Chapter 7: Sounds

Lesson A: How are Sounds Made (7.1)

Name :_____

Date :_____

1. Sounds are made when objects vibrate.
   What is a vibration? Circle the correct answer.

a back-and-forth movement

a circular movement

an upward movement

2. Sounds can travel through various materials to our ears.
   Complete the sentences. Choose from the following words.

air	faster	heat	slower	water	vibrations

Sound travels faster in water than it does in air.

This is because the particles are closer together in water than in air.

The particles can quickly pass on the vibrations from one particle to the next.

3. What can happen when an object vibrates?

Tick (✓) the **two** correct answers.

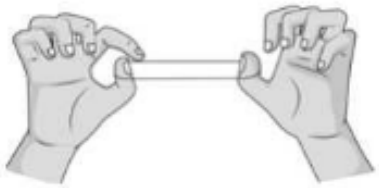
It can make the air particles around it vibrate.	✓
It does not affect the particles around it.	
The vibration can travel through different types of matter.	✓
The vibration cannot travel through solids.	

4. A vacuum is a space without any air or other matter.

Explain why sound cannot travel through a vacuum.

Sounds are transferred when the particles vibrate. In a vacuum there are no particles to vibrate. so sound cannot be transferred .

5. Hassan plucks a rubber band.



a. How does the rubber band make a sound?

The rubber band vibrates.

b. Describe how the sound is able to travel through the air to Hassan's ear.

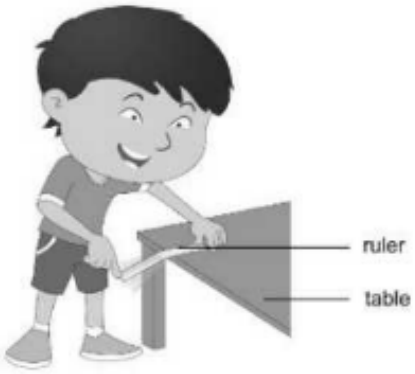
When the rubber band vibrated, the air around it also vibrated leading to the transfer of sound vibrations into his ears.

Lesson B: Pitch and Volume (7.2)

Name :_____

Date :_____

1. When Rudy flicked a ruler, he heard a sound.



a. Describe the way the ruler made the sound.

The ruler vibrated

b. How did the sound reach Rudy's ears?

The air particles around the ruler vibrated, transferring the vibrations into his ears.

c. What can Rudy do to make the ruler produce a louder sound when he flicks it?

Apply more force /flick it harder

d. Rudy later placed a longer ruler over the edge of the table. Predict whether the sound made by the ruler will be higher or lower in pitch.

Lower pitch

2. What instrument can you use to measure sound levels?

Sound meter /sound decibel meter /sound level meter

3. The sounds in this table have sound levels 10 dB, 60 dB, 85 dB, 120 dB and 130 dB. Complete the table to match the correct sound level to each sound.

Sound	Sound level (DB)
hairdryer blowing	85
human breathing	10
aeroplane taking off	130
background music playing	60
siren sounding	120

a. Which **two** sounds in the table can harm our ears?

aeroplane taking off /siren sounding

b. Write down two ways you can protect your ears from these loud sounds.

1. wear earmuffs

2. sound proof the surroundings.

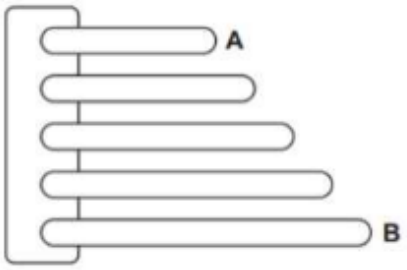
4. Andrew is playing the guitar.

He plucks the strings of the guitar to produce sounds.

What can Andrew do to increase the volume of the sounds? Explain.

Apply more force/ pluck it harded. The more force applied the bigger the vibrations the louder the sound

5. The children made a musical instrument from sticks.



Complete the sentence to show how the musical instrument works.

a. The sticks make a sound when they are hit because they vibrate.

b. Stick A makes a higher note than stick B.

