**Rockcliffe CE School – Whole School Science Overview 2022 – 2023 Cycle B**

Below is an overview of the Science learning focus for each term/half term in each class.

Class teachers may choose to adapt the schemes of work to suit their class but must ensure full coverage throughout the two-yearly cycle.

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| 2022-2023 | | | | | | |
|  | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
| **EYFS** | **All About Me/Autumn**  **Understanding the world**  Talk about members of their immediate family and community. Name and describe people who are familiar to them. Describe what they see, hear and feel whilst outside. Understand the effect of changing seasons on the natural world around them – leaves falling off trees, cold, frost.  Explore the outdoor environment and talk about the local area – Rockcliffe as a village. Talk about key places and simple routes such as the journey from home to school. | **Alien Invasion/Christmas**  **Understanding the world**  Draw, write and create in response to what they see and learn about.  Explore and ask questions about the natural world around them.  Perform simple experiments and make simple observations of how things work | **Traditional Tales**  **Understanding the world**  Explore senses in different environments – indoors compared to outdoors  Talk about key places and simple routes such as the journey from home to school and those from stories. | **Spring Has Sprung**  **Understanding the world**  Explore the wild area of school looking at physical features. Compare to other parts of the school/school grounds (human features).  Contribute to school led projects in the local area/school grounds. Explore changes in the weather and seasons and outdoor environment.  Describe what they see, hear and feel whilst outside. | **Sea Adventures**  **Understanding the world**  Explore the natural world around them, making observations and drawing pictures of animals and plants.  Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; | **Around The World**  **Understanding the world**  Express views about how to look after our planet and local environment.  Explain some similarities and differences between life in this country and life in other countries, drawing on knowledge from stories, non-fiction texts and – when appropriate – maps. |
| **Year 1/2** | **Ourselves and Other Animals**  identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.  describe and compare the structure of a variety of common animals fish, amphibians, reptiles, birds and mammals including pets)  notice that animals, including humans, have offspring which grow into adults | **Sound**  (explore different ways of making and altering sounds … experiment making sounds of differing volume and pitch)  (observe and name a variety of sources of sound, noticing that we hear with our ears) | **Habitats**  identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals  identify and name a variety of common animals that are carnivores, herbivores and omnivores  identify and name a variety of plants and animals in their habitats, including micro-habitats  identify 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, and how they depend on each other  observe changes across the four seasons (observe which animals are present in local habitats throughout the year).  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 | **10 – 19 March 2023 National Science Week** | **Light**  (explore looking for things in a dark “cave/area” erected from dark material in the classroom)  describe the simple physical properties of a variety of everyday materials (opaque, translucent, transparent materials)  compare and group together a variety of everyday materials on the basis of their simple physical properties (opaque, translucent, transparent material)  (explore shadow play and possibly make shadow puppets)  (observe and name a variety of sources of light, including electric lights, flames and the Sun)  observe and describe weather associated with the seasons and how day length varies. | **Changing Materials**  find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching  describe the simple physical properties of a variety of everyday materials (Flexibility)  compare and group together a variety of everyday materials on the basis of their simple physical properties (Flexibility) |
| **Across the year**  Observation of seasonal changes including the changes in day length/environment. | | | | | |
| **Year 2/3** | **Ourselves and Other Animals**  **Year 2**  identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.  describe and compare the structure of a variety of common animals fish, amphibians, reptiles, birds and mammals including pets)  notice that animals, including humans, have offspring which grow into adults  **Year 3**  identify that humans and some animals have skeletons and muscles for support, protection and movement. | **Habitats**  **Year 2**  identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals  identify and name a variety of common animals that are carnivores, herbivores and omnivores  identify and name a variety of plants and animals in their habitats, including micro-habitats  identify 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, and how they depend on each other  observe changes across the four seasons (observe which animals are present in local habitats throughout the year).  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  **Year 3**  recognise that living things can be grouped in a variety of ways  explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment  recognise that environments can change constantly changing and that this can sometimes pose dangers to specific habitats  construct and interpret a variety of food chains, identifying producers, predators and prey | **Changing Materials**  **Year 2**  find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching  describe the simple physical properties of a variety of everyday materials (Flexibility)  compare and group together a variety of everyday materials on the basis of their simple physical properties (Flexibility)  **Year 3**  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)  identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature | **10 – 19 March 2023 National Science Week**  **Light**  **Year 2**  (explore looking for things in a dark “cave/area” erected from dark material in the classroom)  describe the simple physical properties of a variety of everyday materials (opaque, translucent, transparent materials)  compare and group together a variety of everyday materials on the basis of their simple physical properties (opaque, translucent, transparent material)  (explore shadow play and possibly make shadow puppets)  (observe and name a variety of sources of light, including electric lights, flames and the Sun)  observe and describe weather associated with the seasons and how day length varies.  **Year 3**  recognise that they need light in order to see things and that dark is the absence of light  notice that light is reflected from surfaces  recognise that shadows are formed when a light source is blocked by a solid object  find patterns in the way that the size of shadows change  recognise that light from the Sun can be dangerous and that there are ways to protect our eyes | **Sound**  **Year 2**  identify how sounds are made, associating some of them with something vibrating  recognise that vibrations from sound travel through a medium to the ear  recognise that sounds get fainter as the distance from the sound source increases  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.  **Year 3**  identify how sounds are made, associating some of them with something vibrating  recognise that vibrations from sound travel through a medium to the ear  recognise that sounds get fainter as the distance from the sound source increases  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. | **Consolidation and opportunities for further scientific enquiry and embedding real life contexts.** |
| **Across the year**  Observation of seasonal changes including the changes in day length/environment. | | | | | |
| **Year 4** | **Ourselves and Other Animals**  identify that humans and some animals have skeletons and muscles for support, protection and movement. | **Changing materials**  identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature | **Light**  recognise that they need light in order to see things and that dark is the absence of light  notice that light is reflected from surfaces  recognise that shadows are formed when a light source is blocked by a solid object  find patterns in the way that the size of shadows change  recognise that light from the Sun can be dangerous and that there are ways to protect our eyes | **10 – 19 March 2023 National Science Week**  **Sound**  identify how sounds are made, associating some of them with something vibrating  recognise that vibrations from sound travel through a medium to the ear  recognise that sounds get fainter as the distance from the sound source increases  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. | **Changing Materials**  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)  describe in simple terms how fossils are formed when things that have lived are trapped within rock | **Habitats**  recognise that living things can be grouped in a variety of ways  explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment  recognise that environments can change constantly changing and that this can sometimes pose dangers to specific habitats  construct and interpret a variety of food chains, identifying producers, predators and prey |
| **Year 5** | **Changing Materials**  demonstrate that dissolving, mixing and changes of state are reversible changes.  Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution  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. | **Habitats**  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  give reasons for classifying plants and animals based on specific characteristics  describe the difference in the life cycles of a mammal, an amphibian an insect and a bird  identify how animals and plants are adapted to suit their environment in different ways and adaption leads to evolution | **Ourselves and Other Animals**  recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents  describe the life process of reproduction in some animals  describe the changes as humans develop to old age | **10 – 19 March 2023 National Science Week** | **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  use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them  describe the movement of the Earth, and other planets relative to the Sun in the solar system  describe the movement of the Moon relative to the Earth  describe the Sun, Earth and Moon as approximately spherical bodies  use the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky | **Sound**  *(Enquiry based unit linked to design technology with either children designing sound proofing for a house or ear protectors and designing and making a musical instrument)* |
| **Year 6** | **Forces**  Gap filling from cycle A  identify the effect of air resistance, water resistance and friction, that act between moving surfaces recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect | **Habitats**  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  give reasons for classifying plants and animals based on specific characteristics  describe the difference in the life cycles of a mammal, an amphibian an insect and a bird  identify how animals and plants are adapted to suit their environment in different ways and adaption leads to evolution | **Changing Materials**  demonstrate that dissolving, mixing and changes of state are reversible changes.  Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution  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. | **10 – 19 March 2023 National Science Week**  **Ourselves and Other Animals**  recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents  describe the life process of reproduction in some animals  describe the changes as humans develop to old age  Human Reproduction | **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  use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them  describe the movement of the Earth, and other planets relative to the Sun in the solar system  describe the movement of the Moon relative to the Earth  describe the Sun, Earth and Moon as approximately spherical bodies  use the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky | **Sound**  *(Enquiry based unit linked to design technology with either children designing sound proofing for a house or ear protectors and designing and making a musical instrument)* |