

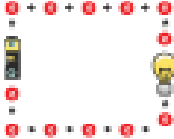

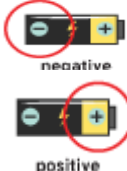





## Year 6 Science Autumn 1 Term

This term in Science, we are exploring Electricity.

| Our Key Learning Objectives   | Red | Orange | Green | Extra questions  |
|---|-----|--------|-------|--|
| I can construct a working circuit with specified components. <b>I</b>                                   |     |        |       | 1. What is the difference between wires used for circuits and fuse wires?                      |
| I can use recognised symbols when representing a simple circuit in a diagram. <b>I</b>                  |     |        |       |  |
| I can explore how to change the brightness of a bulb and volume of a buzzer. <b>I</b>                   |     |        |       | 2. What would happen if all the lights in a house were connected to one circuit and one broke? |
| I know that the 'amount' of electricity (voltage) depends on the number of batteries.                   |     |        |       |  |
| I can associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells |     |        |       | 3. Use a simple model to show a current in a circuit.  |
| I can compare circuits and give reasons for variations in how components function. <b>I</b>             |     |        |       |  |

|  |  |  |  |
|--|--|--|--|
| <p><b>Voltage</b>, - an electric force that causes free electrons to move from one atom to another</p>  | <p><b>Current</b>- flow of an electric charge. .Current flows through a circuit when a voltage is placed across two points of a conductor.</p>  | <p><b>Series</b>- A series circuit consists of a single pathway through which electricity can flow.</p>  | <p><b>Component</b>- An electronic component is a basic electronic element.</p>  |
| <p><b>Positive/negative terminal</b>, -The two terminals of a battery.</p>                            | <p><b>Circuit</b>-A circuit is a complete path around which electricity can flow.</p>    | <p><b>Batteries</b> give electric power to flashlights, radios, and other equipment.</p>                | <p><b>Cell</b> - An electrical cell is an "electrical power supply".</p>        |

Write down any questions you would like to explore further.

- 
-



### **Beacon 3—working scientifically skills**

- I can plan different types of scientific enquiries to answer questions.
- I recognise and control variables where necessary.
- I can take measurements, in standardised units, using a range of scientific equipment, with increasing accuracy and precision.
- I record data and results of increasing complexity.
- I record and present my findings using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs.
- I can report on findings from enquiries in oral and written explanations such as displays and other presentations.
- I can identify conclusions, causal relationships and patterns.
- I can identify scientific evidence that has been used to support or refute ideas.
- I can use test results to make predictions and to set up further comparative and fair tests.








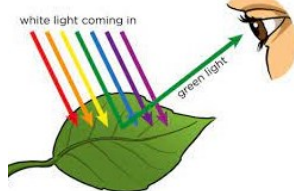
## Year 6 Science Autumn 2 Term

This term in Science, we are exploring Light.

| Our Key Learning Objectives   |  |  |  |
|---|--|--|--|
| I recognise that light appears to travel in straight lines (I)  |  |  |  |
| I can 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 (I) |  |  |  |
| I can draw diagrams to illustrate how light is travelling from the source to the eye.   |  |  |  |
| I can explain that objects are seen because they give out or reflect light into the eye   |  |  |  |
| I can explain why shadows have the same shape as the objects that cast them   |  |  |  |
| I can describe a variety of ways of changing the size of the shadow produced by an object (I)   |  |  |  |

### Extra questions

- Why is coloured light sometimes produced? (I)
- How do curved mirrors distort a reflection?

|   |   |   |  |
|---|---|---|--|
| <p><b>Reflection</b>-the throwing back by a body or surface of light, heat, or sound without absorbing it</p>  | <p><b>Transparent</b>-allowing light to pass through so that objects behind can be distinctly seen</p>  | <p><b>Translucent</b>-allowing light, but not detailed shapes, to pass through; semi-transparent</p>                       | <p><b>Opaque</b>-not able to be seen through</p>  |
| <p><b>Periscope</b>-an apparatus consisting of a tube attached to a set of mirrors or prisms.</p>            | <p><b>Luminous</b>- giving off light; bright or shining.</p>    | <p><b>Non-luminous</b>-Not capable of producing light, but possibly capable of reflecting light from another source</p>  | <p><b>Absorb</b>-take in or soak up</p>         |

Write down any questions you would like to explore further.

- 
-



### **Beacon 3—working scientifically skills**

- I can plan different types of scientific enquiries to answer questions.
- I recognise and control variables where necessary.
- I can take measurements, in standardised units, using a range of scientific equipment, with increasing accuracy and precision.
- I record data and results of increasing complexity.
- I record and present my findings using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs.
- I can report on findings from enquiries in oral and written explanations such as displays and other presentations.
- I can identify conclusions, causal relationships and patterns.
- I can identify scientific evidence that has been used to support or refute ideas.
- I can use test results to make predictions and to set up further comparative and fair tests.

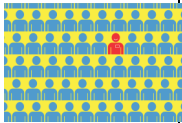
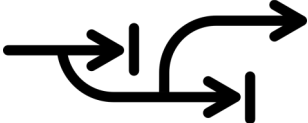

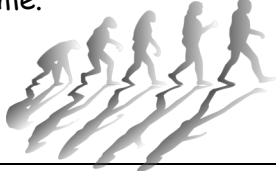




## Year 6 Science Spring 1 Term

This term in Science, we are exploring Evolution and Inheritance.

| Our Key Learning Objectives  | Red | Orange | Green |
|--|-----|--------|-------|
| I can recognise that living things produce offspring of the same kind.                               | I   |        |       |
| I can recognise variation within species and know that offspring are not identical to their parents. |     |        |       |
| I can identify how animals and plants are adapted to their environment. (I)                          |     |        |       |
| I can recognise that adaptations can lead to evolution. (I)  |     |        |       |
| I can recognise that living things have changed over time and that fossils provide information.      |     |        |       |
| I can explain why we do not have a full fossil record.   |     |        |       |

### Extra questions

1. What is the story of the peppered moth and how does it show natural selection?
2. How does the introduction of a new species to an isolated environment affect the native species?
3. Compare Darwin and Lamarck's ideas about evolution. (I)

|   |  |  |  |
|---|--|--|--|
| <p><b>Variation</b><br/>Variation is the differences between things.</p>      | <p><b>Adapt</b> To change. Often this is to adjust to new conditions.</p>                                   | <p><b>Offspring</b> A person's child or children. An animal's young.</p>                 | <p><b>Evolve</b> To develop gradually over time.</p>                         |
| <p><b>Competition</b> the activity or striving to gain or win something</p>  | <p><b>Generation</b> all of the species born and living at about the same time, regarded collectively</p>  | <p><b>Species</b> A group of living organisms with similar individuals, capable of</p>  | <p><b>Fossil</b> The remains of a plant or animal, embedded in a rock.</p>  |

Write down any questions you would like to explore further.

- 
-



### **Beacon 3—working scientifically skills**





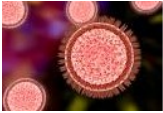

- I can plan different types of scientific enquiries to answer questions.
- I recognise and control variables where necessary.
- I can take measurements, in standardised units, using a range of scientific equipment, with increasing accuracy and precision.
- I record data and results of increasing complexity.
- I record and present my findings using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs.
- I can report on findings from enquiries in oral and written explanations such as displays and other presentations.
- I can identify conclusions, causal relationships and patterns.
- I can identify scientific evidence that has been used to support or refute ideas.
- I can use test results to make predictions and to set up further comparative and fair tests.



## Year 6 Science Spring 2 Term

This term in Science, we are exploring living things and their habitats.

| Our Key Learning Objectives  | I | I | I | <u>Extra questions</u>  |
|--|---|---|---|---|
| I can describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences. <b>I</b> | I |   |   | 1. How did Aristotle originally classify animals?                                 |
| I can give reasons for classifying plants and animals based on specific <b>O</b>   |   |   |   | 2. Can you compare the rate of reproduction in micro-organisms and other animals? |
| I can recognise that some micro-organisms can be used in food production.  |   |   |   | 3. How has the microscope helped our understanding of micro-organisms?            |
| I can describe how micro-organisms feed, grow and reproduce.   |   |   |   | 4. How have the ideas about hygiene changed over time?                            |
| I can describe evidence from investigations that yeast is living. <b>I</b>   |   |   |   |   |
| I can explain how micro-organisms can move from one food source to another.  |   |   |   |   |

|  |  |  |  |
|--|--|--|--|
| <b>Micro-organism</b> — a microscopic organism, especially a bacterium, virus, or fungus<br>   | <b>Fungus</b> , - any of a group of spore-producing organisms feeding on organic matter, including moulds, yeast, mushrooms, and toadstools.<br>                      | <b>bacteria</b> , - a member of a large group of unicellular microorganisms<br> | <b>microscope</b> —an optical instrument used for viewing very small objects<br> |
| <b>virus</b> , - an infective agent that typically consists of a nucleic acid molecule in<br> | <b>yeast</b> , - a microscopic fungus consisting of single oval cells that reproduce by budding, and capable of converting sugar into alcohol and carbon dioxide<br> | <b>classification</b> —the arrangement of animals and plants in taxonomic<br>  | <b>characteristic</b> , - a feature or quality belonging typically to a person, place, or thing<br>  |

**Write down any questions you would like to explore further.**

- 
-



### **Beacon 3—working scientifically skills**

- I can plan different types of scientific enquiries to answer questions.
- I recognise and control variables where necessary.
- I can take measurements, in standardised units, using a range of scientific equipment, with increasing accuracy and precision.
- I record data and results of increasing complexity.
- I record and present my findings using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs.
- I can report on findings from enquiries in oral and written explanations such as displays and other presentations.
- I can identify conclusions, causal relationships and patterns.
- I can identify scientific evidence that has been used to support or refute ideas.
- I can use test results to make predictions and to set up further comparative and fair tests.



## Year 6 Science Summer Term

This term in Science, we are exploring animals including humans.

| Our Key Learning Objectives  | Red | Orange | Green |
|--|-----|--------|-------|
| I can identify and name the main parts of the human circulatory system.                                      | I   |        |       |
| I can describe the functions of the heart, blood vessels and blood.  |     |        |       |
| I can describe the different functions of blood. <b>I</b>  |     |        |       |
| I can describe the way in which nutrients and water are transported around the body. <b>I</b>                |     |        |       |
| I can discover that during exercise the heart beats faster <b>I</b>  |     |        |       |
| I can recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. <b>I</b> |     |        |       |
| I can recognise why medicines can be dangerous and reasons people need to use medicine.                      |     |        |       |

### Extra questions

1. What is the effect of diet and exercise on each organ?
2. How have ideas about the circulatory system changed over time?
3. Why does advice on diet change?

|   |  |  |  |   |
|---|--|--|--|---|
| <p><b>Veins</b> The tube that carries oxygen-depleted blood to the heart.</p> | <p><b>Oxygen</b> The gas that is the life-supporting component of air.</p>                                       | <p><b>Arteries</b> The tube that carries oxygenated blood away from the heart.</p> | <p><b>Carbon dioxide</b> A gas that forms as a waste product in our bodies.</p> <p><b>CO<sub>2</sub></b></p> | <p><b>Nutrients</b> a substance that provides nourishment essential for the maintenance of life</p> |
| <p><b>Medicines</b> any substance used in treating disease or illness</p>     | <p><b>Minerals and vitamins</b> nutrients your body needs in small amounts to work properly and stay healthy</p> | <p><b>Capillaries</b> Fine, branching blood vessels.</p>                           | <p><b>Organs</b> A part of the body that has a specific and vital function.</p>                              | <p><b>Caffeine</b> is a natural stimulant most commonly found in tea, coffee, and cacao plants</p>  |

Write down any questions you would like to explore further.

- 
-



### **Beacon 3—working scientifically skills**

- I can plan different types of scientific enquiries to answer questions.
- I recognise and control variables where necessary.
- I can take measurements, in standardised units, using a range of scientific equipment, with increasing accuracy and precision.
- I record data and results of increasing complexity.
- I record and present my findings using scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs.
- I can report on findings from enquiries in oral and written explanations such as displays and other presentations.
- I can identify conclusions, causal relationships and patterns.
- I can identify scientific evidence that has been used to support or refute ideas.
- I can use test results to make predictions and to set up further comparative and fair tests.