The Ear and Sound

lesson ●1 Sound

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Commented [1]: Very good work!

1. Determine How many compressions can be seen in the wave in the figure?
There are three compressions seen in the chart. P. 140(paragraph 1)

2. Explain What two things create a sound wave?
The compressions and rarefactions form a sound wave. P. 140(paragraph 2)

3. Use Diagrams How many decibels is the sound level of a purring cat?
There are 25 decibels in the sound level of a purring cat. P. 141 (chart)

4. Explain How are pitch and frequency related?
Pitch relates to the frequency of the sound. The pitch of a sound is how high or how low the sound is. The higher the pitch of a sound is, the higher the frequency of the sound. The words pitch and frequency are often used to mean the same thing. p.142(paragraph 1)

5. Compare Which species in the table can hear the largest range of sounds?
Beluga whale 1,000–123,000. P. 142.(chart)

lesson ●2 The Ear and Hearing

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1. Identify Where are the malleus, incus, and stapes of the ear located? (Circle the answer.)
a. outer ear
b. middle ear
c. inner ear

2. Describe How can you adjust the pressure in the eustachian tube?
You can adjust the pressure in the eustachian tube and in your middle ear by swallowing. You may have yawned or chewed gum when on airplanes or in elevators to help equalize the pressure in your middle ears.p. 144(paragraph 2)

3. Identify What type of sound does not bend the hairs in the sensory cells of the cochlea very much?
a. a loud sound
b. a soft sound
c. high-frequency sound
The brain can also determine the loudness of a sound. The further a hair is deflected, or bent, the louder the brain recognizes the sound to be.p.145(paragraph 1)

4. Compare What is the difference between conductive hearing loss and sensorineural hearing loss?
Conductive hearing loss usually can be treated. For example, if fluid has accumulated in the middle ear that resulted in infection, medicine can clear up the infection and restore hearing. sensorineural hearing loss, however, is permanent. Such damage can only be corrected with hearing aids.p.145(paragraph 4)

5. Name one advantage of redirecting sound.
Redirecting sound into their external ears can also help animals detect the smallest sounds, giving them the ability to hear predators and prey more easily.p.146(paragraph 1)

6. Contrast What is the difference between redirecting sound and echolocation?
Redirecting sounds help animals to determine which direction sound is coming from. Redirecting sound into their external ears can also help animals detect the smallest sounds, giving them the ability to hear predators and prey more easily.
Echolocation is a method that some mammals use to navigate and hunt. Bats, for example, make high-frequency calls and then listen for echoes. A bat can determine the position and identity of an object when it hears an echo.p.146(paragraph 1,2)