

**Year 6 Science Sequence**  
Living things and their habitats

| National Curriculum Objective                                                                                                                                                                                                                                                                                                                      | Key Learning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | I Can...                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.</li> <li>Give reasons for classifying plants and animals based on specific characteristics.</li> </ul> | <ul style="list-style-type: none"> <li>Living things can be formally grouped according to characteristics.</li> <li>Plants and animals are two main groups but there are other living things that do not fit into these groups e.g. micro-organisms such as bacteria and yeast, and toadstools and mushrooms.</li> <li>Plants can make their own food whereas animals cannot.</li> <li>Animals can be divided into two main groups: those that have backbones (vertebrates); and those that do not (invertebrates).</li> <li>Vertebrates can be divided into five small groups: fish; amphibians; reptiles; birds; and mammals. Each group has common characteristics.</li> <li>Invertebrates can be divided into a number of groups, including insects, spiders, snails and worms.</li> <li>Plants can be divided broadly into two main groups: flowering plants; and non-flowering plants.</li> </ul> | <ul style="list-style-type: none"> <li>I can use a classification key to correctly organise animal groups</li> <li>Exploring the work of Carl Linnaeus</li> <li>I can classify invertebrates</li> <li>I can group plants according to common observable characteristics</li> <li>To understand the importance and function of microorganisms</li> </ul> |
| <p><b>Key Vocabulary:</b> Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering, non-flowering</p> <p><b>End of unit assessment:</b><br/>TAPS YR 6: Invertebrate research</p>                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                         |



### Example evidence for 'Secure'

- Use secondary sources to learn about the formal classification system devised by Carl Linnaeus and why it is important.
- Use first-hand observation to identify characteristics shared by the animals in a group.
- Use secondary sources to research the characteristics of animals that belong to a group.
- Use information about the characteristics of an unknown animal or plant to assign it to a group.
- Classify plants and animals, presenting this in a range of ways e.g. Venn diagrams, Carroll diagrams and keys.
- Create an imaginary animal which has features from one or more groups.



**Year 6 Science Sequence**  
Animals, including humans

| National Curriculum Objective                                                                                                                                                                                                                                                                                                                                                                         | Key Learning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | I Can...                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</li> <li>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</li> <li>Describe the ways in which nutrients and water are transported within animals, including humans</li> </ul> | <ul style="list-style-type: none"> <li>The heart pumps blood in the blood vessels around to the lungs.</li> <li>Oxygen goes into the blood and carbon dioxide is removed.</li> <li>The blood goes back to the heart and is then pumped around the body.</li> <li>Nutrients, water and oxygen are transported in the blood to the muscles and other parts of the body where they are needed.</li> <li>As they are used, they produce carbon dioxide and other waste products.</li> <li>Carbon dioxide is carried by the blood back to the heart and then the cycle starts again as it is transported back to the lungs to be removed from the body. <i>This is the human circulatory system.</i></li> <li>Diet, exercise, drugs and lifestyle have an impact on the way our bodies function. They can affect how well our heart and lungs work, how likely we are to suffer from conditions such as diabetes, how clearly we think, and generally how fit and well we feel.</li> <li>Some conditions are caused by deficiencies in our diet e.g. lack of vitamins.</li> </ul> | <ul style="list-style-type: none"> <li>I can describe the functions of blood and blood vessels</li> <li>I can identify the main parts of the human circulatory system and explain their functions.</li> <li>I can explore how nutrients are transported around the bodies.</li> <li>I can explain how the human heart works.</li> <li>I can explain the effects of diet and exercise on the body</li> </ul> |
| <p><b>Key Vocabulary:</b> Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle</p> <p><b>End of unit assessment:</b></p> <p><b>TAPS YR 6:</b> Heart rate poses</p>                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                             |

### Example evidence for 'Secure'

- Create a role play model for the circulatory system.
- Carry out a range of pulse rate investigations:
  - fair test – effect of different activities on my pulse rate
  - pattern seeking – exploring which groups of people may have higher or lower resting pulse rates
  - observation over time - how long does it take my pulse rate to return to my resting pulse rate (recovery rate)
  - pattern seeking – exploring recovery rate for different groups of people.
- Research the negative effects of drugs (e.g. tobacco) and the benefits of a healthy diet and regular exercise by asking an expert or using carefully selected secondary sources.
- Can draw a diagram of the circulatory system and label the parts and annotate it to show what the parts do
- Produce a piece of writing that demonstrates the key knowledge e.g. explanation text, job description of the heart

