

A FREE RESOURCE PACK FROM EDUCATIONCITY

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# British Science Week



Topical Teaching  
Resources



Suitability

# British Science Week Topical Teaching Resources

## What Does This Pack Include?

This pack has been created by teachers, for teachers. In it, you will find high quality Lesson Plans, Activity Sheets with answers, and a Fact Sheet, to support teaching and learning during British Science Week.

To go directly to the content, simply click on the title in the index below:

LESSON PLANS:		
1. Your Journey to School	2. Space Shuttle	3. Planet Rover
<b>Learning Objective:</b> Draw the journey to school, looking at a map of the local area and identifying familiar landmarks.	<b>Learning Objective:</b> Design a space shuttle to transport astronauts to the International Space Station.	<b>Learning Objective:</b> Consider the terrain of a newly discovered planet, design a suitable rover vehicle and write an algorithm to control it.

ACTIVITY SHEETS:	
Space Shuttle	<b>Learning Objective:</b> Use the template to design a space shuttle.

FACT SHEETS:	
Thrust Car	<b>Learning Objective:</b> Understand how scientists are trying to break the existing land-speed record.

ACTIVITY SHEETS AND ANSWERS:		
1. Robot Repair	2. Robot Repair	3. Robot Repair
<b>Learning Objective:</b> <b>Working scientifically</b> Setting up simple practical enquiries, comparative and fair tests.	<b>Learning Objective:</b> <b>Electricity</b> Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.	<b>Learning Objective:</b> <b>Electricity</b> Use recognised symbols when representing a simple circuit in a diagram.

LESSON PLANS:
1. Let There Be Light
<b>Learning Objective:</b> <b>Working scientifically</b> Identifying scientific evidence that has been used to support or refute ideas or arguments.

# British Science Week Topical Teaching Resources

## Journeys Through Nature

ACTIVITY SHEETS:	
<b>Flutter and Fly (exploring the butterfly's life cycle)</b> <b>Learning Objective: The world</b> Make observations of animals and plants, explain why some things occur, and talk about changes.	<ul style="list-style-type: none"> <li>• Activity Sheet</li> <li>• Activity Sheet with Answers</li> </ul>
<b>Good Vibrations (exploring sound travel)</b> <b>Learning Objective: Sound</b> Find patterns between the pitch of a sound and features of the object that produced it.	<ul style="list-style-type: none"> <li>• Activity Sheet</li> <li>• Activity Sheet with Answers</li> </ul>
<b>Dried Out (exploring the water cycle)</b> <b>Learning Objective: States of matter</b> Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	<ul style="list-style-type: none"> <li>• Activity Sheet</li> <li>• Activity Sheet with Answers</li> </ul>
<b>Home and Dry (exploring the water cycle)</b> <b>Learning Objective: States of matter</b> Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	<ul style="list-style-type: none"> <li>• Activity Sheet</li> <li>• Activity Sheet with Answers</li> </ul>
<b>Let There Be Light (exploring light travel)</b> <b>Learning Objective: Light</b> Recognise that light appears to travel in straight lines.	<ul style="list-style-type: none"> <li>• Activity Sheet</li> <li>• Activity Sheet with Answers</li> </ul>

## Other Resources Linking to the Theme

Before deciding what to include in your lesson, check out our online content relating to British Science Week too. It's simple to find, just enter the names in EducationCity's Search tool!

ThinkIts: Inspire Creative Ways of Thinking	Learn Screens: Introduce or Reinforce a New Concept	Activities: Educational Content
<b>Water Journey Through a Plant</b> Content ID: 13649	<b>Louder and Louder</b> Content ID: 25863	<b>Let There Be Light</b> Content ID: 22525
<p>Can you describe what happens on the journey of a drop of water through a plant? A great lesson starter!</p>	<p>Learn how sound travels and what happens in a vacuum with Manu and Meg.</p>	<p>Explore how light travels by using light diagrams with your students, and see how objects are seen and shadows created.</p>

## Enjoyed these resources?

Why not start a free trial of the full EducationCity resource and see what else we can offer you!

Email us at [trials@educationcity.com](mailto:trials@educationcity.com)  
 or call us on +44 (0)1572 725080!



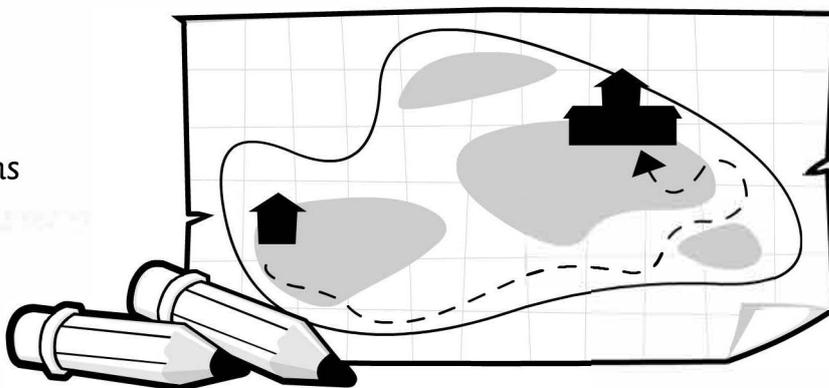
## Overview

In this 80 minute session, students look at a map of their local area, identifying familiar features. They then write directions on their journey to school and use these to draw a map.

## Materials

Resources and organisation:

- Individual whiteboards and pens
- Organise the students into talk partners
- A4 paper and pens



## Lesson structure

**0 - 10 minutes** – Explain to the students that you would like them to draw a map of their journey to school. Start by showing a map of the area that could be accessed via the Internet and look at the area surrounding the local school. Encourage students to identify local features including the street in which they live and other familiar landmarks.

**10 - 20 minutes** – Discuss the directions needed to get from one landmark to another, for example from a local park to the school. Model how to record these directions.

**20 - 35 minutes** – Ask students to work with partners to talk through the route they both take to get to school. Ask them to record the directions and then draw the class back together to share these ideas. Use the map on the IWB to confirm the directions.

**35 - 45 minutes** – Then explain to the students that you would like them to draw a map of their journey. Support this by showing them the map of the area again. Discuss the way in which the roads are presented and explain the scale, for example look at a main road and then a cul-de-sac to compare them so that students have an awareness of this as they draw their maps.

**45 - 70 minutes** – Set the students off on their task and circulate to support understanding. Remind students to use the directions they have drafted to help them with their maps.

**70 - 80 minutes** – Draw the class back together and share some of the maps.

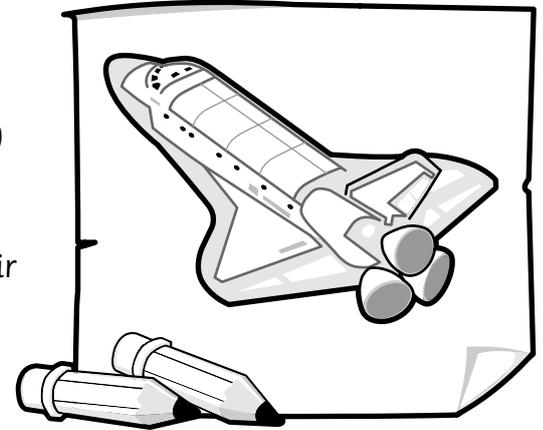


### Overview

In this 60-minute activity, students have the opportunity to design a space shuttle to transport astronauts to the International Space Station. This lesson focuses on the design element and additional time will be required to make and evaluate the spaceship.

### Materials

- Fact Sheet on the International Space Station
- Pictures and clips of space shuttles (available on the Internet)
- Individual whiteboards and pens
- Access to the EducationCity Mind Map Tool
- Reference Sheet for students to design and evaluate their space shuttle – photocopy enough for one per student



### Lesson structure

**0 - 10 minutes** – Explain to the students that they have been commissioned to design and make a space shuttle for NASA and that as part of this commission they have to design and make a model prototype. Discuss the fact that the space shuttle is needed to take a group of astronauts to the International Space Station. Start by setting the scene and asking the students what they know about the International Space Station. This can be supported by the Fact Sheet on the International Space Station.

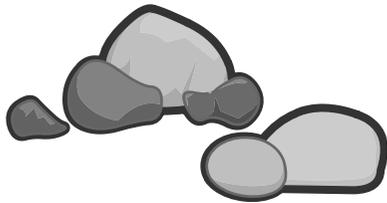
**10 - 20 minutes** – Show the students some pictures and clips of space shuttles (available on the Internet) to give them a starting point for their design should they need it. Discuss the purpose of many of its features, (e.g. the nose cone and number of engines) so that they gain an understanding of their importance.

**20 - 35 minutes** – Then show the students the design pro forma and ask them to work through the design element so that they consider what it will look like and to draw two different design sketches that they could use to make their design. As they work through this, remind them to think back to the pictures and clips you have shown them to ensure they incorporate the various components.

**35 - 45 minutes** – Draw the class back together and by way of peer assessment, ask students to swap their space shuttle designs with a partner. Ask them to assess each other's work, commenting on the content covered in each of the sections. Once they have done this, give the students time to assess their own plans and add to them should they wish to.

**45 - 55 minutes** – Ask the students to choose the design they are going to use and to then consider the resources they will need to complete their prototype. These too can be listed on the pro forma.

