



At Home Learning Resources

Grade 6 - Week 7

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 7

Your child can complete any of the activities in weeks 1-6. These can be found on the Lowell Public Schools website: <https://www.lowell.k12.ma.us/Page/3802>

This week begins a 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 be working on informational books for the next few weeks. The resources in this packet will be the same for next week for writing as well. 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 last throughout the weeks. 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.

Word Work: Students can work on learning new vocabulary about a topic they are interested in. Students can also explore these roots and see where they find them in their reading. Students can create lists of other words with the same root and then write a new sentence using these words.

When reading informational texts, think about the following. Annotate, stop and jot, and respond in writing as you are reading or when you are done.

To Make the Most of Your Nonfiction Texts

Orient yourself.
Generate questions and ideas.



Notice fascinating parts, and mull them over.

Flag a page!



Jot a few points.



Determine *possible* central ideas.



Rethink central ideas in light of new information.



Consider how embedded stories connect to central ideas.



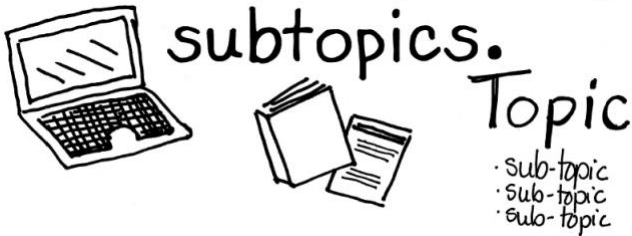
Study how ideas, events, or people are developed.



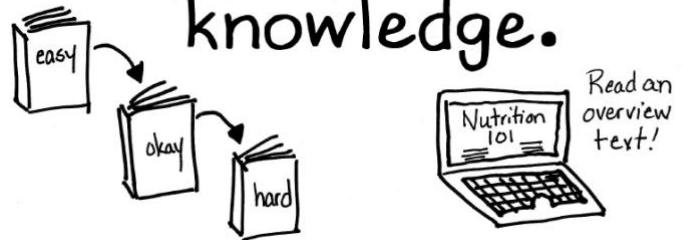
When reading informational texts to learn about a new topic, use the following strategies to help you.

To Research a New Topic...

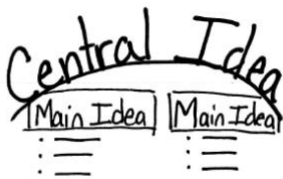
Preview texts to
identify repeating
subtopics.



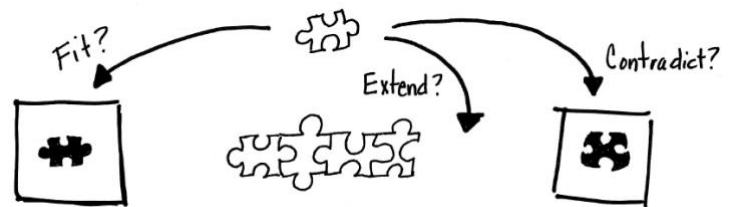
Build up background
knowledge.



Craft a brief
summary.



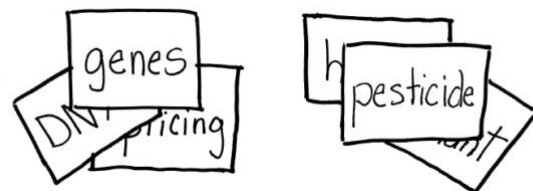
Synthesize across
texts.



Turn to outside
resources to clear
up confusions.



Become an expert on
the topic's lingo.



Grow your own
ideas.



The text says...



When texts
contradict,
determine which is
most trustworthy.



Introduction (p. 1)

Cheyenne Mountain sits on the eastern slope of Colorado's Front Range, rising steeply from the prairie and overlooking the city of Colorado Springs. From a distance, the mountain appears beautiful and serene, dotted with rocky outcroppings, scrub oak, and ponderosa pine. It looks like the backdrop of an old Hollywood western, just another gorgeous Rocky Mountain vista. And yet Cheyenne Mountain is hardly pristine. One of the nation's most important military installations lies deep within it, housing units of the North American Aerospace Command, the Air Force Space Command, and the United States Space Command. During the mid-1950s, high-level officials at the Pentagon worried that America's air defenses had become vulnerable to sabotage and attack. Cheyenne Mountain was chosen as the site for a top-secret, underground combat operations center. The mountain was hollowed out, and fifteen buildings, most of them three stories high, were erected amid a maze of tunnels and passageways extending for miles. The four-and-a-half-acre underground complex was designed to survive a direct hit by an atomic bomb. Now officially called the Cheyenne Mountain Air Force Station, the facility is entered through steel blast doors that are three feet thick and weigh twenty-five tons each; they automatically swing shut in less than twenty seconds. The base is closed to the public, and a heavily armed quick response team guards against intruders. Pressurized air within the complex prevents contamination by radioactive fallout and biological weapons. The buildings are mounted on gigantic steel springs to ride out an earthquake or the blast wave of a thermonuclear strike. The hallways and staircases are painted slate gray, the ceilings are low, and there are combination locks on many of the doors. A narrow escape tunnel, entered through a metal hatch, twists and turns its way out of the mountain through solid rock. The place feels like the set of an early James Bond movie, with men in jumpsuits driving little electric vans from one brightly lit cavern to another.

Fifteen hundred people work inside the mountain, maintaining the facility and collecting information from a worldwide network of radars, spy satellites, ground-based sensors, airplanes, and blimps. The Cheyenne Mountain Operations Center tracks every manmade object that enters North American airspace or that orbits the earth. It is the heart of the nation's early warning system. It can detect the firing of a long-range missile, anywhere in the world, before that missile has left the launch pad.

This futuristic military base inside a mountain has the capability to be self-sustaining for at least one month. Its generators can produce enough electricity to power a city the size of Tampa, Florida. Its underground reservoirs hold millions of gallons of water; workers sometimes traverse them in rowboats. The complex has its own underground fitness center, a medical clinic, a dentist's office, a barbershop, a chapel, and a cafeteria. When the men and women stationed at Cheyenne Mountain get tired of the food in the cafeteria, they often send somebody over to the Burger King at Fort Carson, a nearby army base. Or they call Domino's.

