



Light, Force and Sound

- Learn more about light
- Understanding force
- Understanding sound



WARM-UP

1. Simi, Rahul and Rosy went to the garden at different times of the day. Indicate where the shadows will be formed in each case.



LIGHT

Many objects around us, like sun, a bulb, a diya and a candle, give out **light**. Such objects are called **luminous objects**.

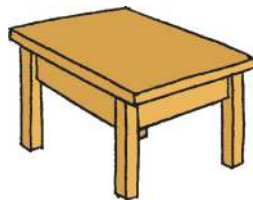
Name a heavenly body that does not have light of its own.

Most objects around us, like tables, vegetables and books, do not give out light. Such objects are called **non-luminous objects**.

We can see non-luminous objects only when light falls on them.



▲ *luminous objects*



▲ *non-luminous objects*



A shadow is formed when something blocks the path of light. Shadows are longer in the mornings and evenings. They are shorter in the afternoons.

FORCE

Place a football on the classroom floor. Make it roll.

How did you make it move?

Once the ball is rolling, make it change its direction.

How did you do this?

Now, make the rolling ball stop.

What did you do to make the ball stop?

The push that you gave to the football to make it move, to change its direction and to stop it is called **force**.



▲ *a boy with a football*

Take your chair to the front of the class. Now bring it back to your seat. How did you do this?

You can push the chair or pull it to change its position. This push or pull is called force. Force helps us to do many things.

Force can—

- move an object.
- stop a moving object.
- change the direction of an object.



▲ *a boy pushing a table*



▲ *a child pulling a toy*

SOUND

Sound can be heard all around us. When we talk, we produce sounds. A special part in the neck produces sound. The tongue, lips and mouth convert the sound into words.

Sounds can be soft, loud, pleasant, unpleasant, etc. For example, you talk very softly while playing chinese whispers.



▲ *soft sound*



▲ *loud sound*



▲ *pleasant sound*



▲ *unpleasant sound*

Think about the different sounds that you heard while coming to school today. Write down at least six of them.

Unpleasant sounds are called **noise**. They are harmful for our ears.

Out of all the sounds that you heard in the morning, name the sounds that were not pleasant.

Music, the sound of birds twittering or someone singing is nice to hear. These are pleasant sounds. Loud music, honking of horns, people screaming are all noise and can cause damage to our ears.

So, we should keep the volume of music low, not listen to TV programmes at a high pitch and speak softly so as not to disturb anyone.



Info Bits

Light travels faster than sound.
That is why you see lightning
before you hear thunder.

light: something that makes vision possible

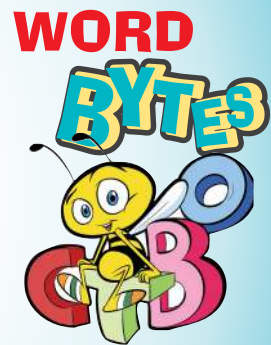
luminous objects: objects that give out light of their own

non-luminous objects: objects that do not give out light of their own

force: a push or a pull

sound: something that produces sense of hearing

noise: an unpleasant sound



WORD BYTES



- Sun, bulb, diya, etc, are some examples of luminous objects.
- Chairs, tables, books, etc, are some examples of non-luminous objects.
- Force can make an object move, stop a moving object and change the direction of an object.
- Sound can be soft, loud, pleasant and unpleasant.



REVIEW ZONE

A Tick (✓) the correct answer.

1. The sounds produced by barking of a dog, screaming of a child and generators in big factories is
 - a. loud and pleasant.
 - b. soft and unpleasant.
 - c. loud and unpleasant.
 - d. soft and unpleasant.
2. Shadows are in the mornings and evenings. Shadows are in the afternoons.
 - a. very short, very long
 - b. longer, shorter
 - c. shorter, longer
 - d. none of these

B Choose the most suitable word from the following and fill in the blanks.

moving neck light harmful good direction

1. Sound is produced in a special part of the
2. Force can make an object move, stop a object and change the of an object.
3. We can see non-luminous objects only in the
4. Loud noise is to our ears.

C State whether the following statements are TRUE or FALSE.

1. Soft sounds are called noise.



2. A washing machine is a luminous object.
3. Force can make an object move.

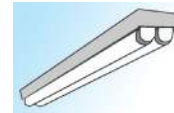
D Match the following:



luminous object
pleasant sound
unpleasant sound
noise
force



E Circle the luminous objects with a red pencil.



F Answer the following questions.

1. What is force?
2. What is a luminous object?
3. State three effects that force has on objects.
4. What are non-luminous objects?
5. Why is noise harmful for us?



HOTS CORNER

1. Ms Chugh has bought a new washing machine. But after a month the machine started making a lot of noise. What should Ms Chugh do so that the machine makes less noise.
2. Name a heavenly body that is luminous and another heavenly body that is non-luminous.

3. Write whether each of the following pictures shows a PULL or PUSH.









ENHANCE YOUR LIFE SKILLS

1. Name the sound that the following animals make.



__ U __ _ _



G __ U __ _



H __ _ _

2. Do you know that loudspeakers are not allowed to be used in public places after a certain time at night? Why do you think this rule has been made? Find out the time at which loudspeakers should be switched off in your city.



ONLY A CLICK AWAY

1. Red fort, also called *Lal Quila*, is located in Old Delhi. It was built by Shah Jahan. It is a venue for amazing 'sound and light' show which lasts for about an hour. The show displays the history of Delhi and that of the fort. To know more about the details, log on to

<http://www.delhitourism.com/dttcd/index.htm>

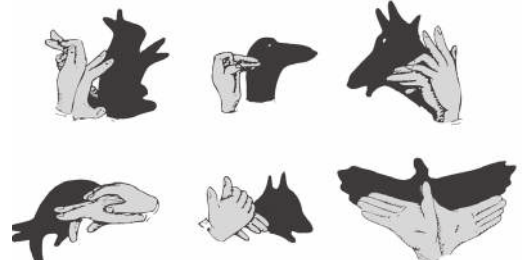
Sound and light shows are shown at many other places like Amber fort (Rajasthan) and Golconda fort (Andhra Pradesh).





ACTIVITY BAG

1. Take a plain white sheet. Request someone to throw light on the paper with a torch. Use your hands to make animal shadows. The animal shadows can be seen on the plain white sheet. This works best at night or in a dark room.



2. Divide the class into two groups. Now play the sport 'Tug of War'. The team which applies more force and pulls the other team wins.



3. Shadow dance is a fun way of playing with your shadow. People dress up in costumes made up of different colours, masks and toys. A large white screen is put up. A light is placed behind the screen. People dance between the screen and light so that their shadow forms on the screen.



Teacher's Notes

- Teacher can demonstrate in class how force can make object start/stop to move and change direction than rough. So we slip more easily on a smooth surface.
- Let the students observe and write down the different kinds of sound they hear. Tell them to classify these as pleasant and unpleasant.