**Progression of Skills in Science**

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|  | **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| PLANTS | Pupils will make closeobservations ofconkers, leaves,pinecones.Pupils will talk about whyleaves change colour.Pupils will observe Springflowers growing and plant sunflower seeds. | Pupils will talk about where is the best place for a plant to grow?Pupils will label parts of a plant.(with support)Pupils will observe seeds usingmagnifying glasses.Pupils will plant cress and beans. | Pupils will explore a variety of plants in the outdoor space.Pupils will examine, sort andtaste a range of fruits and vegetables thatcould be grown in a garden.Pupils will plant and grow carrots.Pupils will label a flower.Pupils will closely observe the growth of a seedto a sunflower.Pupils will identify and classify deciduous and evergreen trees.Pupils will identify and name a variety of wild plants (including trees).Pupils will make close observations ofleaves and plants.Pupils will identify and name a variety of gardenPlants. | Pupils will make closeobservations and sort seeds.Pupils will plant and growpotatoes.Pupils will describe a lifecycle of a sunflower.Pupils will grow a range of seeds into mature plants.Pupils will compare theeffects of 5 differentfactors on plantgrowth.Pupils will compare bulbsand seeds.Pupils will research therequirements forBritish vegetables to grow.Pupils will understand whatparts of plants we eat.Pupils will explore the requirements for fruits around the world to grow. | Pupils will identify and describe the functions of the plant.Pupils will investigate howleaves, help convert sunlight into food.Pupils will sort different partsof plants we eat.Pupils will research differentconditions differentplants, need for life and growth.Pupils will investigatewhether soil typeaffects plant growth.Pupils will investigate therate of transportationof water.Pupils will classify seeds intohow they aredispersed.Pupils will know the steps inthe pollination cycle.**Joseph Banks- or****Ahmed Mumin Warfa** | **In Living things****and their habitats pupils will:**Recognise thatliving things can be grouped in a variety of ways.Explore and useclassification keysto help group,identify and name a variety of livingthings in their local and widerenvironment.Recognise thatenvironments canchange and that this can sometimes posedangers to livingthings. | In Living thingsand their habitats pupils will:Describe the life process ofreproduction inflowering plantsDescribe the life process of asexualreproduction in plantsGrow a new plantfrom a parent plant. | In Living thingsand their habitats pupils will:Describe how living things are classified into broad groupsaccording tocommonobservablecharacteristics and based onsimilarities anddifferences,including micro-organisms, plantsand animals.Give reasons forclassifying plantsand animals based on specificcharacteristics. |
| ANIMALS | Pupils will mirrors drawing of ourselves andFamilies.Pupils will name squirrels and hedgehogsand other woodland animals.Pupils will talk about the life cycles of achicken, andobserving lifecycle ofcaterpillar | Pupils will find facts aboutsquirrels andhedgehogs.Pupils will complete 5 activities toexplore senses.Pupils will find out about keeping happy and healthy and healthy eating.Pupils will talk about the life cycle of afrog | **(Humans)**Pupils will identify parts of our body.Pupils will identify and label parts of the human body.Pupils will investigate differentheights of pupils in class to feet size(Maths)Pupils will identify the five senses.Pupils will use the sense of sound.Pupils will use the sense of smell.**(Animals)**Pupils will name and identifyanimals.Pupils will identify UK mammals.Pupils will identify birds andmammals.Pupils will identify fish andamphibians.Pupils will classify animals.Pupils will sort/classify animals by what they eat.Pupils will know animals bodiesare covered in different ways.Pupils will know how to look afteranimals.**Chris Packham** | **(Humans)**Pupils will investigate how germs spreadin a form of a sneeze.Pupils will observe how germs are spreadthrough contact.Pupils will sort and group the basic needs of a human (baby) for survival.Pupils will sort food using a carroll diagram.Pupils will analyse a school dinner.Pupils will make a pizza using all food groups (DT)Pupils will collect data about the impact ofexercise on the body.Pupils will know how health and keeping healthy.Pupils will observe photos of themselves as babies and compare them tocurrent photos.**(Animals)**Pupils will observe the life cycle of acaterpillar as it grows.Pupils will research the basic needs ofwild animals.Pupils will match animals to their young.Pupils will make an exotic pet guide for owners**Steve Irwin** | Pupils will research nutrientsPupils will identify the right type of nutrition byexamining food groups.Pupils will apply knowledge ofnutrients to make a sandwich (DT)Pupils will identify and namesbones.Pupils will explain the skeleton and some of its functions.Pupils will classify bones thatprotect organs and move.Pupils will explore how muscles work.Pupils will investigate whether children with taller legsrun faster.Pupils will classify animals based on their skeletons.Pupils will compare animals.