Almost every night, a Domino's deliveryman winds his way up the lonely Cheyenne Mountain Road, past the ominous DEADLY FORCE AUTHORIZED signs, past the security checkpoint at the entrance of the base, driving toward the heavily guarded North Portal, tucked behind chain link and barbed wire. Near the spot where the road heads straight into the mountainside, the delivery man drops off his pizzas and collects his tip. And should Armageddon come, should a foreign enemy someday shower the United States with nuclear warheads, laying waste to the whole continent, entombed within Cheyenne Mountain, along with the high-tech marvels, the pale blue jumpsuits, comic books, and Bibles, future archeologists may find other clues to the nature of our civilization—Big King wrappers, hardened crusts of Cheesy Bread, Barbeque Wing bones, and the red, white, and blue of a Domino's pizza box.

What We Eat (p. 3)

OVER THE LAST THREE DECADES, fast food has infiltrated every nook and cranny of American society. An industry that began with a handful of modest hot dog and ham burger stands in southern California has spread to every corner of the nation, selling a broad range of foods wherever paying customers may be found. Fast food is now served at restaurants and drive-throughs, at stadiums, airports, zoos, high schools, elementary schools, and universities, on cruise ships, trains, and airplanes, at K-Marts, Wal-Marts, gas stations, and even at hospital cafeterias. In 1970, Americans spent about \$6 billion on fast food; in 2000, they spent more than \$110 billion. Americans now spend more money on fast food than on higher education, personal computers, computer software, or new cars. They spend more on fast food than on movies, books, magazines, newspapers, videos, and recorded music—combined.

Pull open the glass door, feel the rush of cool air, walk in, get on line, study the backlit color photographs above the counter, place your order, hand over a few dollars, watch teenagers in uniforms pushing various buttons, and moments later take hold of a plastic tray full of food wrapped in colored paper and cardboard. The whole experience of buying fast food has become so routine, so thoroughly unexceptional and mundane, that it is now taken for granted, like brushing your teeth or stopping for a red light. It has become a social custom as American as a small, rectangular, hand-held, frozen, and reheated apple pie.

This is a book about fast food, the values it embodies, and the world it has made. Fast food has proven to be a revolutionary force in American life; I am interested in it both as a commodity and as a metaphor. What people eat (or don't eat) has always been determined by a complex interplay of social, economic, and technological forces. The early Roman Republic was fed by its citizen-farmers; the Roman Empire, by its slaves. A nation's diet can be more revealing than its art or literature. On any given day in the United States about one-quarter of the adult population visits a fast food restaurant. During a relatively brief period of time, the fast food industry has helped to transform not only the American diet, but also our landscape, economy, workforce, and popular culture. Fast food and its consequences have become inescapable, regardless of whether you eat it twice a day, try to avoid it, or have never taken a single bite.

Speedee Service (p. 19)

By the end of the 1940s the McDonald brothers had grown dissatisfied with the drive-in business. They were tired of constantly looking for new carhops and short-order cooks—who were in great demand—as the old ones left for higher-paying jobs elsewhere. They were tired of replacing the dishes, glassware, and silverware their teenage customers constantly broke or ripped off. And they were tired of their teenage customers. The brothers thought about selling the restaurant. Instead, they tried something new.

The McDonalds fired all their carhops in 1948, closed their restaurant, installed larger grills, and reopened three months later with a radically new method of preparing food. It was designed to increase the speed, lower prices, and raise the volume of sales. The brothers eliminated almost two-thirds of the items on their old menu. They got rid of everything that had to be eaten with a knife, spoon, or fork. The only sandwiches now sold were hamburgers or cheeseburgers. The brothers got rid of their dishes and glassware, replacing them with paper cups, paper bags, and paper plates. They divided the food preparation into separate tasks performed by different workers. To fill a typical order,

one person grilled the hamburger; another "dressed" and wrapped it; another prepared the milk shake; another made the fries; and another worked the counter. For the first time, the guiding principles of a factory assembly line were applied to a commercial kitchen. The new division of labor meant that a worker only had to be taught how to perform one task. Skilled and expensive short-order cooks were no longer necessary. All of the burgers were sold with the same condiments: ketchup, onions, mustard, and two pickles. No substitutions were allowed. The McDonald brothers' Speedee Service System revolutionized the restaurant business. An ad of theirs seeking franchisees later spelled out the benefits of the system: "Imagine—No Carhops—No Waitresses—No Dishwashers—No Bus Boys—The McDonald's System is Self-Service!"

Perfect Synergy (p. 47)

Every month about 90 percent of American children between the ages of three and nine visit a McDonald's. The seesaws, slides, and pits full of plastic balls have proven to be an effective lure. "But when it gets down to brass tacks," a *Brandweek* article on fast food notes, "the key to attracting kids is toys, toys, toys."

... "A successful promotion easily doubles or triples the weekly sales volume of children's meals. The chains often distribute numerous versions of a toy, encouraging repeat visits by small children and adult collectors who hope to obtain complete sets."

McTeachers and Coke Dudes (p. 53)

The nation's three major beverage manufacturers are now spending large sums to increase the amount of soda that American children consume. Coca-Cola, Pepsi, and Cadbury-Schweppes (the maker of Dr Pepper) control 90.3 percent of the U.S. market, but have been hurt by declining sales in Asia. Americans already drink soda at an annual rate of about fifty-six gallons per person—that's nearly six hundred twelve-ounce cans of soda per person. Coca-Cola has set itself the goal of raising consumption of its products in the United States by at least 25 percent a year. The adult market is stagnant; selling more soda to kids has become one of the easiest ways to meet sales projections. "Influencing elementary school students is very important to soft drink marketers," an article in the January 1999 issue of *Beverage Industry* explained, "because children are still establishing their tastes and habits." Eight-year-olds are considered ideal customers; they have about sixty-five years of purchasing in front of them. "Entering the schools makes perfect sense," the trade journal concluded.

The fast food chains also benefit enormously when children drink more soda. The chicken nuggets, ham-burgers, and other main courses sold at fast food restaurants usually have the lowest profit margins. Soda has by far the highest. "We at McDonald's are thankful," a top executive once told the *New York Times*, "that people like drinks with their sandwiches." Today McDonald's sells more Coca-Cola than anyone else in the world. The fast food chains purchase Coca-Cola syrup for about \$4.25 a gallon. A medium Coke that sells for \$1.29 contains roughly 9 cents of syrup. Buying a large Coke for \$1.49 instead, as the cute girl behind the counter always suggests, will add another 3 cents' worth of syrup—and another 17 cents in pure profit for McDonald's.

