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| **Science: Progression of Knowledge Map** |
|  | **EYFS** | **Y1** | **Y2** | **Y3** | **Y4** | **Y5** | **Y6** |
| **Plants** | Plant seeds and care for growing plants.Explore the natural world around them, making observationsand drawing pictures of animals and plants. | Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees | Observe anddescribe how seedsand bulbs grow intomature plants.Find out anddescribe how plantsneed water, lightand a suitabletemperature togrow and stayhealthy. | Identify anddescribe thefunctions ofdifferent parts offlowering plants:roots, stem/trunk,leaves and flowers.Explore therequirements ofplants for life andgrowth (air, light,water, nutrientsfrom soil and roomto grow) and howthey vary fromplant to plant.Investigate theway in which wateris transportedwithin plants.Explore the partthat flowers play inthe life cycle offlowering plants,including pollination,seed formation andseed dispersal. |  |  |  |
| **Materials** | Explore collections of materials with similar and/or differentproperties.Talk about the differences between materials and changesthey notice. | Distinguishbetween an objectand the materialfrom which it isIdentify andcompare thesuitability of avariety of everydayCompare andgroup togethereveryday materialson the basis ofScience Knowledge Progression Mapmade.Identify and namea variety ofeveryday materialsincluding: wood,plastic, glass, waterand rock.Describe thesimple physicalproperties of avariety of everydaymaterials.Compare andgroup together avariety of everydaymaterials on thebasis of theirsimple physicalproperties. | Identify andcompare thesuitability of avariety of everyday materials, includingwood, metal, plastic,glass, brick, rock,paper andcardboard forparticular uses.Find out how theshapes of solidobjects made fromsome materials canbe changed bysquashing, bending,twisting andstretching. |  | Compare andgroup materialstogether, accordingto whether they aresolids, liquids orgases. Observe thatsome materialschange state whenthey are heated orcooled and measureor research thetemperature atwhich this happensin degrees Celsius(°C). Identify the partplayed byevaporation andcondensation in thewater cycle andassociate the rateof evaporation withtemperature. | Compare andgroup togethereveryday materialson the basis of their properties,including theirhardness, solubility,transparency,conductivity(electrical andthermal) andresponse tomagnets.Know that somematerials willdissolve in liquid toform a solution anddescribe how torecover a substancefrom a solution.Use knowledge ofsolids, liquids andgases to decide howmixtures might beseparated, includingthrough filtering,sieving andevaporating.Give reasons,based on evidencefrom comparativeand fair tests, forthe particular usesof everydaymaterials, includingmetals, wood andplastic.Demonstrate thatdissolving, mixingand changes ofstate are reversiblechanges.Explain that somechanges result inthe formation ofnew materials andthat this kind ofchange is not usuallyreversible, includingchanges associatedwith burning andthe action of acidon bicarbonate ofsoda. |  |
| **Seasonal Changes** | Understand the effect of changing seasons on the natural world around them.Understand some important processes and changes inthe natural world around them, including the seasons andchanging states of matter. | Observe changesacross the fourseasons.Observe anddescribe weatherassociated with theseasons and how daylength varies. |  |  |  |  |  |
| **Animals including humans** | Understand the key features of the life cycle of a plant andan animal.Explore the natural world around them, making observationsand drawing pictures of animals and plants. | Identify and namea variety of commonanimals includingfish, amphibians,reptiles, birds andmammals.Identify and namea variety of common animals that arecarnivores,herbivores andomnivores.Describe andcompare thestructure of avariety of commonanimals includingfish, amphibians,reptiles, birds,mammals and pets.Identify, name,draw and label thebasic body parts ofthe human body and say which part of the body isassociated witheach sense. | Notice thatanimals, includinghumans, haveoffspring whichgrow into adults.Find out about anddescribe the basicneeds of animals, including humans,for survival (water,food and air).Describe theimportance forhumans of exercise,eating the rightamounts ofdifferent types offood and hygiene. | Identify thatanimals, includinghumans, need theright types andamount of nutrition,and that theycannot make theirown food; they get nutrition from whatthey eat.Identify thathumans and someother animals haveskeletons andmuscles forsupport, protectionand movement. | Describe thesimple functions ofthe basic parts ofthe digestivesystem in humans.Identify thedifferent types ofteeth in humans and their simplefunctions.Construct andinterpret a varietyof food chains,identifyingproducers,predators and prey. | Describe thechanges as humansdevelop to old age. | Identify and namethe main parts ofthe humancirculatory systemand describe thefunctions of theheart, blood vesselsand blood.Recognise theimpact of diet,exercise, drugs andlifestyle on the waytheir bodiesfunction.Describe the waysin which nutrientsand water aretransported withinanimals, includinghumans. |
