

Baden Powell School Science End Points and Big Questions

Year One	Autumn		Spring	Summer
Big End Point	What are the parts of a plant and how do they help it live?	How many hours of daylight in a day? How does the weather change over the year?	What different materials can be used to make objects?	What is the same and different between you, me and other animals?
Topic	Plants	Seasons	Everyday Materials	Animals including Humans
Knowledge	<ol style="list-style-type: none"> 1. Know the basic structure of a flowering plant. 2. Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees 3. Identify and describe the basic structure of a variety of common flowering plants, including trees. 	<ol style="list-style-type: none"> 1. Observe and describe weather associated with the seasons and how day length varies. 2. Know how the seasons change across the year. 	<ol style="list-style-type: none"> 1. Distinguish between an object and the material from which it is made. 2. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. 3. Describe the simple physical properties of a variety of materials. 4. Describe the simple physical properties of a variety of materials. 5. Compare and group together a variety of everyday materials on the basis of their simple physical properties. 	<ol style="list-style-type: none"> 1. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). 2. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. 3. Identify, name, draw and label the basic parts of the human body and say what part of the body is associated with which sense.
Working Scientifically	<ol style="list-style-type: none"> 1. Identify and classify 2. Observing closely, using simple equipment. 3. 	<ol style="list-style-type: none"> 1. Identifying and classifying. 	<ol style="list-style-type: none"> 1. Identifying and classifying. 2. Performing simple tests. 3. Use their observations and ideas to suggest answers to questions. 4. Gathering and recording 	<ol style="list-style-type: none"> 1. Identifying and classifying.

Year Two	Autumn		Spring	Summer
Big End Point	What do Plants need to grow?	How are animals suited to where they live?	How could I use this material?	What do we need in order to grow from a baby to an adult?
Topic	Plants	Living things and their habitats.	Everyday Materials	Animals including Humans
Knowledge	<ol style="list-style-type: none"> 1. Observe and describe how seeds and bulbs grow into mature plants. 2. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. 	<ol style="list-style-type: none"> 1. Describe the relationships between different living things in a habitat. 2. Be able to identify living and non-living things. 3. Know the differences between things that are living, dead, and things that have never been alive 4. Know that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants. 	<ol style="list-style-type: none"> 1. Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. 2. Know different materials objects are made from. 3. Know properties that make objects suitable for purpose. 4. Know the properties of different materials. 5. Know how we can change the shape of objects due material. 	<ol style="list-style-type: none"> 1. Know that animals, including humans, have offspring which grow into adults. 2. Sequence life cycles of different animals and humans. 3. Be able to describe the basic needs of animals, including humans, for survival (water, food and air). 4. Know what animals and humans need to survive. 5. Know the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. 6. Know how exercise changes the body.
Skills Development	<ol style="list-style-type: none"> 1. Identifying and classifying. 2. Observing closely, 	<ol style="list-style-type: none"> 1. Identifying and classifying. 2. Gathering and 	<ol style="list-style-type: none"> 1. Performing simple tests. 2. Observing closely, using simple equipment. 	<ol style="list-style-type: none"> 1. Identifying and classifying. 2. Performing simple tests. 3. Use observations and ideas to suggest answers

	<p>using simple equipment.</p> <ol style="list-style-type: none"> Gathering and recording data to help in answering questions. Performing simple tests. Gathering and recording data to help in answering questions. 	<p>recording data to help in answering questions.</p> <ol style="list-style-type: none"> Observing closely, using simple equipment. 	<ol style="list-style-type: none"> Gathering and recording data to help in answering questions. Identifying and classifying. 	<p>to questions.</p> <ol style="list-style-type: none"> Gather and record data to help answer scientific questions. 	
Year Three	Autumn		Spring	Summer	
Big End Point	What does a plant need to live and grow and make new plants?	How do humans and animals stand and move?	How can we use the rocks to help us?	What forces are around us? How does magnetic force work?	How are shadows formed?
Topic	Plants	Animals including Humans	Rocks	Forces and Magnets	Light
Knowledge	<ol style="list-style-type: none"> Know what plants need for life and to grow. Know that plants compete for the necessities of life. Know the main parts of flowering plants and their function. Know how water is transported through plants. Know the life 	<ol style="list-style-type: none"> Know humans and animals need nutrition supplied by food. Can create and use a food chain. Can create and use a food web. Know the functions of the skeleton and muscles in humans and animals. 	<ol style="list-style-type: none"> Know how fossils are formed. Know properties of rocks. Know how to use properties to compare rocks. Know Soils are made from rocks and organic matter. Be able to suggest a use for different types of rock. 	<ol style="list-style-type: none"> Know that some forces need contact between two objects, but magnetic forces can act at a distance Know how different surfaces affect how things move. Know that magnets attract or repel each other and attract some materials and not others Compare and group 	<ol style="list-style-type: none"> Find patterns in the way that the size of shadows changes. Recognise that they need light in order to see things and that dark is the absence of light. Know light is reflected from surfaces. Know that light