Throughput (p. 67)

Every Saturday Elisa Zamot gets up at 5:15 in the morning. It's a struggle, and her head feels groggy as she steps into the shower. Her little sisters, Cookie and Sabrina, are fast asleep in their beds. By 5:30, Elisa's showered, done her hair, and put on her McDonald's uniform. She's sixteen, bright-eyed and olive-skinned, pretty and petite, ready for another day of work. Elisa's mother usually drives her the half-mile or so to the restaurant, but sometimes Elisa walks, leaving home before the sun rises. Her family's modest townhouse sits beside a busy highway on the south side of Colorado Springs, in a largely poor and working-class neighborhood. Throughout the day, sounds of traffic fill the house, the steady whoosh of passing cars. But when Elisa heads for work, the streets are quiet, the sky's still dark, and the lights are out in the small houses and rental apartments along the road.

When Elisa arrives at McDonald's, the manager unlocks the door and lets her in. Sometimes the husband-and-wife cleaning crew are just finishing up. More often, it's just Elisa and the manager in the restaurant, surrounded by an empty parking lot. For the next hour or so, the two of them get everything ready. They turn on the ovens and grills. They go downstairs into the basement and get food and supplies for the morning shift. They get the paper cups, wrappers, cardboard containers, and packages of condiments. They step into the big freezer and get the frozen bacon, the frozen pancakes, and the frozen cinnamon rolls. They get the frozen hash browns, the frozen biscuits, the frozen McMuffins. They get the cartons of scrambled egg mix and orange juice mix. They bring the food upstairs and start pre-paring it before any customers appear, thawing some things in the microwave and cooking other things on the grill. They put the cooked food in special cabinets to keep it warm.

The restaurant opens for business at seven o'clock, and for the next hour or so, Elisa and the manager hold down the fort, handling all the orders. As the place starts to get busy, other employees arrive. Elisa works behind the counter. She takes orders and hands food to customers from breakfast through lunch. When she finally walks home, after seven hours of standing at a cash register, her feet hurt. She's wiped out. She comes through the front door, flops onto the living room couch, and turns on the TV. And the next morning she gets up at 5:15 again and starts the same routine.

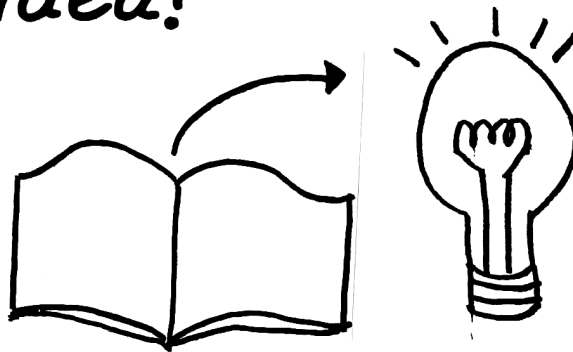
Stroking (p. 72)

The nation has about 1 million migrant farm workers and about 3.5 million fast food workers. Although picking strawberries is orders of magnitude more difficult than cooking hamburgers, both jobs are now filled by people who are generally young, unskilled, and willing to work long hours for low pay. Moreover, the turnover rates for both jobs are among the highest in the American economy. The annual turnover rate in the fast food industry is now about 300 to 400 percent. The typical fast food worker quits or is fired every three to four months.

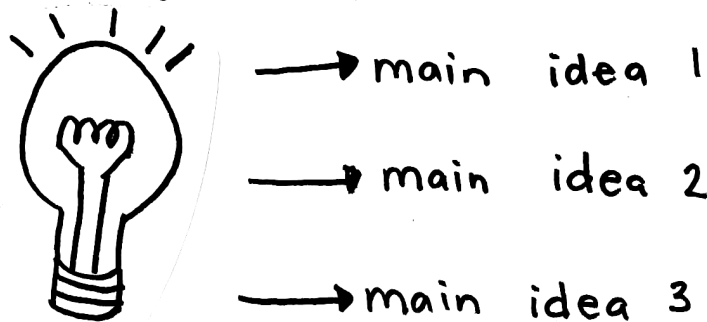
The fast food industry pays the minimum wage to a higher proportion of its workers than any other American industry. Consequently, a low minimum wage has long been a crucial part of the fast food industry's business plan.

Create a brief summary of the text.

- ◆ *Ask, "What's the author's central idea?"*

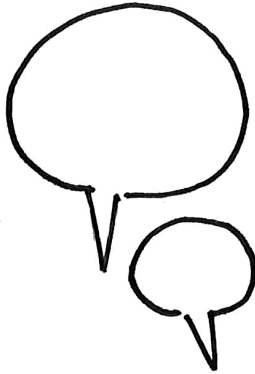


- ◆ *Determine main ideas that support the central idea.*



- ◆ *Say back the central and main ideas in a short paragraph.*

Prompts to Grow Your Own Ideas



The text says...
This makes me think...



A thought I have about this is...

My idea differs from the
author's when...

I think...

This makes me wonder...

One theory I'm growing is...
because...

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

Organize your information: make a table of contents.

WRITERS SHARE A VARIETY OF INFORMATION

Revise

Edit!

Writing Information Texts Well

The anchor chart features several icons: a lightbulb, a tree, a house, a hand, a magnifying glass, a book, and a pencil. A starburst shape points to the title, and a speech bubble contains the tip about planning. A box on the right lists the steps: 'Think of the questions people will ask, and answer them.' Below the title, there are five icons representing different types of books or chapters. At the bottom, there is a box with the text 'Organize your information: make a table of contents.' and a small diagram of a table of contents. To the right, there is a box with the text 'WRITERS SHARE A VARIETY OF INFORMATION' and a starburst shape with the word 'Edit!'.

Think of a topic.

Things I could write about:

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

Traveling

- Italy
- Cambodia
- Spain
- Portugal

The anchor chart features a drawing of a girl with a lightbulb in a thought bubble above her head. To the right, there is a list of topics: 'Basketball', 'Traveling', 'Video games', 'Cooking', 'the environment', and 'Social Media'. 'Traveling' is circled. Below this list, there is another list of countries: 'Italy', 'Cambodia', 'Spain', and 'Portugal'. 'Traveling' is underlined.

