SCIENCE

Lesson 1

Year 1

Topic: Exploring light and sound

Examining light and sound in our world

Lesson concepts

- Light and sound are produced by a range of sources and can be sensed
- People use science in their daily lives
- Questioning can obtain responses
- Investigations can explore and answer questions
- Observations can be compared with others
- Observations and ideas can be represented and communicated

Today students will:

► understand that light and sound can be observed in everyday life, using the senses.

Resources

Digital

Video — Active blue creating sounds (3:03)

Slideshow — Light in our world

Sheet

Sheet 1 — Word cards

Find and prepare

At least six objects that emit sound and/or light, including a torch (for example: boxes, tins, kitchen utensils, kaleidoscopes or other light toys, stained glass window, music playback device, musical instruments, toys that light up or make a sound)

Camera (optional)

Key terms

light, observe, science, senses, sound

For definitions and explanations of terms, please see the Glossary.

Learning alerts

Be aware of students describing light and sound using prior knowledge rather than actual observations.

Suggested next steps for learning

- Encourage students to use their observations to describe light and sound.

Lesson

Explore light and sound

Say to students

"This lesson is about light and sound. I am sure you already know quite a lot about light and sound."

Focus questions

Q. *Tell me some things you have observed about light.*

A. For example: We have lights in our home to help us see, the sun gives us light, lights can be different colours, we light candles on our birthday cakes.

Q. *Tell me some things you have observed about sound.*

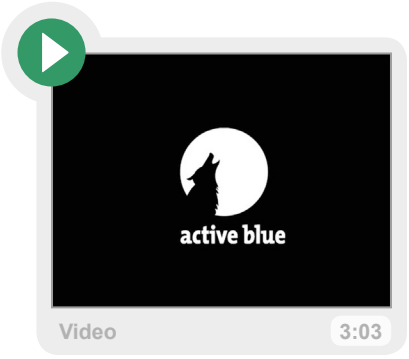
A. For example: We hear sounds, sounds can be loud or soft, machines make sounds, we can make sounds when we talk and sing.

Say to students

"We are now going to watch a video that has lots of sounds in it and also some light. Look closely and then we will discuss what you observed."

1. Display and view the **Video — Active blue creating sounds**.

   In this short video, some sound recording artists use instruments and objects in the recording studio to make individual sounds that are compiled into a repeated tune. They also use machines to monitor the recordings, which have light displays.



activeblue, *active blue creating sounds* http://www.youtube.com/watch?v=t72BxiS_MTw

Focus questions

Q. *What objects were used to make the different sounds?*

A. For example: Tape, a drum, a keyboard, a handle, a microphone, air from a can, a plug, a zip

Q. *Which sense do we mostly observe sounds with?*

A. Our sense of hearing

Q. *What do we call it when there are no sounds to be heard?*

A. Silence

Q. *Why might some people not be able to hear sounds?*

A. For example: The hearing part of their ear is damaged; they are said to be deaf. They use all their other senses to work out what sounds are being made.

Q. *Where in the video did you notice some light?*

A. There were lights on the machines that were recording the sounds. There was also light all around in the studio so they could see what they were doing.

Say to students

“We are going to use our imaginations and pretend we are exploring a cave.”

Focus question

Q. *What do you know about caves?*

A. For example: They’re dark, bats live in them, they’re cold

Say to students

“Let’s get ready to explore the cave. Put on your shoes and make sure your laces are tied up so you don’t trip. Collect your camera and your torch. Now imagine we are standing ready at the opening of the cave. The sun is shining very brightly today. Now, let’s go in.”

Focus questions

Q. *What do you notice?*

A. For example: It's getting darker, I can't see much the further I go in. I need to turn on my torch.

Q. *How do you feel?*

A. For example: Excited, scared, cold

Q. *What can you hear?*

A. For example: Bats screeching, water dripping, wind blowing, nothing

Q. *Why do you think it is so dark in the cave?*

A. For example: The sunlight can't get in.

Say to students

"Now, we will turn on our torches and move further into the cave. It is getting very dark and much cooler now."