**Wihelm Rontghen -X****Rays** | Pupils will locate and order partsof digestive system.Pupils will research the simple functions of the basic parts of the digestivesystem.Pupils will identify the differenttypes of teeth in humans and their simple function.Pupils will investigate andexplain how to keep teethand gums healthy.Pupils will know and understandsimple food chains.Pupils will make a video to describe the order andbasic functions of the digestive system.Pupils will consolidate learning about the digestive system**Ivan Pavlov- Digestive****System Mechanisms** | Pupils will draw timeline toindicate stages ingrowth anddevelopment ofhumans.Pupils will present data to describe the development of babies in their first year.Pupils will describe andexplain the mainchanges that occur during puberty.Pupils will identify the changes that take place in old age.**Eva Crane -****Reproduction in****Bees** | Pupils will investigate and record data about resting pulserates.Pupils will investigate howexercise impacts a pulse.Pupils will research the parts of the circulatory system.Pupils will understand whathappened to the oxygen we breathe in.Pupils will describe the function ofblood and blood vessels.Pupils will describe the waysnutrients and water aretransported through thebody (English).Pupils will understand what a ‘balanced diet’ is and analyse healthy snacks.Pupils will recognise the impact and dangers of alcohol and drugs.Pupils will research and presentinformation about a scientist. |
| LIVING THINGS and their HABITATS | Pupils will learn about woodlandanimals and theirhabitats.Pupils will learn the names ofspring flowers.Pupils will explore outdoor spaces for mini-beasts. | Pupils will learn about pumpkinsand where they grow.Pupils will explore arctic sceneries and arctic animals.Pupils will go on a trip to the park. | In plants pupils will:Identify and name a variety of common wild and garden plants, includingdeciduous andevergreen trees.Identify and describe the basic structure of a variety of common flowering plants, including trees.In animals pupils will:Identify and name a variety of commonanimals includingfish, amphibians,reptiles, birds andmammals.Identify and name a variety of common animals that are carnivores,herbivores andomnivores. Describe and compare thestructure of a variety of common animals. | Pupils will explore and compare thedifferences between thingsthat are living, dead or never been alive.Pupils will map a habitat andidentify what is in it.Pupils will match animals to theirhabitats.Pupils will explore animals andplants from a seaside habitatPupils will compare two areas forminibeast and carry out asimple investigation.Pupils will research a habitat and the animals and plants thatlive in it.Pupils will identify that most livingthings live in habitats to which they are suited.Pupils will explain how living thingsin a habitat depend on eachother.Pupils will describe how animals get their food.**(Marine biologist); Rachel Carson** | In Plants pupils will:Explore the partthat flowersplay in the life cycle of floweringplants, includingpollination, seedformation and seed dispersal. | Pupils will understand thecharacteristics of a living things.Pupils will ask questions, observe and record the living things in a local area.Pupils will classify living things indifferent of ways.Pupils will create a classificationkey to name living things.Pupils will classify living thingsfound in different habitats.Pupils will use fieldwork toexplore impact on the local environment.Pupils will research the effects of cutting down trees inrainforests.Pupils will research how a natural disaster could affect anenvironment.**Cindy Looy-****Environmental Change and Extinction** | Pupils will describe the life process of reproduction in flowering plants.Pupils will observe how plants canreproduce asexually.Pupils will compare and describe the life cycles andreproduction(metamorphosis) of insects and amphibians.Pupils will compare and describe the life cycle andreproduction of mammals and birds.Pupils will research the life cycle and dangers of the green turtle.Pupils will look for patterns aboutthe gestation period of different mammals.**Jane Goodall: naturalist** | Pupils will recap ways of groupingorganisms according to theircharacteristics.Pupils will research scientist: Carolus Linnaeusto understand the Linnaean System of classification.Pupils will be able to identifycharacteristics of different types ofanimals.Pupils will develop classification keys:non- flowering plants andflowering plants.Pupils will research main characteristicsof a vertebrate group.Pupils will create an imaginary animal thathas features from one or moregroups.Pupils will research micro-organisms andhow they can be grouped.Pupils will investigate what conditions make yeast grow. |
