Upshur County Snow Packet #1
8th Grade
2018-2019

Just because we're out of school is "sNOw" reason to stop learning!

Instructions: (Read ALL instructions carefully.)

- Packets will be passed out during Advisory.
- Complete Snow Packet #1 when instructed by Parent Link.
- Put the following heading on each assignment:
    - Your Name
    - Teacher's Name for that Subject
    - Class Period
- Return the completed Day 1 assignments to your subject teacher within two days of returning to school.
- Students with an IEP, who are in self-contained classes, will receive their assignments from their Special Education teacher. If they lose their assignments, they will do the packet that is posted on the school's website for their grade level.

Eighth Grade

Day 1:

Use the list below to check off your assignments.

Day 1:

____Math: Study Guide and Intervention: Variables, Expressions, and Properties

____ELA (Reading and English): The Captive (4 Pages)

____Science: Sound and Light (8 Pages)

____Social Studies: Average Temperatures and Employment Trends (2 Pages)

8th Grade Math

Snow Packet

Day 1

NAME DATE PERIOD

Study Guide and Intervention

Variables, Expressions, and Properties

When finding the value of an expression with more than one operation, perform the operations in the order specified by the order of operations.

Order of Operations

1. Perform all operations within grouping symbols first; start with the innermost grouping symbols.
2. Evaluate all powers before other operations.
3. Multiply and divide in order from left to right.
4. Add and subtract in order from left to right.

Example 1 Evaluate the expression $(5 + 7) \div 2 \times 3 - (8 + 1)$.

$(5 + 7) \div 2 \cdot 3 - (8 + 1) = 12 \div 2 \cdot 3 - (8 + 1)$	Add inside the left parentheses.
$= 12 \div 2 \cdot 3 - 9$	Add inside the remaining parentheses.
$= 6 \times 3 - 9$	Divide.
$= 18 - 9$	Multiply.
$= 9$	Subtract.

Example 2 Evaluate the expression $3x^2 - 4y$ if $x = 3$ and $y = 2$.

$3x^2 - 4y = 3(3)^2 - 4(2)$	Replace x with 3 and y with 2.
$= 3(9) - 4(2)$	Evaluate the power first.
$= 27 - 8$	Do all multiplications.
$= 19$	Subtract.

Exercises

Evaluate each expression.

1. $4 \times 5 + 8$
2. $16 - 12 \div 4$
3. $14 \div 2 - 3(5)$
4. $5 - 6 \times 2 \div 3$
5. $2 \cdot 3^2 + 10 - 14$
6. $2^2 + 32 \div 8 - 5$
7. $(10 + 5) \div 3$
8. $5^2 \cdot (8 - 6)$
9. $(17 - 5)(6 + 5)$
10. $3 - 7(14 - 8 \div 2)$
11. $5[24 - (6 - 8)]$
12. $\frac{14}{3^2 - 2}$

Evaluate each expression if $a = 3$, $b = 5$, and $c = 6$.

13. $a - 3b$
14. $4b - 3c$
15. $2a - b + 5c$
16. $(ab)^2$
17. $a(b + c)$
18. $3(bc - 8) \div a$

ELA Snow Packet Directions – 8th Grade

Day 1

1.) Read the article.
2.) Answer the comprehension questions.
3.) Use the ACE method
    - **A-** Answer and restate the question
    - **C-** Cite evidence and use quotation marks when it is a direct quote
    - **E-** Explain the evidence in your own words
4.) Using the ACE method, answer the short answers in at least 1-2 paragraphs with at least 5-8 sentences.
5.) Return the ELA packet to your English teacher within 2 days of your return.

ELA Day 1 Grade [illegible]

THE CAPTIVE

by John R. Musick

There is no more beautiful and thrilling tale of early pioneer days than the story of Helen Patterson. She was born in Kentucky. While she was still a child her parents removed to St. Louis County, Missouri. They lived for a time in a settlement called Cold Water. About the year 1808 or 1809, her father took his family to the St. Charles district. They settled only a few miles from the home of the veteran backwoodsman, Daniel Boone.

At the time of this last removal, Helen was about eighteen years of age.

Shortly after the family had settled in their new home, bands of prowling savages began to roam about the neighborhood. The Indians would plunder the cabins of the settlers during their absence, and drive away their cattle, horses, and hogs.

One day business called all the Patterson family to the village, except Helen. She was busily engaged in spinning, when nine Indians surrounded the house. Resistance was useless. She did not attempt to escape or even cry out for help; for one of the savages who spoke English gave her to understand that she would be killed if she did so.

She was told that she must follow the Indians. They took such things as they could conveniently carry. With their captive they set off on foot through the forest, in a northwestern direction. The shrewd girl had brought a ball of yarn with her. From this she occasionally broke off a bit and dropped it at the side of the path, as a guide to her father and friends, whom she knew would soon be in pursuit.

This came very near being fatal to Helen, for one of the Indians observed what she was doing, and raised his hatchet to brain her. The others interceded, but the ball of yarn was taken from her. She was closely watched lest she might resort to some other device for marking a trail.

It was early in the morning when Helen was captured. Her parents were expected to return to the cabin by noon. She reasoned that they would be in pursuit before the Indians had gone very far. As the savages were on foot, and her father would no doubt follow them on horseback, he might overtake them before dark. The uneasiness expressed by her captors during the afternoon encouraged her in the belief that her friends were in pursuit.

A little before sunset, two of the Indians went back to reconnoiter. The other seven, with the captive, continued on in the forest. Shortly after sunset, the two Indians who had fallen behind joined the others. All held a short consultation, which the white girl could not understand.

The conference lasted but a few moments. Then the savages hastened forward with Helen to a creek, where the banks were sloping, and the water shallow enough for them to wade the stream. By the time they had crossed, it was quite dark. The night was cloudy, and distant thunder could occasionally be heard.

Day 1 ELA

The Indians hurried their captive to a place half a mile from the ford. There they tied her with strips of deerskin to one of the low branches of an elm. Her hands were extended above her head. Her wrists were crossed and tied so tightly that she found it impossible to release them. When they had secured her to their own satisfaction, the Indians left her, assuring her that they were going back to the ford to shoot her father and his companions as they crossed it.

Helen was almost frantic with fear and grief. Added to the uncertainty of her own fate was the knowledge that her father and friends were marching right into an Indian ambuscade.

In the midst of her trouble, she did not forget her pious teaching. She prayed God to send down his angels and release her. But no angel came. In her distress, the rumbling thunders in the distance were unheard, and she hardly noticed the shower until she was drenched to the skin.

The rain thoroughly wet the strips of deerskin with which she was tied. As they stretched she almost unconsciously slipped her hands from them. Her prayer had been answered by the rain. She hastily untied her feet, and sped away toward the creek. Guided by the lightning's friendly glare, she crossed the stream half a mile above the ford, and hastened to meet her father and friends.

At every flash of lightning she strained her eyes, hoping to catch sight of them. At last moving forms were seen in the distance, but they were too far away for her to determine whether they were white men or Indians. Crouching down at the root of a tree by the path, she waited until they were within a few rods of her, and then cried in a low voice, "Father! Father!"

"That is Helen," said Mr. Patterson.

She bounded to her feet, and in a moment was at his side, telling him how she had escaped. The rescuing party was composed of her father and two brothers, a neighbor named Shultz, and Nathan and Daniel M. Boone, sons of the great pioneer, Daniel Boone.

She told them where the Indians were lying in ambush, and the frontiersmen decided to surprise them. They crossed the creek on a log, and stole down to the ford, but the Indians were gone. No doubt the savages had discovered the escape of the prisoner, and, knowing that their plan to surprise the white men had failed, became frightened and fled.

1. How did the rescue party follow Helen?

   a. They could hear her captors.
   b. The pieces of yarn showed them the right direction.
   c. The pieces of yarn led them right to Helen.
   d. They followed the trail the Indians left.

5-7-11 Day 1
Grade 8

2. How did Helen escape?

   a. She knew the rain would loosen her binds.
   b. Helen was able to untie her hands and feet.
   c. Because her hands were above her head, when the strips became loose Helen's hands came right out.
   d. A friend untied Helen.

3. How far do you think Helen traveled after she was freed to find her family and friends? How were you able to calculate this? Why was the trip difficult?

Day 1 Grade 8 Science

Sound and Light

Sound

Before You Read

What do you think? Read the two statements below and decide whether you agree or disagree with them. Place an A in the Before column if you agree with the statement or a D if you disagree. After you've read this lesson, reread the statements to see if you have changed your mind.

Before	Statement	After
	1. Vibrating objects make sound waves.	
	2. Human ears are sensitive to more sound frequencies than any other animal's ears.	

Key Concepts

- How are sound waves produced?
- Why does the speed of sound waves vary in different materials?
- How do your ears enable you to hear sounds?

Read to Learn

What is sound?

Have you ever walked down a busy city street and noticed all the sounds? They all have one thing in common. The sounds travel from one place to another as sound waves. *A* **sound wave** *is a longitudinal wave that can travel only through matter.* Sound waves can travel through solids, liquids, and gases. The sounds you hear now are traveling through air—a mixture of solids and gases.

You might have dived under water and heard someone call you. Those sound waves traveled through a liquid. Sound waves travel through a solid when you knock on a door. Your knock makes the door vibrate. Vibrating objects produce sound waves.

Mark the Text

Identify Main Ideas As you read, underline the main ideas under each heading. After you finish reading, review the main ideas that you underlined.

REVIEW VOCABULARY

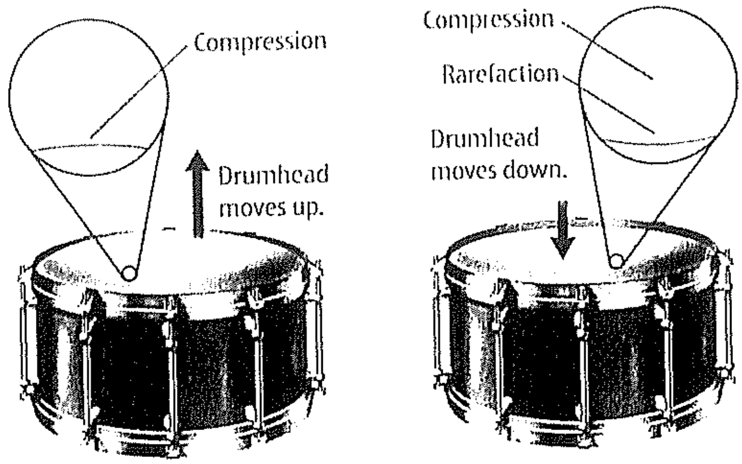
longitudinal wave
a wave in which particles in a material move along the same direction that the wave travels

Vibrations and Sound

Some objects, such as doors or drums, vibrate when you hit them. When you hit a drum, the drumhead moves up and down, or vibrates. These vibrations produce sound waves by moving molecules in air.

Compressions and Rarefactions

As the drumhead moves up, it pushes the molecules in the air above it closer together. The region where molecules are closer together is a compression.



Visual Check

1. Point Out Highlight the air molecules above each drumhead that are part of the compression.

When the drumhead moves down, it makes a rarefaction. This is a region where the molecules in the air are farther apart. As the drumhead vibrates up and down, it produces a series of compressions and rarefactions, as shown in the figure above, that travels away from the drumhead. This series of compressions and rarefactions is a sound wave.

The vibrating drumhead causes molecules in the air to move closer together and then farther apart. The molecules move back and forth in the same direction that the sound wave travels. As a result, a sound wave is a longitudinal wave.

Key Concept Check

2. Explain How do vibrating objects produce sound waves?

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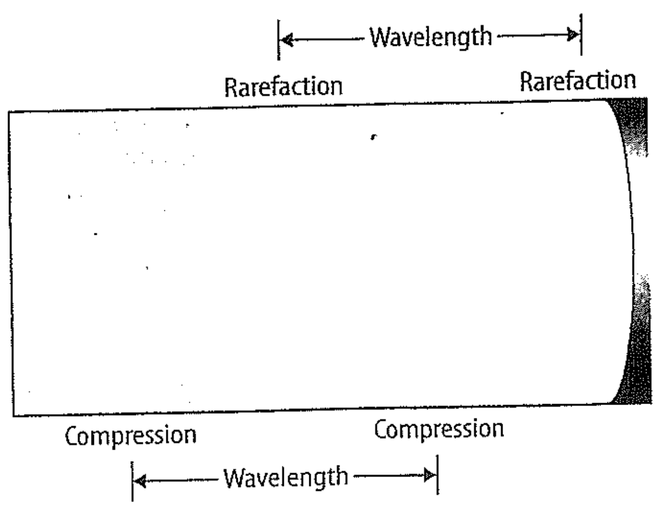
Wavelength and Frequency

Wavelength is the distance between a point on a wave and the nearest point just like it. The figure below shows that the wavelength is the distance between one compression and the next compression or the distance between a rarefaction and the next rarefaction.

