

SCIENCE

**AT SHALFLEET AND YARMOUTH CHURCH OF ENGLAND
PRIMARY SCHOOLS**

NATIONAL CURRICULUM STATEMENT

Purpose of study

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Aims

The national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.



OUR INTENT

By the time our children leave our school, our science provision will have encouraged them to develop a questioning mind about ways in which science influences everyday life.

Our children will ask important questions about how things work and why things happen in a certain way. We aim to foster curiosity and excitement about the natural world in our children, as well as understanding that their skills in science can be used today and in the future.

They will be able to understand the world they are growing up in and gain life skills to better access it; becoming adults who strive to seek solutions to problems and answers to life's questions.

We strive to promote a joy and excitement for learning and to approach unknown and unexplainable phenomenon with awe and wonder.



The Federation of the Church Schools of Shalfleet and Yarmouth

Curriculum for Learning Overview

What are we trying to achieve?

Lifelong Achievement

Curriculum Values

Design principles to inspire & challenge

Our purpose is to educate children in an atmosphere of Christian love where all achieve the very best they can, now and throughout their lives

Relationships We have strong partnerships and positive relationships	Determination We are determined to do our very best to achieve	Respect We show respect to others and the environment	
Coherent learning links and pathways	Strong working partnerships	High quality outcomes, deep learning	Valuing all children, learning is accessible to all
Challenging, engaging and motivating	Opportunities for memorable experiences	Promotes independence and curiosity	Broad, relevant and balanced Local, Mainland, Global

How do we implement?

Components

Teaching for Learning

Approaches

EYFS/National Curriculum

The curriculum as the entire planned learning experience

Lessons	Topics	Events/Trips	Environment	Enrichment/Inspire	Partnerships							
Clear understanding of cognition and learning – Good subject knowledge – Skilful instruction, coaching and facilitating – Flexible and responsive teaching strategies – Stimulating and well organised learning environments – Effective use of assessment - High expectations and productive interactions												
Sequences of learning that link key ideas in subject domains - rich connected learning journeys – clear progression of learning – flexible inclusion strategies to tackle educational disadvantage - social, moral, spiritual, cultural education												
CLL	PSED	PD	Literacy	Maths	UW	EAD						
Eng	Ma	Sci	Comp	D&T	Hist	Geo	A&D	Music	PE	MFL	PSHE	RE
Positive relationships and interactions	Appropriate learning opportunities understood by pupils	Children understand how to be successful	Oral and written feedback that has impact	Dialogic talk and rich questioning	Developing meta-cognition	Moderation underpins standards	Effective use of assessment driving tailored learning	Target setting and review				

What is the impact?

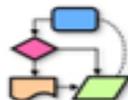
Successful Learning

Our curriculum impact can be measured by...

Systematic monitoring, action and review : Do design principles translate into an inspiring and challenging curriculum for all?

Evidenced by...

High achievement and outcomes for all across the curriculum	Good behaviour, positive attitudes and high attendance	Teaching that is engaging and consistently good for all	Motivated teams & positive learning culture	Confident, kind, respectful, determined learners
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<p>Federation Vision for Science – Intention for Children By the time our children leave our school, our science provision will have offered our children an understanding of the world through the disciplines of biology, chemistry and physics. Through scientific enquiry, the children will have explored processes and relationships building eagerness and inquisitiveness surrounding natural phenomena.</p>	<p>Big Ideas</p> <p>Working scientifically – questioning, formulating investigations, performing tests, recording, concluding and evaluating</p>		<p>Content and Sequencing (Broad, relevant and balanced)</p> <p>Animals (including humans) - name common animals, draw parts of the human body, notice they have offspring, describe basic needs for animals and importance of exercise for humans (KS1) animals and humans needing the right nutrition, having muscles and skeletons for a purpose, know the human teeth, know the human digestive system, create food chains, describe changes to humans up to old age, identify and name the circulatory system, the impact of exercise, drugs and lifestyle on humans, and how nutrients and water are transported in humans and animals (KS2)</p> <p>Plants – identify, name and describe plants and trees and observe plant growth (KS1) Identify and describe plant functions, their life cycle, and requirements for life (KS2)</p> <p>Living things and their habitats – identify plants’ and animals’ habitats and how they suit them, explore differences between things alive, dead and that have never been alive, create simple food chains (KS1) living things can be grouped, use classification keys, recognise environments can change, describe reproduction in plants and animals, look at differences in life cycles, classify living things into broad groups, give reasons for animal and plant classification (KS2)</p> <p>Electricity – learn about common appliances, create simple circuits with lamps and switches, name parts of a circuit, find insulators and conductors (LKS2) use symbols to draw circuits, explain how a buzzer’s volume and bulbs brightness can be affected (UKS2)</p> <p>Forces – focusing on the forces created by magnets, attracting and repelling and their strength (LKS2) explain gravity, water and air resistance, friction, and forces in mechanisms (UKS2)</p> <p>Materials – identify everyday materials, describe and group everyday materials, find out how solid shapes can be changed, compare suitability of materials (KS1) materials can change state when heated or cooled, group based on their properties, reversible and irreversible changes, dissolving materials (KS2)</p>				
	<p>Biology – habitats, living things, animals, evolution, humans, plants,</p> <p>Chemistry – materials and their properties, uses of materials, rocks, states of matter,</p> <p>Physics – forces, Earth and space, light, electricity, sound, seasonal changes</p>						

Vision for the Federation Learning Principles in Science

Coherent Learning Links and Pathways:	Strong Working Partnerships:	High Quality Outcomes/Deep Learning:	Valuing All Children/Accessible Learning:	Challenging, Engaging and Motivating:	Opportunities for Memorable Experiences:	Promotes Independence and Curiosity:	Local, Mainland and Global:
Science work is underpinned by strong maths skills and report writing language skills.	Children will be able to perform scientific enquiry working together on range of experiments and investigations.	Children will be encouraged to use their scientific language fluently and confidently to explain concepts and phenomena.	All children have an opportunity to explore scientific processes at their level of understanding.	Children will be motivated through the use of practical investigations to bring the science to life in front of their eyes.	Engaging trips that build on scientific knowledge, encompassing a range of investigations.	Giving children ownership to explore scientific questions and natural phenomena that interests them.	Exploring different processes and concepts across local, mainland and global environments.
<p>Links with English and Maths</p> <p>Maths – measurement, data analysis, decimals, fractions, percentages, four operations, shape.</p> <p>Literacy – report writing, research skills,</p>		<p>Progress</p> <p>Evidence will be seen in books showing development within scientific enquiry.</p> <p>Investigations will be recorded and evaluated in a depth suitable for the year group.</p> <p>Scientific vocabulary will be shown to progress in complexity throughout the year groups.</p>		<p>Support</p> <p>Everyone has access to the science National Curriculum.</p> <p>Activities adapted in accordance to previous assessment, where a child may not have got the background knowledge from a previous year group. This would be seen in a number of ways from using more visual links, to recapping key vocabulary etc.</p>			

PROGRESSION OF SKILLS

1. Knowledge
2. Skills
3. Vocabulary
4. Resources
5. Overview of coverage

SCIENCE	Links to EYFS	Key Stage 1		Lower Key Stage 2		Upper Key Stage 2	
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Knowledge	<ul style="list-style-type: none"> - Knowing similarities and differences in relation to places, objects, materials and living things. - Knowing features of their own immediate environment and how environments might vary from one another. - To make observations of animals and plants, explaining why some things occur and talk about changes. 	<p>Plants</p> <ul style="list-style-type: none"> - To be able to identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. - To be able to identify and describe the basic structure of a variety of common flowering plants, including trees. <p>Animals including humans</p> <ul style="list-style-type: none"> - To be able to identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals - To be able to identify and name a variety of common animals that are carnivores, herbivores and omnivores - To be able to describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) - To be able to identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense <p>Everyday Materials</p> <ul style="list-style-type: none"> - To be able to distinguish between an object and the material from which it is made - To be able to identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock - To be able to describe the simple physical properties of 	<p>All living things and their habitats</p> <ul style="list-style-type: none"> - To be able to explore and compare the differences between things that are living, dead, and things that have never been alive - To be able to 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 - To be able to identify and name a variety of plants and animals in their habitats, including micro-habitats - To be able to 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. <p>Plants</p> <ul style="list-style-type: none"> - To be able to observe and describe how seeds and bulbs grow into mature plants - To be able to find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. <p>Animals, including humans</p> <ul style="list-style-type: none"> - To be able to notice that animals, including humans, have offspring which grow into adults - To be able to find out about and describe the 	<p>Plants</p> <ul style="list-style-type: none"> - To be able to identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers - To be able to explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant - To be able to investigate the way in which water is transported within plants - To be able to explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. <p>Animals, including humans</p> <ul style="list-style-type: none"> - To be able to identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat - To be able to identify that humans and some other animals have skeletons and muscles for support, protection and movement. <p>Rocks</p> <ul style="list-style-type: none"> - To be able to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties 	<p>Living things and their habitats</p> <ul style="list-style-type: none"> - To be able to recognise that living things can be grouped in a variety of ways - To be able to explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment - To be able to recognise that environments can change and that this can sometimes pose dangers to living things. <p>Animals, including humans</p> <ul style="list-style-type: none"> - To be able to describe the simple functions of the basic parts of the digestive system in humans - To be able to identify the different types of teeth in humans and their simple functions - To be able to construct and interpret a variety of food chains, identifying producers, predators and prey. <p>States of matter</p> <ul style="list-style-type: none"> - To be able to compare and group materials together, according to whether they are solids, liquids or gases - To be able to observe that some materials change state when they are heated or cooled, and measure or research the 	<p>Living things and their habitats</p> <ul style="list-style-type: none"> - To be able to describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird - To be able to describe the life process of reproduction in some plants and animals. <p>Animals, including humans</p> <ul style="list-style-type: none"> - To be able to describe the changes as humans develop to old age. <p>Properties and changes of materials</p> <ul style="list-style-type: none"> - To be able to compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets - I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution - To be able to use knowledge of solids, 	<p>Living things and their habitats</p> <ul style="list-style-type: none"> - To be able to 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 - To be able to give reasons for classifying plants and animals based on specific characteristics. <p>Animals, including humans</p> <ul style="list-style-type: none"> - To be able to identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood - To be able to recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function - To be able to describe the ways in which nutrients and water are transported within animals, including humans. <p>Evolution and inheritance</p> <ul style="list-style-type: none"> - To be able to recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago - To be able to recognise that living things produce

	<p>a variety of everyday materials</p> <ul style="list-style-type: none"> - To be able to compare and group together a variety of everyday materials based on their simple physical properties. <p>Seasonal Changes</p> <ul style="list-style-type: none"> - To be able to observe changes across the four seasons - To be able to observe and describe weather associated with the seasons and how day length varies. 	<p>basic needs of animals, including humans, for survival (water, food and air)</p> <ul style="list-style-type: none"> - To be able to describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. <p>Uses of everyday materials</p> <ul style="list-style-type: none"> - To be able to identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses - To be able to find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 	<ul style="list-style-type: none"> - To be able to describe in simple terms how fossils are formed when things that have lived are trapped within rock - To be able to recognise that soils are made from rocks and organic matter. <p>Light</p> <ul style="list-style-type: none"> - To be able to recognise that they need light in order to see things and that dark is the absence of light - To be able to notice that light is reflected from surfaces - To be able to recognise that light from the sun can be dangerous and that there are ways to protect their eyes - To be able to recognise that shadows are formed when the light from a light source is blocked by a solid object - To be able to find patterns in the way that the size of shadows change. <p>Forces and magnets</p> <ul style="list-style-type: none"> - To be able to compare how things move on different surfaces - To be able to notice that some forces need contact between two objects, but magnetic forces can act at a distance - To be able to observe how magnets attract or repel each other and attract some materials and not others describe magnets as having two poles - To be able to predict whether two magnets will attract or repel each other, depending on which poles are facing. - To be able to compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials 	<p>temperature at which this happens in degrees Celsius (°C)</p> <ul style="list-style-type: none"> - To be able to identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. <p>Sound</p> <ul style="list-style-type: none"> - To be able to identify how sounds are made, associating some of them with something vibrating - To be able to recognise that vibrations from sounds travel through a medium to the ear - To be able to find patterns between the pitch of a sound and features of the object that produced it - To be able to find patterns between the volume of a sound and the strength of the vibrations that produced it - To be able to recognise that sounds get fainter as the distance from the sound source increases. <p>Electricity</p> <ul style="list-style-type: none"> - To be able to identify common appliances that run on electricity - To be able to construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers - To be able to identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery - To be able to recognise that a switch opens and 	<p>liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <ul style="list-style-type: none"> - To be able to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic - To be able to demonstrate that dissolving, mixing and changes of state are reversible changes - To be able to 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. <p>Earth and Space</p> <ul style="list-style-type: none"> - To be able to describe the movement of the Earth, and other planets, relative to the Sun in the solar system - To be able to describe the movement of the Moon relative to the Earth - To be able to describe the Sun, Earth and Moon as approximately spherical bodies - To be able to use the idea of the Earth's rotation to 	<p>offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <ul style="list-style-type: none"> - To be able to identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. <p>Light</p> <ul style="list-style-type: none"> - To be able to 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 - To be able to 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 - To be able to use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. <p>Electricity</p> <ul style="list-style-type: none"> - To be able to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit - To be able to compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches - To be able to use recognised symbols when representing a simple circuit in a diagram.
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					<p>closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <ul style="list-style-type: none"> - To be able to recognise some common conductors and insulators, and associate metals with being good conductors. 	<p>explain day and night and the apparent movement of the sun across the sky.</p> <p>Forces</p> <ul style="list-style-type: none"> - To be able to explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object - To be able to identify the effects of air resistance, water resistance and friction, that act between moving surfaces - To be able to recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. 	
<p>Skills (Investigations)</p> <ul style="list-style-type: none"> - To run as a thread throughout all scientific work. 	<ul style="list-style-type: none"> - Enquiry skills. - Questioning skills – asking and responding to questions posed. - Exploration and observational skills – using first hand experience and secondary sources to explore and gather information to answer to question. 	<ul style="list-style-type: none"> - Asking simple questions and recognising that they can be answered in different ways - Observing closely, using simple equipment - Performing simple tests - Identifying and classifying - Using their observations and ideas to suggest answers to questions - Gathering and recording data to help in answering questions. 	<ul style="list-style-type: none"> - Asking relevant questions and using different types of scientific enquiries to answer them - Setting up simple practical enquiries, comparative and fair tests - Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers - Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions - Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions - Identifying differences, similarities or changes related to simple scientific ideas and processes - Using straightforward scientific evidence to answer questions or to support their findings. 	<ul style="list-style-type: none"> - Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary - Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate - Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - Using test results to make predictions to set up further comparative and fair tests - Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations - Identifying scientific evidence that has been used to support or refute ideas or arguments. 			

<p>Vocabulary</p> <ul style="list-style-type: none"> - Environment - Living things - Materials - Change - Animal - Plant - Observation - Feature - Similarity - Difference 	<p>Working scientifically – question, answer, observe, observing, equipment, identify, classify, sort, diagram, chart, map, data, compare, contrast, describe, biology, chemistry, physics, group, record.</p> <p>Plants – wild plants, garden plants, deciduous, evergreen, tree, plant, bud, root, bulb, seed, stem, blossom, petal, growth.</p> <p>Animals including humans – habitat, food chain, living, dead, amphibian, reptile, mammal, bird, fish, carnivore, herbivore, omnivore, survive, human and animal body parts, animal names.</p> <p>Everyday materials – wood, plastic, glass, metal, water, rock, hard, soft, stretchy, stiff, twist, push, pull, rough, smooth, bendy, waterproof, absorbent, brick, paper, fabric, elastic, foil, properties, rigid, flexible.</p> <p>Seasonal changes – summer, spring, autumn, winter, seasons, weather, difference</p>	<p>Working scientifically – as Year 1.</p> <p>Plants – water, light, temperature, grow, healthy, germination, reproduction.</p> <p>Animals including humans – adult, nutrition, survival, reproduce, lifecycle, grow, hygiene, exercise, water, food, air, and further animal names.</p> <p>Living things and their habitat – micro-habitat, food chain, healthy, seashore, woodland, shelter, ocean, rainforest, conditions.</p> <p>Everyday materials – cardboard, squashing, bending, twisting, types of metal objects, types of wooden objects, types of spoons (not glass), opaque, translucent, transparent.</p>	<p>Working scientifically – Research – relevant, scientific enquiry, comparative and fair test, systematic, careful observation, accurate, measurements. Equipment – thermometer, data logger, Data – gather, record, classify, present. Record – drawings, labelled diagrams, keys, bar charts, tables, oral and written explanations, conclusions, predictions, differences, similarities, changes, evidence, improve, secondary sources, guides, construct, interpret.</p> <p>Plants – functions, flowering plants, structure, nutrient, transported, fertiliser, pollination, seed formation and seed dispersal.</p> <p>Animals including humans – food groups – carbohydrate, fat, protein, vitamins, nutrients, minerals, fibre, fruit and vegetables, diet. Skeleton (common names for bones and major organs), protection, support, structure, joint, cartilage, muscles, movement, pull, contract and relax.</p> <p>Rocks – igneous, sedimentary, metamorphic, fossil, appearance, physical, organic matter, absorbent, non-absorbent, grains, crystal. Mary Anning.</p> <p>Light – reflection, dark is the absence of light, dangerous, shadow, spectrum, natural, artificial, surface, blocked, light source, straight, protect, patterns</p> <p>Forces and magnets – attract, repel, magnetism, magnetic, non-magnetic, magnetic field, poles, north, south, strength, surface, cobalt, iron, metal, aluminium, tin.</p>	<p>Working scientifically – as Year 3.</p> <p>Living things and their habitats – moss, nature reserve, fern, population, human impact, development, litter, deforestation, vertebrate, invertebrate.</p> <p>Animals including humans – human digestive system, tongue, saliva, oesophagus, stomach, acid, enzymes, intestines (small and large), waste product, faeces, anus, transport, teeth, incisors, canines, molars, grind, tearing, ripping, chewing, slicing, predators, prey.</p> <p>States of matter – solid, melt, freeze, liquid, evaporate, condense, gas, container, changing state, degrees Celsius, thermometer, temperature, water cycle, condensation, water vapour.</p> <p>Sound – vibrate, vibration, vibrating, air, medium, volume, pitch, faint, loudness, string, percussion, brass, insulate, woodwind, patterns, strength, distance, waves.</p> <p>Electricity – circuit, cells, wires, bulbs, switches, buzzers, lamp, battery, motor, voltage, loop, switch, series circuit, brightness, conductor, insulator, common, open circuit, closed circuit,</p>	<p>Working scientifically – Plan, variables, measurements, accuracy, precision, repeat readings, Record data – scientific diagrams, labels, classification keys, scatter graphs, bar graph and line graph, further comparative and fair test, casual relationships, degree of trust. Evidence – support, refute ideas or arguments, identify, classify and describe, patterns, systematic.</p> <p>Living things and their habitats – reproduction, plants – sexual and asexual prehistoric.</p> <p>Animals including humans – puberty, lifecycle, gestation, growth, foetus, fertilisation, length, mass, life expectancy, adolescence, adulthood, childhood.</p> <p>Properties and changes of materials – transparency, conductive, electrical and thermal, dissolve, solution, filtering, sieving, evaporating, reversible changes, irreversible changes, chemists, quantitative measurements, conductivity and insulation.</p> <p>Earth and Space – Earth, sun, moon, astronomy, telescope, planets (names), planet, solar system, rotate, orbit, axis, spherical, heliocentric, geocentric, hemisphere, season tilt, Aristotle, Ptolemy, Galileo, Copernicus, Brahe, Alhazem.</p> <p>Forces – air resistance, water resistance, gravity, theory of gravitation, accelerate, friction, decelerate and accelerate,</p>	<p>Working scientifically – as Year 5.</p> <p>Living Things and their habitats – micro-organisms, classification,</p> <p>Animals including humans – heart, lungs, liver, brain, kidney, skeletal, muscular, blood vessels, human circulatory system, impact, damage (alcohol/substances).</p> <p>Evolution and inheritance – inherited traits, adaptive traits, natural selection, offspring, vary, non identical, characteristics, genes, DNA, evolution, adaption, inherit, fossilisation, environment, Charles Darwin, palaeontology,</p> <p>Light – periscope, filters.</p> <p>Electricity – consolidate vocabulary learnt so far.</p>
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						direction, mechanism, pulley, gear, spring, break, Isaac Newton.	
Resources – Including link to Reading	<ul style="list-style-type: none"> - Outdoor classroom - Non-fiction and fiction books - Whole class internet use to research and find images - Pens and other recording materials - iPads for pictures - Reading labels and captions - Consumables - Visits 	<ul style="list-style-type: none"> - Outdoor classroom - Animal pictures/models - Online research - Book research - Online videos - Posters - Outside visitors - Material samples - Everyday objects using curriculum specific materials - iPads for pictures - Magnifying glasses - Consumables - Visits 	<ul style="list-style-type: none"> - Outdoor classroom - Animal pictures/models - Online research - Book research - Online videos - Posters - Outside visitors - Material samples - Everyday objects using curriculum specific materials - iPads for pictures - Magnifying glasses - Gardening equipment - Seeds and bulbs - Consumables - Visits 	<ul style="list-style-type: none"> - Outdoor classroom - Seeds and bulbs - Plant diagrams - Animal pictures/models - Online research - Book research - Online videos - Posters - Outside visitors - iPads for pictures - Different rock samples - Torches - Mirrors - Magnets - Magnetic/non-magnetic objects - Everyday objects/materials using curriculum specific materials. - iPads for pictures - Skeleton model - Consumables - Dark tent - Visits 	<ul style="list-style-type: none"> - Animal internal pictures/models - Teeth pictures/models - Online research - Book research - Online videos - Posters - Outside visitors - iPads for pictures - Musical instruments - iPads for pictures - Data logger - Apps relevant to sound and light capture - Thermometer - Examples of different liquids, gases and solids - Digital scales - Electrical circuit kit - Bulbs and batteries - Tape measure - Heating and cooling equipment - Filter paper - Sieve - Solar system model - Space camp equipment - Torches - Lever - Pulleys - Gears - Water tray - Stop watch - Consumables - Visits 	<ul style="list-style-type: none"> - Lifecycle pictures - Outdoor classroom - Diagrams of reproduction - Online research - Book research - Online videos - Posters - Outside visitors - iPads for pictures - Data logger - Thermometer - Examples of different liquids, gases and solids - Digital scales - Electrical circuit kit - Bulbs and batteries - Tape measure - Heating and cooling equipment - Filter paper - Sieve - Solar system model - Space camp equipment - Torches - Lever - Pulleys - Gears - Water tray - Stop watch - Consumables - Visits 	<ul style="list-style-type: none"> - Outdoor classroom - Pictures of humans, animals and micro-organisms - Animal organs for dissection - Scalpel - Model/pictures of the human circulatory system - Online research - Book research - Online videos - Posters - Outside visitors - iPads for pictures - Data logger - Digital scales - Electrical circuit kit - Bulbs and batteries - Tape measure - Torches - Mirrors - Stop watch - Consumables - Visits

OUR IMPLEMENTATION



Autumn Science MT 5 6 yar fresh.pdf



MTP Template Science Year 2 objectives.pdf



science autumn MTP plan 2 Y34 FW.pdf



SCIENCE MTP LIGHT yr5.pdf



science plan yarmouth 3 4.pdf

OUR IMPLEMENTATION: AUTUMN 2



MTP Template Science Year 2 objectives.pdf



Aut Science Yr1 objectives.pdf



Science MTP Eclipse Autumn 2020.pdf



science autumn MTP plan 2 Y34 FW.pdf



SCIENCE Aut Shalfleet Year 1 Sunshine.pdf



MTP science Autumn Year 4.pdf



Autumn Science MT 5 6 yar fresh.pdf



SHALFLEET_Y3 Science Autumn 2020 Plants.pdf



SHALFLEET_Y3 Science Autumn 2020 Animals (1).pdf



SCIENCE MTP year 6 shalfleet.pdf

Our Implementation: Spring and Summer 2021

Federation Medium Term Planning Folder

https://drive.google.com/drive/u/3/folders/10tAkIYDGk-sRVNnKMD_sJWzJBNUUnzu7b

FEDERATION COVERAGE – AUTUMN 1

EYFS YARMOUTH

Name: Roman Date: 5/11/20 In/Out CIAL

Know (what are we seeing?): Chalky water.
Roman was playing with the tyres with a peer when they noticed the rain water inside them had gone red. The boys investigated and discovered an old chalk inside the tyre. Roman explained to the adults, "It's melted. It's disappeared". Adult explained how the chalk had dissolved in the water.

Assess (where are they?):

Play & Explore Find out and explore Play with what they know Willing to have a go	Active Learner Being involved and concentrating Keep on trying Enjoy achieving what set out to do	Critical Thinker Have own ideas Making links Choose ways to do things
--	--	--

Plan (what can we plan for next time?):
Science experiments to explore melting and dissolving.
Remember to ENGAGE right now - how can we move the learning on?
Completed by: Emma Sell

Science
Purple Class
Autumn Term
Child Led Learning

Name: Zeif U Date: 8/9/20 In/Out CIAL

Know (what are we seeing?): The children visited the environmental garden to see the pumpkins growing. Zeif noticed a tin drinks can thrown down the back of the fence, a lock at that rubbish (pointing) that shouldn't be there, it can't go into the ground - they should put it in the bin, how will we get it out from there?

Assess (where are they?):

Play & Explore Find out and explore Play with what they know Willing to have a go	Active Learner Being involved and concentrating Keep on trying Enjoy achieving what set out to do	Critical Thinker Have own ideas Making links Choose ways to do things
--	--	--

Plan (what can we plan for next time?): Problem solve a way to retrieve the can - create a poster about how + why we need to put rubbish in the bin - explore recycling.
Remember to ENGAGE right now - how can we move the learning on?
Completed by: Miss Sampson

Science
Purple Class
Autumn Term
Child Led Learning

Name: Leo Brewer Date: 18/9/20 In/Out CIAL

Know (what are we seeing?): Leo found a sticker of a helicopter on the ground picking it up he said 'it's a magnet lock'. The adult asked how did you know? Leo explained 'because there's a lock on the back lock and it sticks'.

Assess (where are they?):

Play & Explore Find out and explore Play with what they know Willing to have a go	Active Learner Being involved and concentrating Keep on trying Enjoy achieving what set out to do	Critical Thinker Have own ideas Making links Choose ways to do things
--	--	--

Plan (what can we plan for next time?): Test magnet out on different surfaces - what does the magnet stick to and why?
Remember to ENGAGE right now - how can we move the learning on?
Completed by: Miss Sam Dan

Science
Purple Class
Autumn Term
Child Led Learning

If you don't brush your teeth you might get Cavities - Ava
8/10/20
HSA 40-60
SCSA 40-60
S 40-60

Science
Purple Class
Autumn Term
Child Led Learning

Understanding the World

- Explore the natural world around them.
- Describe what they see, hear and feel whilst outside.

Name: Zeif U Date: 8/9/20 In/Out CIAL

Know (what are we seeing?): Pumpkin walk
The class walked over to see how well the pumpkins had grown - Zeif noticed that they were different colours 'that's because it's hiding under the leaf' the colour - Zeif explained - no sun

Assess (where are they?): adult asked why this would change the colour - Zeif explained - no sun

Play & Explore Find out and explore Play with what they know Willing to have a go	Active Learner Being involved and concentrating Keep on trying Enjoy achieving what set out to do	Critical Thinker Have own ideas Making links Choose ways to do things
--	--	--

Plan (what can we plan for next time?): Explore shadows and how they are made - investigate what plants (flowers need to grow successfully) will they grow well in the winter?
Remember to ENGAGE right now - how can we move the learning on?
Completed by: Miss Sampson

Science
Purple Class
Autumn Term
Child Led Learning

"I could most like wax" - Leif
C/L
S-40-60
SCSA-40-60
MR-40-60
EAD-B1-EG

Prime Area

- Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - healthy eating - toothbrushing - sensible amounts of 'screen time' - having a good sleep routine - being a safe pedestrian.

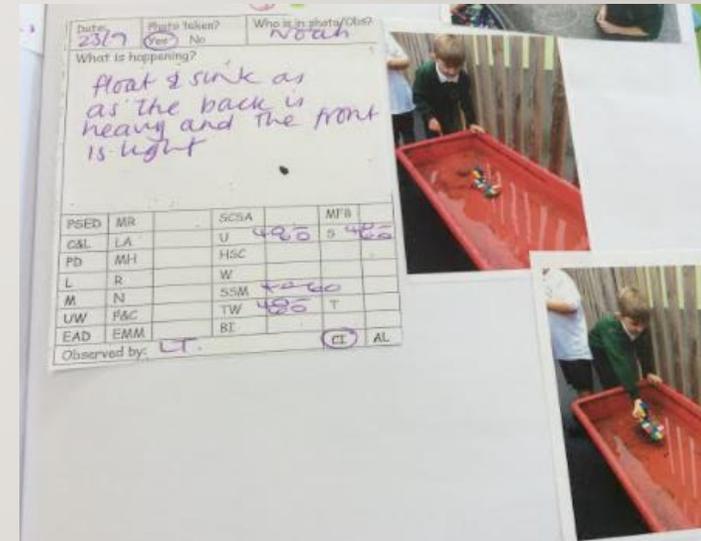
EYFS SHALFLEET

Understanding the World

- Explore the natural world around them.
- Describe what they see, hear and feel whilst outside

Early Learning Goal

- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.



EYFS Autumn 2

Science evidence - links to Understanding the World in EYFS curriculum.

Understanding the World

- Explore the natural world around them.
- Describe what they see, hear and feel whilst outside

Early Learning Goal

- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

This week we have been exploring hot and cold places on the globe and exploring the polar regions and equator. We used hot water bottles and frozen water bottles on our sensory tray to encourage us to think about words to describe these locations. Abel noticed that the ice was dripping and explained to the children it was because it was melting. He also explained the ice melted because it warmed up. The children made predictions about how long they thought the ice would take to melt.



EYFS Autumn 2

SCIENCE

Understanding the World

- Explore the natural world around them.
- Describe what they see, hear and feel whilst outside

Early Learning Goal

- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Themes discussed Autumn:

- Harvest and growing - exploring the vegetables we had grown in the garden (potatoes, pumpkins, sweetcorn, turnips).
 - Seasons - observations of changes to weather and vegetation.
 - Habitats and hibernation - linked to the geese gathering on The River Yar to fly off to warmer climates.
 - Our bodies/staying healthy - skeletons (role of) and teeth (looking after them).
- 

EYFS: SHALFLEET Autumn 2

Understanding the World

- Explore the natural world around them.
- Describe what they see, hear and feel whilst outside

Date: 23/9 Photo taken? Yes No Who is in photo/Obs? Noah
 What is happening? Float & sink as as the back is heavy and the front is light

PSED	MR	SCSA	MFB
C&L	LA	U 4060	S 4060
PD	MH	HSC	
L	R	W	
M	N	SSM 4260	
UW	P&C	TW 4060	T
EAD	EMM	BI	

Observed by: LT. CI AL



Date: 30/9 Photo taken? Yes No Who is in photo/Obs? Charlie
 What is happening? We had frozen some vegetables. Charlie said we could use warm water or our hands as they are warm.

PSED	MR	SCSA	MFB
C&L	LA	U 4060	S 4060
PD	MH	HSC	
	R	W	
	N	SSM	
W	P&C	TW 4060	T
AD	EMM	BI	

Observed by: AL CI AL

Date: 27/20 Photo taken? Yes No Who is in photo/Obs? Anna
 What is happening? Anna said Bees make honey they collect pollen and take it back to their hive to make the honey.

PSED	MR	SCSA	MFB
C&L	LA	U 4060	S 4060
PD	MH	HSC	
L	R	W	
M	N	SSM	
UW	P&C	TW 4060	T
EAD	EMM	BI	

Observed by: AL CI AL

Early Learning Goal

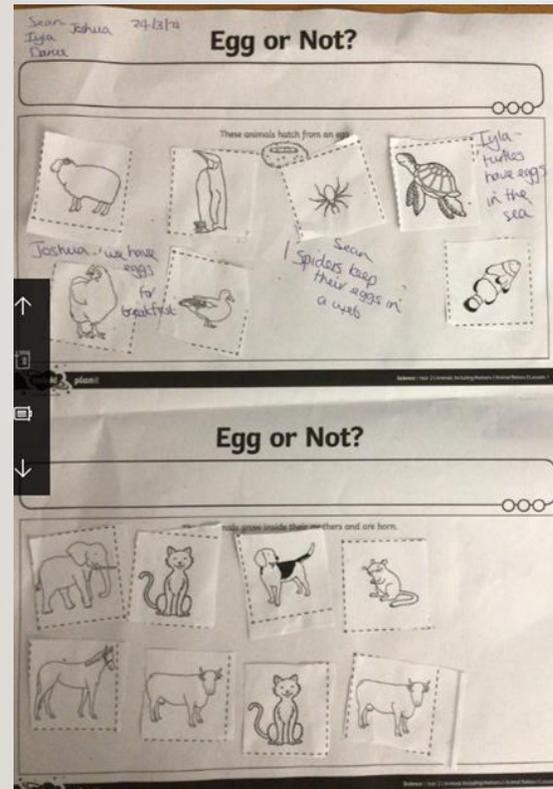
- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

EYFS: Spring and Summer 2021

Science Evidence: Purple Class Spring 2

Child interest: EGGS

Around Easter the children became fascinated by eggs and this became a theme for our learning. We spent a few lessons exploring and comparing animals that hatch from eggs and animals that are born live (including humans). We gathered evidence from books and thought about where the animals live. This also proved a useful talking point for some animals e.g. 'Would an elephant squash an egg if they had to sit on eggs and keep them warm?



Around this time, there were a few children losing their first teeth in class, so we decided to host an experiment to help us understand the importance of cleaning our teeth regularly. We chose liquids to place eggs in - linking between the similarities between an egg shell and a human tooth. The children made predictions about what they thought would happen to the egg shells over several days with the eggs submerged into them.

EYFS: Spring and Summer 2021

Science Evidence: Purple Class Summer 2

Child interest: EGGS lifecycles

Science Evidence



In class we have been exploring lifecycles and had caterpillars to watch as they developed into butterflies.

We kept a diary every other day to record our observations.

EYFS: Spring and Summer 2021

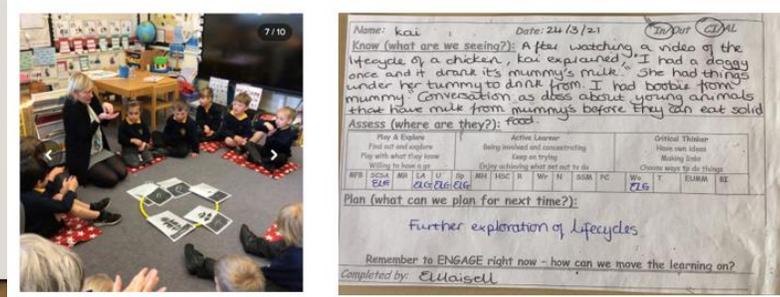
Science Evidence Summer 1

Linked to the children's interests, our learning has taken us on to exploring lifecycles: This half term we have been exploring growing - linked to what it is that helps humans (us) and animals to grow (including the stages we go through). We've also explored what we need to do to help plants to grow. We have planted sunflower seeds, potatoes, runner beans and grass seeds and continue to care and monitor them. We set up a runner bean in a glass jar so that we could watch it split open and begin to grow - demonstrating what is happening under the surface of the soil before our shoots appear.

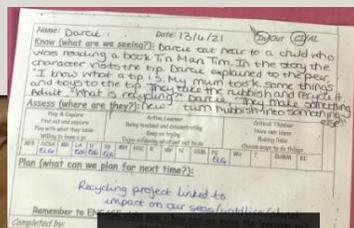
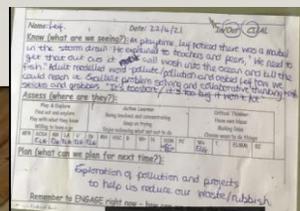
We explored stages of growth from our baby pictures:



The children then progressed the learning to a particular focus on worms, exploring the diet and habitats of worms. The children wrote letters to source a fish tank which we could then use to make a wormery. Through information posters at carpet time over several days, the children discovered facts about worms and their habitat.



Evidence of child led learning – observations of science:



SCIENCE SKILLS IN KEY STAGE 1

- Asking simple questions and recognising that they can be answered in different ways
- Observing closely, using simple equipment
- Performing simple tests
- Identifying and classifying
- Using their observations and ideas to suggest answers to questions
- Gathering and recording data to help in answering questions.

SCIENCE IN YEAR 1

- Everyday materials
- Animals including humans
- Plants
- Seasonal changes

SCIENCE IN YEAR 2

- Uses of everyday materials
- All living things and their habitats
- Plants
- Animals including humans

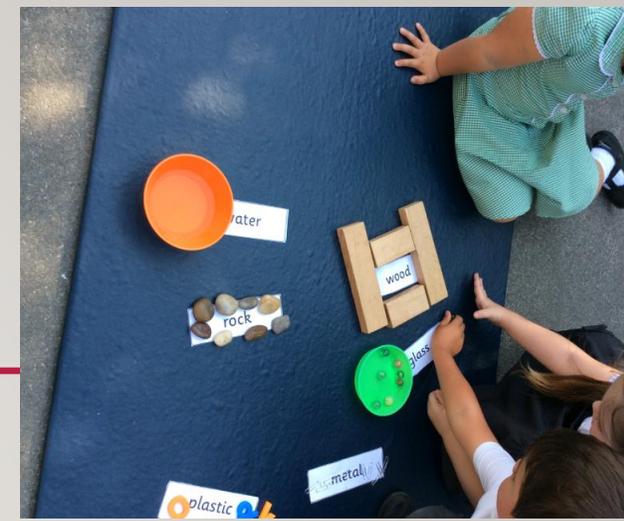
COVERAGE IN YEAR ONE: SHALFLEET

Autumn I

Name: Barry Date: 25/9/20
 L.O. To tell the difference between an object and the material it is made from.
 Sort the difference between the objects and the everyday materials

Everyday Objects

Everyday Materials



L.O. I can identify and name a variety of every day materials, including wood, plastic, glass, metal, water and rock.