**Year 6 Science Sequence**  
Evolution and Inheritance

| National Curriculum Objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Key Learning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | I Can...                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</li> <li>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</li> <li>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul> | <ul style="list-style-type: none"> <li>All living things have offspring of the same kind, as features in the offspring are inherited from the parents.</li> <li>Due to sexual reproduction, the offspring are not identical to their parents and vary from each other.</li> <li>Plants and animals have characteristics that make them suited (adapted) to their environment.</li> <li>If the environment changes rapidly, some variations of a species may not suit the new environment and will die.</li> <li>If the environment changes slowly, animals and plants with variations that are best suited survive in greater numbers to reproduce and pass their characteristics on to their young.</li> <li>Over time, these inherited characteristics become more dominant within the population.</li> <li>Over a very long period of time, these characteristics may be so different to how they were originally that a new species is created. This is evolution</li> <li>Fossils give us evidence of what lived on the Earth millions of years ago and provide evidence to support the theory of evolution.</li> <li>More recently, scientists such as Darwin and Wallace observed how living things adapt to different environments to become distinct varieties with their own characteristics.</li> </ul> | <ul style="list-style-type: none"> <li>I can investigate fossils and compare them with living relatives</li> <li>I can create a fossil record to demonstrate evolutionary relationships (cladogram)</li> <li>I can investigate how characteristics are passed from parents to offspring</li> <li>I can demonstrate how an animal or plant has adapted to suit their environment</li> <li>I can understand and explain what evolution is</li> </ul> |
| <p><b>Key Vocabulary:</b> Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils</p> <p><b>End of unit assessment:</b><br/>TAPS YR 6: Fossil Habitats</p>                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



### Example evidence for 'Secure'

- Design a new plant or animal to live in a particular habitat.
- Use models to demonstrate evolution e.g. 'Darwin's finches' bird beak activity.
- Use secondary sources to find out about how the population of peppered moths changed during the industrial revolution.
- Make observations of fossils to identify living things that lived on Earth millions of years ago.
- Identify features in animals and plants that are passed on to offspring and explore this process by considering the artificial breeding of animals or plants e.g. dogs.
- Compare the ideas of Charles Darwin and Alfred Wallace on evolution.
- Research the work of Mary Anning and how this provided evidence of evolution

## Year 6 Science Sequence

### Light

| National Curriculum Objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Key Learning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | I Can...                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Recognise that light appears to travel in straight lines.</li> <li>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.</li> <li>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.</li> <li>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> </ul>                                                                                                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>Light appears to travel in straight lines, and we see objects when light from them goes into our eyes.</li> <li>The light may come directly from light sources, but for other objects some light must be reflected from the object into our eyes for the object to be seen.</li> <li>Objects that block light (are not fully transparent) will cause shadows</li> <li>Because light travels in straight lines the shape of the shadow will be the same as the outline shape of the object</li> </ul> | <ul style="list-style-type: none"> <li>I can explore and investigate: transparent, translucent, opaque</li> <li>I can explain how light travels in straight lines</li> <li>I can explain how we see light sources and non-light sources.</li> <li>I can explain how the shape and size of a shadow are determined</li> <li>I can explain how white light is made up of a spectrum of different colours.</li> </ul> |
| <p><b>Key Vocabulary:</b> Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous, straight lines, light rays.</p> <p><b>End of unit assessment:</b> TAPS: Investigating shadows</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Example evidence for 'Secure'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>Investigate magnifying lenses, suggesting which cannot magnify enough in given circumstances.</li> <li>Explain and demonstrate that light can be bent when it is slowed down.</li> <li>Split white light into rainbow colours</li> <li>Be able to explain that a human shadow has the same shape as the person casting it.</li> <li>Independently plan and carry out an investigation into shadow size and position of a light source</li> <li>Explore different ways to demonstrate that light travels in straight lines e.g. shining a torch down a bent and straight hose pipe, shining a torch through different shaped holes in card.</li> <li>Explore the uses of the behaviour of light, reflection and shadows, such as in periscope design, rear view mirrors and shadow puppets.</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                    |

**Year 6 Science Sequence**  
Electricity

| National Curriculum Objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Key Learning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | I Can...                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</li> <li>Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.</li> <li>Use recognised symbols when representing a simple circuit in a diagram.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>Adding more cells to a complete circuit will make a bulb brighter, a motor spin faster or a buzzer make a louder sound. If you use a battery with a higher voltage, the same thing happens.</li> <li>Adding more bulbs to a circuit will make each bulb less bright.</li> <li>Using more motors or buzzers, each motor will spin more slowly and each buzzer will be quieter.</li> <li>Turning a switch off (open) breaks a circuit so the circuit is not complete and electricity cannot flow.</li> <li>Any bulbs, motors or buzzers will then turn off as well.</li> <li>You can use recognised circuit symbols to draw simple circuit diagrams.</li> </ul> | <ul style="list-style-type: none"> <li>Exploring static electricity – What is electricity?</li> <li>I can describe the function of electrical components and match them to their symbols.</li> <li>I can explore and describe the differences between series and parallel circuits.</li> <li>I can investigate the effect of changing components in a circuit.</li> <li>I can predict whether an electrical circuit will function and suggest ways of improving it.</li> </ul> |
| <p><b>Key Vocabulary:</b> Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage</p> <p><b>End of unit assessment:</b><br/>TAPS: Conductive dough</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Example evidence for 'Secure'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>Explain how a circuit works to achieve particular operations, such as to control the light from a torch with different brightness's or make a motor go faster or slower.</li> <li>Make circuits to solve problems, such as a quiet and a loud burglar alarm.</li> <li>Carry out fair tests exploring changes in circuits.</li> <li>Make circuits that can be controlled as part of a DT project.</li> <li>Can incorporate a switch into a circuit to turn it on and off</li> <li>Can change cells and components in a circuit to achieve a specific effect</li> <li>Can communicate structures of circuits using circuit diagrams with recognised symbols</li> <li>Can devise ways to measure brightness of bulbs, speed of motors, volume of a buzzer during a fair test.</li> <li>Can predict results and answer questions by drawing evidence gathered.</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |