



# Nelson International Science

## Workbook 2



Anthony Russell

OXFORD





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## Introduction

*Nelson International Science Workbook 2* provides a complete copy of the *Student Book* activities for all learners to work through.

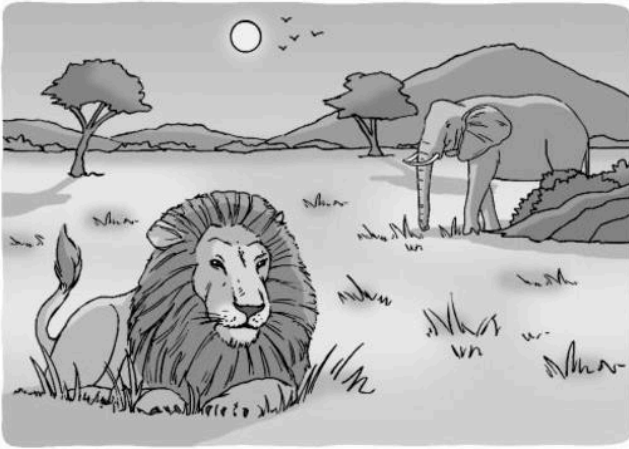
The activities are marked with  showing the corresponding page number in the *Student Book*.

In addition to the *Student Book* activities, there are extra activities marked, for example, Activity A, that can be done in the classroom or as homework at home. They support the knowledge and understanding gained in the *Student Book* activities.

# Chapter 1: Living things in their environment



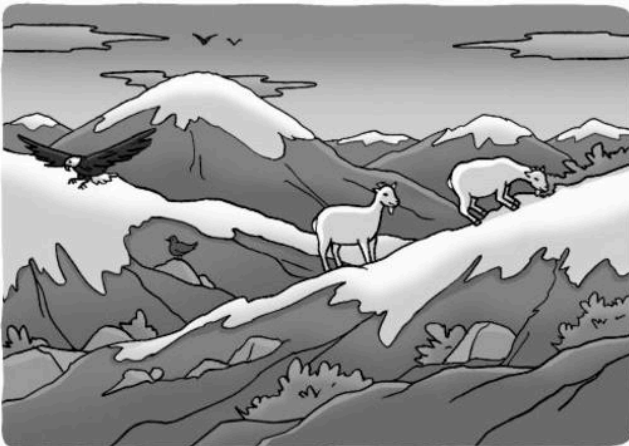
## Environments and living things



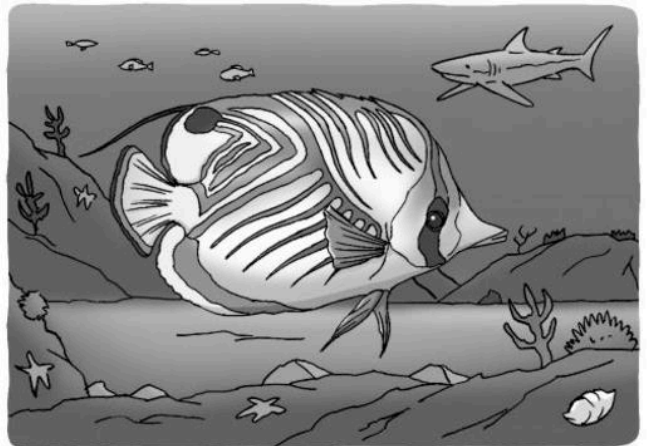
Environment a



Environment b



Environment c



Environment d

### Activity 1 3

**You will need:** a pen or pencil.

-  **1** Look at the pictures of the four different environments.

## Activity 1 (continued) 3



**2** Compare them. Talk about them in a group.



**a** What is the same in all the environments?

---



---

**b** What is different about each environment?

---



---

**c** Record what you can see in the table below.

Write a ✓ for 'yes' and a ✗ for 'no'.

Environment a has been done for you.

### What can you see?

|               | Trees | Animals | Rocks | Grass | Water |
|---------------|-------|---------|-------|-------|-------|
| Environment a | ✓     | ✓       | ✓     | ✓     | ✗     |
| Environment b |       |         |       |       |       |
| Environment c |       |         |       |       |       |
| Environment d |       |         |       |       |       |

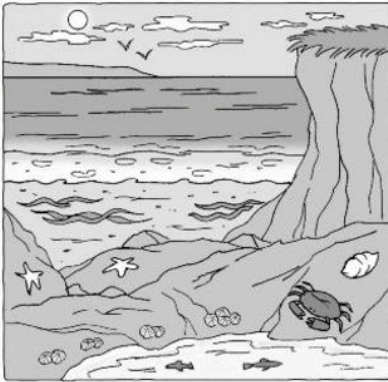


**3** Share your group's ideas with the class.



## Activity A

**You will need: a pen or pencil.**



*Environment e*



*Environment f*



**1** Look at the pictures of these two different environments.

**2** Compare them. You might not know all of the animals and plants in the pictures, but by observing (looking carefully) you will be able to compare the two environments.



**a** What is the same in each environment?

---

**b** What is different about each environment?

---

**c** Record what you can see in the table below.  
Write a ✓ for 'yes' and a ✗ for 'no'.

**What can you see?**

|               | Trees | Animals | Rocks | Grass | Water |
|---------------|-------|---------|-------|-------|-------|
| Environment e |       |         |       |       |       |
| Environment f |       |         |       |       |       |

## Activity 2 4 – 5

**You will need:** a pen or pencil.



**1** Choose two environments close to your school to explore.

**They must be different.**

Where is Environment 1? \_\_\_\_\_

Where is Environment 2? \_\_\_\_\_



**2** Complete the table below.

Write a ✓ for 'yes' and a ✗ for 'no'.

**What can you see?**


|               | Trees | Animals | Rocks | Grass | Water | Other |
|---------------|-------|---------|-------|-------|-------|-------|
| Environment 1 |       |         |       |       |       |       |




**3** Go outside and take your table with you. Record what you observe of your first environment.



**a** Record what you see, smell, hear and touch.

I can see  \_\_\_\_\_

\_\_\_\_\_

I can smell  \_\_\_\_\_

\_\_\_\_\_

I can hear  \_\_\_\_\_

\_\_\_\_\_

I can touch  \_\_\_\_\_

\_\_\_\_\_

**Activity 2 (continued)**  5

- b** Can you see animals and plants? Write down their names and make drawings of them.




- 4** Now go out and look at your second environment. Take your table with you. Record what you observe.

**What can you see?**


|               | Trees | Animals | Rocks | Grass | Water | Other |
|---------------|-------|---------|-------|-------|-------|-------|
| Environment 2 |       |         |       |       |       |       |

## Activity 2 (continued) 5


- a** Record what you see, smell, hear and touch.

I can see  \_\_\_\_\_

\_\_\_\_\_

I can smell  \_\_\_\_\_

\_\_\_\_\_

I can hear  \_\_\_\_\_

\_\_\_\_\_

I can touch  \_\_\_\_\_

\_\_\_\_\_



- b** Can you see animals and plants? Write down their names and make drawings of them.

**Activity 2 (continued)** 5 – 6

**5** Now compare the environments.

**a** What is the same?

---

---

**b** What is different?

---

---



**6** In class, look at your completed table.  
These are your results.

**a** Talk about them in a group.

**b** Why were some things different? Try to explain.

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**7** Share your results and ideas with the class.

## Activity 2 (continued) 6

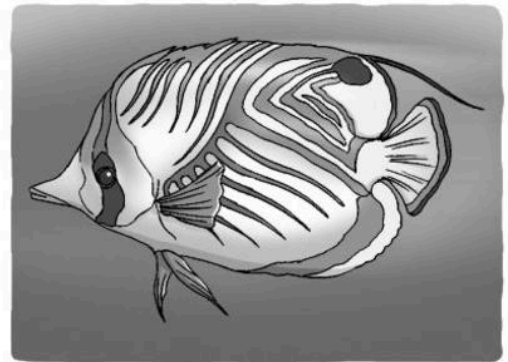
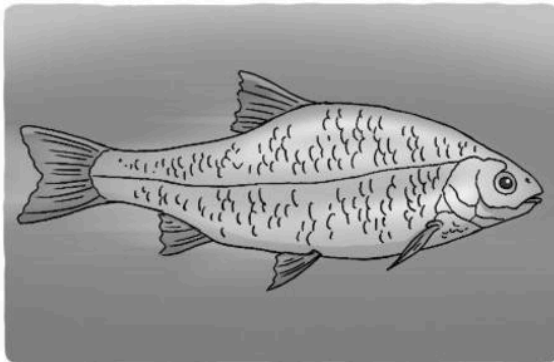


8 Now complete these sentences. Here are the words you need.

predators town fresh rivers ponds land  
lions ground rats animals grass

Most plants and \_\_\_\_\_ cannot live under water. They need to be on \_\_\_\_\_ .