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.

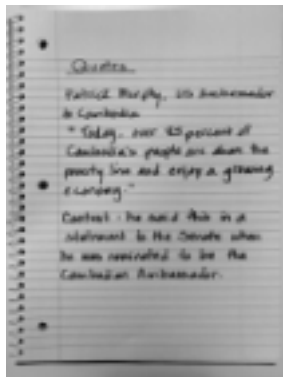
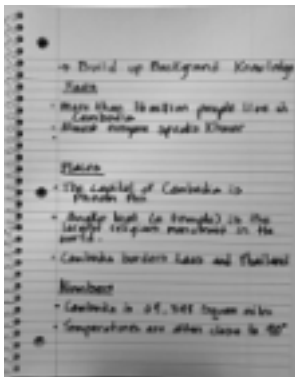
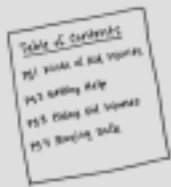


TABLE OF CONTENTS	
ANGKOR WAT	4
LOCATION	6
LANDSCAPE AND CLIMATE	8
WILDLIFE	10
PEOPLE	12
COMMUNITIES	14
CUSTOMS	16
SCHOOL AND WORK	18
PLAY	20
FOOD	22
CELEBRATIONS	24
TIMELINE	26
CAMBODIA FACTS	28
GLOSSARY	30
TO LEARN MORE	32
INDEX	32

Organize your information: make a table of contents.

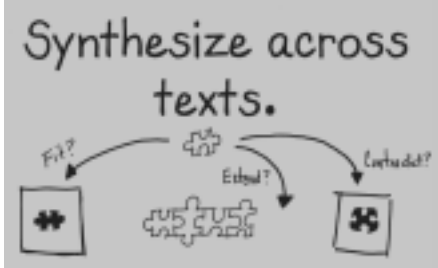


Contents	
Where is Cambodia?	4
The Land	6
The Tonle Sap	8
Wildlife	10
The People	12
Daily Life	14
Going to School	16
Working	18
Playing	20
Food	22
Holidays	24
Angkor Wat	26
Fast Facts	28
Glossary	30
To Learn More	31
Index	32

Preview texts to identify repeating subtopics.

Topic

- Sub-topic
- Sub-topic
- Sub-topic



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 EACH 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 of 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

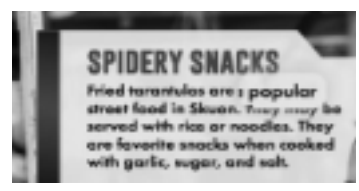
Define key terms and use technical vocabulary



Provide a surprising fact or statistic



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.



GLOSSARY

tarantula a very large arachnid, especially one of the hairy tarantulas, which are, although often in a place or among objects related to a group of people who share common and no identity

giant part of an insect or arachnid that is much larger than most members of its species

street food a food or drink sold in a public place, often in a market or street

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Include a glossary to define key terms.

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.

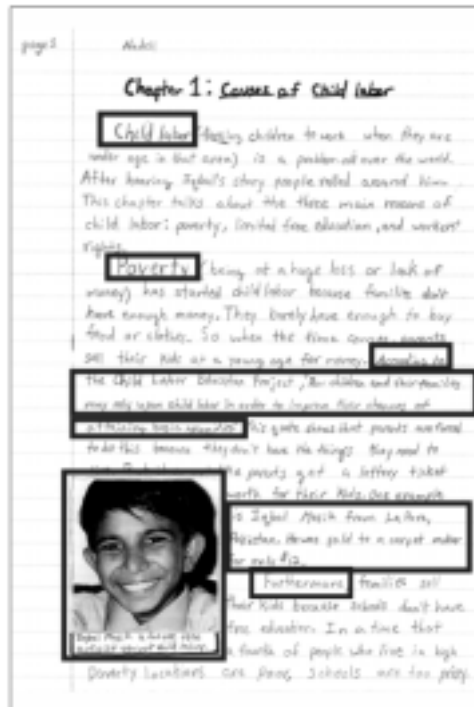
make sure to list



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.

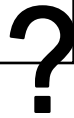


Questions to Ask Yourself as You Edit

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.



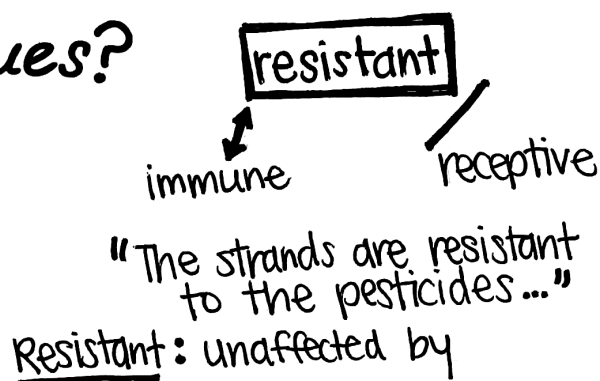
There are many different kinds of interesting animals in Cambodia.



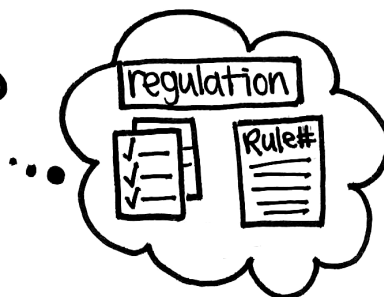
Look ALL Around a Word for Clues

✓ Are there direct clues?

- ➔ Synonyms?
- ➔ Antonyms?
- ➔ Gist clues?
- ➔ Definitions?



✓ What do you envision?



✓ Is the word or phrase positive or negative?

+
productive

- -
debilitating crisis

✓ What type of word is it?