**55 - 60 minutes** – By way of a plenary, ask the students to think about the various design and technology techniques they have learnt, such as joining and cutting, and may need in order to complete their design. Additional time will be needed to make and evaluate their designs. The pro forma will also take students through the evaluation process.

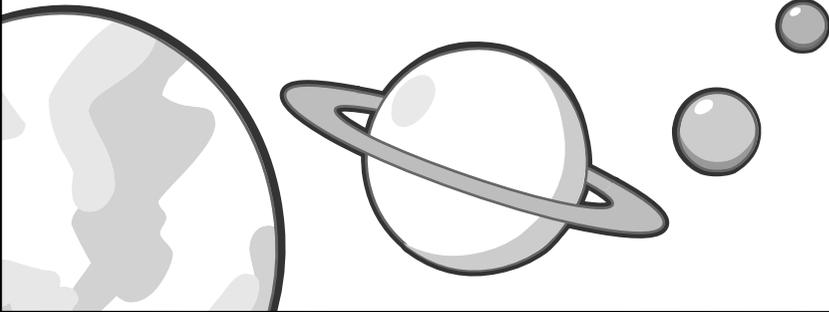
<b>Subject: British Science Week</b>		<b>Duration: 1 Day</b>		<b>Curriculum Links</b>		
<p><b>Broad Aims:</b></p> <p>In this one-day lesson, children will assess the terrain of a newly discovered planet, in order to design and command a rover vehicle suitable for the harsh environment. In the first part of the day, Children will look at samples, images and data, sent back by the original rover expedition. They will use these samples to build up their own image of the planet's terrain. In the second part of day the children will design a rover vehicle suitable to travel across the planet's surface and collect samples. Finally, the children will write algorithms to navigate and control the rover.</p>				<p><b>Maths:</b></p> <p>Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.</p> <p>Solve problems involving similar shapes where the scale factor is known or can be found.</p> <p><b>Design and technology:</b></p> <p>Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.</p> <p><b>Geography:</b></p> <p>Describe and understand key aspects of physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle.</p> <p><b>Computing:</b></p> <p>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</p>		
						
Lesson	Learning Objective	Success Criteria	Starter	Main	Plenary	Resources
1	To be able to write a description of the surface of an undiscovered planet.	<p>I can describe differences between the surface of the Earth and Moon.</p> <p>I can interpret data from graphs and tables.</p> <p>I can write a scientific description.</p>	Display the 'Search and discover' Thinkit and discuss with the children how the surface of the Moon and Earth differ.	<p>Discuss different categories for comparing the two planets such as terrain, atmosphere and weather, gravitational pull, vegetation and hours of daylight and temperature.</p> <p>Split the class into groups of 3 or 4 to introduce the day's task:</p> <p>It is 2084 and an unmanned probe, Opportunity 64, recently landed on the planet 653b, in the Onomatopoeia galaxy. Unfortunately the rover that was sent to explore the planet has malfunctioned, due to the unusual terrain. The mission today, is to use the samples sent back by Opportunity 64 to assess the terrain and to design and build a rover, better suited for the harsh environment on the planet.</p>	<p>Each group should choose three things that the rover vehicle will find most challenging when it encounters the planet.</p> <p>Discuss as a class their choice of challenges.</p>	<ul style="list-style-type: none"> <li>• Resource Sheet 1</li> <li>• Samples of rocks and sand, coloured for effect.</li> </ul>

		<p><b>Challenge:</b> I can explore different kinds of rocks and soils.</p>		<p>Distribute a selection of samples and the images and data from Resource Sheet 1. Explain that these samples, photographs and data were taken of the planet's surface by the first expedition probe.</p> <p>In this session children must use the information available to write a detailed description of the planet's surface and atmosphere. This description will guide them to think about the hazards that the rover vehicle will have to overcome. The description should include details on:</p> <ul style="list-style-type: none"> <li>• <b>the terrain</b></li> <li>• <b>the atmosphere</b></li> <li>• <b>the weather</b></li> <li>• <b>the gravity</b></li> <li>• <b>any vegetation</b></li> <li>• <b>hours of daylight</b></li> <li>• <b>average temperature</b></li> </ul>  <p>Encourage the children to think and write scientifically, including using measurements from the data sheet (Resource Sheet 1).</p> <p><b>Challenge:</b> Link to prior learning on rocks in science.</p>		
2	To be able to design a rover vehicle.	<p>I can design a rover vehicle to meet a given specification.</p> <p><b>Challenge:</b> I can draw a scale drawing of my design.</p>	<p>Display images of previous mars and moon rovers and discuss their features:</p> <ul style="list-style-type: none"> <li>• <b>Viking 1</b> and <b>Viking 2</b> (landed on Mars in 1976)</li> </ul>	<p>In this session children will design a rover vehicle to assess the terrain of planet 635b.</p> <p>They should continue to work in their groups, to design the rover, meeting the specification in Resource Sheet 1. Their design should take into account their assessment of the planet's terrain and atmosphere, created in session 1. The design should include an annotated drawing and additional description of the rover's functions, meeting each part of the specification.</p> <p><b>Challenge:</b> Use graph or square paper to draw a scale drawing of the rover design, annotating</p>	Referring back to the previous session, children should explain how their rover is designed to meet the challenges of the planet and present this to the rest of the class.	<ul style="list-style-type: none"> <li>• Resource Sheet 1</li> <li>• square or graph paper</li> <li>• rulers, protractors, compasses and set squares</li> </ul>



		<p>• <b>Spirit and Opportunity</b> (landed on Mars in 2004)</p>		<p>particular features.</p> <p>Link to prior maths learning on ratio and scale.</p>		
3	To be able to write an algorithm to control a rover vehicle.	<p>I can write an algorithm to direct the rover vehicle to perform a specific task.</p> <p><b>Challenge:</b> I can display an algorithm as a flow diagram.</p>	<p>One of the specification criteria is that the rover should be completely autonomous.</p> <p>Discuss as a class how control of the rover could be achieved – Through computer control and programming.</p>	<p>Discuss with the children the first stage of the programming process - Writing an algorithm (set of instructions) to perform the given task.</p> <p>Explain to the children that in this session they will be writing algorithms to perform the programming specification tasks in the data and specification sheet (Resource Sheet 1).</p> <p>Model the algorithm to perform the task:</p> <p>To collect a sample of sand from the desert and return it to the landing site.</p> <ol style="list-style-type: none"> <li>1. activate heat shields</li> <li>2. turn right 90 degrees</li> <li>3. travel 6 km at a speed of 20 km/h</li> <li>4. stop</li> <li>5. activate sample arm and scoop</li> <li>6. lower scoop into sand</li> <li>7. raise scoop</li> <li>8. retrieve sample</li> <li>9. turn 180 degrees</li> <li>10. travel 6 km at a speed of 20 km/h</li> <li>11. stop</li> <li>12. deposit sample into main spacecraft</li> </ol>	Children to test out and debug each other's algorithms.	<ul style="list-style-type: none"> <li>• Resource Sheet 1</li> <li>• Access to computers and the EducationCity Flow Diagram Tool.</li> </ul>



			<p><b>13. deactivate heat shields</b></p> <p>In their groups, children should write detailed instructions for the rover to perform the tasks.</p> <p><b>Challenge:</b> Introduce the children to the EducationCity Flow Diagram Tool and the activity and decision box functions. Children should write their algorithms using the Tool.</p> 		
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### Next Steps

#### **Design and Technology**

Construct prototypes of the rover designs and test them out on a mock landscape.



Name: \_\_\_\_\_ Class: \_\_\_\_\_

Designing your space shuttle.

**1** What will your space shuttle look like?

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**2** What special features will you need to include?

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

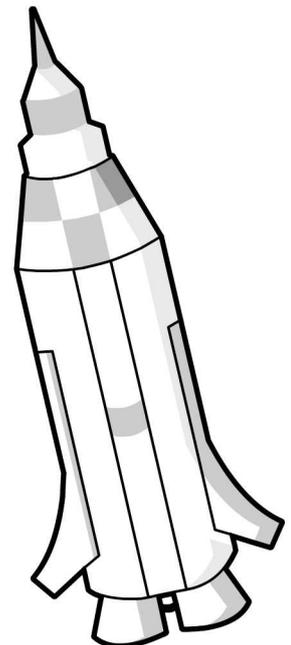
**3** Draw two designs to show what your space shuttle might look like.

Design 1	Design 2
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Gathering resources.

**4** What resources will you need? List them below.

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_



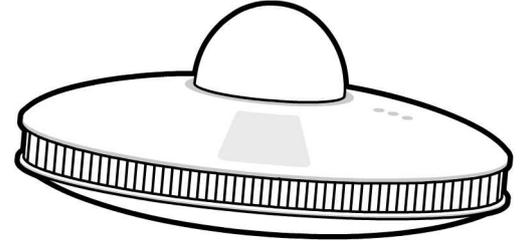


Name: \_\_\_\_\_ Class: \_\_\_\_\_

Making your space shuttle.

**5** How will you make it? Write yourself some instructions below.

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_



**6** Once you have finished making your space shuttle, draw a picture of it here.

Evaluating your design.

**7** Which space shuttle did you make and why?

**8** Were you pleased with your space shuttle? Why?

**9** How could you have improved your space shuttle and why?

Scientists and engineers are always trying to improve their designs. For example, once they have designed a fast car, they would then work building an even faster one. At the moment teams from across the world are designing and testing cars that they hope will one day break the existing land-speed record. This is how they are doing it.