\_\_\_\_\_ water in \_\_\_\_\_ , streams, lakes and \_\_\_\_\_ is a good environment for plants and animals.



## Activity 2 (continued) 7

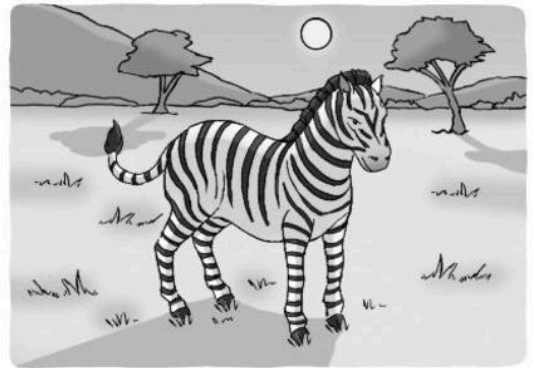
Animals that eat grass cannot live in the town.

Most of the \_\_\_\_\_ is covered by buildings.

In \_\_\_\_\_, cats eat mice and \_\_\_\_\_.

In the grasslands, \_\_\_\_\_ and cheetahs eat antelope and other \_\_\_\_\_ eaters.

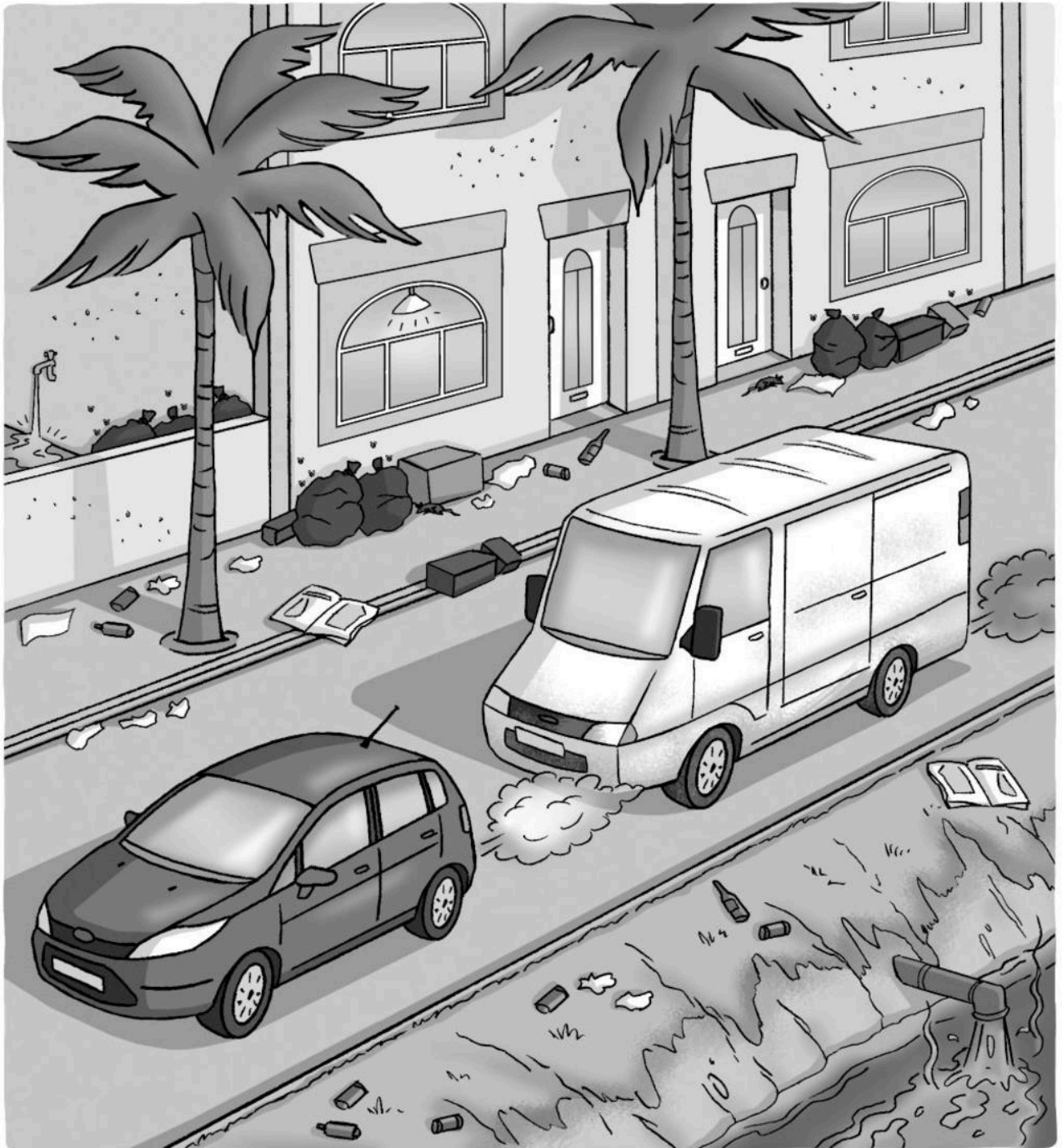
They are \_\_\_\_\_.





## Caring for the environment

The environment in the picture is being damaged.  
People are not caring for it.





## Activity 3

**You will need:** a pen or pencil.



- 1** Describe the environment in the picture.  
How is it being damaged?

---

---

---

---



- 2** Talk about it in a group. What have you found?

- a** Make a list of all the things you found.

- b** Try to explain why each thing is bad for the environment.

---

---

---

---



- 3** Share your ideas and explanations with the class.

## Activity B

**You will need:** a pen or pencil.



Complete these sentences using these words (you may need to use some words more than once):

**plants destroy soil recycled world non  
protect air spoil paper living**

- 1 We can \_\_\_\_\_ and take care of the natural \_\_\_\_\_.
- 2 We can also \_\_\_\_\_ and \_\_\_\_\_ it.
- 3 The \_\_\_\_\_ parts of the environment are the \_\_\_\_\_ and the animals.
- 4 The \_\_\_\_\_, the water and the \_\_\_\_\_ are the \_\_\_\_\_-living parts.
- 5 Glass, \_\_\_\_\_ and plastic can all be \_\_\_\_\_.





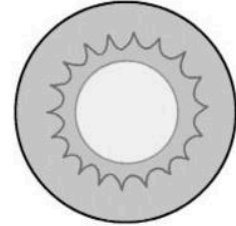
Look at the pictures. 13



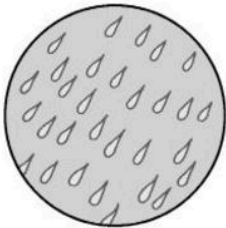
(a) \_\_\_\_\_



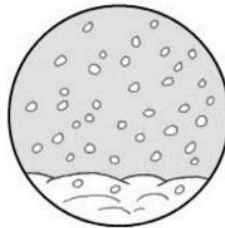
(b) \_\_\_\_\_



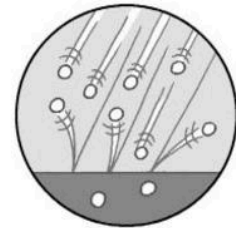
(c) \_\_\_\_\_



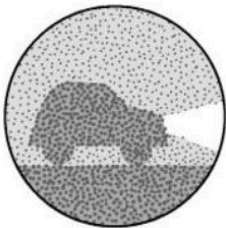
(d) \_\_\_\_\_



(e) \_\_\_\_\_



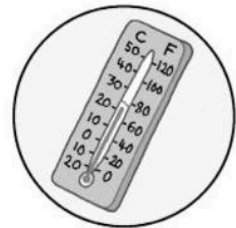
(f) \_\_\_\_\_



(g) \_\_\_\_\_



(h) \_\_\_\_\_



(i) \_\_\_\_\_

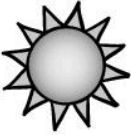












Match these names to the weather features (a) to (i).