| **Living things and their habitats** | Begin to understand the need to respect and care for theNatural environment and all living things.Understand the key features of the life cycle of a plant andan animal.Explore the natural world around them, making observationsand drawing pictures of animals and plants. |  | Explore andcompare thedifferencesbetween things thatare living, dead andthings that havenever been alive.Identify thatmost living thingslive in habitats towhich they aresuited and describehow different habitats provide for the basic needs of different kinds of animals and plants and how they depend on each other. Identify and namea variety of plantsand animals in theirhabitats, includingmicro-habitats.Describe howanimals obtain theirfood from plantsand other animals,using the idea of asimple food chainand identify andname differentsources of food |  | Recognise thatliving things can begrouped in a varietyof ways.Explore and useclassification keysto help group,identify and name avariety of livingthings in their localand widerenvironment.Recognise that environments canchange and thatthis can sometimespose dangers toliving things. | Describe thedifferences in thelife cycles of amammal, anamphibian, an insectand a bird.Describe the lifeprocess ofreproduction insome plants andanimals. | Describe howliving things areclassified intobroad groupsaccording tocommon observablecharacteristics andbased onsimilarities anddifferences,including microorganisms, plantsand animals.Give reasons forclassifying plantsand animals basedon specificcharacteristics. |
| **Rocks**  |  |  |  | Compare andgroup togetherdifferent kinds ofrocks on the basisof their appearanceand simple physicalproperties. Describe in simpleterms how fossilsare formed whenthings that havelived are trapped within rock. Recognise thatsoils are made fromrocks and organicmatter. |  |  |  |
| **Light and sound** |  |  |  | Recognise thatthey need light inorder to see thingsand that dark is theabsence of light. Notice that lightis reflected fromsurfaces. Recognise thatlight from the suncan be dangerous and that there areways to protecttheir eyes. Recognise thatshadows are formedwhen the light froma light source isblocked by anopaque object. \* Find patterns inthe way that thesize of shadowschange. | Identify howsounds are made,associating some ofthem withsomething vibrating.Recognise thatvibrations fromsounds travelthrough a medium to the ear.Find patternsbetween the pitchof a sound andfeatures of theobject thatproduced it.Find patternsbetween the volumeof a sound and thestrength of thevibrations thatproduced it.Recognise thatsounds get fainteras the distancefrom the soundsource increases. |  | Recognise thatlight appears totravel in straightlines.Use the idea thatlight travels instraight lines toexplain that objectsare seen becausethey give out orreflect light intothe eye.Explain that wesee things becauselight travels fromlight sources to oureyes or from lightsources to objectsand then to oureyes.Use the idea thatlight travels instraight lines toexplain why shadowshave the sameshape as theobjects that castthem. |
| **Forces and magnets** | Explore and talk about different forces they can feel. |  |  | Compare howthings move ondifferent surfaces. Notice that someforces need contactbetween twoobjects, butmagnetic forces canact at a distance. Observe howmagnets attract orrepel each otherand attract somematerials and notothers. Compare andgroup together avariety of everydaymaterials on thebasis of whetherthey are attractedto a magnet andidentify somemagnetic materials. Describe magnetsas having two poles. Predict whethertwo magnets willattract or repeleach other,depending on whichpoles are facing. |  | Explain thatunsupportedobjects fall towardsthe Earth becauseof the force ofgravity actingbetween the Earthand the fallingobject. Identify theeffects of airresistance, waterresistance andfriction, that actbetween movingsurfaces.Recognise thatsome mechanisms,including levers,pulleys and gears,allow a smallerforce to have agreater effect. |  |
| **Electricity** |  |  |  |  | Identify commonappliances that runon electricity. Construct a simpleseries electricalcircuit, identifyingand naming its basicparts, includingcells, wires, bulbs,switches andbuzzers. Identify whetheror not a lamp willlight in a simpleseries circuit, based on whether or notthe lamp is part of acomplete loop withbattery.Recognise that aswitch opens andcloses a circuit andassociate this withwhether or not alamp lights in asimple seriescircuit.Recognise somecommon conductorsand insulators andassociate metalswith being goodconductors. |  | Associate thebrightness of a lampor the volume of abuzzer with thenumber and voltageof cells used in thecircuit. Compare and givereasons forvariations in howcomponentsfunction, includingthe brightness ofbulbs, the loudness of buzzers and the on/off position ofswitches.Used recognisedsymbols whenrepresenting asimple circuit in adiagram. |
| **Earth and space** |  |  |  |  |  | Describe themovement of theEarth and otherplanets, relative tothe Sun in the solarsystem.Describe themovement of theMoon relative tothe Earth.Describe the Sun,Earth and Moon asapproximatelyspherical bodies.Use the idea ofScience Knowledge Progression Mapthe Earth’s rotationto explain day andnight and theapparent movementof the sun acrossthe sky. |  |
| **Evolution and inheritance** |  |  |  |  |  |  | Recognise thatliving things havechanged over timeand that fossilsprovide informationabout living thingsthat inhabited theEarth millions ofyears ago.Recognise thatliving thingsproduce offspringof the same kind,but normallyoffspring vary andare not identical totheir parents.Identify howanimals and plantsare adapted to suittheir environment in different ways and that adaptation may lead to evolution. |