### **The Bloodhound Project**

- Working as part of the Bloodhound Project, the team includes the former land-speed record holder Richard Noble and the current record holder Andy Green.
- The car currently being designed is constructed from a rocket, a jet engine and an additional Formula 1 racing car engine.
- The design was tested in October 2012. The results were so impressive that the engineers are convinced it will be able to travel up to 1000 miles per hour.
- The project is very expensive and so using a jet engine was one way of keeping costs down. The jet engine was donated by the army.

### **Who else is designing a car to break the land-speed record?**

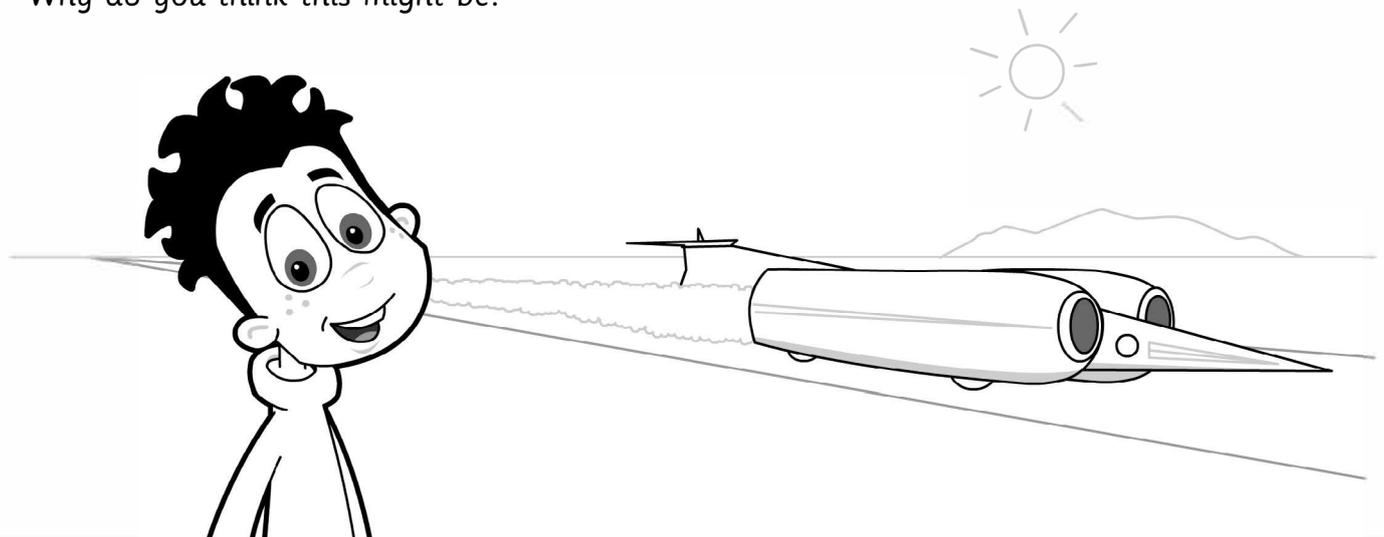
- There are five teams who are working on car designs to break the land-speed record.
- One of the other teams is run by American Waldo Stakes. He claims his car, called Sonia Wind, will be able to travel at 2000 mph.
- There are two competitors in Australia currently working on designs along with one in New Zealand and a Canadian-American partnership.

### **Design your own car....**

- Could you design a car that could break the land-speed record?  
What features would your car need?

### **Let's find out....**

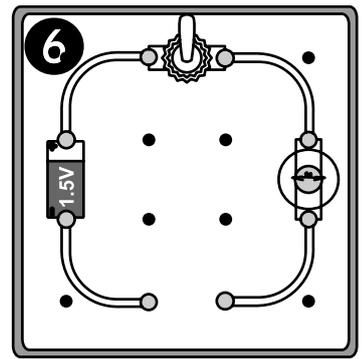
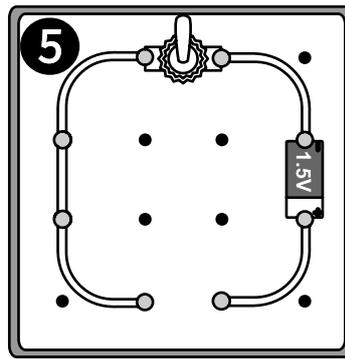
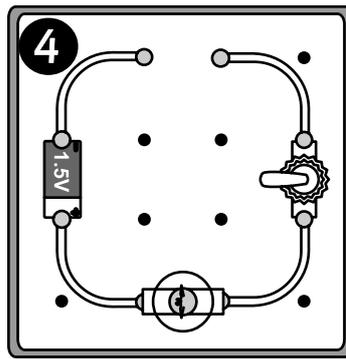
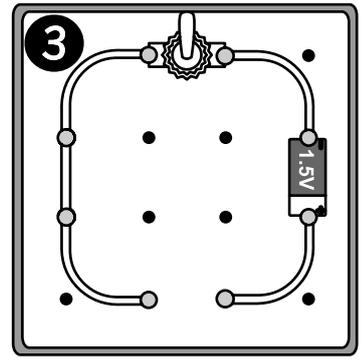
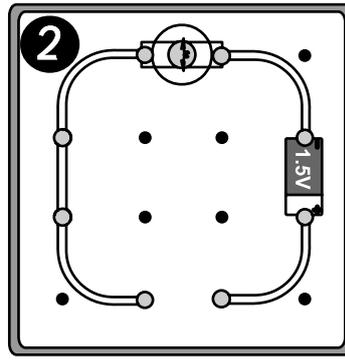
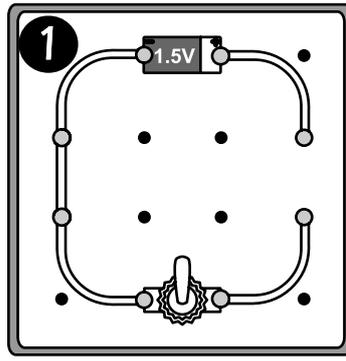
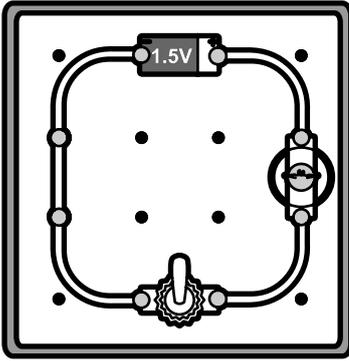
How many land-speed record attempts have there been? Use the internet to find out as much information as you can. Many of the attempts take place in deserts or on salt flats. Why do you think this might be?



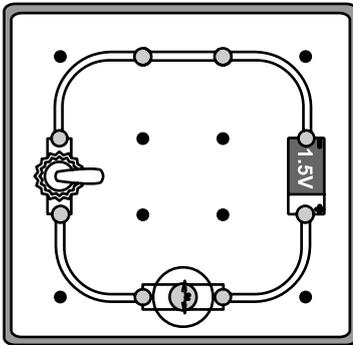


Name: \_\_\_\_\_ Class: \_\_\_\_\_

Draw the missing parts to complete the circuits. Use the working circuit on the left to help you.



This circuit looks like it should work, but it doesn't. Read the sentences below and check all of the reasons why the circuit is not working.



- a) The battery might need to be more powerful to light this bulb.
- b) The battery might be in the wrong place in the circuit.
- c) The bulb might be in the wrong way.

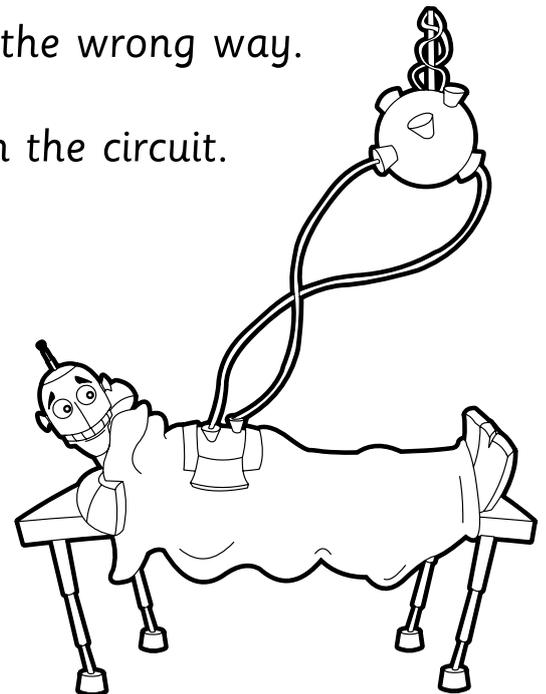
d) The switch might be in the wrong place in the circuit.

e) The switch might be in the wrong way.

f) There might be a gap in the circuit.

g) The bulb might have blown.

