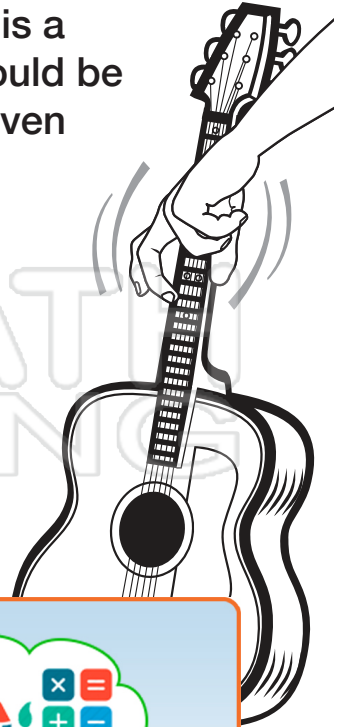
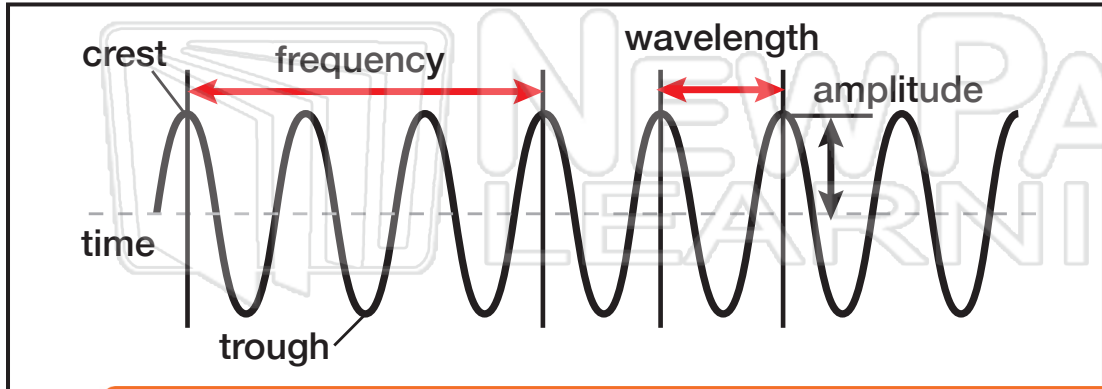




Sound

Name _____ Class _____ Date _____


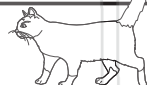


Sound is created by the **vibrations** of an object. A **vibration** is a complete back-and-forth motion by an object. The object could be a guitar string, a drum, the diaphragm of a loudspeaker, or even your vocal cords.



Sound travels through air, water, and solids. Sound cannot travel through a vacuum. Sound travels faster in solids than in liquids or gases. Sound travels faster in water than in air. Sound travels faster in steel than in water. Sound travels faster in diamond than in steel. Sound travels faster in glass than in air.

PREVIEW

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Animal	Frequency range (Hz)
bat 	2,000 to 110,000
cat 	45 to 64,000
human 	20 to 20,000
dog 	67 to 45,000

The **pitch** of the sound determines how low or high a sound seems to be. The pitch of a sound depends upon the frequency of the vibrations that cause it. The **frequency** of a sound is the **number of vibrations** per second. **Frequency** is measured in units called **hertz (Hz)**.








Sound

Name _____ Class _____ Date _____

The **loudness** of a sound depends upon the **amplitude** (height of a sound wave) of the vibrations that cause it. The **bigger** the vibration, the greater the **amplitude** of the waves, and thus the **louder** the sound will be. The **loudness** of sound is measured in units called **decibels (dB)**.