**sunny windy cloudy snow lightning storm  
hail temperature rain fog**

Write the names under the pictures.

What does (i) show?

We use a thermometer to measure the temperature.

| Day       | Cloud and sun   | Temperature | Wind direction and strength   | Rain  | Electrical storm  |
|-----------|---|-------------|---|---|---|
| Monday    |    | Hot, 30°C   | West<br>       |   |   |
| Tuesday   |    | Hot, 38°C   | West<br>       |    |  |
| Wednesday |    | Warm, 25°C  | Northwest<br>  |   |   |
| Thursday  |   | Cool, 18°C  | Northwest<br> |   |   |
| Friday    |  | Cold, 13°C  | North<br>    |  |   |

## Activity 6

**You will need:** a pen or pencil.



Complete these sentences. Use the chart to help.

- As the \_\_\_\_\_ increases the \_\_\_\_\_ falls.
- The \_\_\_\_\_ strength changes and so does its \_\_\_\_\_.
- \_\_\_\_\_ falls only when there are \_\_\_\_\_.

## Activity C

**You will need:** a pen or pencil.



Use the chart on page 16 to answer the questions in the spaces below:

**1** What is the highest temperature in the chart?

*The highest temperature is* \_\_\_\_\_

**2** On which days did it rain?

*It rained on* \_\_\_\_\_

**3** How many days had clouds?

*There were clouds on* \_\_\_\_\_

**4** What made Tuesday special?

*Tuesday was special because* \_\_\_\_\_

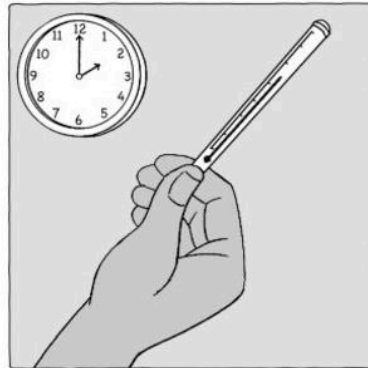
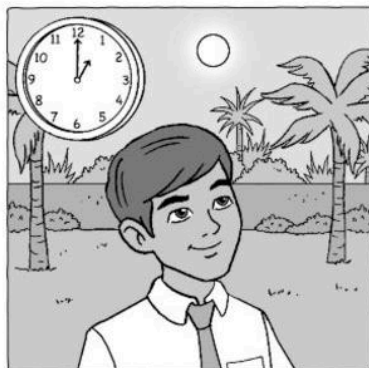
\_\_\_\_\_

## Activity D

This is how two pupils made weather observations:

### Learner A

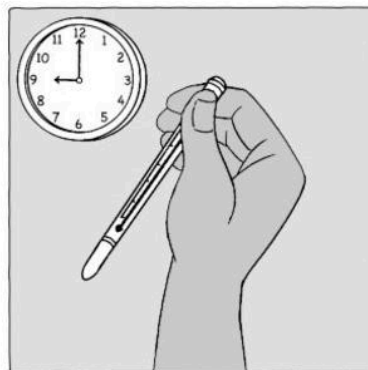
- He went out at a different time each day.
- He sometimes stood under the tree to read the thermometer.
- He sometimes stood out in the open to read the thermometer.
- He held the thermometer with his hand around the bottom of it.
- He sometimes looked all around at the sky.
- On some days, he only looked over the roof of the school.



## Activity D (continued)

### Learner B

- She went out at the same time each day.
- She stood in the same place.
- She stood out in the open, away from trees and buildings.
- She held the thermometer at the top between her fingers.
- She had a good view of all the sky.
- She always looked at the whole sky.





Look at **Activity D**.

Write your answers to these questions in the spaces below:

**1** Which learner made a **fair** set of weather records?

Learner \_\_\_\_\_

Give **one** example of what made their records fair.

---

---

**2** What was not fair about the other learner's records? Give **one** example.

---

---

**3** Why is it important to hold a thermometer in the correct way?

---

---





### Rocks and their uses

#### Activity 1 19

**You will need:** different rocks, a hand lens, coloured pencils and a pen or pencil.



**1** Examine the rocks you have in class.

**a** Draw a picture of each one.

## Activity 1 (continued) 19



- b** Write a short description of what each rock feels like. Describe their:

**texture**

**hardness**

|       |       |
|-------|-------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

- c** Use other **sources** of information to identify the rocks. Which sources did you use? List them here.



**2** Share your drawings and notes with the class.

**3** Play a game with the rocks.

- a** Read out the description of a rock.

Ask someone to find the correct rock and pick it up.

- b** Repeat this to allow turns for everyone.

## Activity 2 20 – 21

**You will need:** a clipboard, colouring pencils and a pen or pencil.



**1** Go out of school. Look for rocks that have been used in your environment.

They could be easy to pick up, or they could be used on buildings or roads.



**2** What do the rocks look like?

- a** Record your observations in the table below. You may need to ask your teacher for more paper.

| Name of rock | Description          | Uses                      |
|--------------|----------------------|---------------------------|
| Marble       | White, smooth, shiny | Covering wall of the bank |
|              |                      |                           |
|              |                      |                           |

One row has been done for you.

Here are some words to help you.

**smooth marble rough sandstone shiny  
granite dull slate knobbly shale speckled**



- b** In class, talk about your findings. Add your information to the class record.

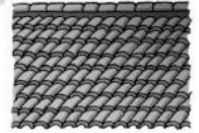
## Activity E

**You will need: a pen or pencil.**



Complete these sentences using these words:

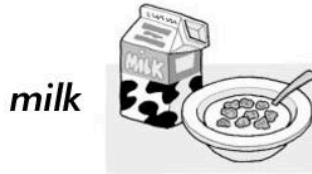
|                  |                  |              |
|------------------|------------------|--------------|
| <b>chalk</b>     | <b>hard</b>      | <b>flat</b>  |
| <b>natural</b>   | <b>soft</b>      | <b>slate</b> |
| <b>jewellery</b> | <b>buildings</b> |              |
| <b>colourful</b> | <b>tiles</b>     |              |



- 1 A \_ \_ \_ \_ rock like granite is used to make strong \_ \_ \_ \_ \_ .
- 2 Roofs can be made of \_ \_ \_ \_ \_ .
- 3 Slate is easy to make into \_ \_ \_ \_ \_ that can be thin and \_ \_ \_ \_ \_ .
- 4 Some stones are used in necklaces and other \_ \_ \_ \_ \_ because they are \_ \_ \_ \_ \_ and pretty.
- 5 Artists sometimes draw with \_ \_ \_ \_ \_ .
- 6 Chalk is a very \_ \_ \_ \_ \_ rock to draw with.
- 7 All these rocks are \_ \_ \_ \_ \_ materials.






Here are some pictures of materials.



## Activity 3 24

**You will need:** a pen or pencil.

-  **1** Look at the materials shown in the picture.
  -  **a** In your group, talk about which are natural materials.
  - b** Then talk about which are man-made (manufactured) materials.

-  **2** Make two lists of the materials:

| natural materials | man-made materials |
|-------------------|--------------------|
| _____             | _____              |
| _____             | _____              |
| _____             | _____              |

-  **3** Share your lists with the class.

## Activity F

**You will need: a pen or pencil.**



**1** Collect **six** different things from inside and outside your home.

- a Three must be made of natural materials.
- b Three must be made of man-made materials.