Write the name of the material shown in the picture. Use the words at the bottom to help you

wood plastic metal
 glass rock water

L.O. To describe the properties of everyday materials
 Describe the materials (20)

Wood

smooth
thick

Metal

hard
shiny
heavy

Plastic

hard
smooth
light

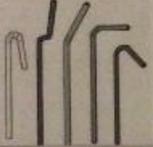


L.O. To describe the properties of everyday materials

Make a poster which describes one of these materials, wood, plastic, glass, metal, water or rock. Write the word in the middle and then add the properties and some examples of objects, which are made from your material around the outside.

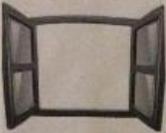
To be able to describe the simple physical properties of a variety of everyday materials

Are these objects bendy or not bendy? Tick the correct box.

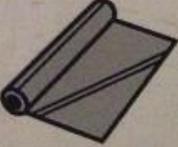
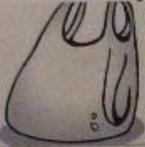
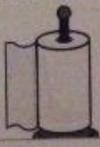
Straws	Bendy	Not bendy
	Bendy ✓	
Pencils		Not bendy ✓
		
T shirt	Bendy ✓	
		
Plastic bag	Bendy ✓	
		

Are these objects transparent or opaque?

Tick the correct box.

Window	Transparent	Opaque
	Transparent ✓	
Cardboard box		Opaque ✓
		
Tin can		Opaque ✓
		
Plastic bottle	Transparent ✓	
		

Tick the correct box.

Paper	Waterproof	Not waterproof
		No Not Water Proof ✓
Tin foil	Water Proof ✓	
		
Plastic bag	Water Proof ✓	No Not ✓
		
kitchen towel		No Not Water Proof ✓
		

- Identifying and classifying
- Using their observations and ideas to suggest answers to questions
- Gathering and recording data to help in answering questions

- Distinguish between an object and the material from which it is made
- Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock
- Describe the simple physical properties of a variety of materials
- Compare and group together a variety of everyday materials on the basis of their simple physical properties

YEAR 1: SHALFLEET

Autumn 2

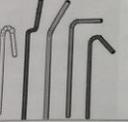
Everyday materials Identifying and classifying

Describe the simple physical properties of a variety of materials

Name: Barker Date: 13.10.20

To be able to describe the simple physical properties of a variety of every day materials

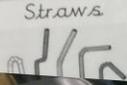
Are these objects bendy or not bendy? Tick the correct box.

	Bendy	Not bendy
Straws 	Bendy ✓	
Pencils 	Not bendy ✓	Not bendy ✓
T shirt 	Bendy ✓	
Plastic bag 	Bendy ✓	

Name: Barker Date: 13.10.20

To be able to describe the simple physical properties of a variety of every day materials

Are these objects bendy or not bendy? Tick the correct box.

	Bendy	Not bendy
Straws 	Bendy ✓	
	Not bendy ✓	Not bendy ✓
	Bendy ✓	
	Bendy ✓	

Name: Barker Date: 13.10.20

Are these objects transparent or opaque? Tick the correct box.

	Transparent	Opaque
Window 	Transparent ✓	Transparent ✓
Cardboard box 	Opaque ✓	Opaque ✓
Tin can 	Opaque ✓	Opaque ✓
Plastic bottle 	Transparent ✓	Transparent ✓

Seasons:

Identifying and classifying.

Observe changes across the four seasons.

Observe and describe weather associated with the seasons and how day length varies.

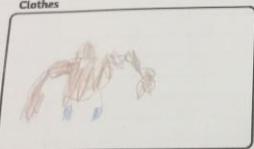
Name: Baxeer Date: _____

To understand the seasonal changes in autumn.

Draw a picture and write a sentence to describe the changes in this season.

Date: 2.11.20 Season: Autumn

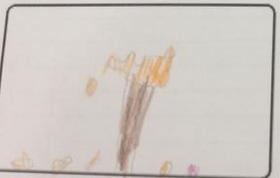
Clothes



I will wear
shoulder shrugs
and gloves and
boots, gaiters

coat	hat	jumper	sun cream	shorts	wellies	shoes
scarf	gloves	sunglasses	umbrella	t-shirts	jacket	sandals

Trees



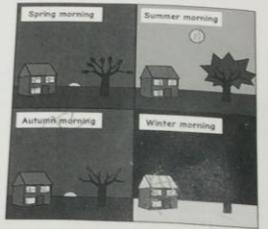
The trees
in autumn
are
yellow and
red leaves
and
red leaves
leaves.

leaves	fall	yellow	red	orange	pink
colour	lose	brown	green	blossom	white

Name: Baxeer Date: 17.1.20

L.O. I can create a pictogram of the number of hours of daylight throughout the seasons.

Spring	11
Summer	16
Autumn	11
Winter	7



Which Season has the most hours of daylight?
summer ✓

Which season has the least hours of daylight?
winter ✓

Which seasons have similar hours of daylight?
spring and autumn ✓

What happens to the hours of daylight between spring and summer?
more hours ✓

What happens to the hours of daylight between summer and autumn?
less hours ✓

What happens to the hours of daylight between autumn and winter?
less hours ✓

What happens to the hours of daylight between winter and spring?
more hours ✓

Name: Baxeer Date: _____

Pictogram showing the number of hours of daylight on the middle of each season.

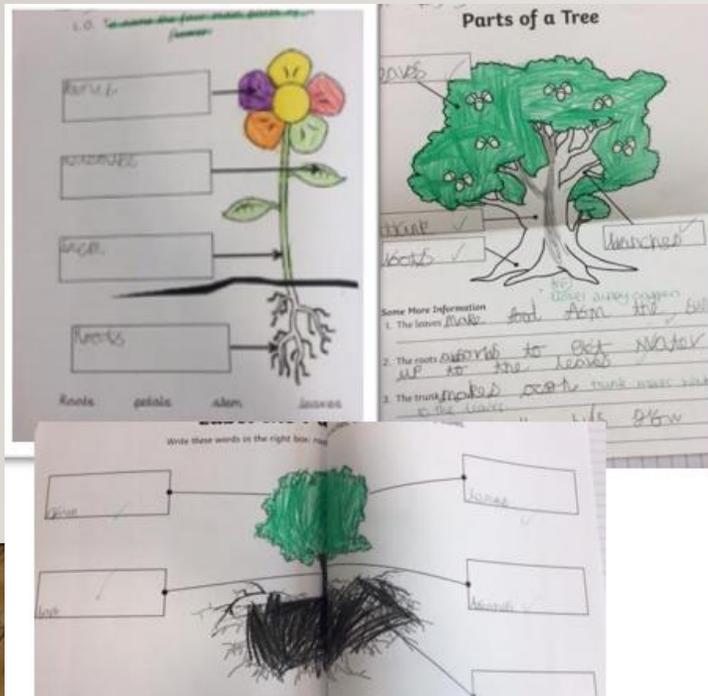


Spring	Summer	Autumn	Winter
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Shalfleet Year 1: Spring and Summer 2021

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.



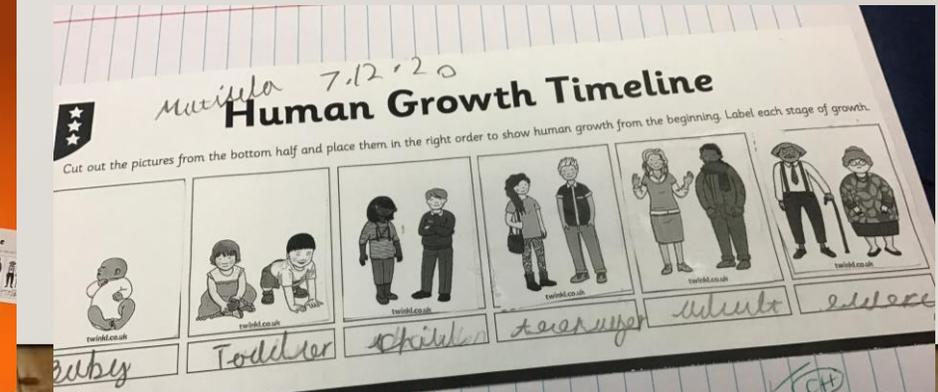
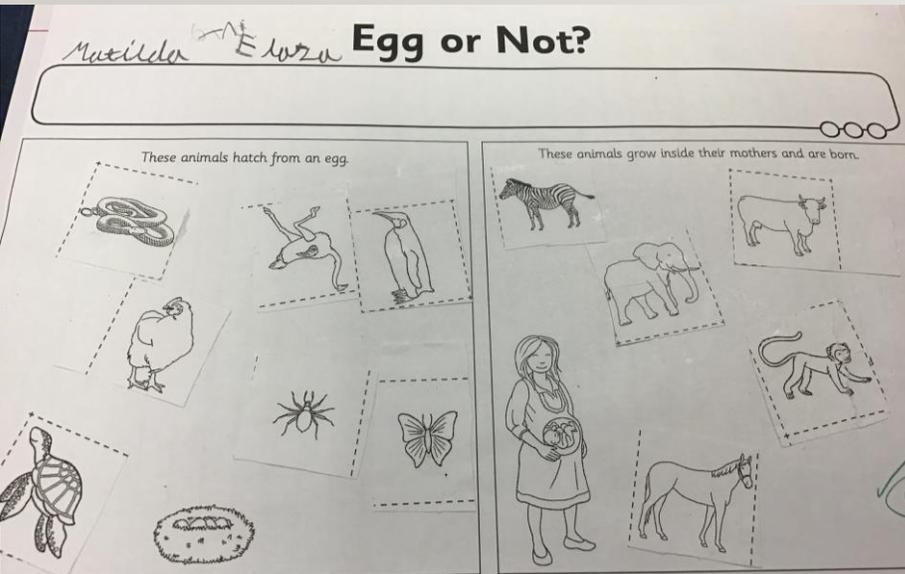
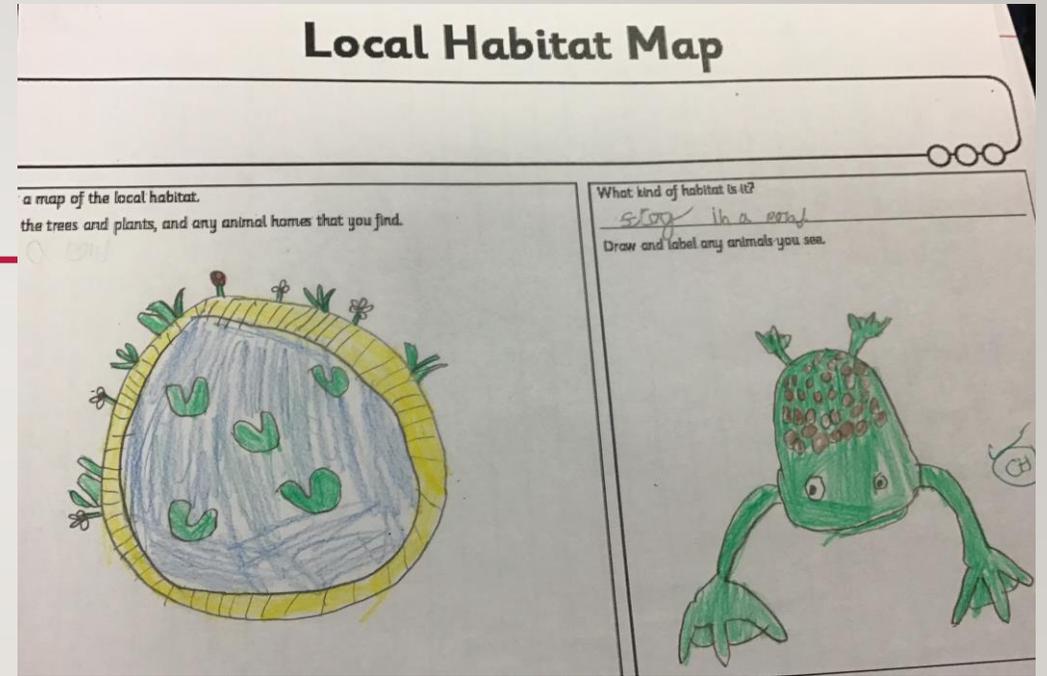
Animals (including humans)

- 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
- describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)
- identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.



YEAR 1-2 – YARMOUTH Autumn 2

- Identifying and classifying.
- Notice that animals, including humans, have offspring which grow into adults.



