

中学生趣味英语阅读丛书

长风 编译

物理迷宫



中国广播电视出版社

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SOUND

INTRODUCTION

The world is filled with many interesting sounds. Some are unpleasant to our ears while others are very pleasant to hear. In a single day you probably hear hundreds of different sounds.

All sounds are different. Some may be soft; others may be loud. Some sounds are high; others are low.

Some sounds are useful. Without sound we cannot talk or listen to one another. The ringing alarm clock wakes people up. The hooting of a horn on the road warns careless people of danger.

Some sounds are harmful. Very loud sounds produced by huge planes which fly low over the land can cause damage to houses. Loud sounds will disturb people. Very loud sounds can even make people deaf or prevent them from hearing clearly.

Things to Do

- (I) Collect as many solids as you can, for

example, coins, rocks, tins, pieces of wood and glass.

Take two similar objects and knock them together. Then take different objects and knock them together. Try to make as many different sounds as possible.

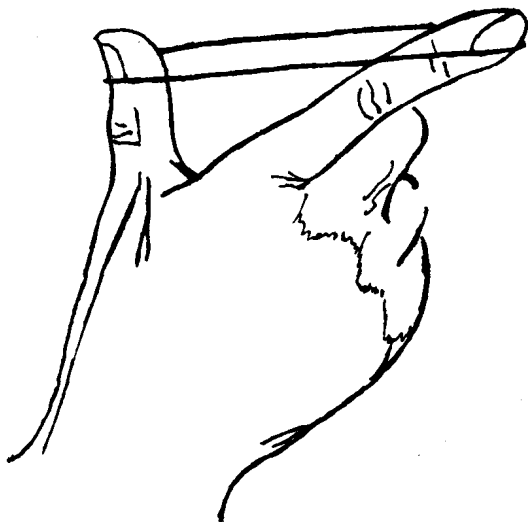
- (II) Next take two similar objects and rub them together. Then take different objects and rub them together. Try to make as many different sounds as possible.

HOW WE MAKE SOUNDS

Whenever you hear a sound, find out where it comes from and what causes it. We make sounds by making things move to-and-fro. This to-and-fro movement is called **vibration**. It means moving up and down or forwards and backwards very fast. These vibrations cause the air to vibrate. This makes **sound waves**.

Things to Do

- (I) Hold a long ruler on the table, so that two-thirds of the ruler is jutting off the table. Pull down on the free end of the ruler and let go. See the ruler vibrate. Can you hear a humming sound?

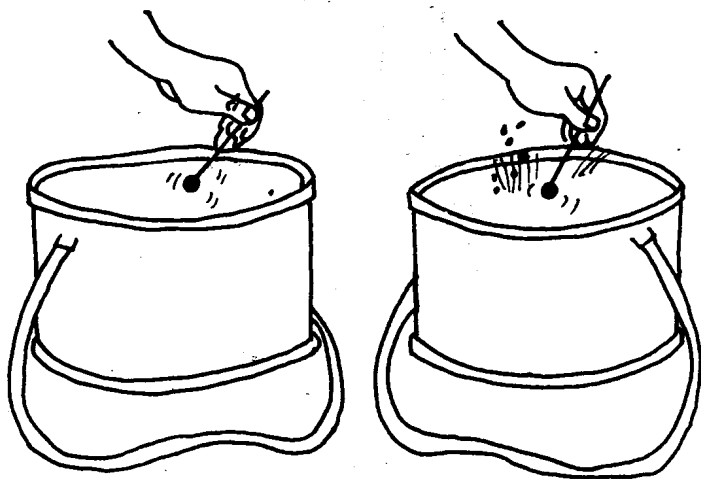


A vibrating rubber band

- (II) Take a rubber band. Hold it between your index finger and thumb as shown in the picture. Pluck it. What do you

notice? Can you hear it humming?

(III) Strike a drum. You can hear the sound but you cannot see the drum moving. Put some small stones on the drum. Strike the drum again. The stones will jump up and down. This shows that the drum is vibrating.



To show vibration

We can make sounds in many ways e. g. by shouting, clapping our hands and banging the

table. We can make sounds only by making things vibrate. Sometimes these things vibrate so fast, or so slightly, that we cannot see them vibrating.

We can talk because we can make our **vocal cords** vibrate. Our vocal cords are in a sound-box or **voice-box**. Feel your throat gently. You can feel a hard lump. It moves up and down when you speak. This is your voice-box. Two vocal cords are stretched across it. They vibrate when your lungs force the air through them.

Things to Do

Let us make sound go through things :

- (I) Take a piece of tubing, about one metre long, and ask your friend to hold one end to his ear. whisper something through the other end of the tubing. Now remove the tubing and whisper to him again. Ask him whether it is easier to hear when you are whispering through the tubing or whispering without the tubing. what does

this show?

- (II) Take a clean empty tin and cup it over your mouth. Talk into it. Can the other children hear what is said? What does this show?

SOUNDS MADE BY ANIMALS

Animals can make sounds too. Different animals can make different sounds, but they all must make some part of their body vibrate.

(A) Birds can chirp and sing because they have voice-boxes. Many of them have two voice-boxes—one for singing and one for calling or warning other birds.

(B) Bees can make a buzzing sound because their wings move up and down very fast. They have no voice-boxes.

(C) Bull-frogs croak by using the voice-boxes in their throats.

When they croak they puff up their throats like balloons.