**2** Draw the six things in the table. You may need to ask your teacher for more paper.

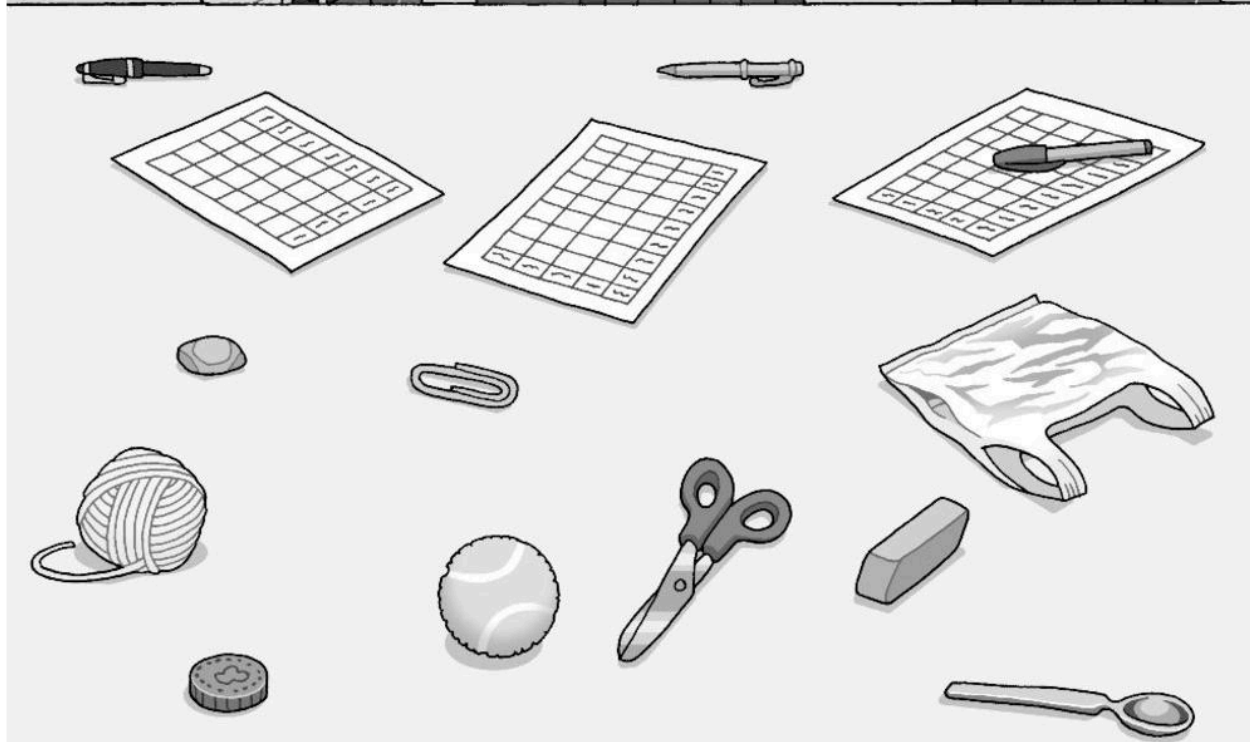
- a Make three drawings in the natural row and three drawings in the man-made row.
- b Name each thing and name the materials each thing is made of.

|                           |                    |                    |                    |
|---------------------------|--------------------|--------------------|--------------------|
| <b>Natural materials</b>  | Name:<br>_____     | Name:<br>_____     | Name:<br>_____     |
|                           | Material:<br>_____ | Material:<br>_____ | Material:<br>_____ |
|                           |                    |                    |                    |
| <b>Man-made materials</b> | Name:<br>_____     | Name:<br>_____     | Name:<br>_____     |
|                           | Material:<br>_____ | Material:<br>_____ | Material:<br>_____ |
|                           |                    |                    |                    |



### Activity 1: Can you change the shape of some things? 29

**You will need:** four different objects made of different materials and a pen or pencil.



## Activity 1: Can you change the shape of some things? (continued) –

**1** Find four different objects (things) made of different materials. You will look at four different ways to change their shape: squashing, bending, twisting and stretching.

What do you think will happen when you squash, or bend, or twist, or stretch your objects?



**2** Record your test results in the tables on pages 29 and 30. The first row of each table has been done for you.



**a** Write the names of the objects and their materials in each table.

**b** Think about four ways that could change the shape of the objects.



**c** Write your predictions in each table before you start the testing.

**3** You must try to do the same things to each material. This makes the test fair.



Try the four ways of changing the shape of the objects. Then record what you found out in the four tables.



# Activity 1: Can you change the shape of some things? (continued) 29 – 32

## Squashing

| Object | Material | Prediction<br>Squash or not?<br>✓ or ✗ | Test                                  | Result<br>Yes or No? |
|--------|----------|--|---------------------------------------|----------------------|
| Pebble | Rock     | ✗                                      | We tried to squash it using our hands | No                   |
| 1      |          |  |                                       |                      |
| 2      |          |  |                                       |                      |
| 3      |          |  |                                       |                      |
| 4      |          |  |                                       |                      |

## Bending

| Object | Material | Prediction<br>Bend or not?<br>✓ or ✗ | Test                                | Result<br>Yes or No? |
|--------|----------|--------------------------------------|-------------------------------------|----------------------|
| Pebble | Rock     | ✗                                    | We tried to bend it using our hands | No                   |
| 1      |          |                                      |                                     |                      |
| 2      |          |                                      |                                     |                      |
| 3      |          |                                      |                                     |                      |
| 4      |          |                                      |                                     |                      |

## Activity 1: Can you change the shape of some things? (continued) 32

### Twisting

| Object | Material | Prediction<br>Twist or not?<br>✓ or ✗ | Test                                 | Result<br>Yes or<br>No? |
|--------|----------|---------------------------------------|--------------------------------------|-------------------------|
| Pebble | Rock     | ✗                                     | We tried to twist it using our hands | No                      |
| 1      |          |                                       |                                      |                         |
| 2      |          |                                       |                                      |                         |
| 3      |          |                                       |                                      |                         |
| 4      |          |                                       |                                      |                         |

### Stretching

| Object | Material | Prediction<br>Twist or not?<br>✓ or ✗ | Test                                   | Result<br>Yes or<br>No? |
|--------|----------|---------------------------------------|--|-------------------------|
| Pebble | Rock     | ✗                                     | We tried to stretch it using our hands | No                      |
| 1      |          |                                       |  |                         |
| 2      |          |                                       |  |                         |
| 3      |          |                                       |  |                         |
| 4      |          |                                       |  |                         |

## Activity 1: Can you change the shape of some things? (continued) 32

**4** **a** What happened in the tests?

---

---

---

---

**b** Were your predictions correct?

---

---

---

---

 **5** In the class, talk about what happened.

**a** Were your results different to those of other groups? Compare them.

*My group's results were the same as the other groups because* \_\_\_\_\_

---

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## Activity 1: Can you change the shape of some things? (continued) 32

*My group's results were different from the other groups because \_\_\_\_\_*

---

---

---

- b** Show how you changed the shape of two of your materials.
- c** Explain how you made your testing fair.

*The test was fair because \_\_\_\_\_*

---

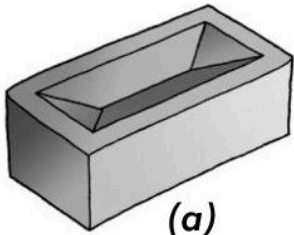
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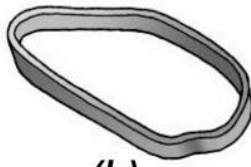
## Activity G

**You will need: a pen or pencil.**

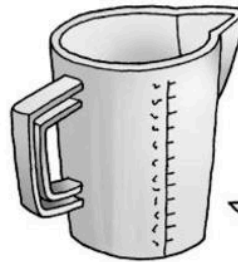
 Look around for eight different objects, similar to the ones below.