The frequency of a sound wave is the number of wavelengths that pass a given point in one second. The faster an object vibrates, the higher the frequency of the sound wave it produces. Frequency is measured in hertz (Hz).



Visual Check

3. Specify How is the wavelength of a sound wave measured?

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Speeds of Sound Waves

Sound waves traveling through air cause most of the sounds you hear every day. Recall that sound waves can also travel through liquids and solids. Like all types of waves, the speed of a sound wave depends on the material in which it travels.

The Speed of Sound Waves in Different Materials

Gases (0°C)		Liquids (25°C)		Solids	
Material	Speed (m/s)	Material	Speed (m/s)	Material	Speed (m/s)
Carbon dioxide	259	Ethanol	1,207	Brick	3,480
Dry air	331	Mercury	1,450	Ice	3,850
Water vapor	405	Water	1,500	Aluminum	6,420
Helium	965	Glycerine	1,904	Diamond	17,500

Sound in Gases, Liquids, and Solids

Sound waves travel at different speeds in different materials. The table above lists the speed of sound waves in different materials. The more dense the material is, the faster a sound wave can move through it. Solids and liquids are usually more dense than gases. Sound waves move fastest through solids and slowest through gases.

A sound wave's speed also depends on the strength of the forces between the particles—atoms or molecules—in the material. The stronger these forces, the faster a sound wave can move through the material.

These forces are usually strongest in solids and weakest in gases. Overall, sound waves usually travel faster in solids than in liquids or gases.

Temperature and Sound Waves

The temperature of a material also affects the speed of a sound wave. The speed of a sound wave in a material increases as the temperature of the material increases.

For example, the speed of a sound wave in dry air increases from 331 m/s to 343 m/s as the air temperature increases from 0°C to 20°C. Therefore, sound waves in air travel faster on a warm, summer day than on a cold, winter day.

Math Skills

Speed (s) is equal to the distance (d) something travels divided by the time (t) it takes to cover that distance:

$$s = \frac{d}{t}$$

You can use this equation to calculate the speed of sound waves. For example, if a sound wave travels a distance of 662 meters in 2 seconds in air, its speed is:

$$s = \frac{d}{t} = \frac{662\ \text{m}}{2\ \text{s}} = 331\ \text{m/s}$$

4. Use a Simple Equation How fast is a sound wave traveling if it travels 5,000 m in 5 s?

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Interpreting a Table

5. Compare Through which material do sound waves move fastest? (Circle the correct answer.)

a. dry air
b. water
c. ice

Key Concept Check

6. Explain Why is the speed of sound waves faster in solids than in liquids or gases?

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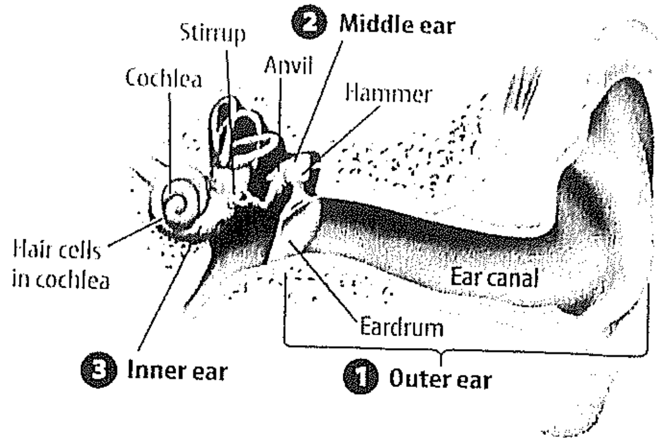
Visual Check
7. Identify In which part of the ear is the cochlea located?



The Human Ear

When you think about your ears, you probably think only about the structure on each side of your head. However, the human ear has three parts—the outer ear, the middle ear, and the inner ear. These parts collect and amplify sound waves and convert the waves into nerve signals. The parts of the ear are shown in the figure above.

1. The Outer Ear

The outer ear collects sound waves. The structure on each side of your head and the ear canal are included in the outer ear. The visible part of the outer ear collects sound waves and funnels them into the ear canal. The ear canal channels sound waves into the middle ear.

Think it Over
8. Analyze Bat-eared foxes have very large outer ears. How do large outer ears benefit these foxes?