What word describes how high or low the note is? pitch

c. What can they do to get stick A make a louder sound?

apply more force

6. Lily investigates how different surfaces affect the loudness of sound.
She drops a pen onto a surface and listens to the sound it makes.
Lily describes the loudness of the sound using numbers.
Number 1 is the quietest and number 10 is the loudest.
Here are her results.

surface	loudness of sound
A	8
B	3
C	9
D	3
E	1

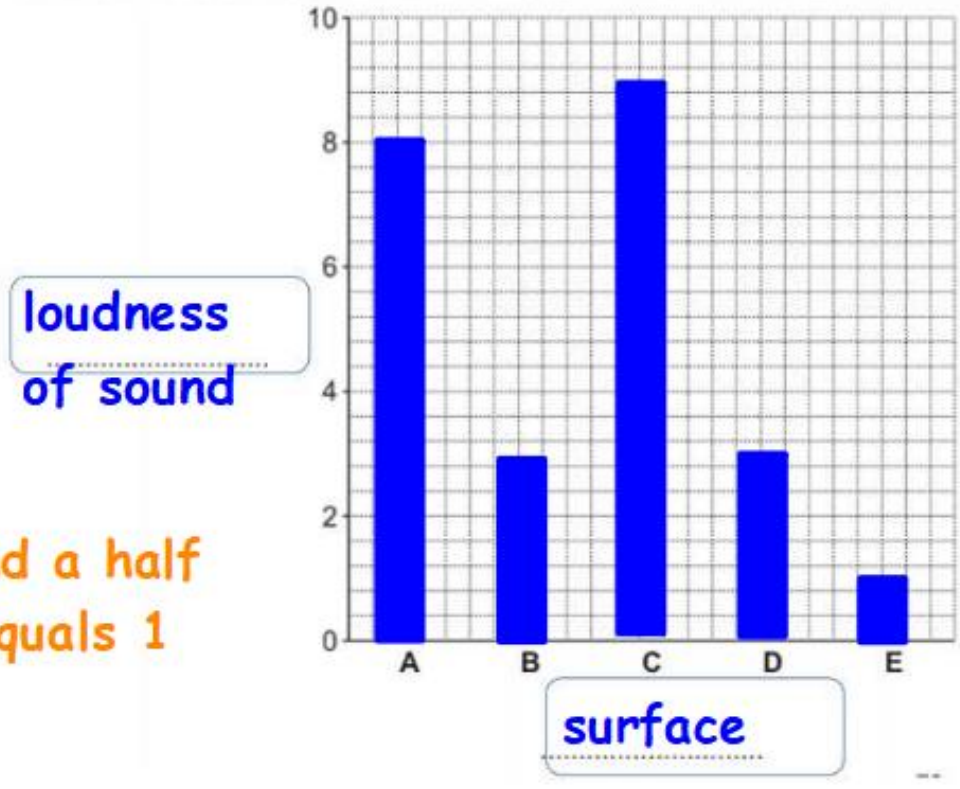
a. Which surface made the loudest sound?
Circle the correct answer.

A B C D E

b. What equipment should lily use to measure the loudness of the sound?

sound meter

c. Complete the bar chart to show the loudness of sound for each material.



each 2 and a half squares equals 1

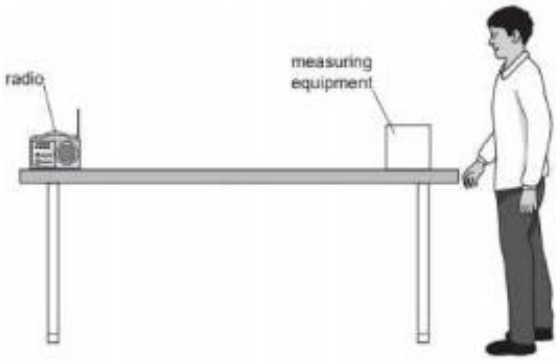
d. Complete these sentences about sound.

Sound is made when an object vibrate .

Loud and quiet describe the volume of a sound.

High and low describe the pitch of a sound.

7. Carlos has a radio on a table.



Carlos measures the distance from the measuring equipment to the radio.

Carlos measures the volume of the sound from the radio.

Write the name of the measuring tools used to

a. measure the distance between the r and equipment: tape meter ruler measuring tape

b. measure the volume of sound : sound meter