Yarmouth Years 1 & 2: Spring and Summer 2021

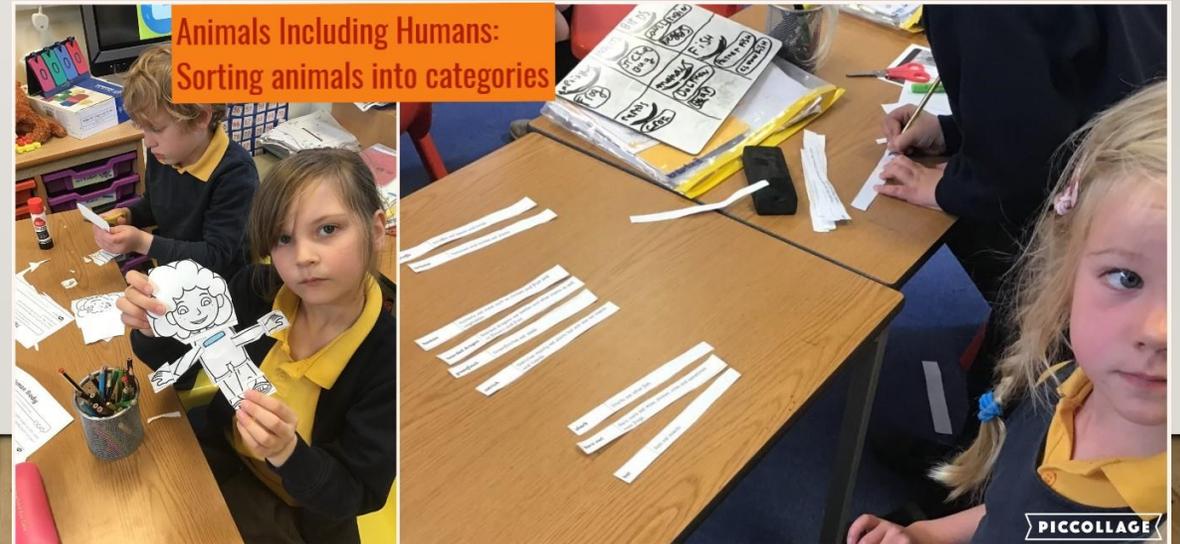
Plants

- 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.



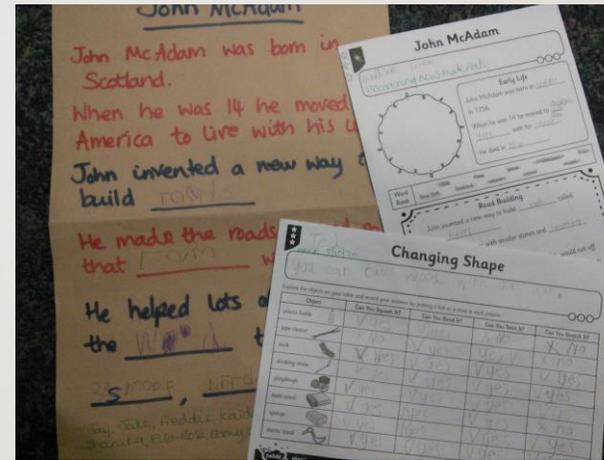
Animals (including humans)

- 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
- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)
- Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.



COVERAGE YEAR 1-2 FRESHWATER

Autumn 1



- Identifying and classifying
- Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
- Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.



- Inventors of new materials

YEAR 1-2 FRESHWATER

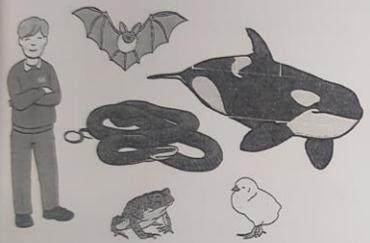
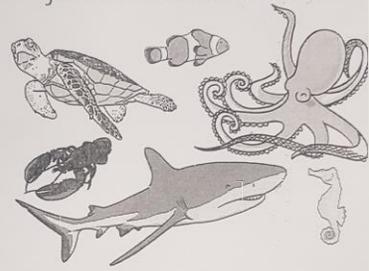
Autumn 2

- Identifying and classifying
- Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)
- Identifying and classifying
- Notice that animals, including humans, have offspring which grow into adults.

Basic Needs

Autumn

Cut out the labels at the bottom and stick them into the right categories on the page.

mammals, reptiles and birds	fish and other sea creatures
	
Food Eats meat, plants or both. 	Food Eats meat, plants or both. 
Air Breathes air into lungs. 	Air Breathes water through gills. 
Water Gets water by drinking or from food. 	Water

Human Growth Timeline

Cut out the pictures from the bottom half and place them in the right order to show human growth from the beginning.

 Baby	 Toddler	 Child	 Teenager	 Adult	 Elderly
--	---	---	--	---	---

13-19

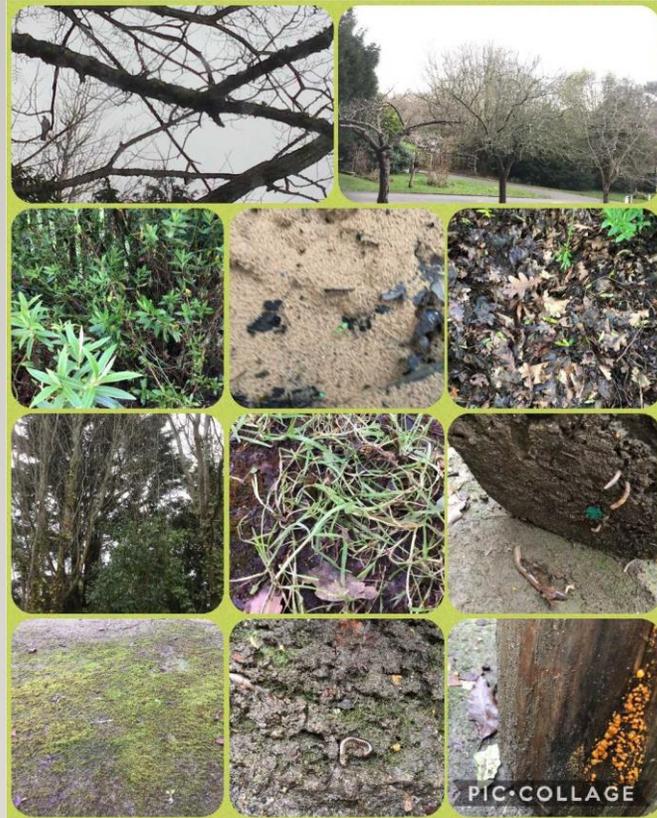
planit

Science | Year 2 | Animals Including Humans | Growing and Changing | in 2

lar remembered the ages for each stage.

Freshwater Years 1 & 2: Spring and Summer 2021

Spending lots of time in the local garden and grounds exploring the weather, habitats and animals. Cross curricular learning has been key during the extended school closure. PSHE, Art, D&T along with English and Maths. Inspired by the Magic Scientist show the children asked questions, answered questions and conducted simple experiments with everyday objects and materials.



Unusual spring weather incidents provided a chance to question the world around us and also observe how plants survive harsh conditions.

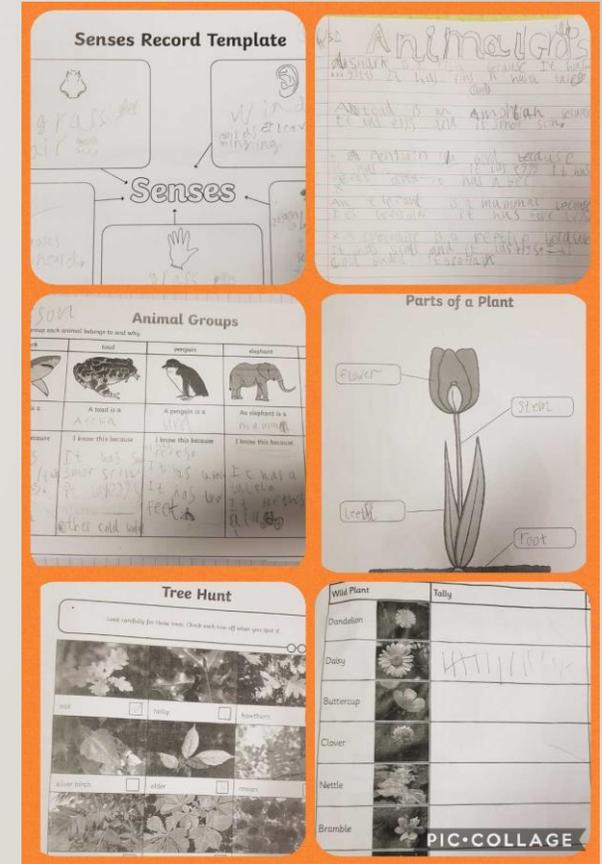
Home learning provided opportunities to observe and classify signs of spring and the trees and plants at school and home.

Freshwater Years 1 & 2: Spring and Summer 2021



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.



COVERAGE YEAR 2: SHALFLEET Autumn 1

Identifying Uses of Everyday Materials Emily

Look around you and use the photo cards for any uses these materials may have and fill in the table. A few have been done for you to help you get started. Remember - some uses may come under more than one material, for example rulers can be made from plastic, wood and metal.

Wood	Plastic	Glass	Metal	Rock	Brick	Paper	Cardboard
ruler book table door ship	pot window chairs	window fish tank doors	ruler board table tap	School	School	books work sheet	box

Comparing Suitability of Everyday Materials Emily 29.9.20

Read the object descriptions and write down a material which you think would be suitable for the job. Explain the properties it has that make it suitable.

Description	Material	Why is it Suitable?
A hutch to keep a rabbit in. It has to be kept outdoors and keep the rabbit warm and dry.	wood	because it is strong and won't break.
A cup for a toddler. It has to be light, brightly coloured and safe for a toddler to use.	plastic	because it's colourful and light.
A pillow case. It has to be soft and able to go in the washing machine.	fabric	because it comes in different colours and sizes.
A vase. It has to hold flowers and	glass glass ball	because it's transparent so you can see

Spotting Uses of Everyday Materials Out and About

I can identify and group the uses of everyday materials. I can record my observations. I can record my findings.

Material	Use
wood	fence
concrete	playground
	bench
	slide
	netball post
	tiers
	school
	sheep

Identify Changes in Seasons

Autumn
 leaves fall off
 it gets cooler
 days shorten
 start to change colour

Winter
 cold wet sometimes ice

Spring
 things start to grow
 it gets warmer
 days get longer

Summer
 it gets hot
 days are long

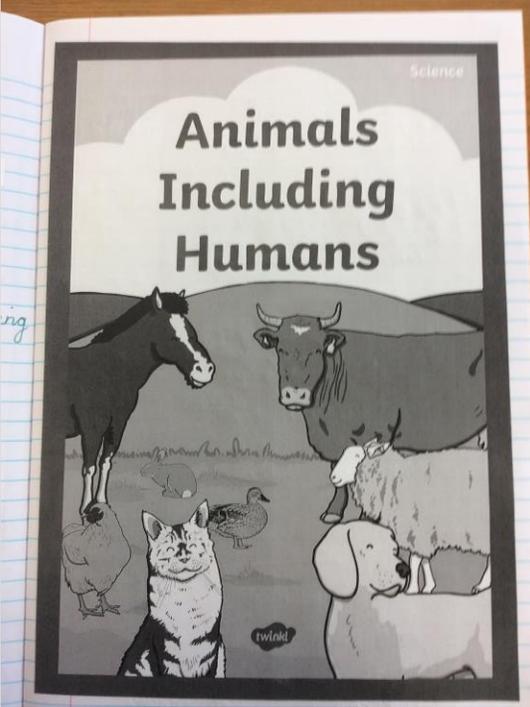
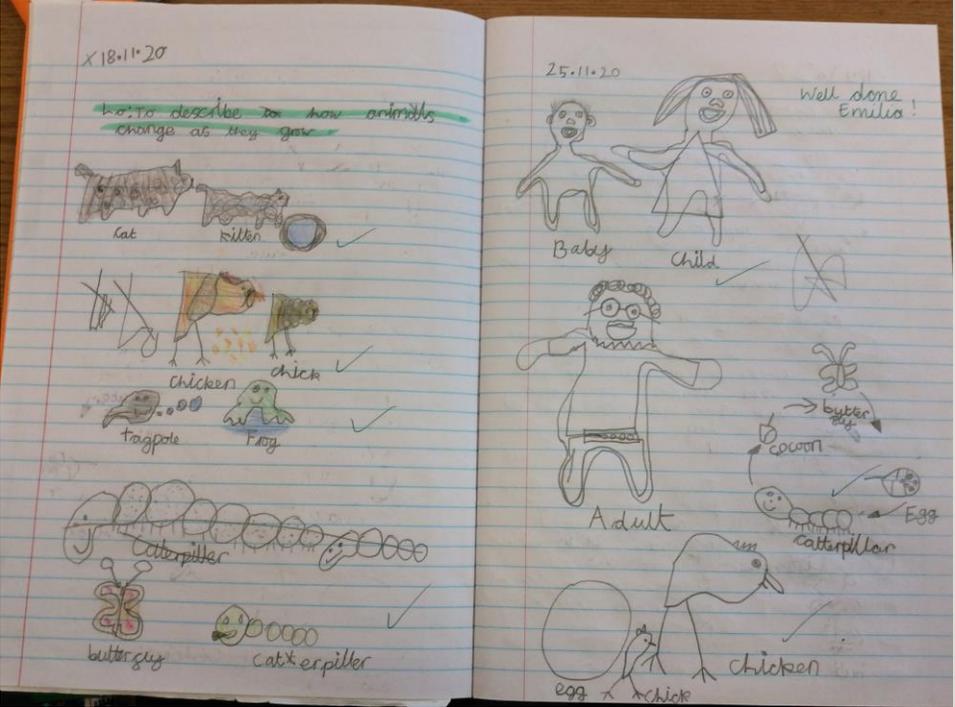
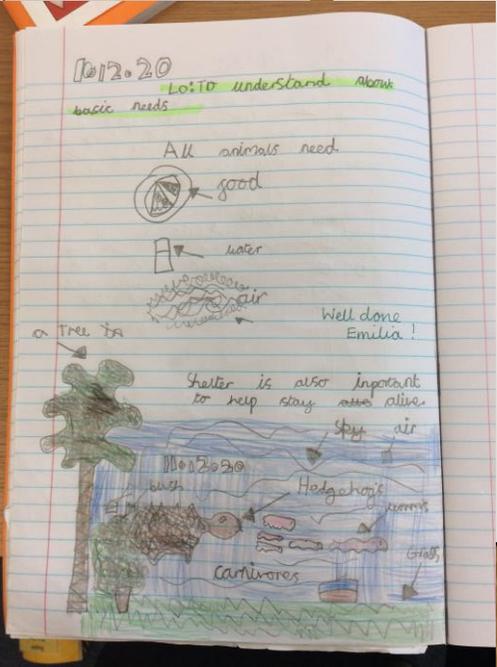
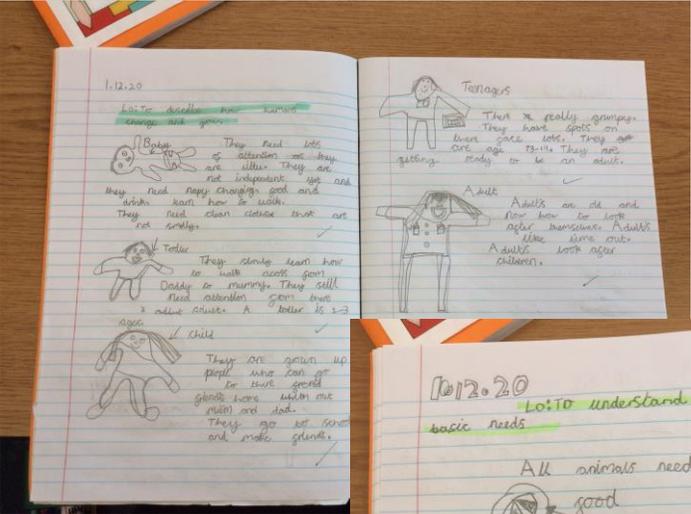