2. The Middle Ear

The middle ear amplifies, or strengthens, sound waves. As shown in the figure above, the middle ear includes the eardrum and three tiny bones—the hammer, the anvil, and the stirrup. The eardrum is a thin membrane that stretches across the ear canal. When a sound wave hits the eardrum, it causes the eardrum to vibrate. The vibrations travel to the three tiny bones, which amplify the sound wave.

3. The Inner Ear

The inner ear converts, or changes, vibrations into nerve signals that travel to the brain. The inner ear has a small chamber called the cochlea (KOH klee uh). The cochles is filled with fluid. Tiny hairlike cells line the inside of the cochlea. These cells are sensitive to vibrations. As a sound wave passes into the cochlea, it causes some hair cells to vibrate. The movements of these cells produce nerve signals that travel to the brain.

Key Concept Check
9. Describe What is the function of each of the three parts of the ear?

Frequencies and the Human Ear

Recall that frequency—vibrations per second—is measured in hertz (Hz). The table shows that humans hear sounds with frequencies between about 20 Hz and 20,000 Hz. Some mammals can hear sounds with frequencies greater than 100,000 Hz.

Frequencies Different Mammals Can Hear

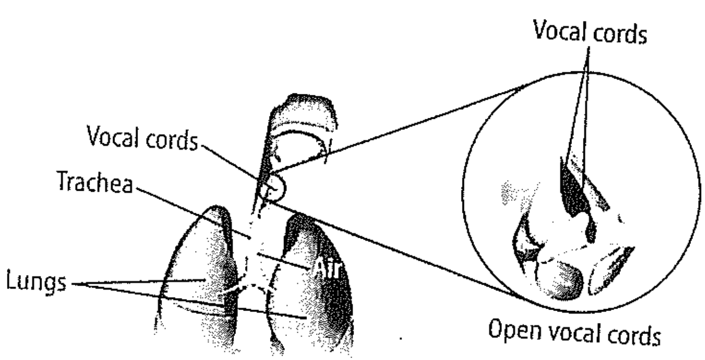
Creature	Frequency Range (Hz)
Human	20–20,000
Dog	67–45,000
Cat	45–64,000
Bat	2,000–110,000
Beluga whale	1,000–123,000
Porpoise	75–150,000

Sound and Pitch

If you pluck a guitar string, you hear a note. A thick guitar string makes a low note. A thin guitar string makes a higher note. The sound a thick string makes has a lower pitch than the sound a thin string makes. *The* **pitch** *of a sound is the perception of how high or low a sound seems.* A sound wave with a higher frequency has a higher pitch. A sound wave with a lower frequency has a lower pitch.

You use your vocal cords to make sounds of different pitches. As shown below, vocal cords are two membranes in your neck above your windpipe, or trachea (TRAY kee uh). When you speak, you force air from your lungs through the space between the vocal cords. Your vocal cords then vibrate, making sound waves that people hear. This is your voice.

You change the pitch of your voice by using the muscles connected to your vocal cords. When these muscles contract, they pull on your vocal cords. This stretches the vocal cords, and they become longer and thinner. The pitch of your voice is then higher, just as a thinner guitar string produces a higher pitch. When these muscles relax, the vocal cords become shorter and thicker, and the pitch of your voice is lower.



Interpreting a Table

10. Compare Which mammals listed in the table can hear a sound with a frequency of 55 Hz?

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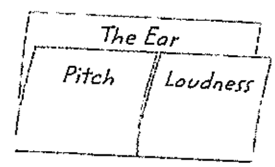
FOLDABLES

Make a two-tab concept-map book to organize information about pitch and loudness.



Visual Check

11. Select Highlight the structure that controls the pitch of the human voice.

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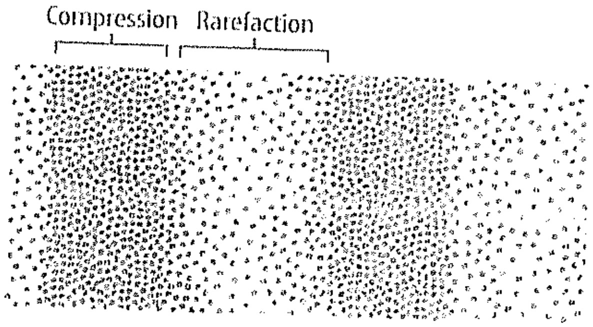
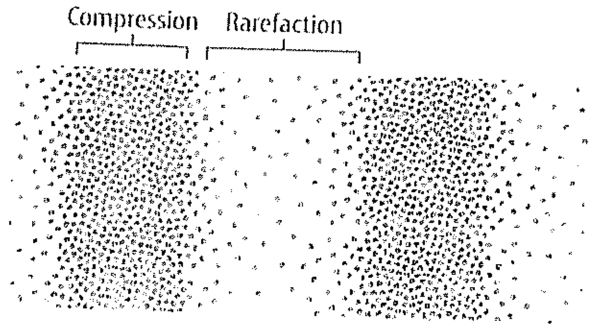