| LIGHT | In the provision:Investigation station:Pupils will use different colouredlenses for glassesthat can be mixedtogether, torches and mirrors. | In the provision:Investigation station:Pupils will use different colouredlenses for glassesthat can be mixedtogether, torches andmirrors | In animals (including humans):Identify, name, draw and label thebasic parts of the human body andsay which part of the body isassociated with each sense. (Y1 -Animals, including humans) |  | Pupils will explore how different objects are more or less visible in different levels of lighting.Pupils will explain that we need light to see things, and dark is the absence of light.Pupils will investigate the reflective nature of different materials.Pupils will identify and classify materials that are opaque,transparent and translucent.Pupils will investigate what material is best suited for a pair ofSunglasses.Pupils will investigate the difference in shadows when using different materials.Pupils will investigate how moving the light source affects theShadow.Pupils will choose suitable materials to make shadow puppets.**To research scientist: James Clerk Maxwell** |  |  | Pupils will recognise that light travels in straight lines.Pupils will use mirrors to show that light travels in a straight line.Pupils will investigate how refraction changes the direction in which light travels.Pupils will label the main parts of the human eye and explain their functions.Pupils will investigate how light enables us to see colours.Pupils will investigate how shadows can be changed.**To research scientist: Patricia Bath, Thomas Young,****Percy Shaw or Ibn al-Haytham** |
| FORCES | In theprovision:Pupils will use a magnetinvestigationstation forexploring,sorting objectsthat aremagnetic andnon-magnetic.Pupils will conduct the stomp rocketexperiment,explore theidea ofgravity/nogravity in space. Mini pulland go carinvestigationstation. | In theprovision:Pupils will use a magnetinvestigationstation forexploring,sorting objectsthat aremagnetic andnon-magnetic.Pupils will conduct the stomp rocketexperiment,explore theidea ofgravity/nogravity in space. Mini pulland go carinvestigationstation. |  | In Uses of everyday materials:Find out how the shapes of solidobjects made from some materialscan be changed by squashing,bending, twisting and stretching | Pupils will identify push and pulls.Pupils will investigate how objects move on different surfaces.Pupils will classify materials according to whether they areMagnetic.Pupils will explore the way that magnets behave in relation to eachOther.Pupils will explore how different objects move.Pupils will classify coins.Pupils will devise an investigation to test the strength of magnetics.Pupils will investigate how magnets work at a distance throughMaterials.**To research scientist: The Wright Brothers (Airplanes)** |  | Pupils will demonstrate the effect of gravity acting on anunsupported object.Pupils will Investigate the effect of friction in a range of contexts.Pupils will investigate the effects of air resistance in a range of contexts.Pupils will investigate resistance in different liquids.Pupils will explore how levers, pulleys and gears work.Pupils will know that some levers and pulleys allow a smaller force to have a greater effect.Pupils will make a product that involves a lever, pulley or gear (DT).**To research how the work of scientists such as Galileo Galilei and Isaac Newton helped to develop****the theory of gravitation** |  |
| ROCKS |  |  | In everyday materials:Distinguish between anobject and the materialfrom which it is made.Identify and name avariety of everydaymaterials, including wood,plastic, glass, metal, water,and rock. Describe thesimple physical propertiesof a variety of everydaymaterials.Compare and grouptogether a variety ofeveryday materials on thebasis of their simplephysical properties | In uses of everydaymaterials:Identify and compare thesuitability of a variety ofeveryday materials,including wood, metal,plastic, glass, brick, rock,paper and cardboard forparticular uses | Pupils will observe closely and classify rocks in a rangeof ways, based on their appearance.Pupils will devise a test to investigate the hardness of arange of rocksPupils will investigate the properties of a rock.Pupils will observe how rocks have changed over time.Pupils will research and explain how fossils are formed.Pupils will model fossil formation.Pupils will observe and classify soilsTo observe how soil can be separated throughSedimentation.**To research scientist: Mary Anning** |  |  | In evolution and inheritance:Recognise that living things have changed overtime and that fossils provide information aboutliving things that inhabited the Earth millions ofyears ago |
| SOUND | In the provision:Pupils will do a range oflistening games. | In the provision:Pupils will do a range oflistening games. | In animals (including humans):Identify, name, draw and label thebasic parts of the human bodyand say which part of the body isassociated with each sense. |  |  | Pupils will explore making sounds in a range of ways.Pupils will classify sound sources.Pupils will explore how vibrations from sounds travel through solids and liquids to the ear.Pupils will investigate how sounds change with distance from the source.Pupils will investigate muffling sounds by using materials.Pupils will explore changing the volume of sounds.Pupils will explore changing the pitch of sounds.**To research scientist: Aristotle - Sound Waves** |  |  |