NOUN



Verb



Adjective



Ways to Sort Key Vocabulary

Unfamiliar/
Familiar words

✓ organism transgenic?
regulation biofuels

According to
Central Ideas

people are conflicted about GMOs

Positive/Neutral/
Negative words

+ productive
- debilitating

Chronologically

1900 1950 2000

By Subtopic

Plants? Animals?
[] []
[] []

By Part of Speech

Nouns Describing Words Verbs
[] [] []
[] [] []
[] [] []

Word Morphology Log

Prefix/Suffix	Meaning	Examples

Practice Problems

<p>1. Solve the following:</p> <p>a. $\begin{array}{r} 231.8 \\ +17.4 \\ \hline \end{array}$</p> <div style="border: 1px dashed gray; width: 80px; height: 25px; margin: 5px auto;"></div> <p>b. $\begin{array}{r} 59.1 \\ -8.76 \\ \hline \end{array}$</p> <div style="border: 1px dashed gray; width: 80px; height: 25px; margin: 5px auto;"></div>	<p>2. Solve the following:</p> <div style="border: 1px dashed gray; width: 80px; height: 25px; margin: 5px auto;"></div> <p>a. $\begin{array}{r} 4.97 \\ \times 13 \\ \hline \end{array}$</p> <div style="border: 1px dashed gray; width: 80px; height: 25px; margin: 5px auto;"></div> <p>b. $6.5 \overline{)117}$</p>
<p>3. Kathy is planning a party. She decides to serve pizza to her guests and estimates that she will need 12 pizzas with 8 slices each. If each person eats 3 pieces, how many people can she serve?</p> <div style="border: 1px dashed gray; width: 100%; height: 100px; margin: 10px 0;"></div>	

<p>1. Solve the following:</p> <p>a. $\begin{array}{r} 40.08 \\ +13.2 \\ \hline \end{array}$</p> <div style="border: 1px dashed gray; width: 80px; height: 25px; margin: 5px auto;"></div> <p>b. $\begin{array}{r} 29.3 \\ -13.84 \\ \hline \end{array}$</p> <div style="border: 1px dashed gray; width: 80px; height: 25px; margin: 5px auto;"></div>	<p>2. Solve the following:</p> <div style="border: 1px dashed gray; width: 80px; height: 25px; margin: 5px auto;"></div> <p>a. $\begin{array}{r} 342 \\ \times 25 \\ \hline \end{array}$</p> <div style="border: 1px dashed gray; width: 80px; height: 25px; margin: 5px auto;"></div> <p>b. $7.3 \overline{)47.45}$</p>
<p>3. A rectangular room is covered in 512 square feet of carpet. If the length of the room is 16 feet, what is the width of the room?</p> <p style="text-align: center;">Area = length x width</p> <div style="border: 1px dashed gray; width: 100%; height: 100px; margin: 10px 0;"></div>	

Dividing Decimals by a Whole Number

Key Idea

Dividing Decimals by Whole Numbers

Words Place the decimal point in the quotient above the decimal point in the dividend. Then divide as you would with whole numbers.

Numbers
$$\begin{array}{r} 1.83 \\ 4 \overline{)7.32} \end{array}$$
 Place the decimal point in the quotient above the decimal point in the dividend.

Dividing Decimals by Whole Numbers

a. Find $7.6 \div 4$.

Estimate $8 \div 4 = 2$

$$\begin{array}{r} 1.9 \\ 4 \overline{)7.6} \\ \underline{-4} \\ 3.6 \\ \underline{-3.6} \\ 0 \end{array}$$
 Place the decimal point in the quotient above the decimal point in the dividend.

So, $7.6 \div 4 = 1.9$.

Reasonable? $1.9 \approx 2$ ✓

Divide. Check your answer.

1. $9 \overline{)7.2}$

4. $1.08 \div 4$

7. $62.4 \div 3$

10. $158.4 \div 12$

13. $16.616 \div 8$

24. You buy 65 oranges for \$22.75. How much does each orange cost?

25. You and three of your friends go parasailing for \$128.40. You split the cost evenly. How much does each person pay?

26. The yearly precipitation of a city is 38.94 inches. About how much precipitation falls each month?

27. A 12-fluid ounce bottle of shampoo costs \$8.40. A 16-fluid ounce bottle of shampoo costs \$10.24. Which is the better buy? Explain.

1. Solve the following:

a.
$$\begin{array}{r} 34.67 \\ +8.94 \\ \hline \end{array}$$

b.
$$\begin{array}{r} 72.31 \\ -10.95 \\ \hline \end{array}$$

2. Solve the following:

a.
$$\begin{array}{r} 19.2 \\ \times 1.5 \\ \hline \end{array}$$

b.
$$1.6 \overline{)1.28}$$

3. A large banquet room holds 288 people with each table seating 8. How many tables can the banquet hall have without going over its capacity?

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1. Solve the following:

a.
$$\begin{array}{r} 75.17 \\ +26.0 \\ \hline \end{array}$$

b.
$$\begin{array}{r} 15.01 \\ -9.65 \\ \hline \end{array}$$

2. Solve the following:

a.
$$\begin{array}{r} 204 \\ \times 2.7 \\ \hline \end{array}$$

b.
$$.41 \overline{)213.2}$$

3. Michael drives to work each day. He travels a total of 160 miles at the end of the work week, how far is Michael's house from work?

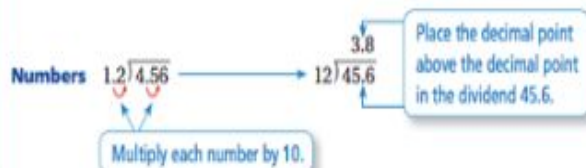
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Dividing a Decimal by a Decimal

Key Idea

Dividing Decimals by Decimals

Words Multiply the divisor *and* dividend by 10, 100, or 1000 to make the divisor a whole number. Then place the decimal point in the quotient and divide as you would with whole numbers.



A sold out movie theater earns \$4875. Each ticket costs \$6.50. How many tickets were sold?

A piece of paper is 0.0075 inch thick. How many sheets of paper will be in a stack that is 2.25 inches high?

A 9.2-ounce can of tomato juice costs \$3.48. What is the price per ounce of the tomato juice to the nearest cent?

A runner completed the 100-meter dash in 9.7 seconds. How far does the runner travel in one second? Round your answer to the nearest tenth of a meter.

1. $23.1 \div 4.2$

Divide.

4. $4.2 \div 0.2$

Divide. Check your answer.