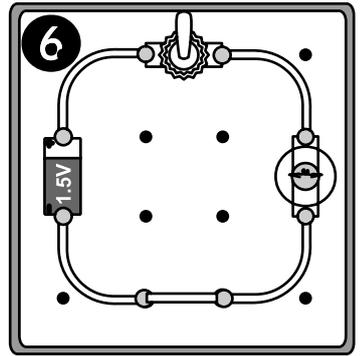
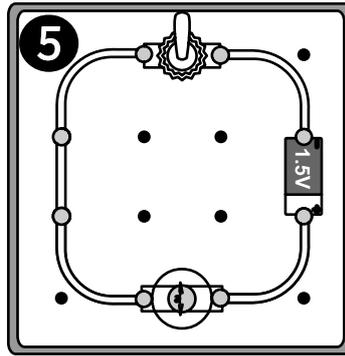
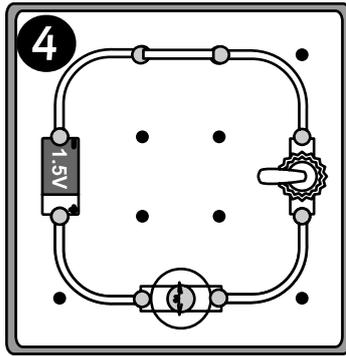
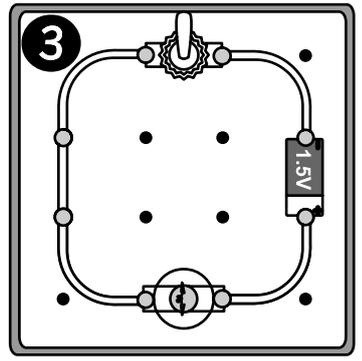
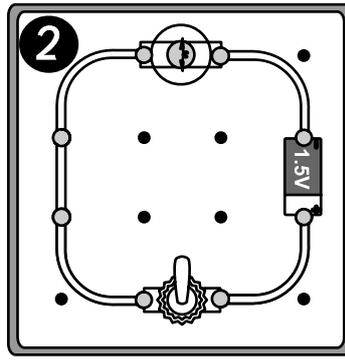
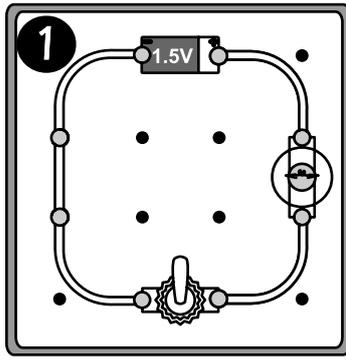
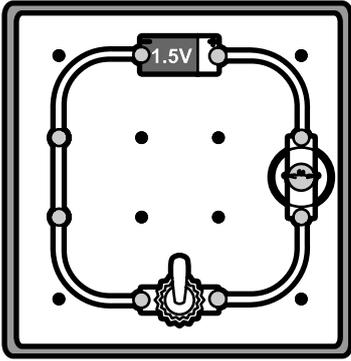
h) The battery might be dead.



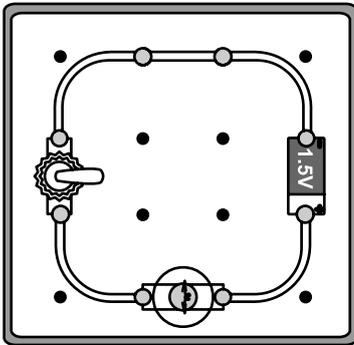


Name: \_\_\_\_\_ Class: \_\_\_\_\_

Draw the missing parts to complete the circuits. Use the working circuit on the left to help you.



This circuit looks like it should work, but it doesn't. Read the sentences below and check all of the reasons why the circuit is not working.



- a) The battery might need to be more powerful to light this bulb.
- b) The battery might be in the wrong place in the circuit.
- c) The bulb might be in the wrong way.

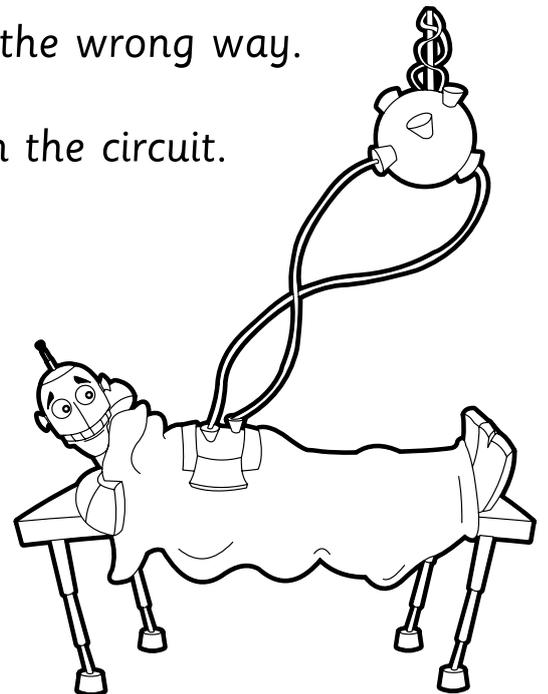
d) The switch might be in the wrong place in the circuit.

e) The switch might be in the wrong way.

f) There might be a gap in the circuit.

g) The bulb might have blown.

h) The battery might be dead.





# Robot Repair

## Activity Sheet

Name: \_\_\_\_\_ Class: \_\_\_\_\_

Complete the circuits below by labeling each battery with the correct voltage.  
One has been done for you.



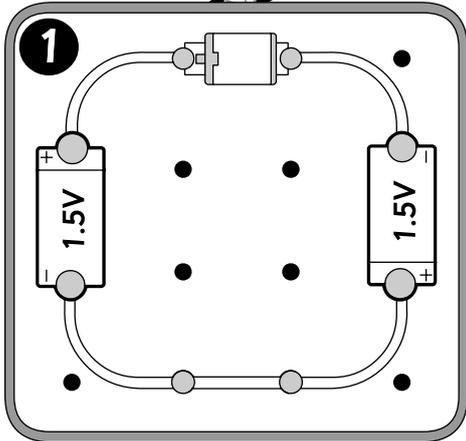
Batteries:

1.5V

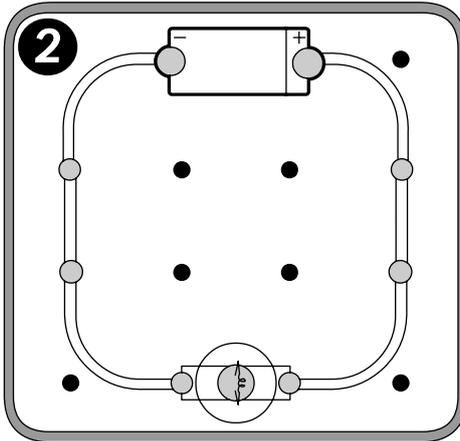
3V

4.5V

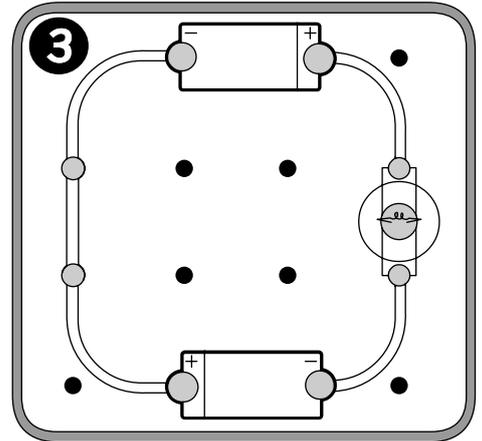
6V



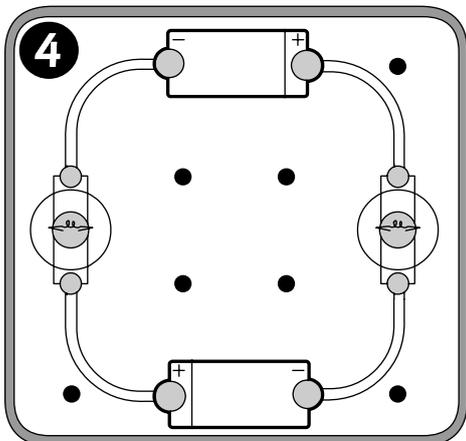
3v motor



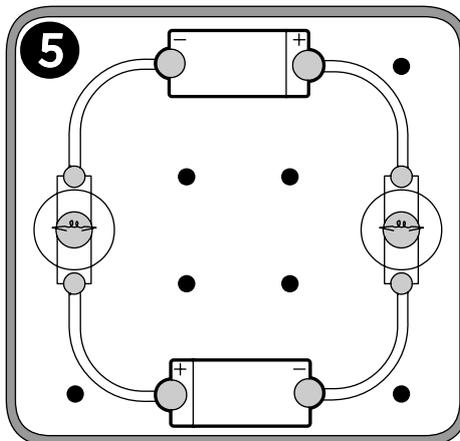
6v bulb



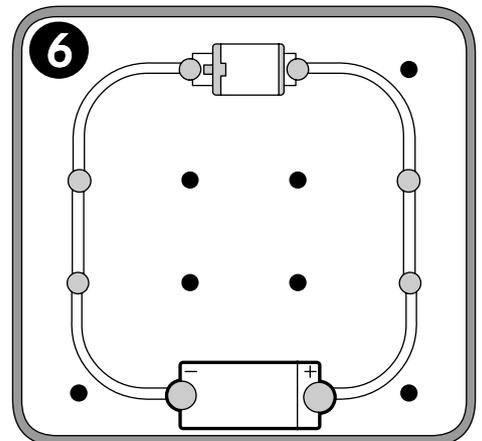
4.5v bulb



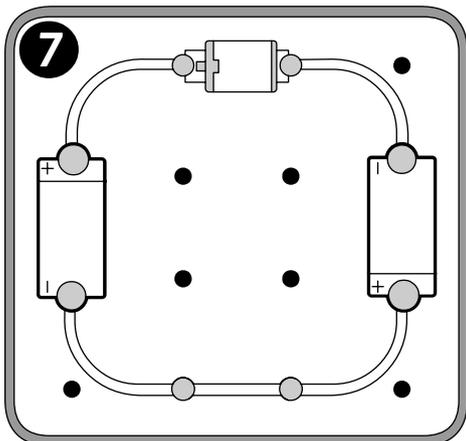
Two 1.5v bulbs



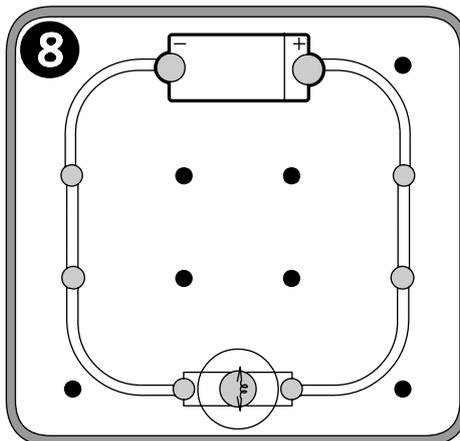
Two 3v bulbs



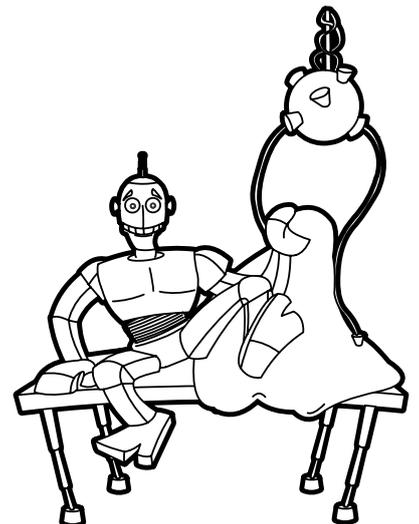
4.5v motor



6v motor



6v bulb



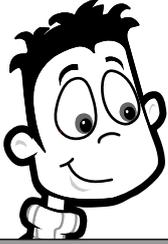


# Robot Repair

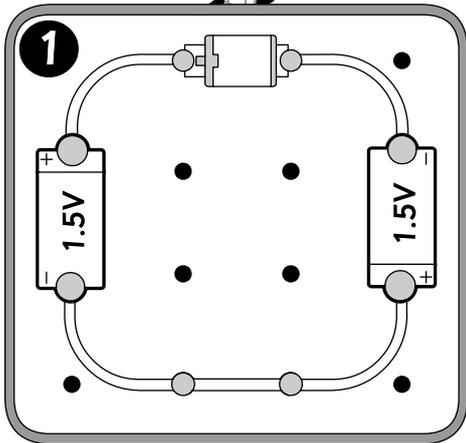
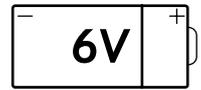
## Activity Sheet

Name: \_\_\_\_\_ Class: \_\_\_\_\_

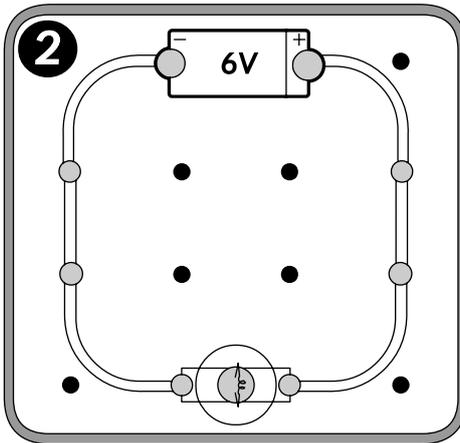
Complete the circuits below by labeling each battery with the correct voltage.  
One has been done for you.



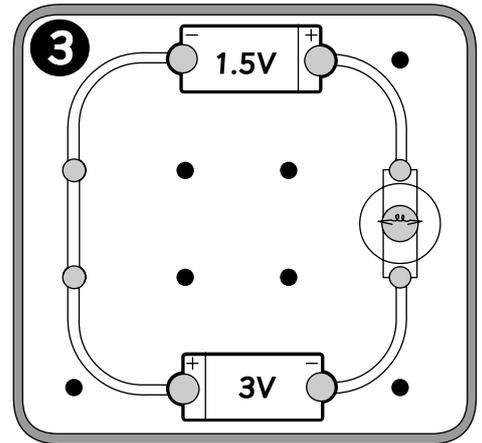
Batteries:



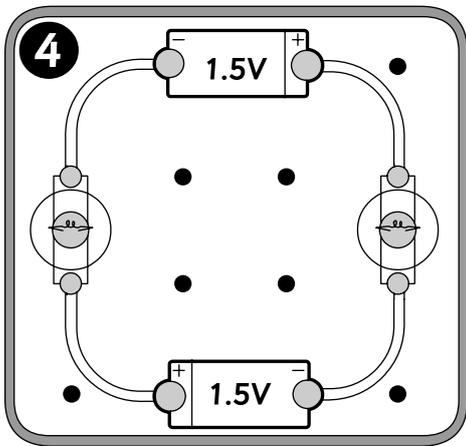
3v motor



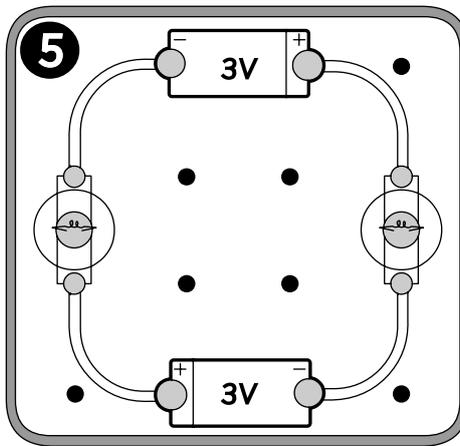
6v bulb



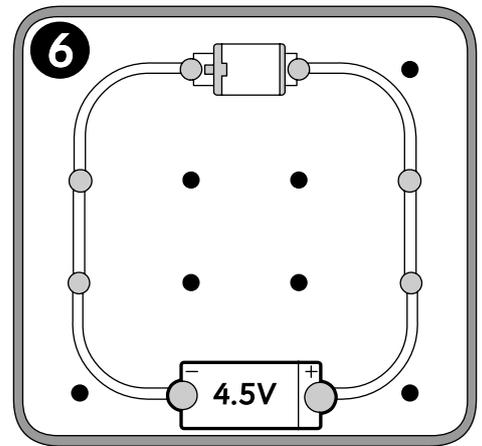
4.5v bulb



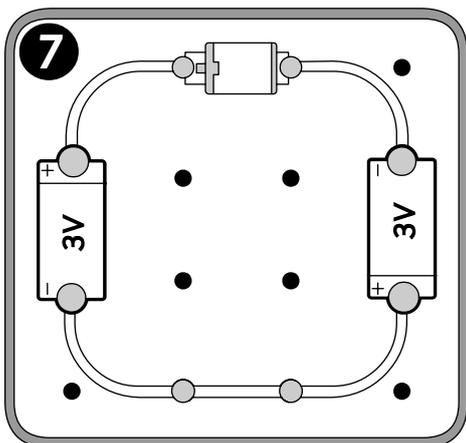
Two 1.5v bulbs



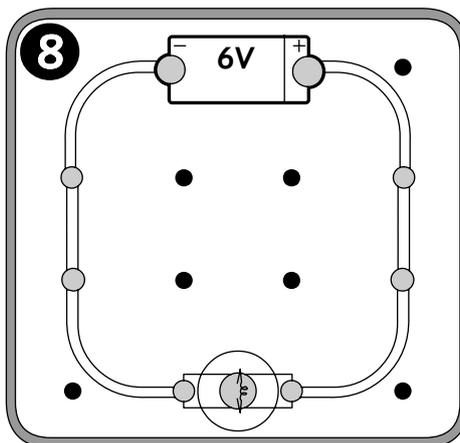
Two 3v bulbs



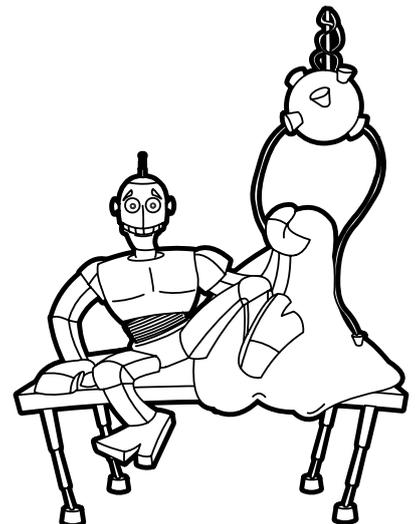
4.5v motor



6v motor



6v bulb



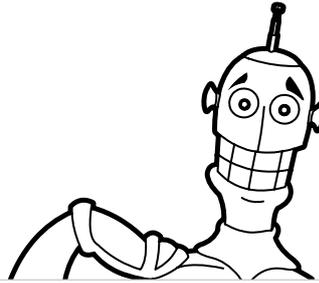


# Robot Repair

## Activity Sheet

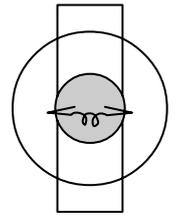
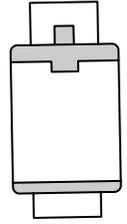
Name: \_\_\_\_\_ Class: \_\_\_\_\_

Look at the symbols and complete the circuits by drawing the missing parts.