Decibels of Sound

a whisper		10
normal voice		60
train horn		100
jet plane		120
rock concert		140



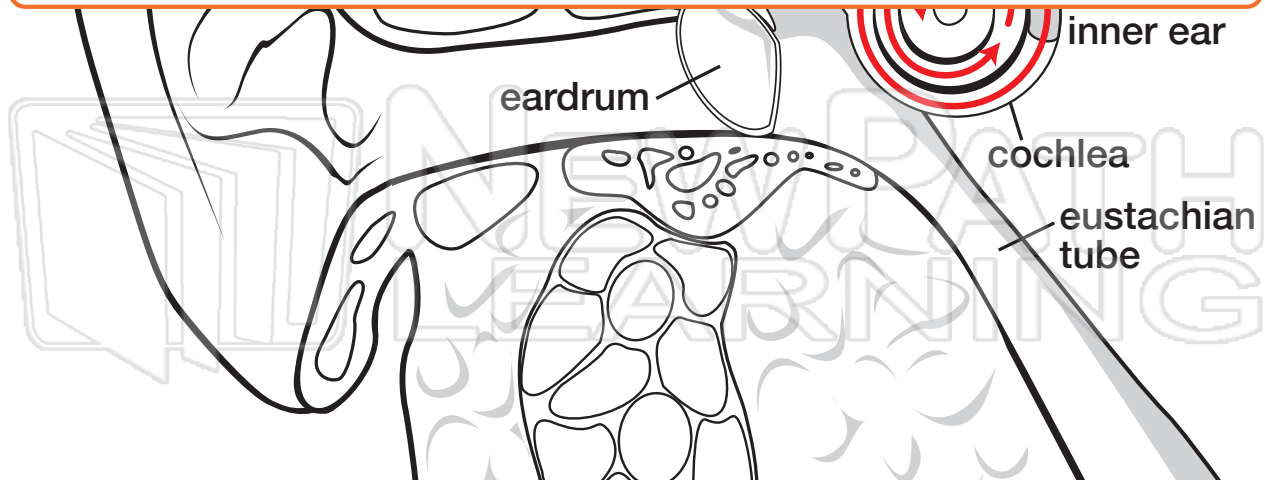
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PREVIEW

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Sound




Name _____ Class _____ Date _____

Use the charts to answer the questions. Fill in the blanks below.

Sound travels at different **speeds** through different matter. In general, the denser the matter, the faster sound travels through it.

The **loudness** of a sound depends upon the **amplitude** (height of a sound wave) of the vibrations that cause it. The **loudness** of sound is measured in units called **decibels (dB)**.

Speed of Sound	
Medium	Speed (m/s)
air (0°C)	331
air (20°C)	343

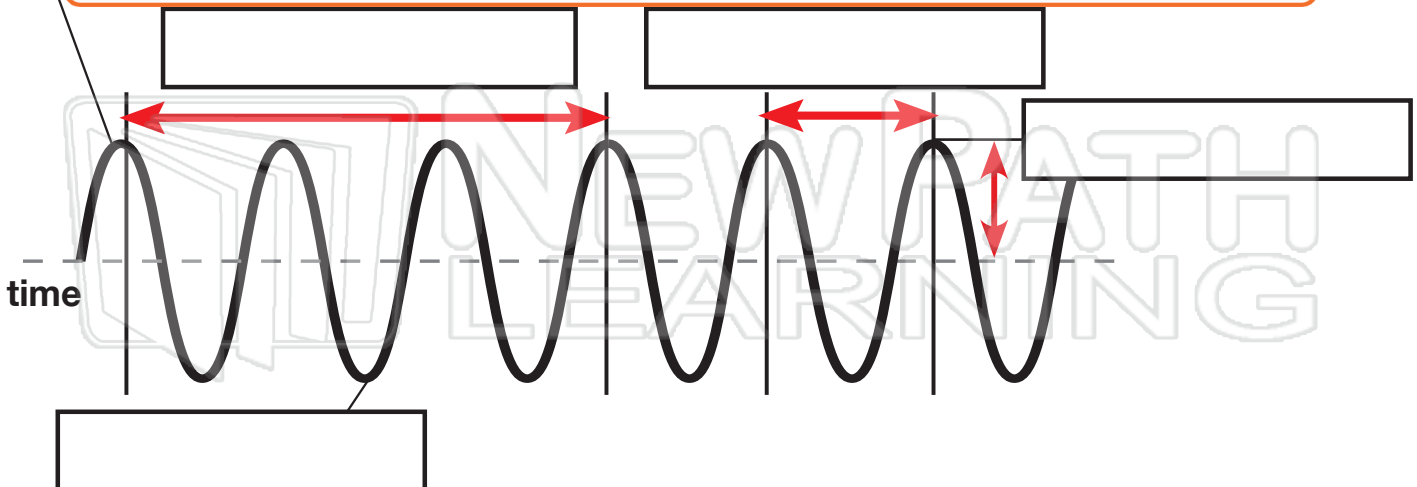
Decibels of Sound		
a whisper		10
normal voice		60
train horn		100