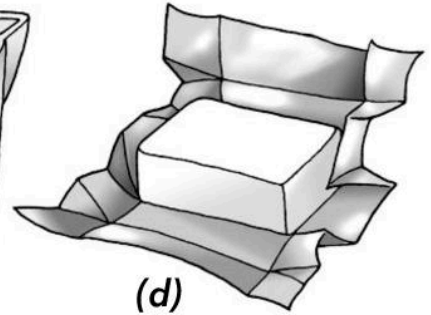
(a)



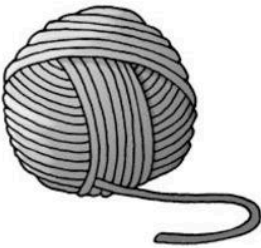
(b)



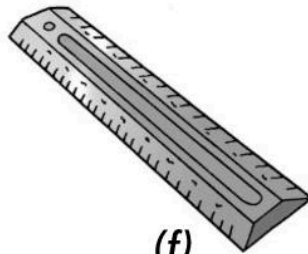
(c)



(d)



(e)



(f)



(g)



(h)

 Add the names of things to these sentences about changing shapes:

**1** The shape can be changed by stretching: \_\_\_\_\_

**2** The shape cannot be changed by bending: \_\_\_\_\_

**3** The shape can be changed by squashing: \_\_\_\_\_

**4** The shape cannot be changed by twisting: \_\_\_\_\_

**5** The shape can be changed by bending: \_\_\_\_\_

**6** The shape cannot be changed by stretching: \_\_\_\_\_

**7** The shape can be changed by twisting: \_\_\_\_\_

**8** The shape cannot be changed by squashing: \_\_\_\_\_



## Changes caused by heating and cooling

### Activity 2 33 – 34

**You will need:** two of these materials: wax, chocolate, butter, ice; plus a heat source and a pen or pencil.

- 1** In class, choose two of the following materials for your exploration:

**wax   chocolate   butter   ice**

- 2** Talk with your group about how you will explore the way these materials change:

**a** when they are heated

---

---

**b** when they are cooled.

---

---

- 3** Plan to make your exploration fair. Write down here how you will do that.

*It will be fair because* \_\_\_\_\_

---

---

**Activity 2 (continued)** 34 – 35

- 4** Decide what equipment you need and collect it. List it here:

---

---

---

---



- 5** Choose how you will observe change.

- 6** How will you record what you find out? Choose and circle your answers below.

Drawings

A table

A chart

All of these



- 7** Make predictions about both materials and write down your predictions. Say:

- a** how they will change when heated


---

- b** how they will change when cooled

---

## Activity 2 (continued) 34 – 35

### 8 Heat the first material.

 **WARNING:** take care when heating.  
Stand well back from the heat source



- a Observe it closely.

What can you smell?  \_\_\_\_\_

\_\_\_\_\_

What can you hear?  \_\_\_\_\_

\_\_\_\_\_

What can you see?  \_\_\_\_\_

\_\_\_\_\_



**Activity 2 (continued)** 35

**b** Record any changes.

You can make drawings, or draw a table or a chart. Ask your teacher for help or for more paper if you need it.

**9** When there are no more changes, let the material cool.



**a** Observe it closely.

**b** Record any changes. You can make drawings, or draw a table or a chart. Ask your teacher for help or more paper if you need it.

## Activity 2 (continued) 35 – 36

**10** Use the second material. Do the heating and cooling as you did with the first one.

**! WARNING:** take care when heating.  
Stand well back from the heat source



**11** Record what you found out. Ask your teacher for help or more paper if you need it.

**12** Compare your results with what you predicted might happen. Were your predictions right?

---

---

**Activity 2 (continued)** 

**13** Compare the way the two materials were changed by heating and cooling.

**a** What was different?

---

---

**b** What was the same?

---

---



**14** Share with the class what you found out.



## Materials in water

What happens to the materials we add to water?



### Activity 3 40

**You will need:** a pen or pencil.



**1** Look at the pictures. What is the same about all of them?

---

---

### Activity 3 (continued) 40



- 2** Make a list of three materials that do not behave in this way when mixed with water.

---

---



- 3** Tell the class what your three materials are.

- 4** Some materials dissolve in water and others do not dissolve in water. When a material dissolves it disappears – it cannot be seen.

- a** Is the material still there?

---

- b** How can you tell?

---

---

---



- 5** Share your answer with the class.

## Activity H

**You will need:** a pen or pencil.

Two learners compare two materials to find out if they both dissolve in water. One learner does a fair test but the other does not.

| Learner A   | Learner B |
|---|-----------|
| <ul style="list-style-type: none"> <li>• 1 spoonful of material <b>a</b></li> <li>• 3 spoonfuls of material <b>b</b></li> <li>• mix material <b>a</b> with a cup of cold water</li> <li>• mix material <b>b</b> with half a cup of hot water</li> <li>• stir material <b>a</b> mixture</li> <li>• do not stir material <b>b</b> mixture</li> <li>• record the result for material <b>a</b> after 1 minute</li> <li>• record the result for material <b>b</b> after 5 minutes</li> </ul> |           |

 **1** Look at what Learner A does in their test. Was it a fair test?                      Yes                      No

 **2** Write two things which show you that the test was fair or not fair.

**a** \_\_\_\_\_

**b** \_\_\_\_\_

**3** In the Learner B space in the table, write out the way you think the test was done by Learner B.



### Activity 1 43 – 44

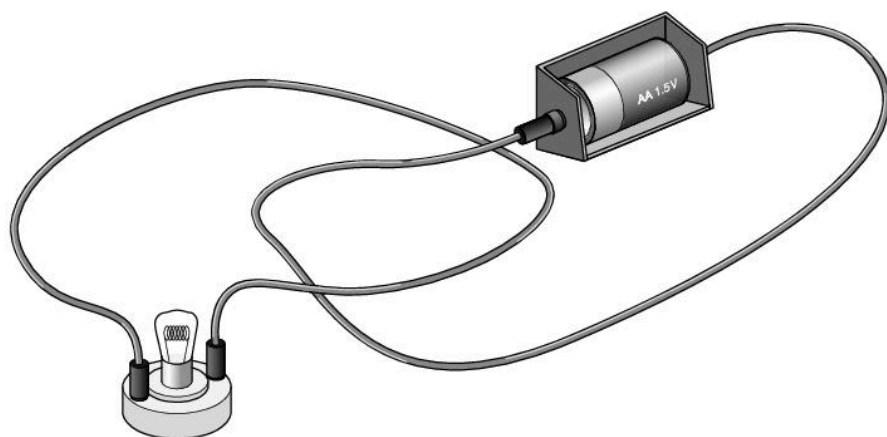
**You will need:** a cell (battery), a lamp, two wires, paper and a pen or pencil.

Work with a partner.

**1** In school, take a cell (battery), a lamp and two wires.

 **2** Explore what happens when you connect these things in different ways.

 **3** Draw a picture of each way you try. Here is an example.



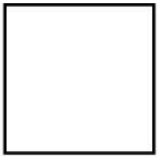
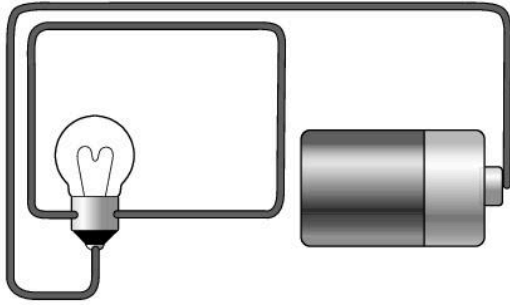
**4** Try to make the lamp light up.

 Record this on the drawings of the circuits you made. Which circuits worked?

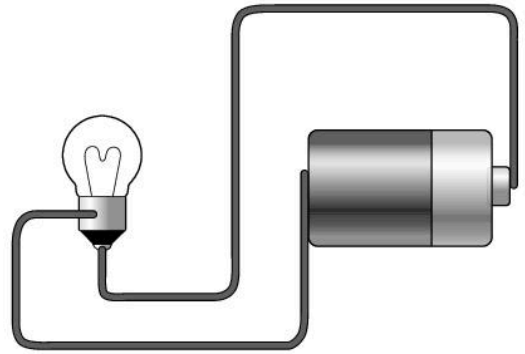
 **5** Share your results with the class. Show them how you made the lamp light up.

## Activity 1 (continued) 44

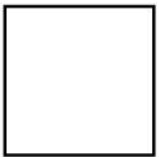
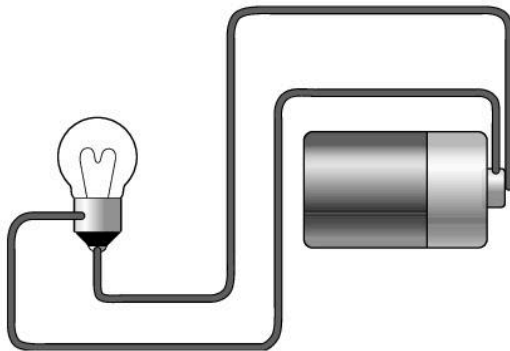
There is more than one way to make a circuit that lights the lamp.