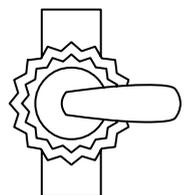
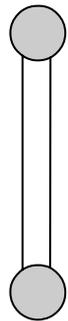
**1**

**2**



**3**

**4**



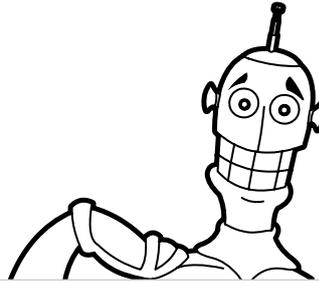


# Robot Repair

## Activity Sheet

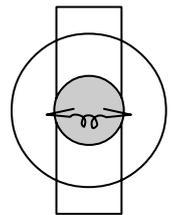
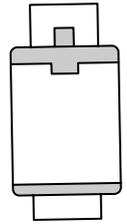
Name: \_\_\_\_\_ Class: \_\_\_\_\_

Look at the symbols and complete the circuits by drawing the missing parts.



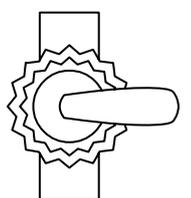
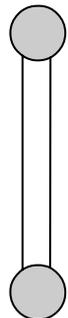
**1**

**2**



**3**

**4**





### Overview of these Investigations

- This teacher-led demonstration shows how light travels in a straight line by using a laser.

### Prior knowledge

Students will already have some prior knowledge and will recognise that light can reflect off surfaces. They may also have some knowledge about how light travels.

### Links to working scientifically

- Observation and description of experimental data
- Recognise how evidence can be used to support ideas

### Keywords

laser, light, beam, travel, straight line, reflect, surface, emit, mirror

### Resources required

- Laser pointer
- Blank wall
- 2 or more mirrors
- Talcum powder or icing sugar
- Ability to darken the room

### Health and Safety/Warnings

- A darkened room may provide extra trip hazards, especially for those with sight problems, ensure a clear working space and all chairs are under tables etc.
- Handle lasers safely. Keep them at a low level to help prevent them shining into the eye. Ensure that the light will hit an opaque object to absorb the light and not escape via windows etc. into other rooms.
- Take into consideration those present who may have any respiratory problems that may be irritated by the fine dust of talcum powder or icing sugar.
- A full risk assessment should be taken out before any practical within a particular work area and group of students, as the above warnings may not cover all aspects that need to be considered.

### Useful EducationCity resources

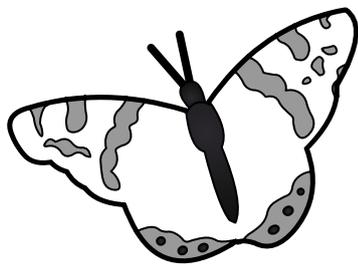
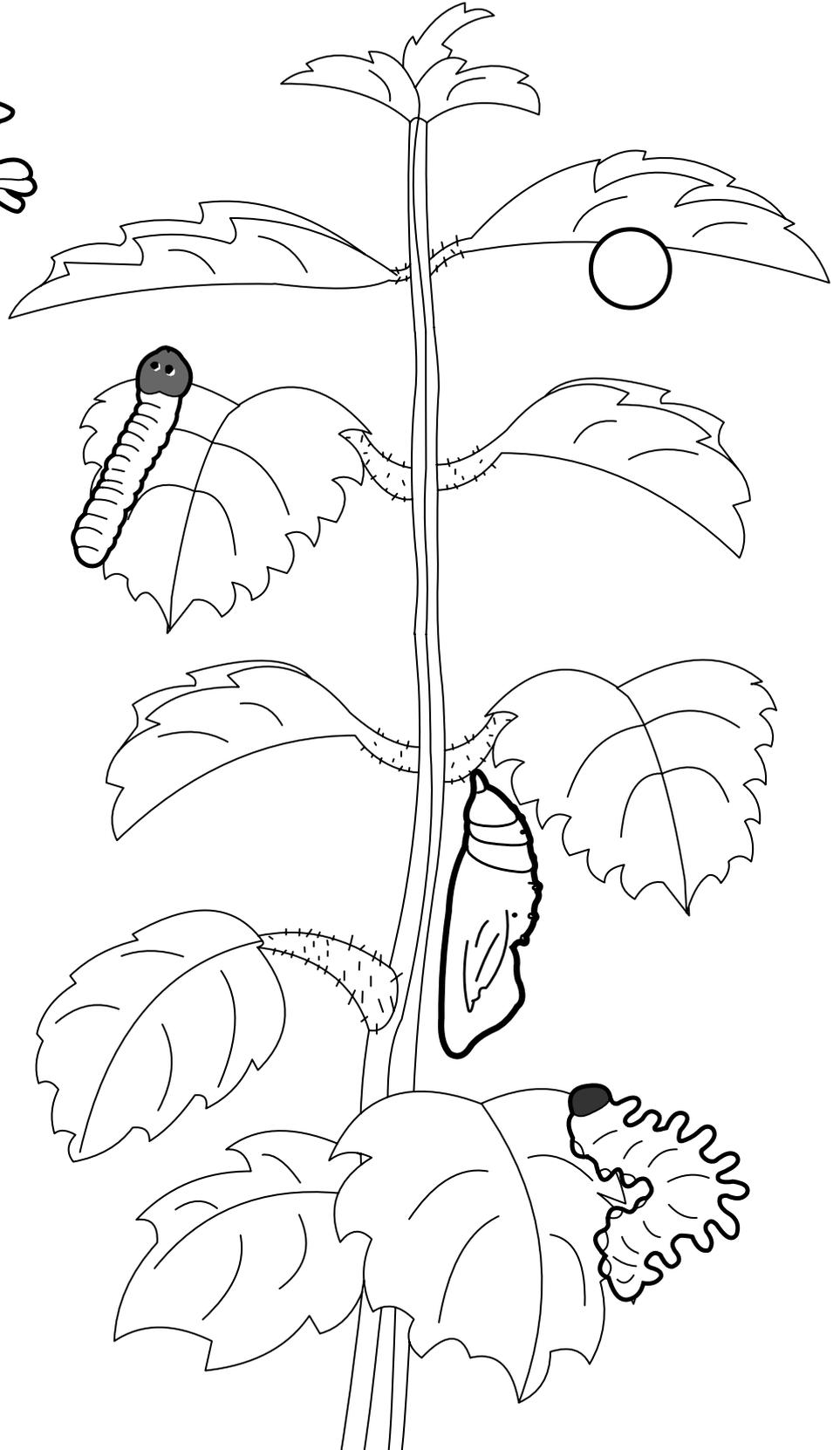
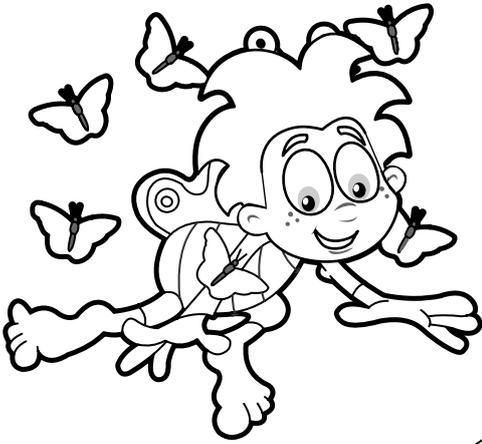
- Topic Tools, Activities or Learn Screens within relevant topic objectives can be also used alongside this practical idea. They can be used on the whiteboard or individually. See their associated materials for ideas on their uses.



Name: \_\_\_\_\_ Class: \_\_\_\_\_

### Instructions for teachers:

Show the illustration from the activity on the whiteboard. Choose stages of the life cycle in order - egg, small caterpillar (larva), large caterpillar, pupa and butterfly. Ask the children to colour each of these stages (in the correct colour if possible) as they are read out.