Low-amplitude sound wave



High-amplitude sound wave

Visual Check

12. Contrast How do distances between particles differ in high- and low-amplitude sound waves?

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Visual Check

13. Calculate What is the difference in decibels between a vacuum cleaner and a jet plane taking off?

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Sound and Loudness

Loudness is the human sensation of how much energy a sound wave carries. Sound waves made by a shout carry more energy than sound waves made by a whisper. Because a shout carries more energy, it sounds louder than a whisper.

Amplitude and Energy

The amplitude of a wave depends on the amount of energy the wave carries. The more energy the wave has, the greater the amplitude.

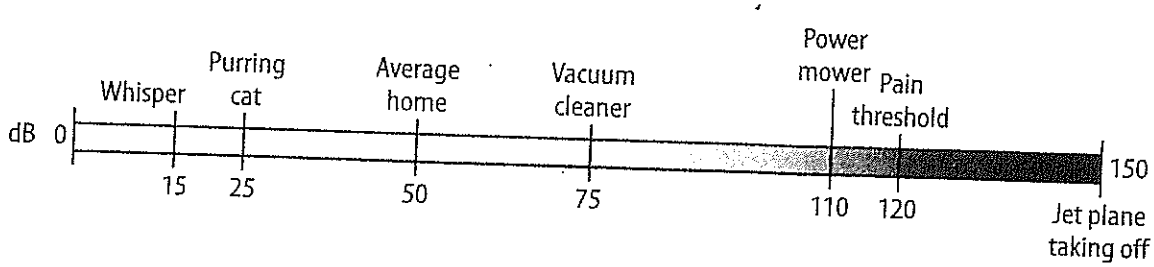
The figure above shows the difference between a high-amplitude sound wave and a low-amplitude sound wave. High-amplitude sound waves have particles that are closer together in the compressions and farther apart in the rarefactions.

The Decibel Scale

The decibel scale is one way to compare the loudness of sounds. The figure below shows the decibel measurements for some sounds.

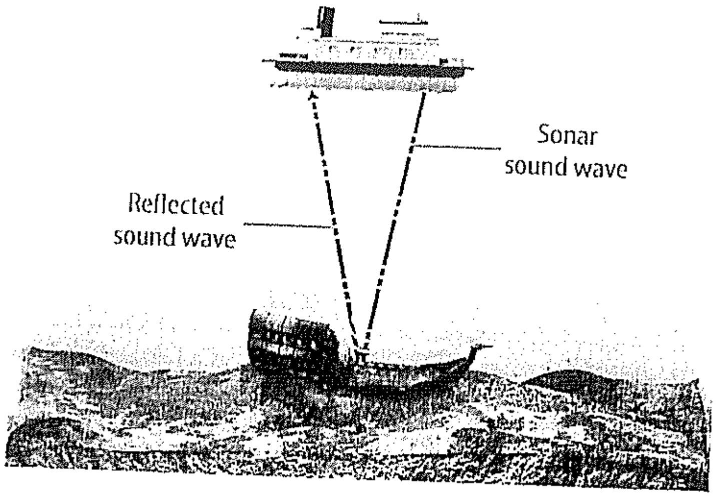
The softest sound a person can hear is about 0 decibels (dB). Normal conversation is about 50 dB. A sound wave that is 10 dB higher than another sound wave carries ten times more energy. However, people hear the higher-energy sound wave as being only twice as loud.

The Decibel Scale



Day 1 Grad 8 Science

Sonar System



Using Sound Waves

If you have ever shouted in a cave or a big, empty room, you might have heard an echo of your voice. *An* **echo** *is a reflected sound wave.* You probably can't tell how far away a wall is by hearing an echo. However, sonar systems and some animals use reflected sound waves to determine how far away objects are.

