**Science – EYS and KS1 Small Steps Ref to Tig Tag scheme in brackets in purple**

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| **PHASE** | **Cycle Year** | **Working scientifically** | **Animals including humans** | **Living things and their habitats** | **Plants** | **Materials and properties** | **Seasonal Changes** |
| Rec/ Y1/Y2 | A | Ask questions  Collect data  Observe  Notice patterns  Record findings  **Possible investigations**  **Sorting keys/hoops for different animals (minibeasts)**  **Which material is best for … (an umbrella) materials**  **Weather diaries (weather and seasons)** | **My brilliant body (to include RSHE)**   * Recognise and compare main external parts of the human body * Describe other animals and what they look like * Importance of hygiene, washing hands, cleaning teeth, showering | **Marvellous minibeasts**   * Sort animals on observed characteristics * Explain difference between animals including fins, arms, skin, feathers, scales etc… * Know that some animals are carnivores/herbivores and omnivores * Identify that most living things have habitat * Explore simple food chains and interdependence within a habitat | **Growth and care**   * Observe and describe how seeds and bulbs grow into mature plants * Explore the importance of water, light and temperature for plants to grow and stay healthy. |  | **Weather and seasons**   * Observe changes across the four seasons * Observe and describe weather associated with the seasons * Observe and describe how day length varies |
| B | Ask questions  Collect data  Observe  Notice patterns  Record findings  **Possible investigations**  **Observation – Let it grow** | **Growth**   * Understand animals have offspring that grow into adults * Compare differences between animals and how they grow * Explore simple life cycle of a human (baby/toddler/child/adolescent/adult) |  |  | **Exploring uses everyday materials**   * Know the difference between an object and its material * Name a variety of materials * Describe simple physical properties of everyday materials * Compare and group everyday materials based on simple physical properties * Explore suitability of everyday materials use particular uses * Find out how the shapes of solid objects can be changed |  |
| **Diet and health**   * Explore basic needs of animals for survival (water, food, air) * Importance of exercise for health * To begin to know which foods are good for us and what can make us unwell * Understand how medicine can make is better |
| C | Ask questions  Collect data  Observe  Notice patterns  Record findings  **Possible Investigations**  **Collecting – totally natural**  **Changes in shape of dough, when dropping it (forces)** | **Senses**   * Identify, name and draw basic body parts associated with each of our senses * Explore sense of smell, taste, touch, sight and hearing | **Animals**   * Identify differences between what is alive, dead and never been alive * Explore habitats, discussing adaptations can a polar bear live in a forest? | **Introduction to Plants**   * Identify and name a variety of common plants and trees * Identify and describe the basic structure of a flowering plant and tree | **Forces and fun (machines/toys)**   * To compare how different thing move * Notice and describe how things are moving, slowly, quickly * Sort objects (toys) according to how they move * Identify pushes ,pulls and twists * Identify pushes and pulls in the classroom |  |

**Science – KS2 lower**

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| **PHASE** | **Cycle Year** | **Working scientifically** | **Animals including humans** | **Living things and their habitats** | **Plants** | **Materials and properties** | **States of matter** | **Electricity** |
| 3/4 | A | Ask questions  Collect data  Observe  Notice patterns  Record findings  **Possible investigations**  **What happens if a plant has no leaves?**  **What happens to our teeth if they are not cleaned? (eggs different drinks)**  **Celery in food colouring to explore how water moves around a plant (plants)** | **Life cycles (to include RSHE)**   * Identify what a life cycle is * Explore life cycle of plant * Explore life cycle of frog/butterfly looking at metamorphosis * Explore how humans change over their life time * How do animals reproduce including egg laying, live birth and metamorphosis | **Classifying living things and their habitats (to include RSHE)**   * Construct and interpret a variety of food chains, identifying producers, consumers, predators and prey (Food chains) * Understand how to group living things and identify them using classification keys (Classifying living things) * Recognise how changes in the environment affect living things | **Helping plants grow well**   * Explore what green plants need to stay alive * Study the importance of leaves * Study importance of roots(how water is transported) * To name parts of the flower and what they do (Parts of a plant) * Explore germination/pollination/seed dispersal (Reproduction and Fertilisation and dispersal) | **Forces and magnets**   * Compare how things move on different surfaces (friction) * Explore floating and sinking * Observe how magnets attract and repel (Magnetism) * Describe poles in terms of magnets |  |  |
| **Food and digestion and Bones – How do we move? Teeth**   * Identify that humans and some animals have skeletons and muscles for support, protection and movement (The human skeleton) (Joints and muscles) * Identify animals, including humans need the right types of nutrition (Diet and exercise) * That they can’t make their own food and get nutrition from what they eat * Describe simple functions of digestive system (The digestive system) * Identify different types of teeth in humans and their functions. (teeth) |
| B | Ask questions  Collect data  Observe  Notice patterns  Record findings  **Possible investigations**  **Find patterns in how shadows can change/plot movement throughout the day (light)**  **Create own water cycles (solids, liquids and gasses)**  **Creating complete circuits investigating materials that are conductors or insulators (electricity)** |  |  |  | **Rocks and soils**   * Compare and group different kinds of rocks (sedimentary, metamorphic and igneous) (Rocks) * Describe how fossils are formed * Recognise that soils are made from rocks and organic matter (Soil) | **Solids, liquids and gases**   * Compare and group materials together, according to their state (Solid, liquid and gas) * Observe changes of state due to heating and cooling (Changes of state) (Separation by evaporation) * Understand the impact of temperature in the water cycle | **Electricity**   * Identify appliances that run on electricity * Construct simple series electrical circuits, identifying and naming parts (Series and parallel circuits) * Identify if a circuit would allow electricity to flow * To understand and recognise common conductors and insulators (Conductors and dangers of electricity) |
| **Light and sound**   * Recognise that light is needed to see things (What is light?) * To understand that light is reflected from surfaces (Reflection) * Know that shadows form when light is blocked (Shadows) * Recognise that light from sun is dangerous and we must protect our eyes * Identify how sound is made (What is sound?) * Understand how sound travels (waves) (Changing pitch and how does sound travel?) |