7. $0.5 \overline{)13.5}$

10. $1.764 \div 0.07$

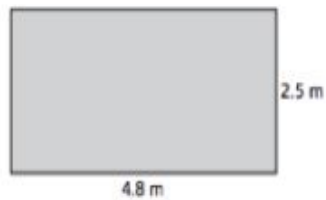
13. $4.08 \div 1.2$

16. $357 \div 0.007$

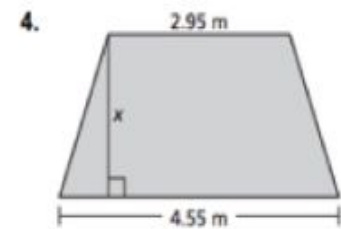
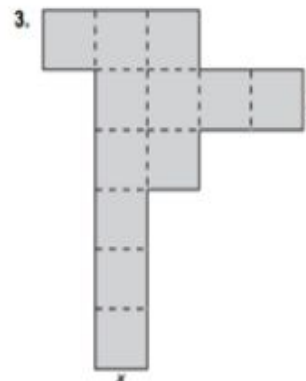
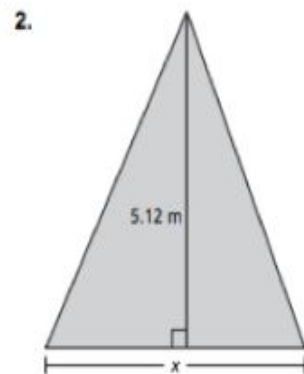
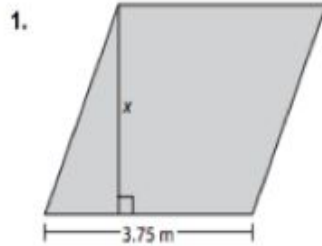
ENRICHMENT

What is the Missing Length?

In Exercises 1–4, the figure has the same area as the area of the rectangle below. Use this information to find the length of x . Explain how you found your answer.



This enrichment page is not required but an additional challenge!



Application Problem

Megan and her three friends are visiting the Textile Museum in Downtown Lowell. After their visit, they decide to go have lunch at Subway. They pay a total of \$31.80. One friend suggests splitting the bill evenly, another friend suggests each person pays for only their portion of the bill.

a. What would each person have to pay if they split the bill evenly? Show or explain how you found your answer.

b. Megan's portion of the bill is \$9.95. What is the difference between Megan's portion of the bill and the answer to part (a). Show or explain how you found your answer.

Megan and one of her friends decide to get cookies for dessert. The cost for three cookies is \$1.09. Each one of them gets three cookies.

c. What would Megan pay now if the total bill is split evenly between all of them?

d. If she wants to pay the least amount possible, should Megan pay her portion of the bill or opt to split the bill evenly? Explain



In this episode, Jonathan travels to Dominica, an island in the Caribbean, for an underwater encounter with Sperm whales. The very deep waters around Dominica attract these whales, who are able to navigate the dark depths and locate prey using echolocation. For social animals such as whales, the use of sound is extremely important for communicating with others and sensing their environment in the absence of light.

Science Lesson: Sound in the Sea

Grade Level: 6-8

<http://www.blueworldtv.com/webisodes/watch/giants-of-the-depths>

Introduction

Animals' ability to sense sound is important to their survival on many levels. Social animals need it to communicate and to find each other. It is used to sense danger or locate prey. Underwater sound is especially important as light from the surface disappears quickly with depth or can get blocked and scattered by material in the water, greatly reducing visibility and limiting vision. Whales and dolphins rely heavily on echolocation to find prey and navigate dark waters. We have our version of echolocation called SONAR for "seeing" underwater. Even fish make sounds for attracting mates or scaring off predators.

But, what is sound? How does sound travel so well in water when light does not? In this activity we will examine the nature of sound and sound underwater.

Science Standards

National Science Education Standards

- Physical Science: Transfer of Energy

Ocean Literacy Principles

- Principle #5: The ocean supports a great diversity of life and ecosystems.

Objectives

- To gain a better understanding of what sound is and how it travels.
- To better understand how energy is transferred by waves.
- To provide a foundation for exploring how and why sounds differ from one another.
- To understand why sound travels better and faster underwater than in air.
- To improve students' appreciation of why sound is so important to life in aquatic ecosystems.



Partial support for this work was provided by the National Science Foundation Grant DUE/NSDL #1043823. Any opinions, findings, or conclusions expressed are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

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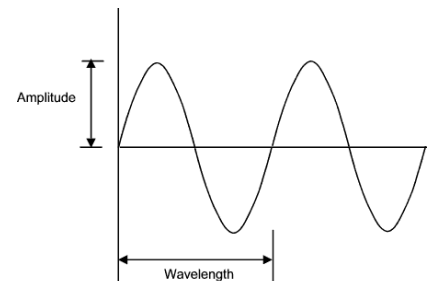
Eliciting Prior Knowledge

Ask students:

- What is sound?
- What are vibrations?
- How is sound made?
- How fast does sound travel?
- How do our ears receive sound?
- Could you “hear” without ears?
- What are the properties of sounds that we can use to describe them?
- Do fish hear? Do they have ears? How might they detect sound?
- Does it travel the same way or speed through all materials?
- Why is sound important to animals in nature?
- Do we hear better underwater or in the air?
- How is sound blocked or absorbed?

Helpful Vocabulary

Acoustic:	Having to do with sound
Echolocation:	An outgoing sound waves travel through the water to the bottom of an object(s) where it is reflected back towards the source and received. The quicker the sound returns to the receiver the closer the object.
Frequency:	The number of waves passing a point per second. In sound, frequency is detected as “pitch.” Low pitch is low frequency and high pitch sounds are sound waves with a high frequency.
Intensity:	The strength or power of the energy.
Longitudinal Wave:	As energy is transferred through a medium, the materials in the medium get squeezed together and then expand along the same direction as the wave. Also known as <i>Compression Wave</i> .
Medium:	Material through which energy passes. Example air: water, etc.
Molecules:	Tiny particles made from two or more atoms chemically combined in a specific way. Water molecules (H ₂ O) are two atoms of Hydrogen bonded to one atom of Oxygen.
Reflection:	Energy waves bounce off a surface. An echo is the reflection of sound waves.
Sonar:	(S ound N avigation and R anging) A system that sends out underwater sound waves and uses echolocation to detect objects underwater or measure the distance to the bottom of a body of water. Sonar is an important tool for measuring depth and mapping the sea floor.
Speed:	Distance traveled in a certain time, e.g. miles per hour, meters per second.
Transverse Wave:	As energy is transferred through a medium, the material moves perpendicular (side to side... up and down) to the direction of the wave.
Wave:	A disturbance that transfers energy as it travels through a medium from one location to another. It is important to note that the medium through which the wave travels experiences some sort of motion as the wave passes, but the particles in the medium do not travel with the wave.
Wavelength:	The distance between corresponding parts of successive waves such as crest to crest or trough to trough.