- Identifying and classifying
- Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
- Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
- Inventors of new materials

COVERAGE YEAR 2: SHALFLEET

Autumn 2

- Identifying and classifying
- Notice that animals, including humans, have offspring which grow into adults



Shalfleet Year 2: Spring and Summer 2021

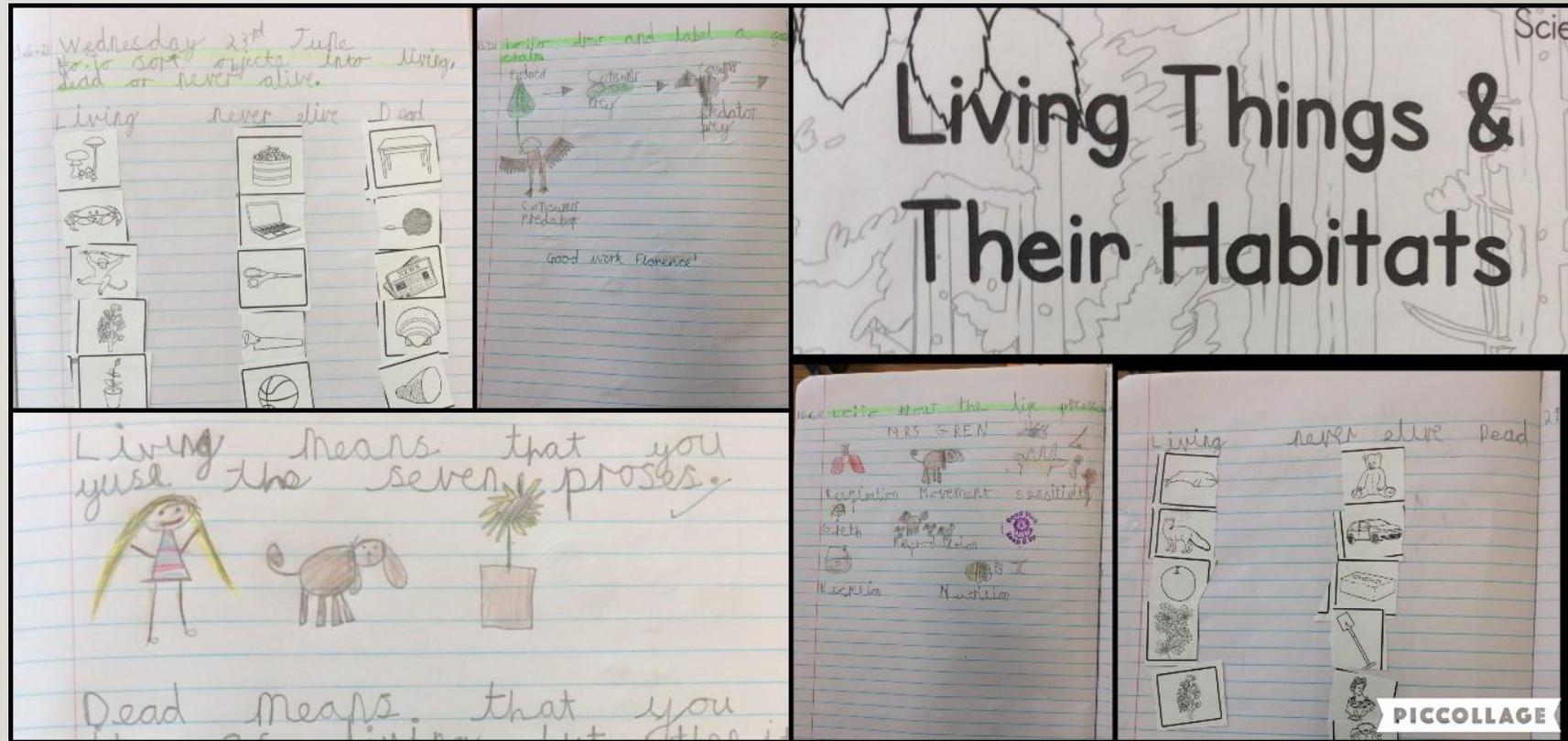
- To observe closely a variety of plants in the local environment.

- To observe and describe how seeds and bulbs grow into mature plants by planting seeds and bulbs.
- To observe and describe how seeds and bulbs grow into mature plants by understanding the life cycle of plants.
- To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy
- To use observations and ideas to suggest good conditions for growing plants for food.
- How Different Plants Grow



Shalfleet Year 2: Summer 2021

- To explore and compare the differences between things that are living, dead, and things that have never been alive
- 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
- To identify and name a variety of plants and animals in their habitats, including micro-habitats
- To 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



SCIENCE

SKILLS IN KEY STAGE 2

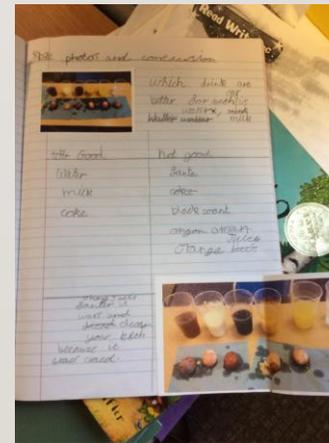
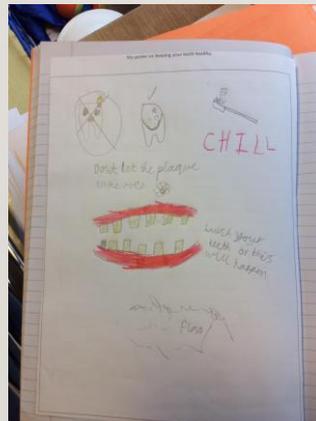
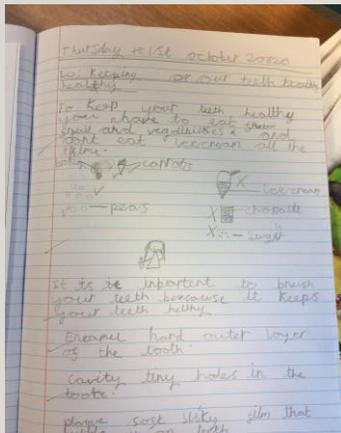
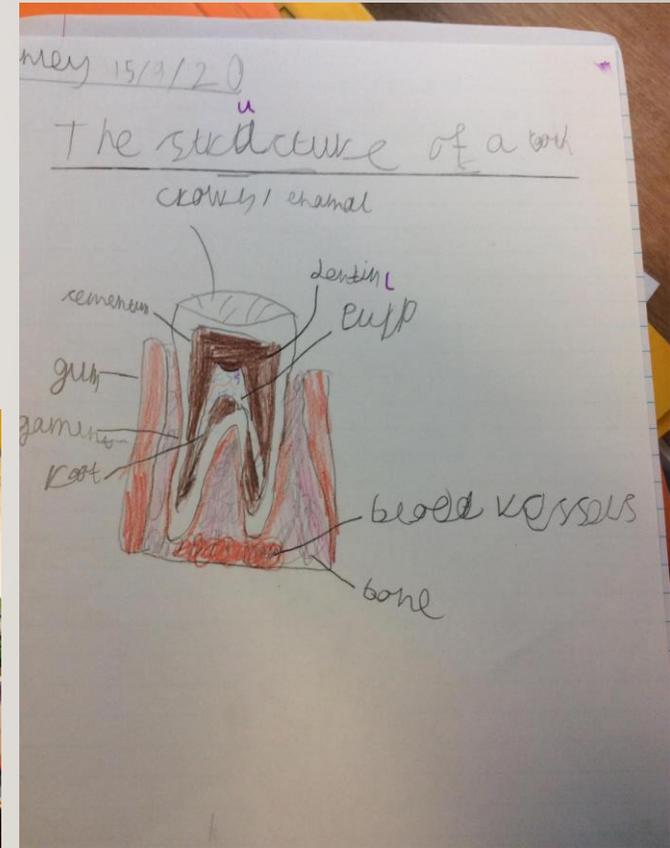
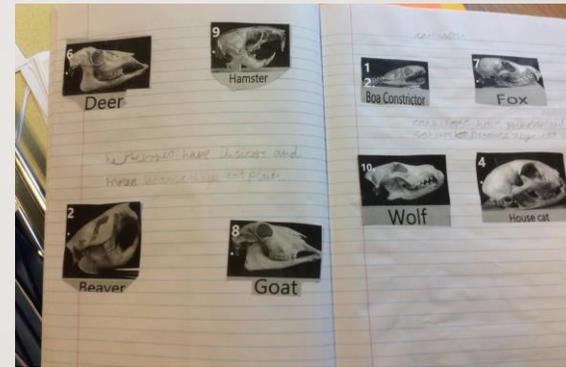
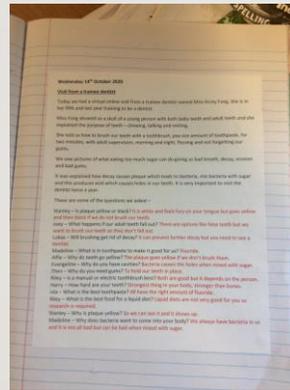
- Asking relevant questions and using different types of scientific enquiries to answer them
- Setting up simple practical enquiries, comparative and fair tests
- Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- Identifying differences, similarities or changes related to simple scientific ideas and processes
- Using straightforward scientific evidence to answer questions or to support their findings.

SCIENCE IN YEAR 3

- Plants
- Animals including humans
- Rocks
- Light
- Forces and magnets

COVERAGE IN YEAR 3-4 FRESHWATER Autumn I

- Types of teeth
- Tooth structure
- Looking after teeth
- The digestive system



COVERAGE IN YEAR 3-4 Freshwater

- describe the simple functions of the basic parts of the digestive system in humans

Autumn 2

Tuesday 15th December
 L.O. R representing our digestive system



Plastic bag = stomach
 crush crackers + banana = food
 orange juice = acid
 water = saliva
 tights = intestine
 bag = body
 waste = poop

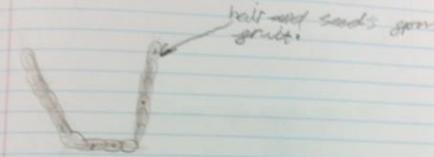
we crushed food for the food then we add
 orange juice of acid water for saliva
 tights of your intestines metal tray for

1.12.20
 b representing our digestive system



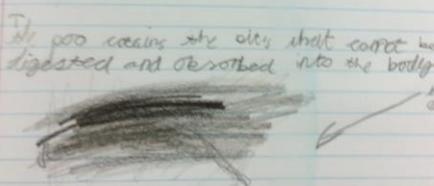
we used lots of disgusting stuff
 we used a plastic bag with = stomach
 we used a banana, cracker and some bananas
 as the food. orange juice = acid
 and the water resembled the saliva in your mouth
 the tights were representing the intestine. the metal
 tray was = to the body the waste products were
 to = poop, poo

Tuesday 8th December 2020
 what are we learning about poop?
 half chog



half and seeds germ grains

the poop carries the bits that cannot be
 digested and absorbed into the body.
 they eat



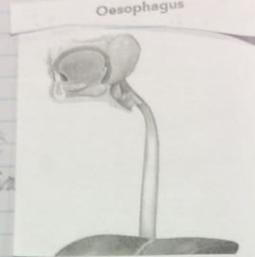
the poop shows us what is being
 eaten.