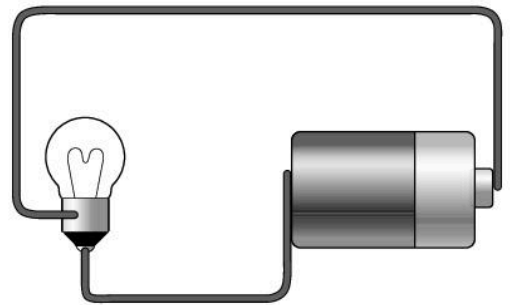
(a)



(b)



(c)



(d)



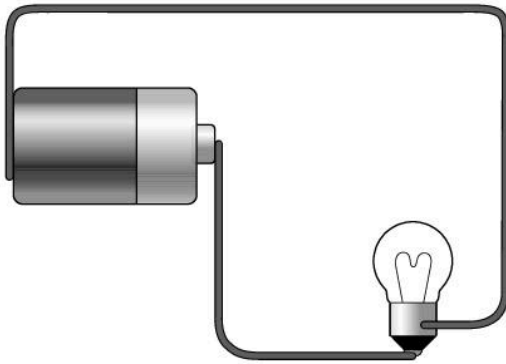
**6** Look at the four circuit drawings.

Which ones will light the lamp? Put a tick (✓) in the box next to your choices.

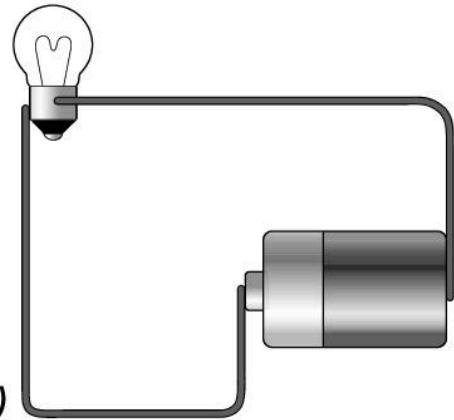


## Activity 1

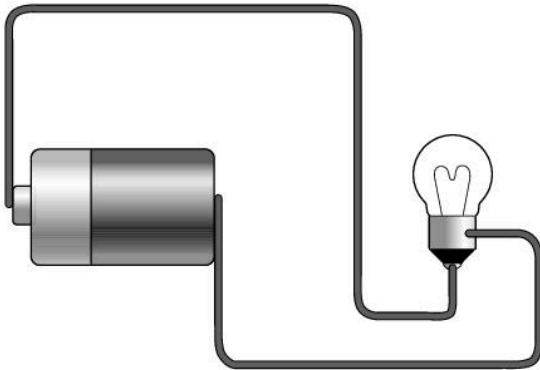
You will need: a pen or pencil.



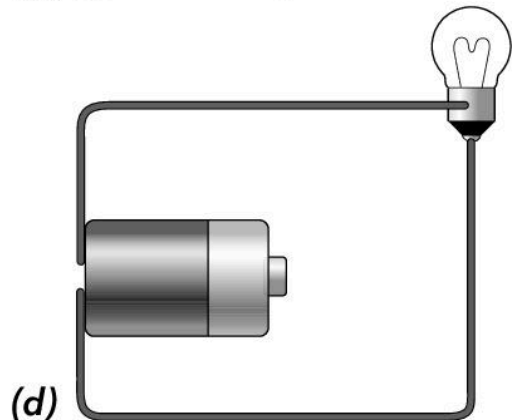
(a)



(b)



(c)



(d)



**1** Look at the four circuit drawings. Which ones will light the lamp?



**2** Add the letters of the four circuits to the spaces in these sentences:

Circuits ( ) and ( ) are not complete. The lamps will **not** light up.

Circuits ( ) and ( ) are complete. The lamps **will** light up.

**3** Explain why one of the circuits will **not** light the lamp.



## Activity 2 46

**You will need:** objects with switches and a pen or pencil.



**1** In school, make a survey of switches in the classroom.

Record your findings in the table on page 47.



**2** Move around the room. Look for four different switches.



**a** Record each switch as a drawing.

**b** In the table, write down where the switch is and what it is for.

**c** Add up all the switches you can find in the room.

Record this number: \_\_\_\_\_



**3** Share your survey results with the class.

**Activity 2 (continued)**  46

| <b>Drawing of the switch</b> | <b>Where it is</b> | <b>What it is for</b> |
|------------------------------|--------------------|-----------------------|
| 1                            |                    |                       |
| 2                            |                    |                       |
| 3                            |                    |                       |
| 4                            |                    |                       |

### Activity 3 47

**You will need:** a lamp, two wires, a cell (battery), a switch and a pen or pencil.

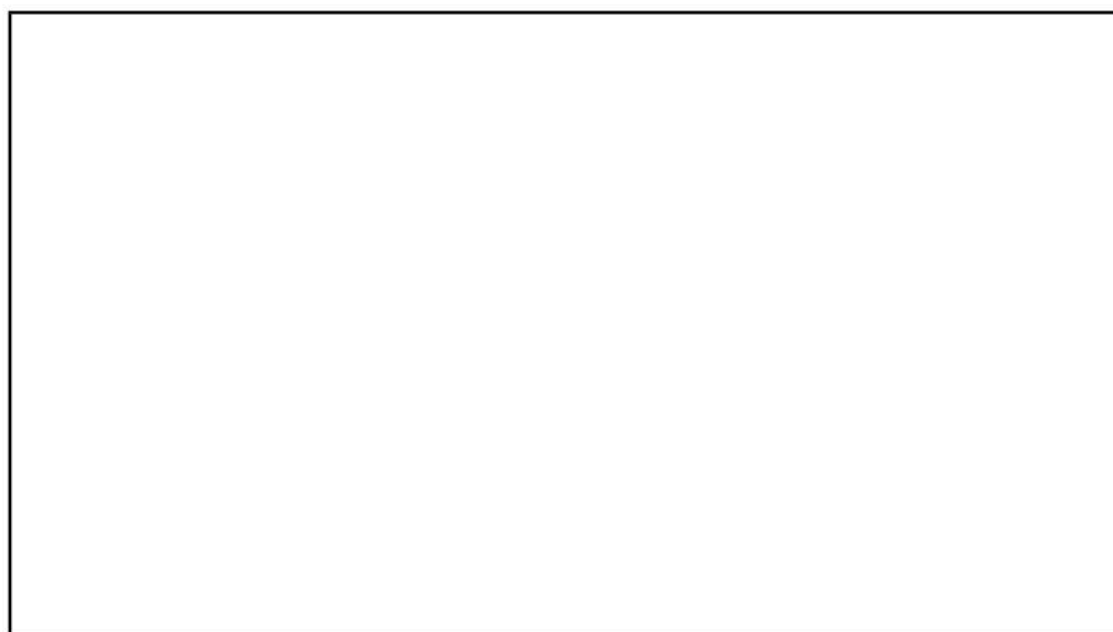
**1** In school, take the things you need to make a circuit.



- a** Set them up so that the lamp lights up.
- b** Take a switch and add it to your circuit.
- c** Try to switch the lamp on and off.
- d** If it does not work, connect the switch in a different way in the circuit.



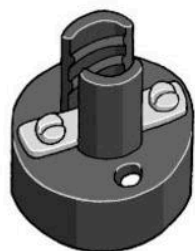
**2** Draw a picture here of each circuit where the switch works.



**3** Share your results with the class. Show them how your switch works.

## Activity J

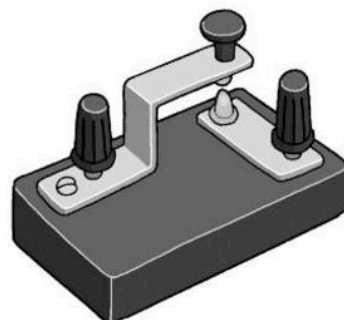
You will need: a pen or pencil.