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Activity: How Does Sound Travel?

Background:

Sound is energy that travels in *waves* through a *medium* such as water or air. Sound happens when something disturbs or pushes particles (*molecules*) in the medium. This “disturbance” or energy continues to be passed along from particle to particle in the medium, sent out in all directions, similar to ripples on a pond’s surface after tossing in a small rock.

Sound waves transport this energy by pushing *molecules* into each other, squeezing or compressing them together for an instant. Then as this wave of compression passes the molecules return to their original position or “*equilibrium*.” This wave of compression continues moving away from the source of the sound in all directions. As it passes, the molecules move back and forth (from compression to equilibrium) but only the energy travels through the medium, not the particles in the medium.

This type of wave is known as a longitudinal or compression wave. In this case the motion of the particles vibrate back and forth along the same direction as the wave. In this activity you will get a sense for how sound waves travel through a medium using a toy slinky.

If you don't have a slinky, watch this video:

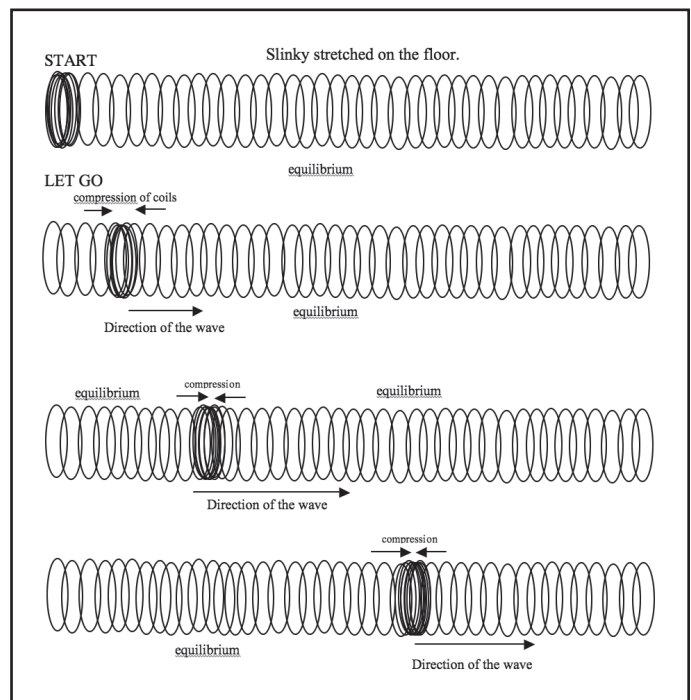
Materials: A toy slinky and a computer with on-line access. <https://www.youtube.com/watch?v=kxQj-wPePBU>

Procedure: Working in teams of two on the floor, with a student holding each end, stretch a slinky in a straight line so that there is roughly 1 to 1.5 inches between coils. The slinky will stretch to a length of about 8 - 10 feet (depending on its size).

One student will generate compression or longitudinal waves down the slinky. while the other will hold their end securely in place. *Note: Do not let go of the slinky! If the coils get tangled, you will have a mess!*

To generate a wave, pull a coil or two of the slinky toward you. When ready release that coil.

Refer to the diagram on the next page to help explain how the wave travels through the slinky.



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As you observe the movement of the energy through the slinky, answer the following questions.

1. Describe how the energy generated is passed through the slinky. _____

2. After the wave passes through the slinky, did the coils move from where they started on the floor? _____

3. Then what exactly is traveling through the slinky? _____

(Remember...When a wave travels through a medium, only the disturbance or energy travels away from the source, not the particles in the medium.)

4. Was there an echo in your slinky demonstration? _____ Explain: _____

5. Why is this type of wave called a “compression wave?” _____

6. At one point in the video, *Giants of the Depths*, Jonathan describes the pounding in his chest from the sounds emitted from the whales. What exactly was he feeling? _____

7. Would you consider the energy through the slinky in this activity to be traveling at a high speed? _____

8. This wave moves through the slinky at about 10 feet per second.

• What is the speed in feet per minute? _____

• What is the speed in feet per hour? _____

• Calculate the speed of this wave through the slinky in miles per hour. (*1 mile = 5280 feet*) _____

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Follow-up and Extensions

You can compare compression waves with other types of wave energy and read clear explanations of how waves work with excellent animations by visiting “Acoustics Animations” from Dr. Dan Russell. Kettering University applied physics. 2002. At the following links:

<http://www.kettering.edu/physics/drussell/Demos/waves-intro/waves-intro.html>

http://www.teachersdomain.org/asset/lsp07_int_waves/

Sound vs. Light in the Sea

Light and other forms of electromagnetic energy do not travel well through materials as they are made of atoms and molecules. Atoms and molecules absorb, block or scatter this energy.

Water and gasses are clear, but they're still made of molecules that want nothing better to do than absorb this energy. Thus, water and even air hamper the conduction of light, no matter how clear. It's interesting that electromagnetic energy such as light can travel through the vacuum of space for trillions of miles, but can't penetrate even the clearest water for more than a few hundred feet. The vast majority of the sea is in total darkness.

On the other hand, sound requires matter in order to be transmitted. Sound cannot travel in outer space as there are no molecules to vibrate and pass along compression waves. In fact sound travels better in materials that are more dense, where molecules are more tightly packed. This is why the speed of sound in water is roughly five times faster in water than in air.

Life has proven that it evolves ways to sense its surroundings with the energy available. Many living things have features for sensing “visible light”; plants utilize it as an energy source for photosynthesis. Visible light is the form of electromagnetic energy that is most available to us from our star, the Sun. Perhaps

if our sun bathed us in infra-red energy or ultra-violet, more life might have evolved ways to “see the world” using these forms of electromagnetic radiation.

Sound travels well in water and is a more versatile and useful form of energy in the deep than light. So it makes sense that many undersea animals have adaptations for using sound to communicate and sense their surroundings. This is especially true for whales and dolphins who can “see” in the darkness using echolocation, and have advanced vocalizations to communicate with other individuals to navigate, coordinate a hunt, or simply find each other.

A comprehensive resource for helping with lessons dealing with sound in the ocean is the *Discovery of Sound in the Sea* web site developed by the University of Rhode Island's (URI) Office of Marine Programs (OMP).