Mouth ①



you chew food with saliva in

Oesophagus ②



Stomach



4. It gets from your mouth
 ② - you get food into your stomach
 ③ - it's left in your stomach

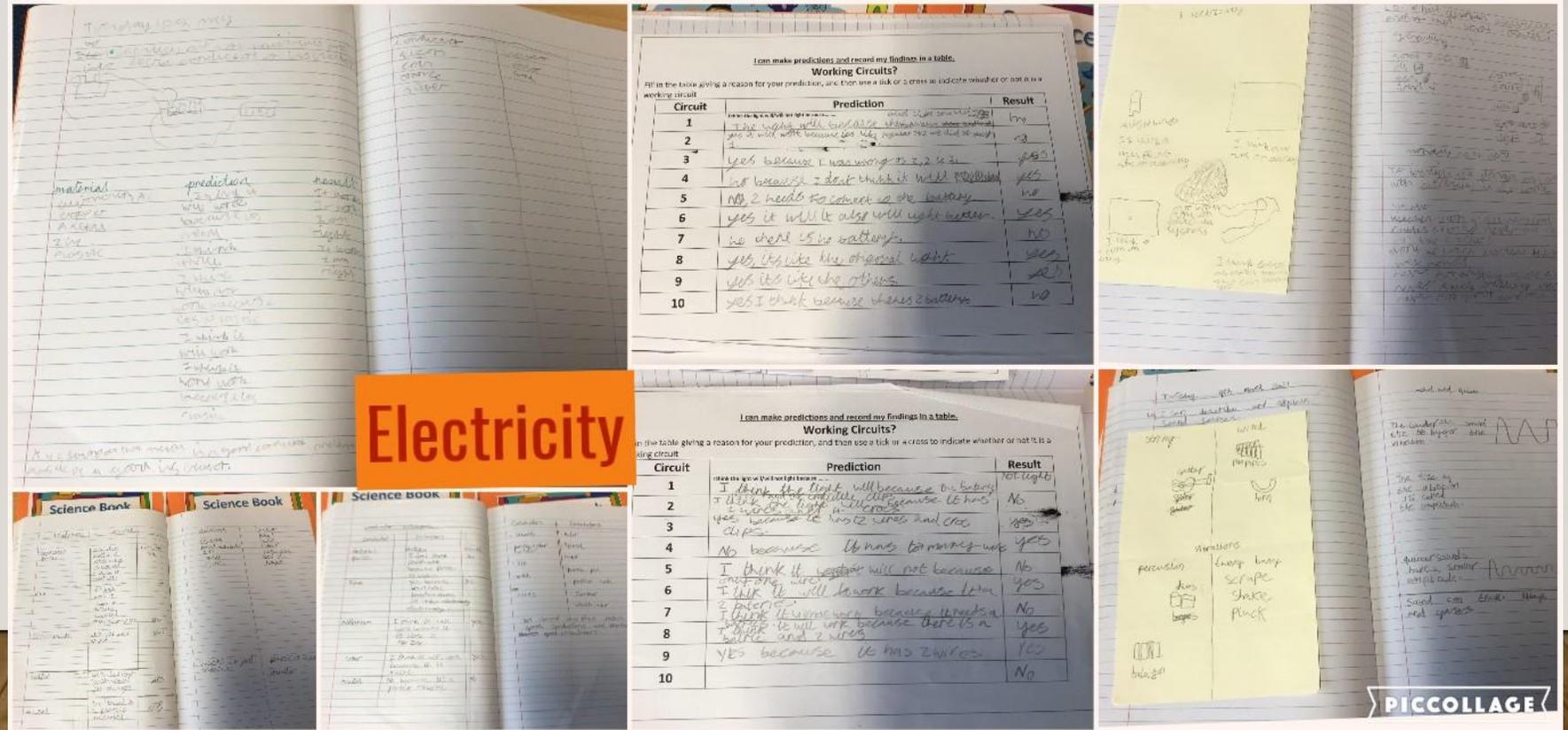
Intestines



and then it goes to your stomach to digest it
 your stomach will get all the way to your intestines and then

Freshwater Years 3 & 4 : Spring and Summer 2021

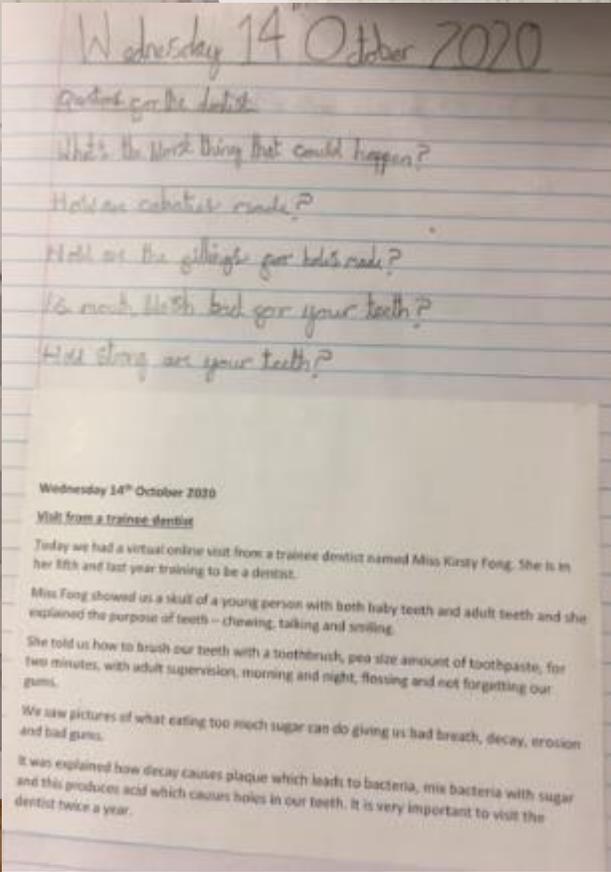
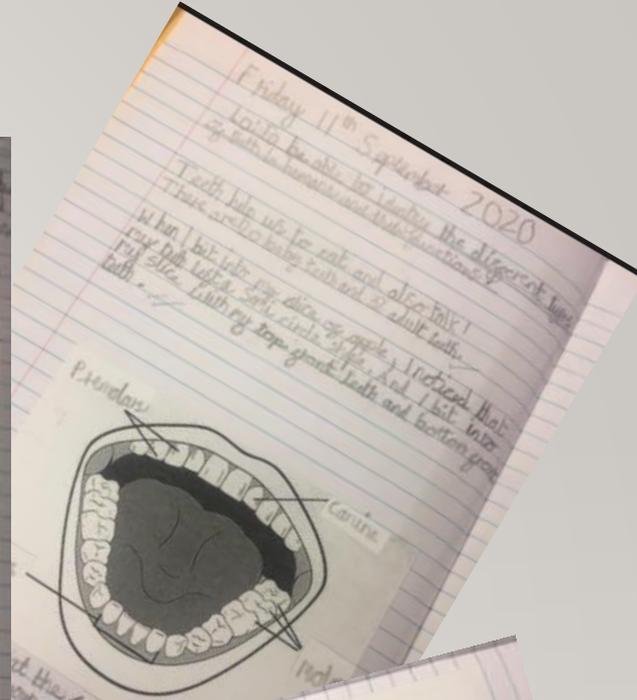
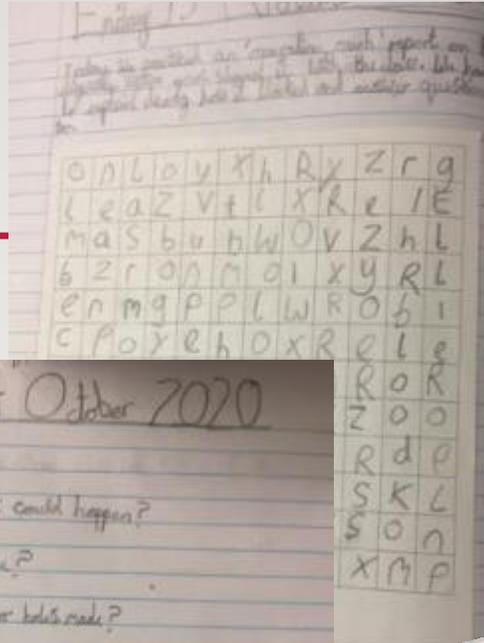
- Identify common appliances that run on electricity.
- Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.
- Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.
- Recognise that a switch opens and closes the circuit and associate this with whether or not a lamp lights in a simple series circuit.
- Recognise some common conductors and insulators, and associate metals with being good conductors.
- *Know the difference between a conductor and an insulator; giving examples of each.*
- *Safety when using electricity.*



COVERAGE IN YEAR 3-4 YARMOUTH

Autumn 1

- Types of teeth
- Tooth structure
- Looking after teeth
- The digestive system

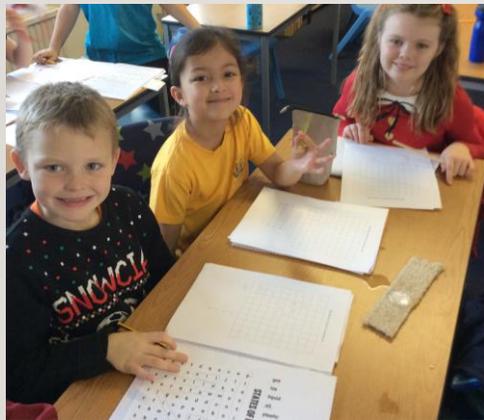


COVERAGE IN YEAR 3/4 YARMOUTH

Autumn 2



- Compare and group materials together, according to whether they are solids, liquids or gases



- 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

COVERAGE IN YEAR 3/4 YARMOUTH

Autumn 2

Match the Temperatures!

What temperature do you think matches each picture?
Draw a line from the temperature to the picture.

- Compare and group materials together, according to whether they are solids, liquids or gases

Friday 27th November 2020

How to understand the states of matter

Liquid: rain, coffee, water, juice, milk, oil, honey, etc.

Solid: wood, metal, plastic, glass, paper, etc.

Gas: air, oxygen, steam, etc.

How could water change into a solid and liquid? Water gets really cold and it makes ice. Water gets really hot and it makes steam.

State of matter	Properties
Solids	very dense and a fixed volume, fixed shape. ✓
Liquids	takes the shape of its container, no fixed shape.
Gases	no fixed shape, low density ✓

- 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

We will be putting ice cubes in different places/ materials and timing how long they take to melt. Write your predictions below.

Ice cube	Hairdryer	On a plate in the classroom	Wrapped in foil	Covered in salt	In a glass of water	On the carpet
Predictions	5 mins	1 hour	2 mins	15 mins	2 mins	30 mins
Time in minutes and seconds	4:9	57	26	29	6:00	1 hour and 45 minutes

I predict that the one which will melt the quickest will be... in the foil.