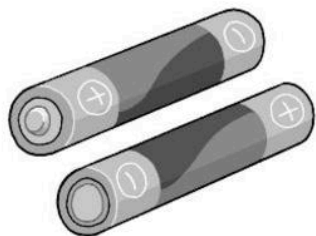
(a)



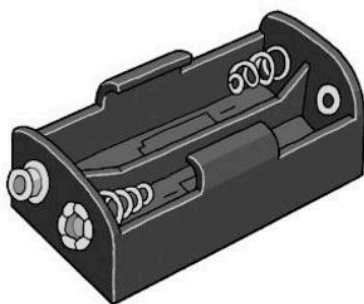
(b)



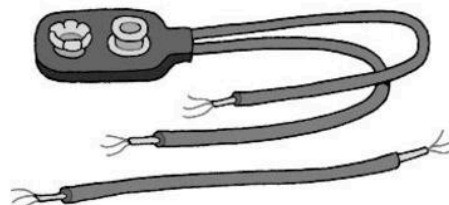
(c)



(d)



(e)



(f)



**1** Look at the drawings of the components of a simple circuit.



**2** In the spaces below, write down the names beside the correct letters.

(a) \_\_\_\_\_

(b) \_\_\_\_\_

(c) \_\_\_\_\_

(d) \_\_\_\_\_

(e) \_\_\_\_\_

(f) \_\_\_\_\_



## Light sources

### Activity 1 48

**You will need:** a pen or pencil.

 **1** In school, talk with your group about all the sources of light you can identify.

 **2** Make a list of all the sources.

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---

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---

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---

---

 **3** Share your list with the class.

49



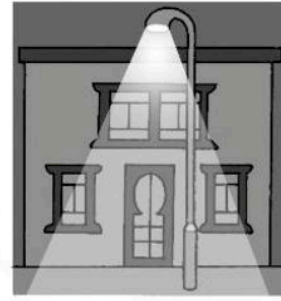
(a)



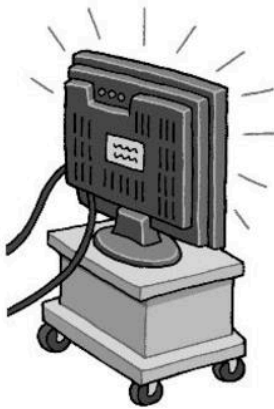
(b)



(c)



(d)



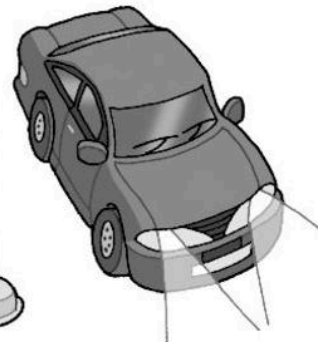
(e)



(f)



(g)



(h)



Look at the light sources in the pictures.

Match the names below to the light sources and write them down next to the letters.

**television torch street light candle fire  
oil lamp headlights desk lamp**

(a) \_\_\_\_\_ (e) \_\_\_\_\_

(b) \_\_\_\_\_ (f) \_\_\_\_\_

(c) \_\_\_\_\_ (g) \_\_\_\_\_

(d) \_\_\_\_\_ (h) \_\_\_\_\_

## Activity K

**You will need:** a pen or pencil.



Complete these sentences using these words (you may need to use some words more than once):

**Earth light shining sources car wood  
night electricity oil Sun**

1 \_\_\_\_\_ comes from many  
\_\_\_\_\_.

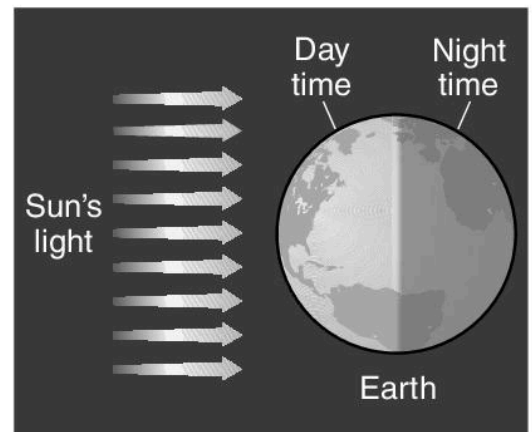
2 The most important is the \_\_\_\_\_.

3 We can burn fuels like \_\_\_\_\_ and \_\_\_\_\_  
to make light.

4 Street lights and \_\_\_\_\_ headlights all use  
\_\_\_\_\_.

5 We do not have \_\_\_\_\_ from the  
\_\_\_\_\_ all the time.

6 At \_\_\_\_\_ it is dark  
because the \_\_\_\_\_ is not  
\_\_\_\_\_ on our  
part of the \_\_\_\_\_.







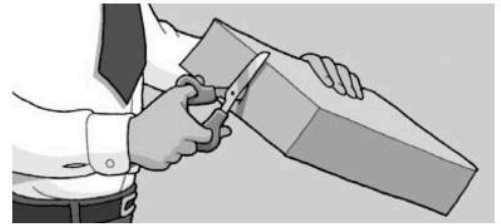
## Activity 2: What happens to colours when there is no light? 51 – 52

**You will need:** a small cardboard box, scissors, black paper or cloth, some small brightly coloured objects and a pen or pencil.

- 1** In school, find a small cardboard box. For example, a cereal packet or a shoe box.

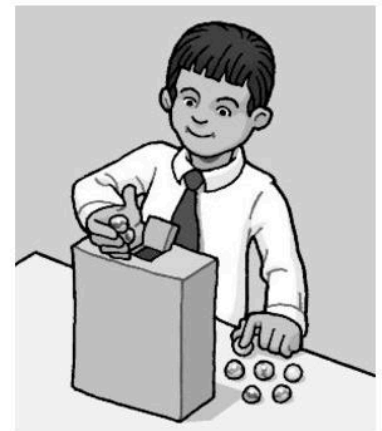
**! WARNING:** always ask your teacher for help with cutting something.

- a** Cut a small flap in the end of the box. This flap will act as a 'window' that can be opened and closed.



- b** Make a small hole in one side of the box for you to peep through.

- c** Put some small coloured objects in the box.
- d** Wrap the box in black paper or in a cloth to keep out the light. You will need to cut the same flap and hole in the wrapping.



## Activity 2 (continued) 52 – 53



**2** Open the flap and then peep through the hole. What can you see?



**3** Record what you observe.

---

---

---

**4** Predict what will happen when you close the flap.

*I predict that* \_\_\_\_\_

---



**5** Close the flap and peep through the small hole again. What can you see?



**6** Record what you observe.

---

---

---



**7** Talk with your group about what you found out.

**a** Try to explain it and record your findings here.

---

---




---

**b** Share what you found out with the class.



## Activity 4 58

**You will need:** a torch, three objects with different shapes and a pen or pencil.

-  **1** In school, talk with your group about how you can make shadows using a torch.
- 2** Collect three objects that have different shapes.
-  **3** Play with the objects and the torch to explore what shadows you can make.
-  **4** Record the shadows as drawings.

A large, empty rectangular box with a black border, intended for students to draw the shadows they observe during the activity.

## Activity 4 (continued) 58



**5** What do you notice about:

- a where the light is \_\_\_\_\_
- b where the object is \_\_\_\_\_
- c where the shadow is \_\_\_\_\_?



**6** Tell the class what you think.

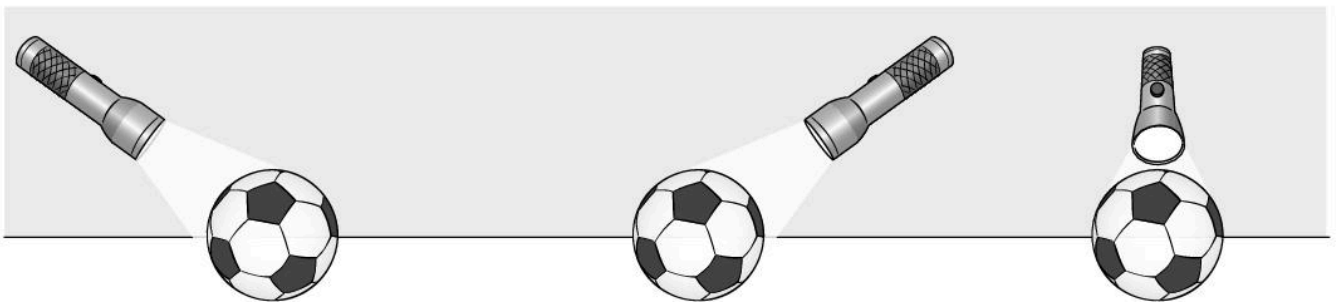
## Activity L

**You will need:** a pen or pencil.

(a)

(b)

(c)



**1** Look at the drawings. Work out where the shadows will be.



**2** Add the shadow to each drawing.



### Activity 1 61

**You will need:** a watch or clock, a metre stick or tape measure and a pen or pencil.



**1** At school, go outside in the morning.

- a Stand in an open place where you can see the Sun.
- b Look for things that have shadows, such as trees or buildings.