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PREVIEW

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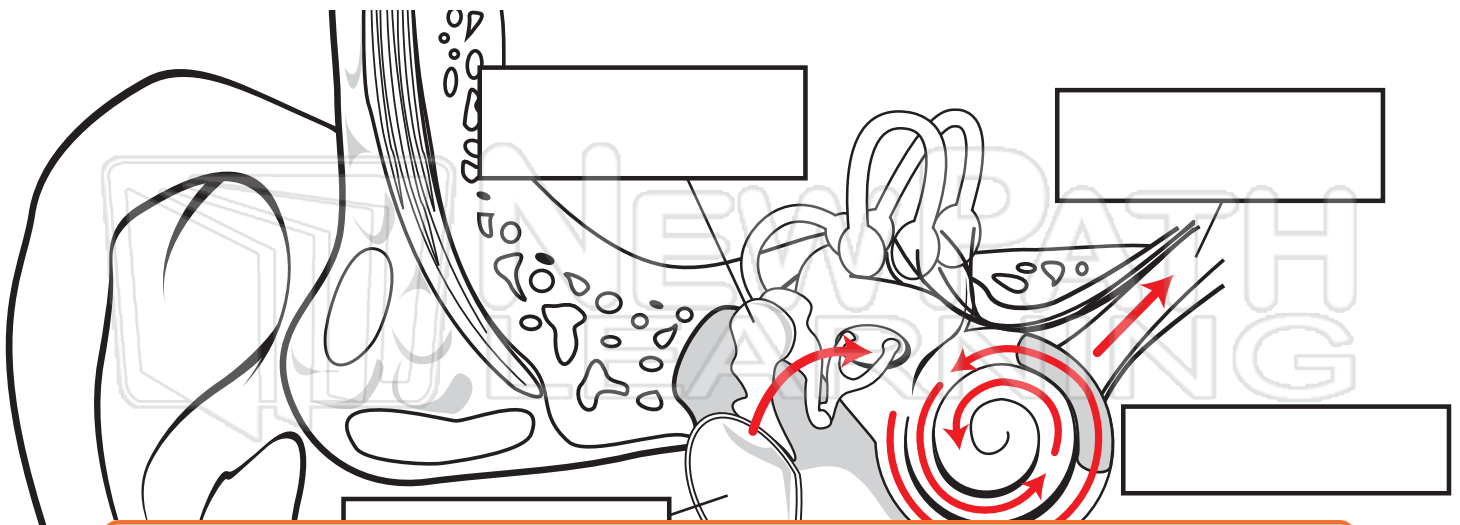




Sound

Name _____ Class _____ Date _____

Label parts of the ear.



PREVIEW

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Brief





Sound




Answer Key

Use the charts to answer the questions. Fill in the blanks below.

Sound travels at different **speeds** through different matter. In general, the denser the matter, the faster sound travels through it.

The **loudness** of a sound depends upon the **amplitude** (height of a sound wave) of the vibrations that cause it. The **loudness** of sound is measured in units called **decibels (dB)**.

