

## Bringing back glass into the primary classroom – UK primary science/STEM curricula links



UK curricula links provided in the table below are intended to be a guide to help teachers use the resource within planned lessons. You may find other areas of the curriculum that are covered by the activities – our list is not necessarily exhaustive. Activities may also work well for science or STEM clubs, home learning, enrichment activities such as science weeks, science fairs or other special events.

Activity	England	Scotland	Wales	Northern Ireland
<b>Arctic Ice</b>	<p><b>Y5 Properties and changes of materials</b></p> <ul style="list-style-type: none"> <li>- compare and group together everyday materials on the basis of their properties, including their conductivity (thermal)</li> <li>- give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</li> <li>- demonstrate that changes of state are reversible changes</li> </ul>	<p><b>SCN 2-15a</b></p> <p>By contributing to investigations into familiar changes in substances to produce other substances, I can describe how their characteristics have changed.</p> <p><b>SCN 2-20a</b></p> <p>Through research and discussion I have an appreciation of the contribution that individuals are making to scientific discovery and invention and the impact this has made on society.</p>	<p><b>Being Curious</b></p> <p>PS3: I can engage with scientific and technological evidence to inform my own opinions.</p> <p>I can understand how my actions and the actions of others impact on the environment and living things.</p> <p><b>Matter</b></p> <p>PS2: I can explore and describe the properties of materials and justify their uses. I can observe and describe ways in which materials change when they are mixed together.</p>	<p><b>The World Around Us (WAU) - Movement &amp; Energy</b></p> <p>KS2: how knowledge in science supports technological inventions</p> <p><b>WAU – Change over time</b></p> <p>KS2: changes that occur to everyday substances, e.g. when heated or cooled</p> <p><b>WAU - Place</b></p> <p>KS2: why materials are chosen for their use</p>
<b>Feed the Birds</b>	<p><b>Y1 Animals including humans</b></p> <ul style="list-style-type: none"> <li>- identify and name a variety of common animals including birds</li> <li>- identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> </ul> <p><b>Y2 Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>- find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</li> <li>- describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food</li> </ul> <p><b>Y3 Animals, including humans</b></p> <ul style="list-style-type: none"> <li>- identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.</li> </ul> <p><b>Y4 Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>- explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> </ul> <p><b>Y6 Evolution and inheritance</b></p> <ul style="list-style-type: none"> <li>- identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</li> </ul>	<p><b>SCN 1-02a</b></p> <p>I can explore examples of food chains and show an appreciation of how animals and plants depend on each other for food.</p>	<p><b>Being Curious</b></p> <p>PS2: I can recognise that what I do, and the things I use, can have an impact on my environment and on living things.</p> <p>PS3: I can describe the features of organisms and recognise how they allow them to live, grow and reproduce for survival in their environment</p> <p>PS4: I can explain how the impact of our actions contribute to the changes in the environment and biodiversity.</p>	<p><b>WAU - Interdependence</b></p> <p>KS1: how plants and animals rely on each other within the natural world; interdependence of people, plants, animals and place; the variety of living things in the world and how we can take care of them.</p> <p>KS2: the relationship between animals and plants in a habitat</p> <p><b>WAU - Place</b></p> <p>KS1: ways in which living things depend on and adapt to their environment</p> <p><b>WAU - Change over time</b></p> <p>KS1: ways in which change occurs in the natural world</p> <p>KS2: how waste can be reduced, reused or recycled and how this can be beneficial</p>

**Fire Fighting****Y5 Properties and changes of materials**

- explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning

**SCN 2-19a**

I have collaborated in activities which safely demonstrate simple chemical reactions using everyday chemicals. I can show an appreciation of a chemical reaction as being a change in which different materials are made.

**Matter**

PS2: I can explore and describe the properties of materials and justify their uses. I can observe and describe ways in which materials change when they are mixed together.

**WAU - Change over time**

KS2: changes that occur to everyday substances, for example, when dissolved in water or heated and cooled

**Glitter Discovery Jar****Y1 Everyday materials**

- identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock

**Y2 Uses of everyday materials**

- identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses

**Y3 Light**

- notice that light is reflected from surfaces  
recognise that shadows are formed when the light from a light source is blocked by an opaque object  
- find patterns in the way that the size of shadows change

**SCN 2-11b**

By exploring reflections, the formation of shadows and the mixing of coloured lights, I can use my knowledge of the properties of light to show how it can be used in a creative way.

**Matter**

PS1: I can explore the properties of materials and choose different materials for a particular use.

**Being Curious**

PS2: I can explore and communicate the basic properties of light,

**WAU - Movement & Energy**

KS1: different sources of light  
KS2: how light shines through some materials

**WAU - Change over time**

KS2: the formation of shadows and how they change

**Investigating Windows****Y5 Properties and changes of materials**

- compare and group together everyday materials on the basis of their properties, including their hardness, transparency and conductivity (thermal)  
- give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic

**SCN 3-04a**

I can use my knowledge of the different ways in which heat is transferred between hot and cold objects and the thermal conductivity of materials to improve energy efficiency in buildings or other systems.

**Being curious**

PS2: I can explore and communicate the basic properties of light.  
PS3: I can apply and make links between a range of models and use them to support or challenge theories.

**WAU - Place**

KS2: why materials are chosen for their use

**SCN 1-20a**

I have contributed to discussions of current scientific news items to help develop my awareness of science.

**Make a Model Lung****Y6 Animals including humans**

- recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function

**SCN 2-12a**

By investigating some body systems and potential problems which they may develop, I can make informed decisions to help me to maintain my health and wellbeing.