**2** Draw a simple picture of the skyline.

- a Show the Sun in the sky.
- b Show the things with their shadows.
- c Write down the time on your drawing.

Time of drawing: \_\_\_\_\_

## Activity 1 (continued) 61 – 62

**3** Measure at least one of the shadows.



- a Write down its length. \_\_\_\_\_
- b What time of the morning did you look at the shadows? Write down the time on your drawing.

**4** Predict what you will see when you go outside at noon. Write down your prediction.

*I predict that* \_\_\_\_\_



**5** At school, go outside as near to noon as you can and stand in the same place as before.

- a Make a second drawing of the Sun and the same things on the skyline, with their shadows.
- b Measure the same shadow and record its length.  
\_\_\_\_\_

c Write down the time on your drawing.

Time of drawing: \_\_\_\_\_

## Activity 1 (continued) 62 – 63



**6** Compare what you recorded with your prediction.

**a** What did you observe?

---



---

**b** Was it different to your prediction?      **Yes**      **No**

**c** Try to explain what you observed.

---



---

**7** Predict what you will see when you go outside late in the day.

*I predict that* \_\_\_\_\_



**8** At school, go outside as late in the day as you can and stand in the same place.

**a** Make a third drawing of the Sun and the same things on the skyline, with their shadows.

**b** Measure the same shadow and record its length.

---

## Activity 1 (continued) 63

- c Write down the time on your drawing.

Time of drawing: \_\_\_\_\_



### 9 Compare what you recorded with your prediction.

- a What did you observe?

---

---

- b Was it different to your prediction?      **Yes**      **No**

- c Try to explain what you observed.

---

---



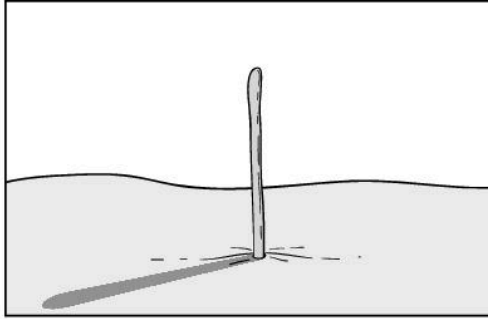
### 10 Share your drawings, your measurements, and your explanations with the class.



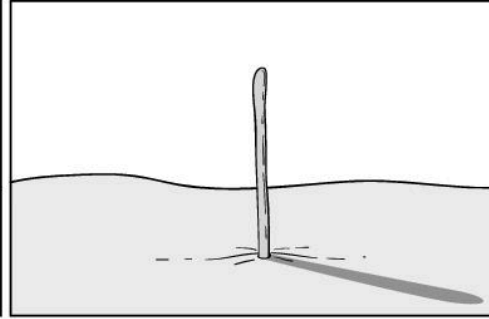


## Activity M

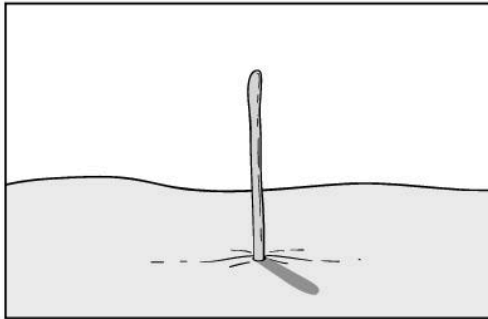
**You will need:** a pen or pencil.



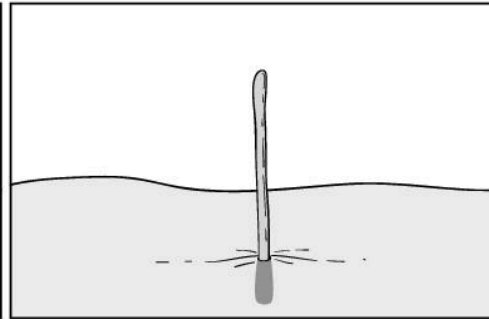
1



2



3



4



**1** Look at the pictures of a stick and its shadow. Think about why the shadows are different.



**2** Add the Sun to drawing 1.

Think about where it must be to make the shadow:

- a** Is the Sun high up or low down? \_\_\_\_\_
- b** Is the Sun to the left or the right, or is it above the stick? \_\_\_\_\_

**3** Now add the Sun to the other drawings. It will be in a different position in each of them.

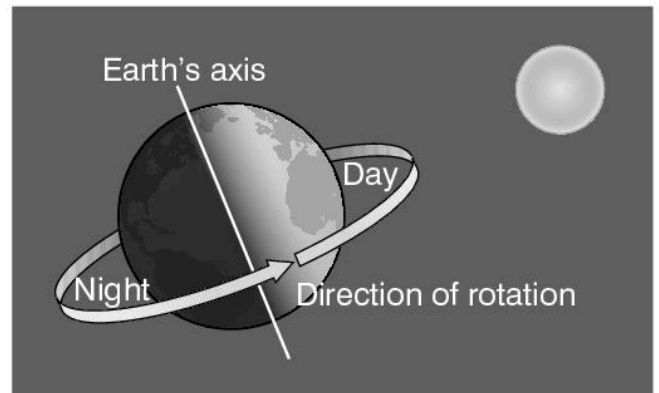
## Activity N

**You will need:** a pen or pencil.



Complete these sentences using these words (you may need to use some words more than once):

|          |          |
|----------|----------|
| rotation | Sun      |
| 24       | axis     |
| day      | position |
| sky      | night    |
|          | Earth    |
| time     | times    |



- 1 We see the \_\_\_ \_\_\_ \_\_\_ in different places in the \_\_\_ \_\_\_ \_\_\_ at different \_\_\_ \_\_\_ \_\_\_ \_\_\_ of the \_\_\_ \_\_\_ \_\_\_.
- 2 These changes are caused by the \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ of the Earth.
- 3 It takes \_\_\_ \_\_\_ hours for the \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ to rotate once on its \_\_\_ \_\_\_ \_\_\_ \_\_\_.
- 4 We can use the \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ of the \_\_\_ \_\_\_ \_\_\_ to help us tell the \_\_\_ \_\_\_ \_\_\_ \_\_\_.
- 5 Day and \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ are also caused by the Earth's \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_.



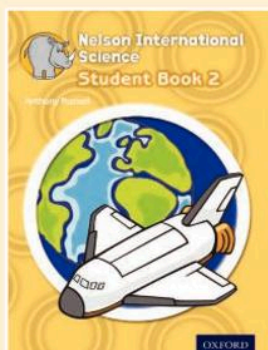
# Nelson International Science Workbook 2

Nelson International Science is a practical, rigorous and progressive scheme specifically developed for international and English medium schools. All components support learners to explore the world of scientific enquiry in a hands-on way.

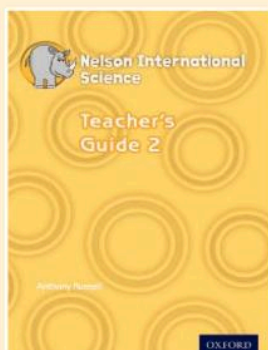
- Student Books and Workbooks are packed full of activities, games and discussions to fully engage students of all ability levels.
- Practical experiments using everyday materials with quizzes and assessments to reinforce knowledge and skills.
- Developed for the Cambridge Primary Science curriculum framework.

Also available:

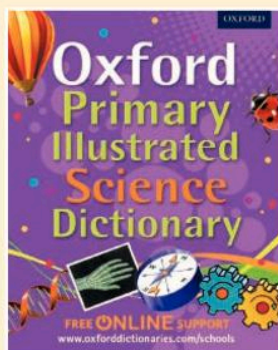
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