Sonar and Echolocation

Sonar systems use reflected sound waves to locate objects under water, as shown in the figure above. The sonar system sends a sound wave that reflects off an underwater object. The sonar system calculates the distance to the object by measuring the time difference between when the sound leaves the ship and when the sound returns to the ship. Sonar is used to map the ocean floor and to detect submarines, schools of fish, and other objects under water. ✓

Some animals use echolocation to hunt or to find their way. Echolocation is a type of sonar. Bats and dolphins make high-pitched sounds and interpret the echoes reflected from objects. Echolocation makes it possible for bats and dolphins to locate prey and detect objects.

Ultrasound

Ultrasound scanners use high-frequency sound waves to make images of internal body parts. The sound waves reflect from structures within the body. The scanner analyzes the reflected waves and produces images, called sonograms, of body structures. The images can help doctors diagnose disease or other medical conditions.

Visual Check

14. Identify What is the echo in the figure at the left?

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Reading Check

15. Explain How do sonar systems use sound waves?

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Think it Over

16. Apply When a bat flies in darkness, why is it able to avoid objects in its path?

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Day 1 Grade 8 Science

After You Read

Mini Glossary

echo: a reflected sound wave

pitch: the perception of how high or low a sound seems

sound wave: a longitudinal wave that can travel only through matter

1. Review the terms and their definitions in the Mini Glossary. Write a sentence that describes how animals use sound waves.

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2. Sounds waves travel at different speeds through different types of matter. Place the terms *liquid*, *gas*, and *solid* in the correct boxes below according to the speed that sound waves travel through each. Then find two examples of each type of matter in the lesson and record them below. Also record the speed that sound waves travel through each.

Fastest		Slowest
	→	→

3. How did underlining the main ideas in the lesson help you learn about sound?

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What do you think NOW?

Reread the statements at the beginning of the lesson. Fill in the After column with an A if you agree with the statement or a D if you disagree. Did you change your mind?

ConnectED

Log on to ConnectED.mcgraw-hill.com and access your textbook to find this lesson's resources.

END OF LESSON

8th Grade WV History
Snow Day #1
([illegible])

Name: ______________________________

Average Temperatures in West Virginia

Directions: Use the data in the table below to make a line graph showing average temperatures in four West Virginia cities over a period of thirty years. Use a different color to represent each city in your graph.

DATA

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Beckley	38	41	52	62	72	76	79	78	72	63	52	42
Charleston	41	45	57	67	76	83	86	84	79	68	57	46
Elkins	38	41	52	62	71	78	80	79	74	64	53	43
Huntington	41	44	57	67	75	81	84	83	78	67	56	45

1. Which city had the highest summer temperature?

2. Which city had the lowest summer temperature?

3. Which city had the highest winter temperature?

4. Which city had the lowest winter temperature?

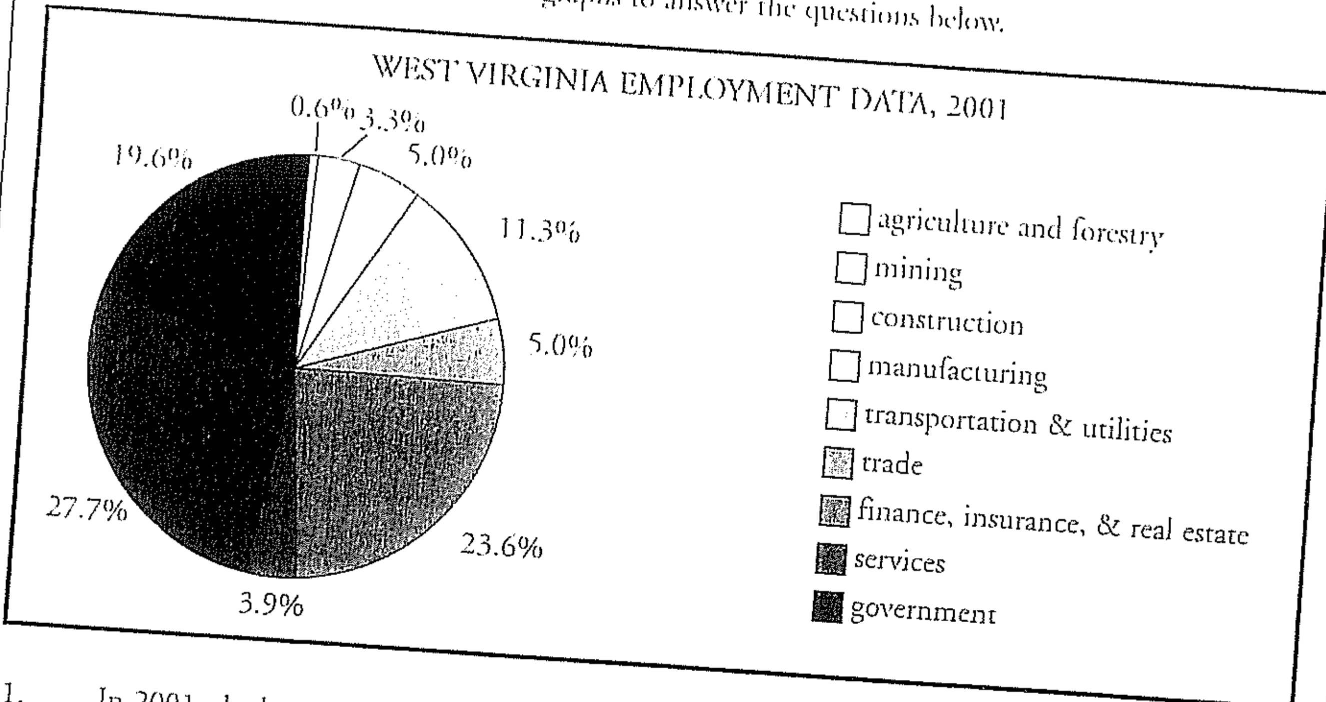
5. What does the graph tell you about average temperatures in West Virginia?