**Science – KS2 upper**

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| **PHASE** | **Cycle Year** | **Working scientifically** | **Animals including humans** | **Living things and their habitats** | **Plants** | **Materials and their properties** | **Earth and space** | **Electricity** |
| **5/6** | **A** | Ask questions  Collect data  Observe  Notice patterns  Record findings  **Possible investigations**  **Moon dairy**  **Total eclipse of my lid**  **Candle with care** | **Human life cycles (to include RSHE)**   * Describe changes as humans develop to old age (Life Cycles) * Describe the life processes of reproduction in some plants and animals (Reproduction) | **Living things and their habitats**   * Describe the differences in life cycles between mammal, amphibian, insect and bird (Life Cycles) * Explore habitat destruction and its impact on animals * Describe how living things are classified into groups according to common observable characteristics, including micro-organisms (Why classify?) * Give reasons for classifying animals (Classification Keys) |  | **Light**   * Recognise that light appears to travel in straight lines (What is light?) * Use this idea to link to how we see by reflection * To know that shadows are the same shape as the objects that cast them (The sun as a light source) * Explain that light travels from a source, to our eyes or from a source to an object and then to our eyes * To recognise the differences between transparent, opaque and translucent | * Understand what the Solar System is (Solar System) * Describe the sun, Earth and moon as spherical bodies (Sun, Earth and Moon) * Describe the movements of the Moon relative to Earth. (The Moon) * Describe the movement of Earth and other planets relative to the sun. * Explain day and night | * Compare and give reasons for variations in how components function, including brightness of bulbs, the loudness of buzzers (Electrical circuits?) * Discuss voltage and cells * Use recognised symbols when drawing circuit diagrams |
| **B** | Ask questions  Collect data  Observe  Notice patterns  Record findings  **Possible investigation**  **Filtering mixtures coffee, sugar, water**  **Sand, mud, water**  **Utterly gene-ius** | **Heart and Health, Blood and transportation**   * Identify and name the main parts of the human circulatory (The circulatory system) * Describe the functions of the heart, blood vessels and blood * Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function |  | **Plants**   * Describe the ways in which nutrients and water are transported within plants * Explore habitat destruction and its impact on plants * Describe how living things are classified into groups according to common observable characteristics, including plants * Give reasons for classifying plants * Identify how plants are pasted to suit their environment in different ways | **Forces**   * Explain the force of gravity and impact on a falling object (Gravity) * Identify effects of air resistance, water resistance and friction (Friction) * Recognise that some mechanisms, including levers, pulleys and gears allow a smaller force to have a greater effect (Gears and pulleys) |  |  |
| **Evolution and inheritance**   * Recognise that living things have changed over time * Fossils provide information about living things millions of years ago * Recognise that living things produce offspring of the same kind * Adaptations lead to evolution (Adaptation and evolution) | **Materials and change**   * Compare and group everyday materials on the basis of their properties (hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets * Give reasons based on evidence from comparative and fair tests for particular uses of materials, including metal, wood and plastic * Know the three states of matter (Solid, liquid and gas) * Understand that some materials are soluble and recover a substance from a solution * Using knowledge of solids , liquids and gases to decide how mixtures can be separated. Using sieving, filtering, evaporating * Demonstrate reversible changes and explain that some changes are irreversible (Changes of state) |