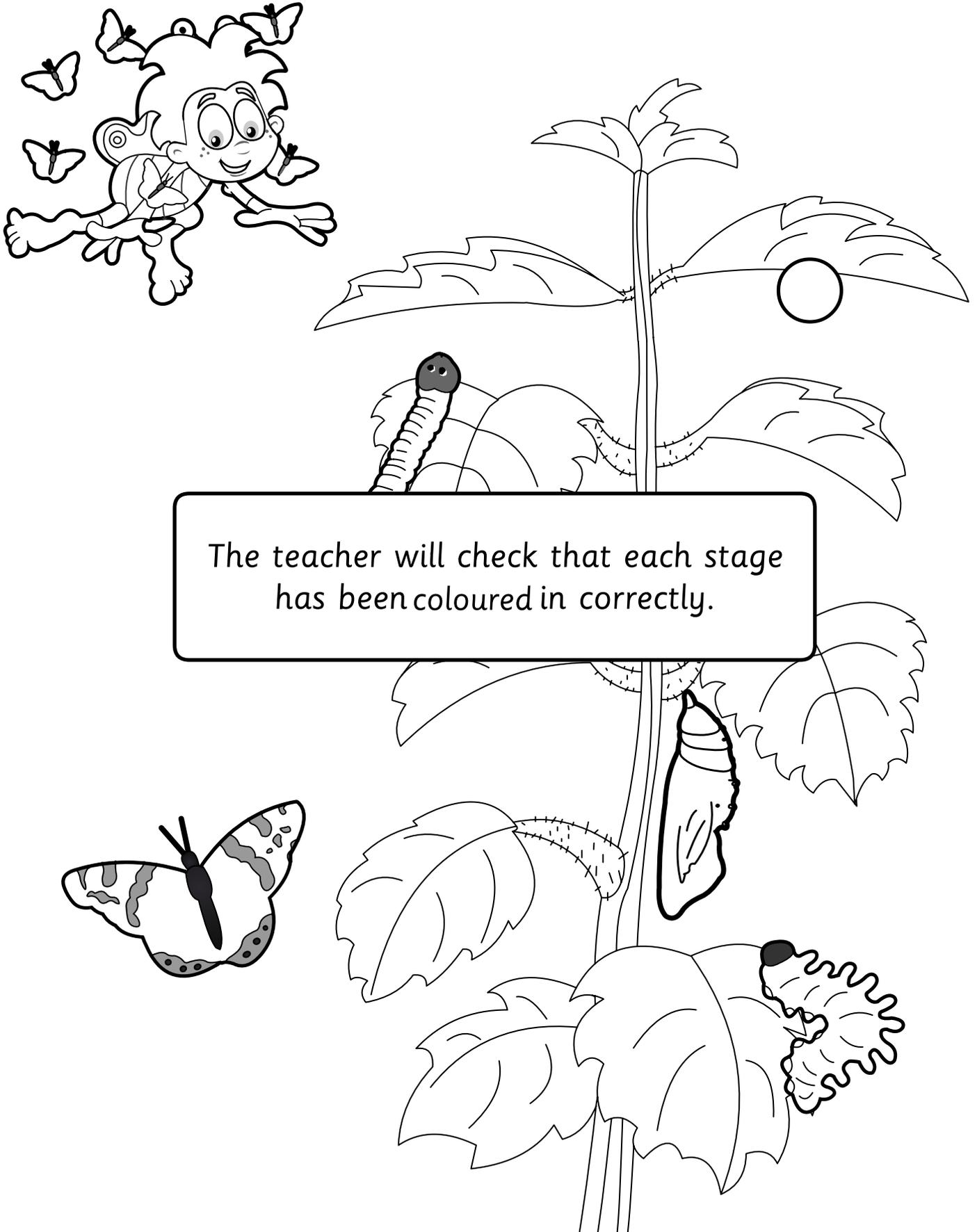




Name: \_\_\_\_\_ Class: \_\_\_\_\_

### Instructions for teachers:

Show the illustration from the activity on the whiteboard. Choose stages of the life cycle in order - egg, small caterpillar (larva), large caterpillar, pupa and butterfly. Ask the children to colour each of these stages (in the correct colour if possible) as they are read out.



The teacher will check that each stage has been coloured in correctly.



Name: \_\_\_\_\_ Class: \_\_\_\_\_

Fill in the blanks with either 'higher' or 'lower'.

- 1 A small whistle will make ..... pitched sounds than a bigger whistle.
- 2 A large drum will make ..... pitched sounds than a smaller drum.
- 3 If you tighten the skin on a drum it makes the pitch .....
- 4 If you make the length of a guitar string shorter you make the pitch .....
- 5 If you tighten a guitar string, by turning its key, you make its pitch .....
- 6 On a guitar the thicker strings have a ..... pitch.

Use the words below to complete the sentences.

strings      vibrations      skin      air

- 7 Sounds are made by .....
- 8 On a guitar the ..... vibrate.
- 9 In a whistle the ..... inside it vibrates.
- 10 On a drum the ..... vibrates.





Name: \_\_\_\_\_ Class: \_\_\_\_\_

Fill in the blanks with either 'higher' or 'lower'.

- 1 A small whistle will make ..... **higher** ..... pitched sounds than a bigger whistle.
- 2 A large drum will make ..... **lower** ..... pitched sounds than a smaller drum.
- 3 If you tighten the skin on a drum it makes the pitch ..... **higher** .....
- 4 If you make the length of a guitar string shorter you make the pitch ..... **higher** .....
- 5 If you tighten a guitar string, by turning its key, you make its pitch ..... **higher** .....
- 6 On a guitar the thicker strings have a ..... **lower** ..... pitch.

Use the words below to complete the sentences.

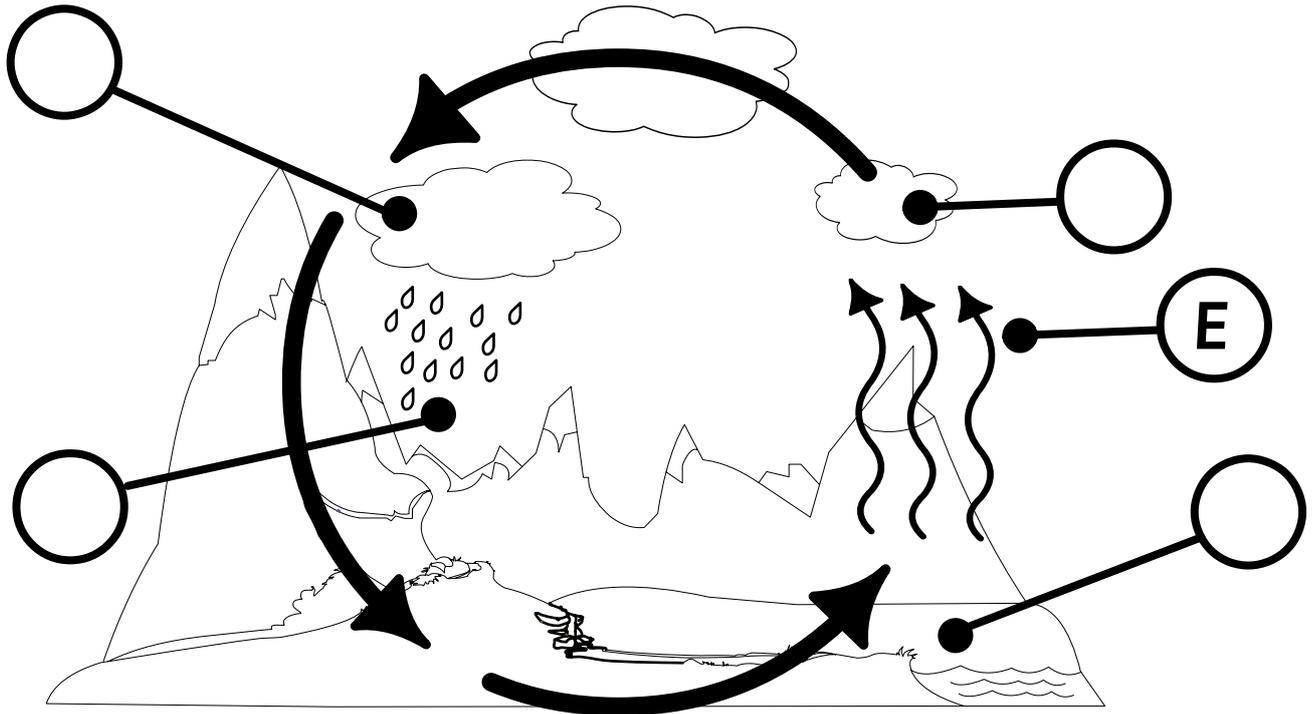
strings      vibrations      skin      air

- 7 Sounds are made by ..... **vibrations** .....
- 8 On a guitar the ..... **strings** ..... vibrate.
- 9 In a whistle the ..... **air** ..... inside it vibrates.
- 10 On a drum the ..... **skin** ..... vibrates.



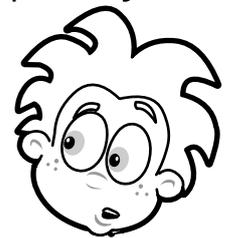


Name: \_\_\_\_\_ Class: \_\_\_\_\_



Using the sentences below, complete the diagram using the correct letters.

- (A) Water vapour in the air rises and then condenses into tiny droplets of water. Clouds are formed.
- (B) Rivers flow into the sea.
- (C) Rain falls onto mountains to form mountain springs, which join together to form rivers.
- (D) Droplets of water in clouds join together to form bigger drops of water, which start to fall as rain.
- (E) Water evaporates from the seas, lakes and plants etc.