Day 1 Grade 8
Social Studi

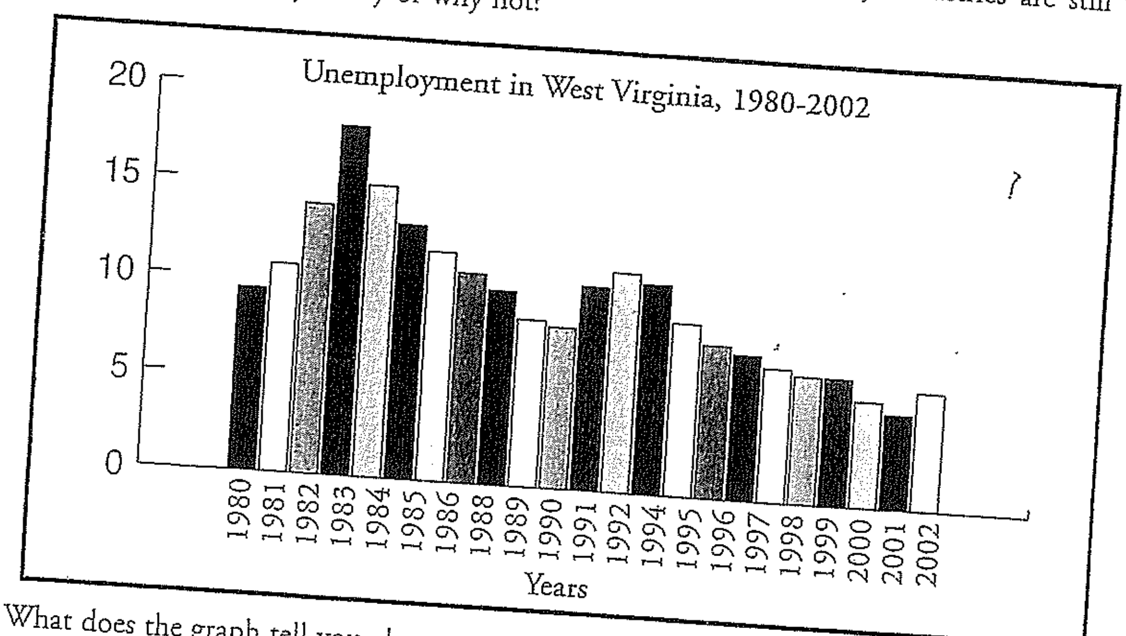
Name:

Employment Trends

Directions: Use the information in the graphs to answer the questions below.



1. In 2001, the largest number of West Virginians were employed in ______________.
2. The least number of West Virginians were employed in ______________.
3. Based on what you read in the chapter about industrial development in West Virginia, do the statistics on the graph support the fact that West Virginia's early industries are still the most important ones today? Why or why not?



4. What does the graph tell you about unemployment in West Virginia between 1980 and 2002?