| ELECTRICITY |  |  |  |  |  | Pupils will sort and classify objects on how they are powered.Pupils will explore how to make a lightbulb work.Pupils will classify the materials that were suitable/not suitable for wires.Pupils will investigate which metal is the is the best conductor of electricity.Pupils will explore how to connect a range of different switches and investigate how they function in different ways.Pupils will apply knowledge of conductors and insulators to design and make different typesof switch.Pupils will make a circuit that can be controlled (Linked to DT).**To research scientist: Thomas Edison** |  | Pupils will recap knowledge of electrical circuits.Pupils will make circuits and draw circuit diagrams.Pupils will investigate the relationship between cells/voltage and lamp brightness.Pupils will Investigate the relationship between cells/voltage and buzzer volume.Pupils will research and design an intruder alarm circuit.Pupils will test circuits and make improvements to the design.Pupils will prepare a presentation about an investigation to explain how circuits work.Pupils will investigate what type of fruit makes the best battery.**To research scientist: Nikola Telsa, Alessandro Volta or Edith Clarke** |
| MATERIALS | Pupils will explorematerials in thesand and water.Pupils will compare conkers,melt chocolateand observe icemelting.Pupils will explore floating and sinking. | Pupils will explore how animals keepwarm in coldplaces.Pupils will investigateusing cooking fat.Pupils will investigatefloating andsinking.Pupils will makepancakes andobserve changingstate. | Pupils will identify different materials around us.Pupils will explore the difference between amaterial and anobject.Pupils will classify objects made of one material.Pupils will describe materials accordingto their property.Pupils will identify natural and man made materials.Pupils will investigate whichmaterial iswaterproof.**Pupils will learn about****scientist: William****Addis Toothbrush****Inventor** | Pupils will classify objects indifferent ways.Pupils will explore a range ofmaterials and theirsuitability in theenvironment.Pupils will identify the unsuitabilityof everyday materials forobjects.Pupils will investigate theabsorbency of different paper (kitchen roll).Pupils will investigate the most suitable materials for a coat.Pupils will explore how to make anabsorbent material can bemade waterproof.**To research scientist:****Charles Macintosh**Pupils will investigate howmaterials can be shaped.Pupils will invent a new use for amaterial/object. | In rocks:Compare andgroup togetherdifferent kinds ofrocks on thebasis of theirappearance andsimple physicalpropertiesDescribe insimple termshow fossils areformed whenthings that havelived aretrapped withinrock.In rocks:Notice thatsome forcesneed contactbetween twoobjects, butmagnetic forcescan act at adistance |  |  |  |
| EARTH |  | Pupils will learn planet names.Pupils will learn simple facts about weather. | In seasonal changes:Observe changes across the fourseasons Observe and describeweather associated with the seasonsand how day length varies. |  |  |  | Pupils will understand the movement of the Earth and the moon and use secondary sources to help create a model.Pupils will use secondary sources to help make a model and explain why day and night occur.Pupils will use data to draw conclusions about the sun at different times of the year.Pupils will observe how shadows caused by the sun change throughout the day.Pupils will describe the movement of the Earth, and other planets, relative to the Sun in the Solar System.Pupils will describe the movement of the Earth relative to the moon.Pupils will research a scientist of my choice linked to Space.Pupils will summarise their learning. |  |
| EVOLUTION |  |  |  | In Living Things andtheir Habitats:Identify that most livingthings live in habitatsto which they aresuited and describehow different habitatsprovide for the basicneeds of differentkinds of animals andplants, and how theydepend on each other | In Rocks:Describe in simpleterms how fossils areformed when thingsthat have lived aretrapped within rock: | In Living Things andtheir Habitats:Recognise thatenvironments canchange and that this cansometimes posedangers to living things. |  | Pupils will research the characteristics that make a plant suited to its environment.Pupils will Identify characteristics that make an animal suited to its environment.Pupils will create an animal suited to an unusual environment.Pupils will research the evolution of the peppered moth.Pupils will investigate if there is a pattern between the size and shape of a bird’s beak and what they eat.Pupils will make close observations of parents and offspring Pupils will create a model for inherited characteristics.Pupils will make observations of fossils to identify living things that lived on Earthmillions of years ago and compare to modern day nimals.Pupils will compare the ideas of Charles Darwin and Alfred Wallace on evolution.**To research scientist: Mary Anning and how this provided evidence to****Evolution.** |