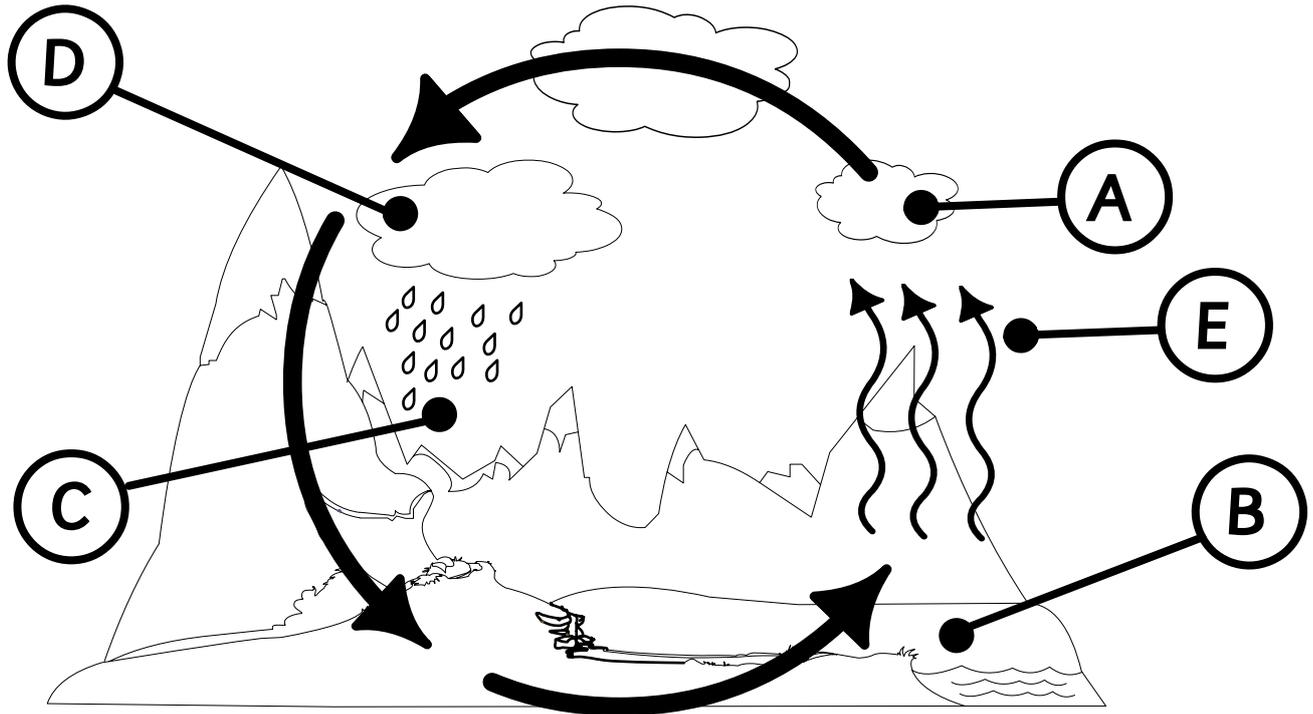


Now help Sten to answer these questions about the water cycle.

- 1 What is the scientific name for steam turning back in to water?  
\_\_\_\_\_
- 2 Explain why steam is made when you boil water.  
\_\_\_\_\_  
\_\_\_\_\_
- 3 Where do all rivers flow to eventually?  
\_\_\_\_\_
- 4 What is a cloud?  
\_\_\_\_\_  
\_\_\_\_\_
- 5 Sten left his cup of water out in the sun on a warm day and the water disappeared! Can you explain why? \_\_\_\_\_

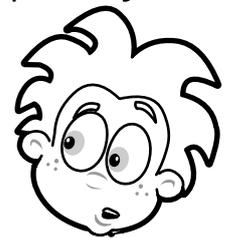


Name: \_\_\_\_\_ Class: \_\_\_\_\_



Using the sentences below, complete the diagram using the correct letters.

- (A) Water vapour in the air rises and then condenses into tiny droplets of water. Clouds are formed.
- (B) Rivers flow into the sea.
- (C) Rain falls onto mountains to form mountain springs, which join together to form rivers.
- (D) Droplets of water in clouds join together to form bigger drops of water, which start to fall as rain.
- (E) Water evaporates from the seas, lakes and plants etc.



Now help Sten to answer these questions about the water cycle.

- 1 What is the scientific name for steam turning back in to water?  
**Condensation**
- 2 Explain why steam is made when you boil water.  
**Because the water changes state, it becomes a gas called steam when it is boiled.**
- 3 Where do all rivers flow to eventually?  
**All rivers flow to the sea eventually.**
- 4 What is a cloud?  
**A cloud is all of the tiny droplets of water evaporated by the sun joining together and condensing.**
- 5 Sten left his cup of water out in the sun on a warm day and the water disappeared! Can you explain why? **It has evaporated.**



# Home and Dry

## Activity Sheet

Name: \_\_\_\_\_ Class: \_\_\_\_\_



Write the stages of the water cycle in the first row of labels at the bottom of the page.



On the second row, write how the water appears at each stage of the water cycle.



Cut out the pictures and labels.

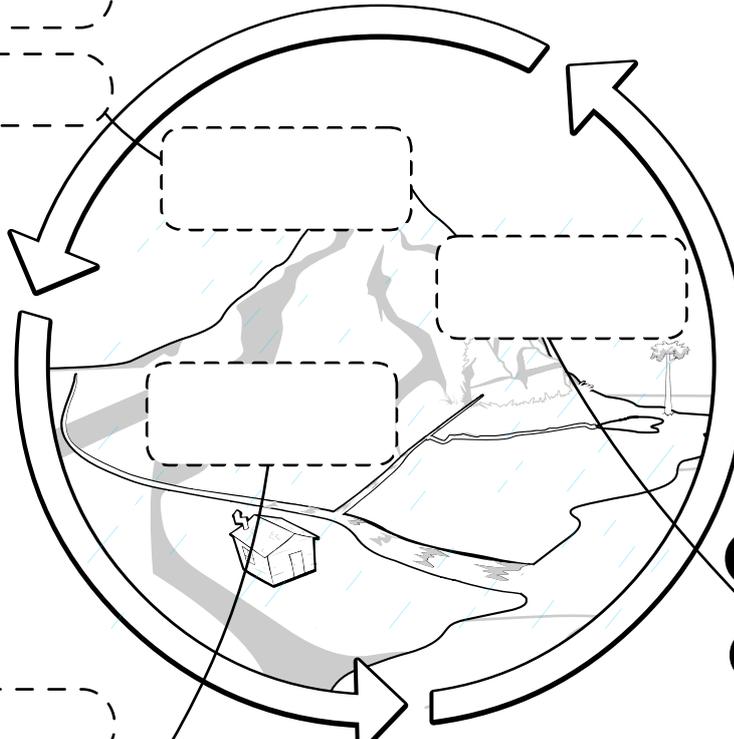


Glue them into position on the water cycle diagram to show the three stages of the water cycle.



1 \_\_\_\_\_

a \_\_\_\_\_



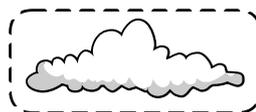
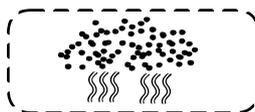
2 \_\_\_\_\_

b \_\_\_\_\_

3 \_\_\_\_\_

c \_\_\_\_\_

Two rows of dashed boxes for writing labels. The second row has a scissors icon at the end, indicating where to cut.







# Let There Be Light

## Activity Sheet

Name: \_\_\_\_\_ Class: \_\_\_\_\_

Add light arrows onto the pictures to show how each of the objects are seen.

**1** How does Stig see the book?



**2** How does Sten see the flower?



**3** How does Klara see the firework?



Answer the questions below.

**4** Sten is looking in a mirror. Describe how he can see himself in it. Draw a diagram to show this.

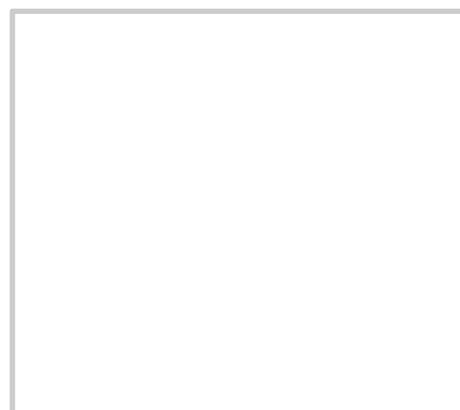
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**5** Klara is in the park. She sees a shadow under a tree. It is the same shape as the tree. How is this shadow formed? Why is it the same shape as the tree?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



Name: \_\_\_\_\_ Class: \_\_\_\_\_

Add light arrows onto the pictures to show how each of the objects are seen.

**1** How does Stig see the book?



**2** How does Sten see the flower?



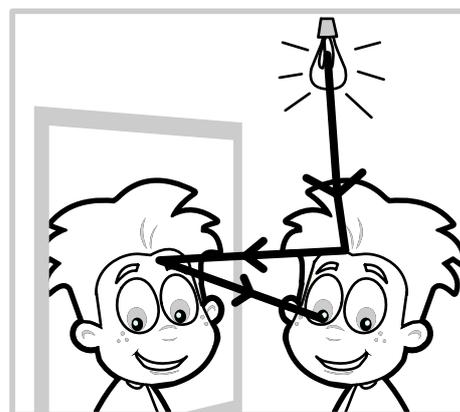
**3** How does Klara see the firework?



Answer the questions below.

**4** Sten is looking in a mirror. Describe how he can see himself in it. Draw a diagram to show this.

**Light from a light source travels to Sten and reflects off him. The light then travels from Sten to the mirror. The light reflects off the mirror and into Sten's eye, who can then see the image.**



**5** Klara is in the park. She sees a shadow under a tree. It is the same shape as the tree. How is this shadow formed? Why is it the same shape as the tree?

**The Sun is a light source. An opaque object can block light given out by a light source and forms a shadow. Light travels in straight lines and so the light that is blocked is the same shape as the object.**

**Accept all reasonable responses**

# About EducationCity

EducationCity produces fun, educational materials to engage students in learning and empower teachers to tailor their teaching. [Take a look at how EducationCity can support you in the classroom:](#)



## Target Lesson Objectives Easily

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**Mark Sanderson,**

Senior ICT Consultant, Herefordshire Learning and Achievement Service

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Email: [trials@educationcity.com](mailto:trials@educationcity.com)