**The world around us**

PS3: I can evaluate the factors which affect the development and health of organisms.

**WAU - Movement and Energy**

KS2: design and make models

**Personal development and mutual understanding - Health, Growth and Change**

KS2: knowing about the harmful effects to themselves and others of tobacco

**Make your own  
Microscope**

**Y6 Light**

- recognise that light appears to travel in straight lines.
- use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them

**SCN 0-12a**

I can identify my senses and use them to explore the world around me.

**SCN 3-11a**

By exploring the refraction of light when passed through different materials, lenses and prisms, I can explain how light can be used in a variety of applications.

**Being curious**

Being curious and searching for answers is essential to understanding and predicting phenomena.  
PS2: I can explore and communicate the basic properties of light.

**Forces and energy**

PS3: I can explain how the properties of sound and light will affect how they are experienced. By manipulating the properties of sound and light, I can produce a desired effect.

**WAU - Movement & Energy**

KS2: how light shines through some materials

**Make your own  
Thermometer**

**Y4 States of Matter**

- compare and group materials together, according to whether they are solids, liquids or gases
- observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)

**Y5 Properties and changes of materials**

- give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic

**SCN 0-05a/SCN 1-05a**

By investigating how water can change from one form to another, I can relate my findings to everyday experiences.

**Being Curious**

PS3: I can apply and make links between a range of models and use them to support or challenge theories.

**WAU - Movement and Energy**

KS2: design and make models

**WAU - Place**

KS2: why materials are chosen for their use

**Making Music**

**Y4 Sound**

- identify how sounds are made, associating some of them with something vibrating
- recognise that vibrations from sounds travel through a medium to the ear
- find patterns between the pitch of a sound and features of the object that produced it.
- find patterns between the volume of a sound and the strength of the vibrations that produced it
- recognise that sounds get fainter as the distance from the sound source increases

**SCN 0-11a**

Vibrations and waves (second)Through play, I have explored a variety of ways of making sounds.

**SCN 1-11a**

By collaborating in experiments on different ways of producing sound from vibrations, I can demonstrate how to change the pitch of the sound.

**Being curious**

PS2: I can explore and communicate the basic properties of sound.

**Forces and energy**

PS3: I can explain how the properties of sound will affect how they are experienced. By manipulating the properties of sound, I can produce a desired effect.

**WAU - Movement & Energy**

KS2: how sound travels through some materials

**WAU - Place**

KS2: why materials are chosen for their use

**Mirror Images**

**Y3 Light**

- notice that light is reflected from surfaces

**Y6 Light**

- recognise that light appears to travel in straight lines
- use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye
- explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes

**SCN2-11b**

By exploring reflections, the formation of shadows and the mixing of coloured lights, I can use my knowledge of the properties of light to show how it can be used in a creative way.

**Being Curious**

PS2: I can explore and communicate the basic properties of light

**Matter**

PS2: I can explore the properties of materials and choose different materials for a particular use.

**Forces and Energy**

PS2: I can explore and communicate the basic properties of light, sound, electricity and magnetism.  
PS2: I can explore and communicate the basic properties of sound.

**WAU - Movement & Energy**

KS2: how light shines through some materials

**WAU - Place**

KS2: why materials are chosen for their use

**Plant Germination and Growth**

**Y2 Plants**

- observe and describe how seeds and bulbs grow into mature plants
- find out and describe how plants need water, light and a suitable temperature to grow and stay healthy

**Y2 Uses of everyday materials**

- identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses

**Y3 Plants**

- explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant

**Y5 Properties and changes of materials**

- give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic

**SCN 0-03a**

I have helped to grow plants and can name their basic parts. I can talk about how they grow and what I need to do to look after them.

**SCN 1-03a**

I can help to design experiments to find out what plants need in order to grow and develop. I can observe and record my findings and from what I have learned I can grow healthy plants in school.

**The world around us**

PS1: I can recognise that plants and animals are living things which grow; I can recognise that what I do, and the things I use, can have an impact on my environment and on living things.

**WAU - Interdependence**

KS1: the variety of living things in the world and how we can take care of them  
KS2: plants and plant growth

**WAU - Place**

KS2: why materials are chosen for their use

**Soil Profiling**

**Y3 Rocks**

- recognise that soils are made from rocks and organic matter

**SCN 3-17a**

Through evaluation of a range of data, I can describe the formation, characteristics and uses of soils, minerals and basic types of rocks.

**Matter**

PS3: I can recognise that our planet provides natural materials and can explain why they may have been processed to make them useful.

**WAU - Place**

KS2: how place influences the nature of life

**Water Cycle in a Jar**

**Y4 States of matter**

- observe that some materials change state when they are heated or cooled
- identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature

**SCN 0-05a/SCN 1-05a**

By investigating how water can change from one form to another, I can relate my findings to everyday experiences.

**SCN 2-05a**

I can apply my knowledge of how water changes state to help me understand the processes involved in the water cycle in nature over time.

**Being Curious**

PS3: I can suggest conclusions as a result of carrying out my inquiries.

PS4: I can use a range of models to explain and make predictions.

**Matter**

PS2: I can recognise patterns from my observations and investigations and can communicate my findings; I can use my knowledge and understanding to predict effects as part of my scientific exploration

PS3: I can recognise that changes in materials affect their properties and uses under different conditions.

**WAU - Changes over time**

KS1: the effect of heating and cooling some everyday substances

KS2: changes of state in the water cycle

**WAU - Place**

KS2: why materials are chosen for their use