Focus question

Q. *What can we see in the cave in our torchlight?*

A. For example: Rock walls, water on the ground, rocks, bats on the ceiling

Say to students

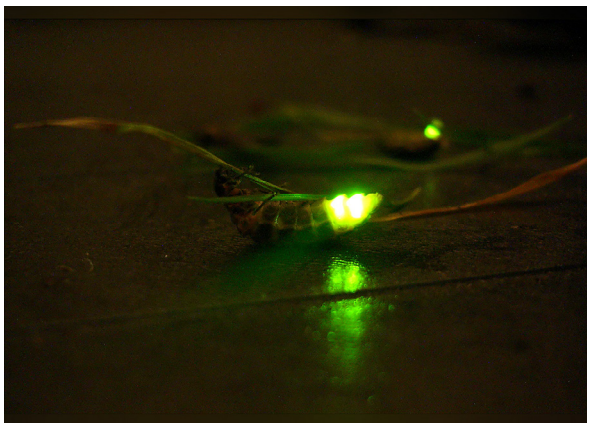
"We have now reached a special place in the cave. Turn off your torch for a minute and look up to the roof of the cave. Your eyes will take a few seconds to adjust but then you will notice some little glowing lights."

Focus question

Q. *What do you think might be making these lights?*

A. For example: Stars, bats eyes, glow-worms

A type of glow-worm, *Arachnocampa luminosa,* in a cave in New Zealand.



Another type of glowing insect, a beetle commonly called a firefly or lightning bug.

Say to students

“These lights are being made by insects. They use special chemicals to make part of their bodies glow. Sometimes it is to attract other insects and sometimes to scare predators away. The light can be yellow, green, blue and even red.

Now, we are going to make our way back out of the cave. We will use our torch to start with, then look for the sunlight coming in through the entry of the cave.

Finally, we make it out of the cave.”

Focus question

Q. *What do you notice when we are out of the cave in the sun?*

A. For example: The sun is very bright. It hurts my eyes, makes me blink and makes my eyes water. I need to close/cover my eyes.

Say to students

“Now we are finished exploring the cave and we are back indoors.”

Examine light and sound in objects

Say to students

"You are soon going to explore some light and sound objects. Before we do, we need to think about safety when observing light and sound. Our ears and eyes are very important and need to be looked after. If a sound is very loud it might damage our hearing. If light is very bright it could damage our eyes if we look directly at it or shine it in our eyes.

Taking care of your eyes and ears, you are now going to explore some objects. Think about the sound and light features they have, rather than just playing with them."

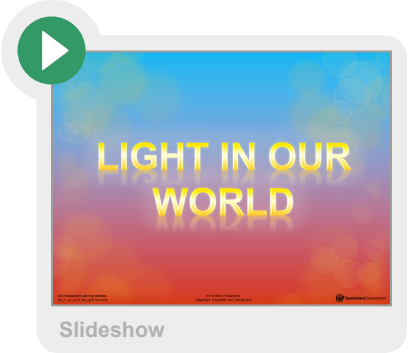
2. Provide objects for independent exploration.

3. Share ideas about observations, for example:
   a. how light is used in objects
   b. how sound is used in objects
   c. whether the light and sound effects in the objects are all the same.

Say to students

"We are now going to view a slideshow about ways that people observe, experience and use light in their everyday lives."

4. Display and view the **Slideshow — Light in our world**.



Slideshow

Consolidate learning

5. Display and read the words *sound* and *light*, cut from **Sheet 1 —** Word cards, with students.

Note

A word wall is an organised collection of words and images displayed on a wall. It helps students become familiar with vocabulary or words related to a particular topic. Students can refer to the word wall when reading, writing, speaking, listening and viewing. A word wall encourages them to use print within their environment. The cards are words students will see, hear and use during the lessons.