is the deepest point in the Indian Ocean. It is 7500 meters deep (25,344 feet)
- The average depth of the ocean is 3,960 meters (12,990 feet).
- It is landlocked to the north.
- It has less islands than other oceans.
- The ocean has a tropical climate.
- The Indian Ocean has oil and gas fields.
- Blue, Humpback, and Orca Whales, Great White Sharks, Green Sea Turtles, and dolphins make their home in the Indian Ocean.

### Arabian Sea

- The Arabian Sea is located in the northwest of the Indian Ocean.
- It is bordered to the east by the Indian peninsula and to the west by the Somali Sea, Guardafui Channel, and the Arabian Peninsula.
- The Arabian Sea covers 3,862,000 square kilometers (1,491,000 square miles)
- It is one of the major sea routes between India and Europe.
- The Arabian Peninsula and the Horn of Africa are to the west of the Arabian Sea.
- India is to the east of the Arabian Sea.
- The Indian Ocean is to the south of the Arabian Sea.
- To the north the Gulf of Oman connects the Arabian Sea with the Persian Gulf.
- The average depth of the Arabian Sea is 2730 meters which is 8970 ft.
- The deepest part of the Arabian Sea is 19038 meters which is 62460 ft and it happens at a place called Wheatley Deep.
- Some of the countries that border the Arabian Sea are Pakistan, Iran, India, Yemen, Oman, and Somalia.
- The Narmada and Indus rivers are the major waterways that drain into the Arabian Sea.
- There are no islands in the middle of the Arabian.
- The Arabian Sea has a monsoon climate.
- The Arabian Sea has natural gas deposits and petroleum which are located off the coast of India.
- There are many types of fish in the Arabian Sea. Some of these include sardine, tuna, Wahoo, sharks, MoonFish, and lancetfish.

Click or go here to investigate these waterways: [bit.ly/centralseasia](http://bit.ly/centralseasia)

# Physical Features of Central and South Asia

## Oceans, Seas, and Rivers

### Bay of Bengal

- The Bay of Bengal is a shallow but large bay of the Indian Ocean.
- The bay was created when the Indian subcontinent collided into Asia about 50 million years ago.
- The bay covers an area of 2,173,000 square kilometers (839,000 square miles).
- Bangladesh is located to its north,
- Myanmar is located to its east.
- India and Sri Lanka are located to its west.
- On average, the bay is 2,600 meters deep (8,500 feet).
- The Ganges, the Brahmaputra, Mahanadi, the Godavari, the Krishna, and the Kaveri are all major rivers that flow into the Bay of Bengal.
- The Bay of Bengal has a monsoon climate.
- The bay has strong winds from November through April, cyclones in April to May and October to November, and monsoons from June to September.
- Natural gas and petroleum deposits have been found in the bay.
- Barracuda, marlin, tuna, Indo-Pacific Humpbacked dolphins make their homes in the Bay of Bengal.

### Ganges River

- The Ganges River is located in the plains of the northern part of the Indian subcontinent.
- The river is known as the Ganga in the Hindi language as well as in other Indian languages.
- In the Hindu religion, the Ganges is considered a holy river.
- The Ganges flows through one of the most populated areas of the world.
- The riverbanks of the Ganges are some of the most fertile lands of the world.
- It is 2,150 km long (1,560 miles).
- The Bay of Bengal starts in the Himalaya mountains and flows south to empty into the Bay of Bengal.
- The river flows mostly through India although part of its delta lies in the modern day country of Bangladesh.
- In April through June, the Himalayan snows melt and feed into the Ganges River.
- In July through September, the rains of the heavy monsoons causes the river to rise.
- Much of the land in the Ganges Delta is used for agriculture.
- Boars, wildcats, deer, jackals, wolves, foxes, Bengal tigers, and crocodiles can be found in the lands around the river.
- The river is filled with fish such as the walking catfish, featherbacks, and the Ganges river dolphin.
- Parrots, crows, mynah birds, and partridges are the types of birds that can be found on the banks of the river.

Click or go here to investigate these waterways: [bit.ly/centralseasia](http://bit.ly/centralseasia)



# Physical Features of Central and South Asia

## Oceans, Seas, and Rivers

### Indian Ocean

How does the Indian Ocean compare to other oceans in the world?

What is the climate of the Indian Ocean?

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What waterways exist in the Indian Ocean?

What types of animals live in the Indian Ocean?

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### Arabian Sea

How big is the Arabian Sea?

What countries border the Arabian Sea?

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Imagine you have been hired to get people to visit the Arabian Sea. List two reasons people should visit. Cite textual evidence from the reading and visual evidence from the website to support your thinking.

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# Physical Features of Central and South Asia

## *Oceans, Seas, and Rivers*

### Bay of Bengal

What rivers flow into the Bay of Bengal?

Describe the climate of the Bay of Bengal. What types of weather does it have during the year

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### Ganges River

Where does the Ganges River start and end?

What is the importance of the Ganges river to the Hindu religion?

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Imagine you are going to the Ganges River to look for animals? Should you be scared? Why or why not?

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# ESL at Home 6-8 Weeks 9-10

Use notebook paper to complete these activities. Do one each day!

| Monday                                                                                                                                                                                                                                                   | Tuesday                                                                                                                                                                                                                                                                           | Wednesday                                                                                                                                                                              | Thursday                                                                                                                                                                                                                                                                        | Friday                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Choose a TV Show or Movie and write a review for it! Include a summary and if you would recommend it to someone.</p> <p>First, ____. Next, ____.<br/>Last, ____. You should/<br/>should not watch this<br/>because ____. Another<br/>reason ____.</p> | <p>Use things in your home to create a kind of store (clothing, furniture, etc.). Write what you will sell and what it will cost! "Sell" items to your family and add their totals!</p> <p><b>Example:</b><br/>Red t-shirt: \$10<br/>Jeans: \$17.99<br/>Gold necklace: \$4.50</p> | <p>Create a cooking show! Choose something to make with your family! Explain the steps of how to make the dish while you are cooking together!</p>                                     | <p>Go on a walk outside. What are some <b>natural resources</b> that you see? What are some <b>physical features</b> of your area? Sketch and label.</p> <p><b>Natural resources:</b><br/>water, plants, sunlight.<br/><b>Physical Features:</b><br/>Mountain, hill, river.</p> | <p>Imagine you were an animal (<b>Example:</b> horse, cow, pig, chicken) that lived on a farm where all the animals could talk. Write and draw about your adventure with your animal friends.</p>      |
| Monday                                                                                                                                                                                                                                                   | Tuesday                                                                                                                                                                                                                                                                           | Wednesday                                                                                                                                                                              | Thursday                                                                                                                                                                                                                                                                        | Friday                                                                                                                                                                                                 |
| <p>Find items around your house and create an instrument. Come up with a song and write lyrics to it. Make sure you use <b>imagery!</b></p>                                                                                                              | <p>Pick a character from a TV show, movie, or book. Write and describe the <b>character traits</b> of that character.</p> <p><b>Example:</b> Batman is wearing black. He is kind because he saves others.</p>                                                                     | <p>Read a story or chapter aloud to someone, but don't read the end (or what happens next). Have them predict what will happen. Then read it to them and see if they were correct!</p> | <p>Interview your parents or grandparents about their life when they were your age. Write about how your life is similar and different to theirs!</p>                                                                                                                           | <p>List four things in your home that produce <b>light energy</b>.<br/>List four things in your home that produce <b>heat energy</b>.<br/>List four things in your home that <b>reflect</b> light.</p> |