Speed of Sound	
Medium	Speed (m/s)
air (0°C)	331
air (20°C)	343

Decibels of Sound		
a whisper		10
normal voice		60
train horn		100



Which

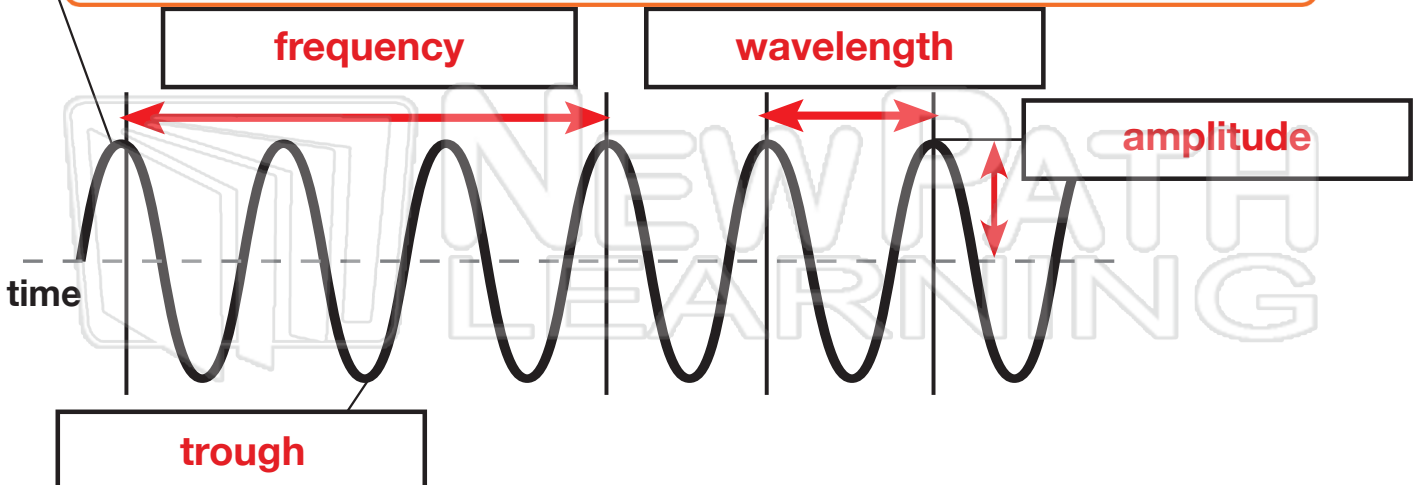
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PREVIEW

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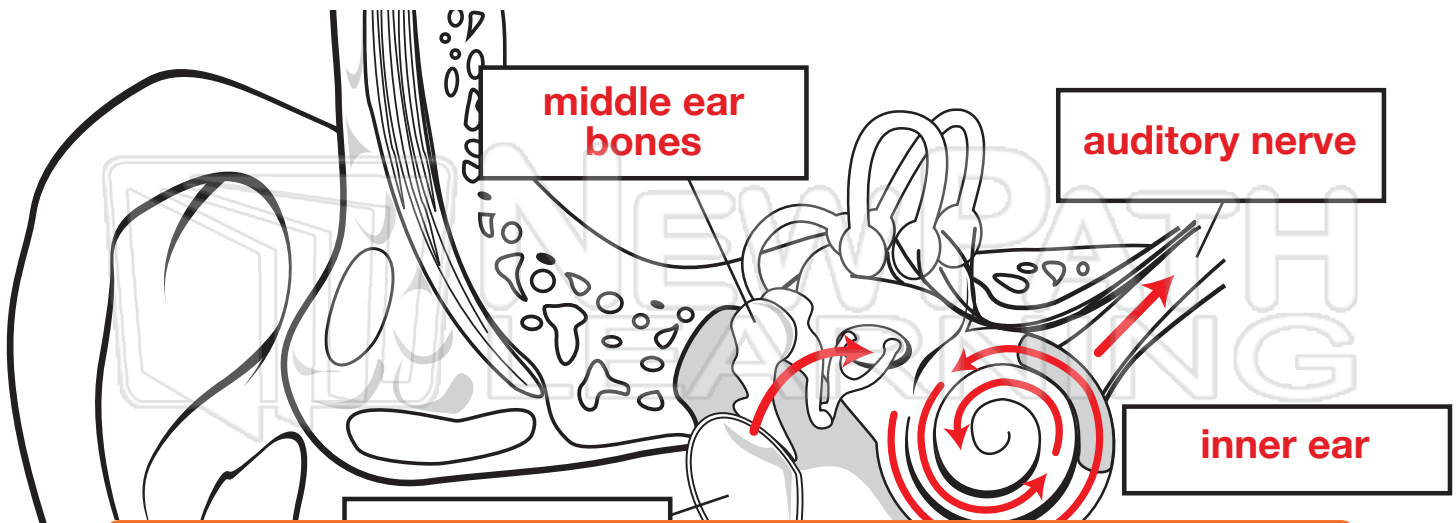




Sound

Answer Key

Label parts of the ear.



PREVIEW

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small bones in the middle ear carry these vibrations to the cochlea.

The cochlea contains tiny hairs, which vibrate and send messages to the brain that are interpreted as sound. The auditory nerve carries messages from the cochlea to the brain.