Accessed at <http://www.dosits.org/>

The Audio Gallery in this web site has an extensive collection of sounds emitted by animals in the sea from croaking fish to the echoes of Sperm whales. There are even the sounds of earthquakes and lightning recorded underwater.

To access this gallery go to: <http://www.dosits.org/audio/interactive/>

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"Seeing" with Sound
(Refer to the video *Giants of the Depths*)

Just as we see the world as light reflects off objects, whales and dolphins "see" in the sea with reflected sound waves or echoes in a process called echolocation. Echolocation is very sophisticated in these animals and has allowed them to hunt and locate prey in areas that are not accessible to visual feeders.

At the 3 minute mark in the video *Giants of the Depths* there is an animation of echolocation which you can review to get a sense as to how this process works.

In echolocation, whales send out pulses or "clicks" through the water that reflect or bounce off of objects underwater, returning to the whale. The faster they return, the closer the object.

Calculating the distance from an object with echolocation

The distance from an object with reflected sound underwater can be calculated in the following manner:

$$\text{Distance} = (\text{speed of the sound}) \times (\text{the time it takes to return}) \div 2$$

(Why do you divide the product of these two measurements by 2?)

Just how fast is sound underwater? The speed of sound waves underwater depends on depth, temperature, and salinity. but the average speed is about 1500 meters/second. That's a little under 1 mile per second. (1500 meters = 0.93 miles) At this speed it is roughly 5 times faster than the speed of sound in air which takes about 5 seconds to go 1 mile.

Calculating the speed of sound underwater in miles per hour.

The average speed of sound underwater is 0.93 miles per second.

1. How many seconds are there in a minute? _____ in an hour? _____
2. So, what is your estimated speed of sound underwater? _____ miles per hour.
3. What is the calculated speed of sound underwater in miles per hour? _____ mph

(show your calculation)

4. Write the formula for finding the distance to an object using echolocation.
-

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5. Using the approximate speed of 1 mile per second, if pulses take 0.2 seconds to return to a whale after bouncing of an object underwater, how far away is the object? Show your calculation below:

At 1500 meters per second an echo takes 0.1 seconds to return to the whale after being sent out into the water.

6. How far away is the object that's reflecting the sound ? Show your calculation below:

We have our own version of echolocation aboard ships called *sonar* which stands for “sound navigation and ranging.” This technology emits a pulse of sound waves in a given direction. A computer then measures the time it takes for the waves to travel outward, bounce off an object and return. It then determines the distance that the ship is from the object. Ships use this technology to measure depth. Many echoes returning from the sea floor can be analyzed by computers and turned into maps or images of the seafloor at depths too deep be imaged with light from the surface.

Calculating depth using sonar: (use the same formula for determining distance with echolocation)

Example: At 1500 meters per second, a sonar pulse takes 4 seconds to return to the ship after being sent toward the bottom.

7. What is the depth of ocean at this location? (Show your calculation)

The Ganges River



The Ganges is India's principal river and one of the longest in the world. Reverence for the Ganges River is an important part of Hinduism. Ancient Hindu literature says the Ganges sprang from the feet of the god Vishnu. To Hindus the river is *Ganga Mai* ("Mother Ganges"), the mother of all rivers. Bathing in the Ganges is of great religious importance to Hindus. They believe that the river has the power to purify the soul by washing away all sins and that drinking its water cures illness. Every 12 years, tens of thousands of the Hindu faithful make pilgrimages in order to bathe in the river.

Many Hindu temples line the banks of the Ganges. Flights of stairs (*ghats*) provide access to the holy waters and a place to sit and pray. Hindu funeral services are held on the *ghats*. The dead are cremated, and their ashes are scattered over the river.

The Ganges begins its course in the Himalayas, some 10,000 feet (3,000 meters) above sea level. There it is fed by melting snows and glaciers. It winds its way through deep mountain gorges until it reaches the Indian town of Hardwar. There it enters the Ganges Plain. The river then runs in a generally southeasterly arc across northern India and Bangladesh. It finally empties into the Bay of Bengal. During its nearly 1,600-mile (2,575-kilometer) course, it flows past the cities of Allahabad and Benares; along with Hardwar, these are considered holy cities in the Hindu religion. In Bangladesh, it joins with the Brahmaputra River to form a vast, swampy delta. The major tributaries of the Ganges are the Jumna, Son, Ramganga, Gogra, Gumti, and Kosi rivers.

The Ganges is also of vital importance in providing water to irrigate crops. A large system of canals carries water from the Ganges and its tributaries to irrigate the wheat-growing areas in the north and the rice lands in the southeast. Together, these rivers provide water to an area that covers about one-quarter of all India, in addition to a large part of Bangladesh. Millions of farmers take advantage of this irrigation system.

Name: _____

Fact Finder

Article Name:

Topic/Main Idea:

Key Details:

- 1 _____
- 2 _____
- 3 _____

- 1 _____
- 2 _____
- 3 _____

New Words:

Most interesting fact I learned: _____



Question I have now: _____

ESL at HOME Gr. 6-8 WEEKS 7-8

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

Monday	Tuesday	Wednesday	Thursday	Friday
<p>Choose a book page, magazine, or newspaper article. Tally how many times you find the words that start with letters:</p> <p>M R E</p>	<p>Go on a shape hunt. Find five things in your house for each shape:</p> <p>Hexagon Trapezoid Equilateral</p>	<p>How many words can you make from this word?</p> <p>educational</p>	<p>List 5 things that can be chemical changes.</p> <p>List 5 things that can be physical changes.</p>	<p>Imagine two of your friends went to your school when no one was there. Write or draw their adventure.</p>
Monday	Tuesday	Wednesday	Thursday	Friday
<p>Hide something in your home. Make a treasure map and let a family member try to find it.</p>	<p>Find four things in your home that are transparent.</p> <p>Find four things in your home that are opaque.</p>	<p>If you had your own restaurant, what would you serve? Write a description of your restaurant and create a menu with prices.</p>	<p>Make a list of all the herbivores, carnivores, and omnivores in your neighborhood.</p>	<p>Get three cups. Put a little bit of soap into each cup. Fill the cups with different amounts of water. Count the minutes it takes for the bubbles to disappear. Which cup's bubbles disappeared first?</p>