Reading 87

Read the text 'The loudest sound you've never heard' and do the tasks that follow.

The Loudest Sound You've Never Heard

1 What do elephants, whales, alligators, hurricanes, and manmade explosions all have in common? They all can create infrasound, a mysterious sound that humans cannot hear. Humans can only hear sounds within a certain range of frequency. The frequency (the number of cycles of vibration per second) of sound is measured in a unit called a hertz. Humans can hear sounds from 20 Hz (hertz) to 20kHz (20,000 hertz), but scientists are able to measure sounds at much lower hertz. Infrasound is less than 20 hertz, which is a frequency too low for humans to hear.

2 Scientists first became aware of the existence of infrasound in 1883, when the gigantic explosion of the Krakatoa volcano in Indonesia resulted in windows breaking hundreds of miles away and barometric pressure readings going haywire around the world. Scientists realized that the volcano created a massive yet inaudible infrasound, sweeping through the air around the world.

3 Modern scientists are now collecting large amounts of infrasound data from measuring stations around the world. They have discovered that infrasound can be created by explosions, ocean storms, hurricanes, auroras (northern lights), and air turbulence. As they learn more about the infrasound patterns associated with certain situations, scientists can use the information to predict storms, volcanoes, and other disturbances. For example, airplanes are often tossed up and down by clear air turbulence, invisible air pockets that are not associated with bad weather. If meteorologists can distinguish the infrasound of air turbulence, they can warn pilots to avoid the dangerous areas.

4 Infrasound can also be measured as it travels through the earth and ocean. Scientists are now measuring the rumblings of earthquakes and the powerful roars of volcanoes before they can be heard by humans. For example, researchers placed special microphones near the opening of Antarctica's Erebus volcano. Even though they could hear practically nothing on the earth's surface, the underground devices measured a great deal of infrasound. Before the 1998 eruption of the Sakurajima volcano in Japan,

infrasound instruments recorded a sharp increase in the frequency and power of the infrasound. Geologists have learned that infrasound is better for predicting a volcano than seismographic activity.

5 To some creatures in the animal world, infrasound is loud and clear. Elephants make infrasounds that can be heard by other elephants up to 10 kilometers away, and can be heard through the ground up to 32 kilometers away. Infrasound travels much further in water, allowing some types of whales to communicate with each other across thousands of miles. Some birds use infrasound to navigate, and rock doves have heard infrasound measured at 0.5 Hz, an extremely low frequency. Understanding infrasound and how animals use it can increase our knowledge about animal behaviour, but it can also show how our actions can disrupt these important sounds. For example, infrasound from supersonic jets, ships, and wind turbines has been shown to disrupt other natural infrasounds, leading animals to become confused and disoriented.

6 Even though we humans can't hear infrasound, there is some evidence that we are affected by it. In a 2003 experiment in the United Kingdom, 750 concertgoers listened to four separate musical pieces. Unknown to the attendees, some of the music pieces were accompanied by infrasound. After the concert, 22% of the concertgoers reported feeling troubled by uneasiness, chills, and nervousness during the infrasound sections of the concert. There are many stories of people being affected by infrasound, but most of these lack true scientific evidence. More research need to be done to support claims that people are affected in predictable ways by infrasound.

Task 1. Read the main idea statements below (a–f) and match them with the relevant paragraphs (1–5). There is one extra statement, mark it with an X. Example.

a. Infrasound — heard by animals. 5

b. Can be created by many natural events
c. How infrasound affects humans
d. Can create health problems in humans
e. Discovery of infrasound
f. Travels through earth and ocean; can be measured
g. Infrasound — less than 20 hertz, very low

Task 2. Read the sentences about "The loudest sound you've never heard". Write T (True) or F (False).

1. Scientists cannot measure sounds that are less than 20 hertz.
2. Meteorologists can use data about infrasound to predict air turbulence.
3. Before a volcano erupts, there is a great decrease in infrasound.
4. Some birds use infrasound to navigate.

Reading 87 — Keys

KEYS

TASK 1.
b–3, c–6, d–X, e–2, f–4, g–1.

TASK 2.
1–F, 2–T, 3–F, 4–T.

EXPLANATIONS

1 What do elephants, whales, alligators, hurricanes, and manmade explosions all have in common? They all can create infrasound, a mysterious sound that humans cannot hear. Humans can only hear sounds within a certain range of frequency. The frequency (the number of cycles of vibration per second) of sound is measured in a unit called a hertz. Humans can hear sounds from 20 Hz (hertz) to 20kHz (20,000 hertz), but scientists are able to measure sounds at much lower hertz. Infrasound is less than 20 hertz, which is a frequency too low for humans to hear.

= discovered

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These are natural events

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