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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **PHASE** | **Cycle Year** | **Working scientifically** | **Animals including humans**  | **Living things and their habitats** | **Plants** | **Materials and properties**  | **Seasonal Changes**  |
| Rec/ Y1/Y2 | A | Ask questionsCollect dataObserve 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 questionsCollect dataObserve 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 questionsCollect dataObserve 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**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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 questionsCollect dataObserve 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 questionsCollect dataObserve 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**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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 questionsCollect dataObserve 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 questionsCollect dataObserve 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)
 |