	<p>cycle of a flowering plant including pollination. .</p> <p>6. Know different methods of pollination and seed dispersal.</p>			<p>together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials</p> <p>5. Know magnets have two poles.</p>	<p>from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>5. Know that shadows are formed when the light from a light source is blocked by a solid object.</p> <p>6. Know shadows change across the day.</p>
Working Scientifically	<p>1. Identifying differences, similarities or changes related to simple scientific ideas and processes.</p> <p>2. Use straightforward scientific evidence to answer questions or to support their findings</p> <p>3. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and</p>	<p>1. Identifying differences, similarities or changes related to simple scientific ideas and processes.</p> <p>2. Use straightforward scientific evidence to answer questions or to support their findings.</p> <p>3. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p>	<p>1. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</p> <p>2. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>3. Identifying differences, similarities or changes related to simple scientific ideas and processes.</p> <p>4. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p>	<p>1. Asking relevant questions and using different types of scientific enquiries to answer them.</p> <p>2. Setting up simple practical enquiries, comparative and fair tests.</p> <p>3. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</p> <p>4. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p> <p>5. Reporting on findings from enquiries,</p>	<p>1. Asking relevant questions and using different types of scientific enquiries to answer them.</p> <p>2. : setting up simple practical enquiries, comparative and fair tests</p> <p>3. making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a</p>

	tables.			including oral and written explanations, displays or presentations of results and conclusions.	range of equipment, including thermometers and data loggers 4. recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables 5. Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions 6. identifying differences, similarities or changes related to simple scientific ideas and processes 7. Use straightforward scientific evidence to answer questions
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					or to support their findings.
Year Four	Autumn		Spring	Summer	
Big End Point	How can I group living things?	What happens when we eat our food?	Why do things melt? What are the properties of materials and can they be changed?	How are sounds made and how do they travel?	What is a circuit and what things can change it?
Topic	Living Things and their habitat	Animals including humans	States of Matter	Sound	Electricity
Knowledge	<ol style="list-style-type: none"> To use classification keys to help group, identify and name a variety of living things in their local and wider environment. Know that living things can be grouped in a variety of ways. Use classification key to identify organisms from the local environment. Explain what deforestation is and the impacts it has on the environment. 	<ol style="list-style-type: none"> Be able to describe the simple functions of the basic parts of the digestive system in humans. To know the different types of teeth in humans and their simple functions. To know how to look after our teeth. To be able to construct and a food chain and identify producers, predators and prey. 	<ol style="list-style-type: none"> 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). Know how to group materials together, according to whether they are solids, liquids or gases. Know 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). Know the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. 	<ol style="list-style-type: none"> Identify how sounds are made, associating some of them with something vibrating. Know 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. Know that that sounds get fainter as the distance 	<ol style="list-style-type: none"> To recognise some common conductors and insulators, and associate metals with being good conductors Be able to identify common appliances that run on electricity. To be able to construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. To be able to identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.

				from the sound source increases.	<ol style="list-style-type: none"> 5. To know that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. 6. To be able to recognise some common conductors and insulators, and associate metals with being good conductors.
Working Scientifically	<ol style="list-style-type: none"> 1. Setting up simple practical enquiries, comparative and fair tests. 2. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. 3. Reporting on findings from 	<ol style="list-style-type: none"> 1. Asking relevant questions and using different types of scientific enquiries to answer them. 2. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. 3. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. 4. Use straightforward scientific evidence 	<ol style="list-style-type: none"> 1. Setting up simple practical enquiries, comparative and fair tests. 2. Use straightforward scientific evidence to answer questions or to support their findings. 3. Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. 4. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. 5. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using 	<ol style="list-style-type: none"> 5. Setting up simple practical enquiries, comparative and fair tests. 6. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment. 7. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. 8. Using results to draw simple conclusions, make 	<ol style="list-style-type: none"> 1. Setting up simple practical enquiries, comparative and fair tests. 2. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. 3. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. 4. Use results to draw simple conclusions, make predictions for new values, suggest

	enquiries, including oral and written explanations, displays or presentations of results and conclusions. 4. Identifying differences, similarities or changes related to simple scientific ideas and processes.	to answer questions or to support their findings.	a range of equipment, including thermometers and data loggers.	predictions for new values, suggest improvements and raise further questions. 9. Use straightforward scientific evidence to answer questions or to support their findings.	improvements and raise further questions. 5. Use straightforward scientific evidence to answer questions or to support their findings.
Year Five	Autumn		Spring	Summer	
Big End Point	What are the stages of a life cycle?	How do our bodies change as we grow?	What properties does this material have? Are the changes reversible?	What is the Solar System?	What force is working on this object?
Topic	Living things in their habitats	Animals including humans	Properties and Changes in Materials	Earth, Sun and Moon	Forces
Knowledge	<ol style="list-style-type: none"> To be able to describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. To be able to describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. 	<ol style="list-style-type: none"> Be able to describe the changes as humans develop to old age. Know how the human foetus develops. Know that humans go through puberty. Know the key differences between adult males and females. 	<ol style="list-style-type: none"> To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. To be able to compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. 	<ol style="list-style-type: none"> To be able to describe the movement of the Earth, and other planets, relative to the Sun in the solar system. To be able to describe the movement of the Moon relative to the Earth. To be able to explain how the 	<ol style="list-style-type: none"> To understand that some mechanisms allow a smaller force to have a greater effect. To be able to explain how gravity impacts on objects. To be able to explain the effects of air resistance, water resistance and friction that acts between moving surfaces.

	<ol style="list-style-type: none"> 3. To be able to describe the life cycle of a flowering plant. 4. Describe the reproduction process in some plants and animals. 		<ol style="list-style-type: none"> 3. To be able to use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. 4. To be able to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. 5. To know that dissolving, mixing and changes of state are reversible changes. 6. To be able to 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 and the action of acid on bicarbonate of soda. 	<ol style="list-style-type: none"> solar system was formed. 4. To know the different sizes of the planets in the solar system. 5. To know how day and night are caused. 6. 	
Working Scientifically	<ol style="list-style-type: none"> 1. Reporting and presenting findings from enquiries, including conclusions, causal 	<ol style="list-style-type: none"> 1. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and 	<ol style="list-style-type: none"> 1. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. 2. To take measurements, 	<ol style="list-style-type: none"> 1. To identify scientific evidence that has been used to support or refute ideas or arguments. 2. To be able to report and present 	<ol style="list-style-type: none"> 1. Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when

	relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. 2. Identifying scientific evidence that has been used to support or refute ideas or arguments.	degree of trust in results, in oral and written forms such as displays and other presentations 2. Identifying scientific evidence that has been used to support or refute ideas or arguments.	using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. 3. To report and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. 4. To use test results to make predictions to set up further comparative and fair tests.	findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentation.	appropriate. 2. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. 3. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
Year Six	Autumn		Spring	Summer	
Big End Point	How can we use features to identify animals and plants?	How does my body work and what should I do to keep it healthy?	How do animals and plants change to survive?	How can I see that shadow?	How can I make the buzzer louder?
	Living things and their habitats	Animals including humans	Evolution	Light	Electricity
Knowledge	1. Construct a dichotomous key and use it to classify living things. 2. Be able to identify similarities and differences in organisms. 3. Know about Linnaeus classification system.	1. Know and identify main parts of circulatory system and explain their function. 2. Know the functions of blood vessels. 3. Know and explain how the human heart works. 4. Know the effects of	1. Can describe the process of natural selection and its connection to evolution. 2. Know that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. 3. Know how Darwin developed his theory of evolution.	1. Know light appears to travel in straight lines. 2. Know why shadows have the same shape as an object. 3. Know how the human eye can see through reflection of light. 4. Know how we see	1. Know the symbols used in a circuit diagram. 2. Know the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. 3. Be able to give reasons for variations

	<p>4. Know what vertebrates and invertebrates are. Know what an arthropod is and use a key to classify them.</p>	<p>alcohol, smoking and drugs on the human body.</p> <p>5. Know how diet and exercise keep human bodies healthy.</p>	<p>4. Know how some plants and animals have adapted to their environment.</p> <p>5. Can explain how fossils are formed and the information they can give us.</p> <p>6. Know how Mary Anning contributed to our understanding of fossils.</p>	<p>light source and non-light sources.</p> <p>5. Know light consists of a spectrum of colours.</p> <p>6. Know why moving an object affects its shadow.</p>	<p>in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.</p>
Working scientifically	<p>1. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p>	<p>1. recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <p>2. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p> <p>3. planning different types of scientific enquiries to answer</p>	<p>1. Identifying scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>1. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p> <p>2. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <p>3. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in</p>	<p>1. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p> <p>2. Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p>

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