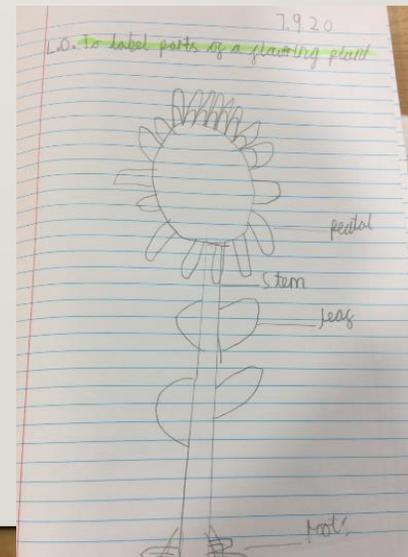
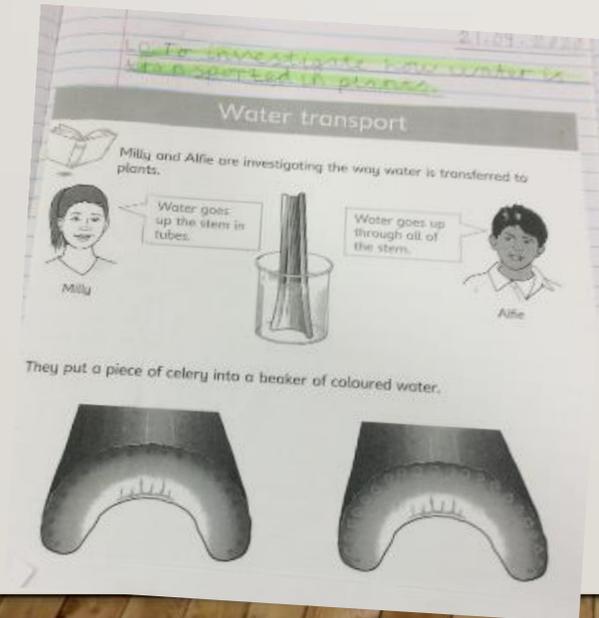
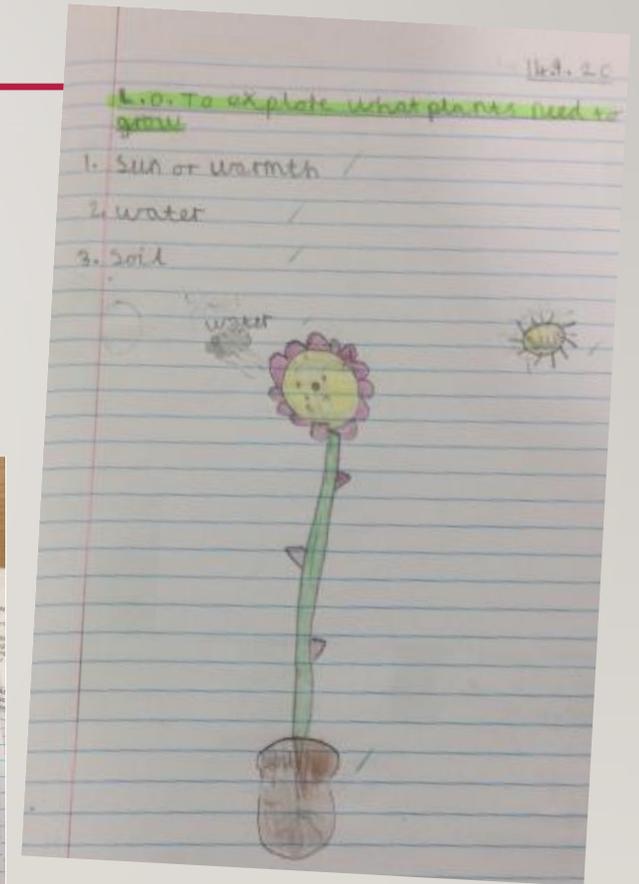
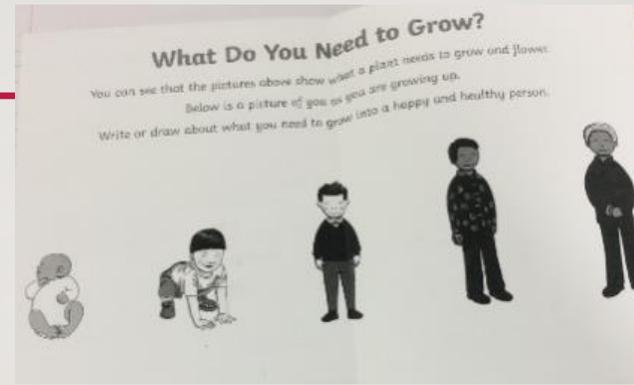
I predict that the one which takes the longest time to melt will be... on a plate in the classroom.

1. It's particles are packed together.
2. First there are pages in it.
3. It doesn't take the shape of its container.

COVERAGE IN YEAR 3 SHALFLEET

Autumn 1

- Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant
- Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers
- Investigate the way in which water is transported within plants



Plants from other countries

Country	Plant (Name)	Maximum height	How long does it take to grow?
England	Sunflower	1.8m	
South America	Tall verbena	2m	
Scotland	Delphinium	2.1m	
Southwest	Yucca	3m	
Sandy Islands	Giant Nip	4m	
North America	Boltonia	6.3m	

Excellent work!

Plant parts

Plants are important because we need them for food and so do other animals.
Plants have four main parts.

The flowers help the plant to reproduce.
The leaves make food for the plant. They need light, air, water and warmth.
The stem has little tube inside it so water can travel from the roots to the leaves. The stem supports the plant.
The roots take in water from the soil and hold plant in the soil.

The 'stem' of a tree is called the trunk. It supports the plant and carries water from the roots to the branches and leaves.

1. Match up the parts of the plant with what they do. Some parts have more than one job.

roots	supports the plant
leaves	hold the plant in the soil
stem	help the plant to reproduce
flowers	take in water
	make food
	carries water to the leaves

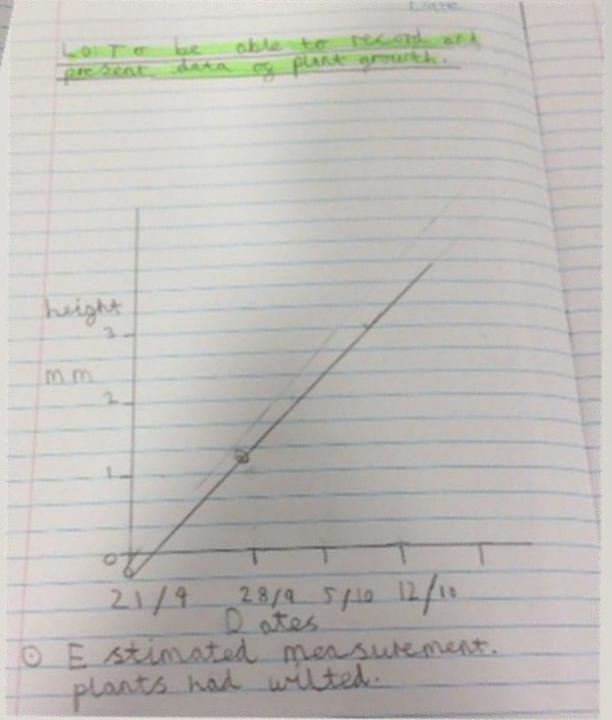
Today I examined some celery to see how transportation works in a plant. I also sowed some seeds as an ongoing experiment - see diary.

28.01.20

to understand the life cycle of a flowering plant.

Germination
The growth of a plant contained within a seed.

Pollination
is the act of transferring pollen grains from the male anther of a flower to the female stigma.



- Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions

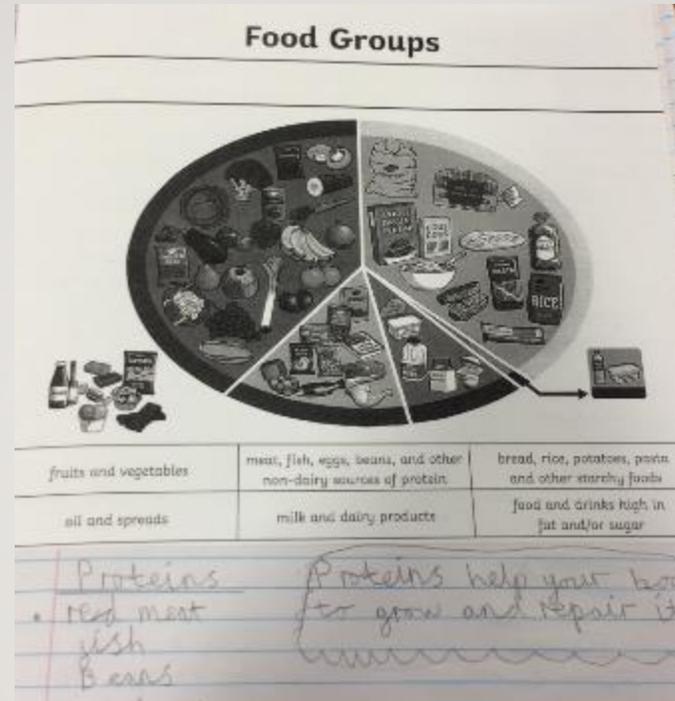
Carbohydrates
 • Bread
 • pasta
 • fruit
 • potatoes
 Carbohydrates give you energy.

Fats
 • Milk
 • oils
 • A spreads
 • Butter
 Fats give you energy.

Vitamins
 • Oranges
 • Carrots
 • Eggs
 • Nuts
 Vitamins keep your body healthy.

Minerals
 • Milk
 • Spinach
 • Salt
 • Sweet corn
 Minerals keep your body healthy.

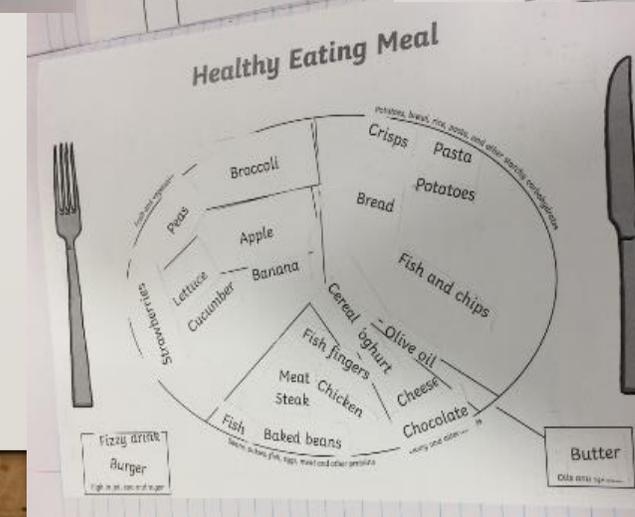
Water
 • Tomatoes
 • Cucumber
 • Cabbage
 • Strawberries
 Water helps to move nutrients in your body or get rid of waste that you don't need.



What Do Nutrients Do for Us?

Nutrient Type	Why We Need It
Protein	Keeps you healthy
Carbohydrates	Moves nutrients in the body Gives energy
Fats	Helps you digest food
Vitamins	Keeps you healthy
Minerals	Gives energy
Water	Grows and repairs your body
Fibre	Gives energy

- Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat

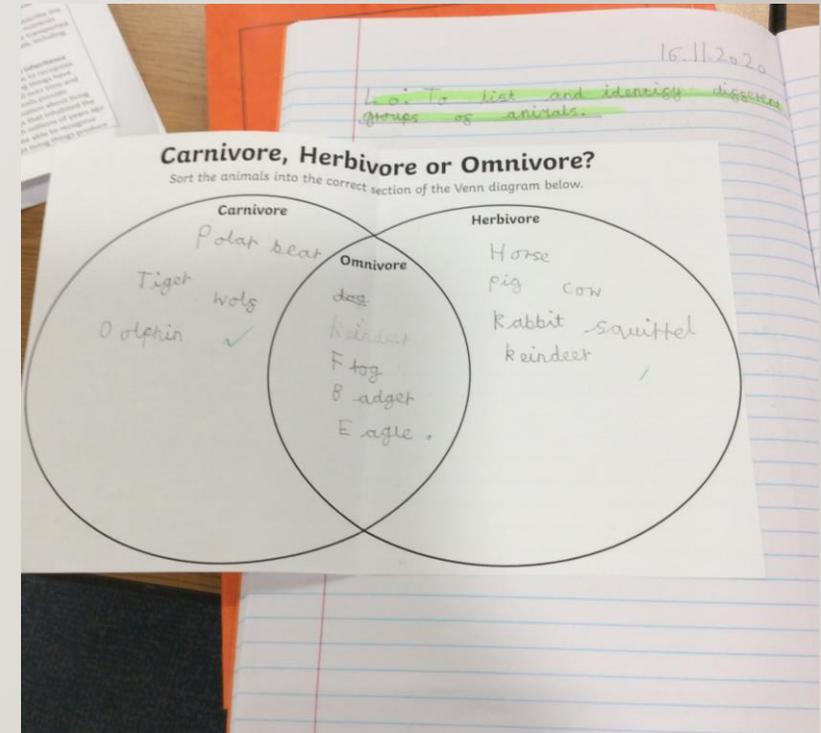
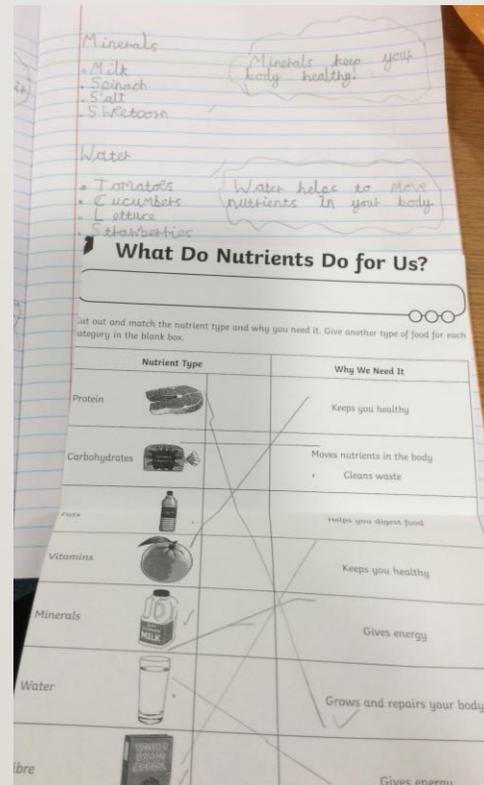
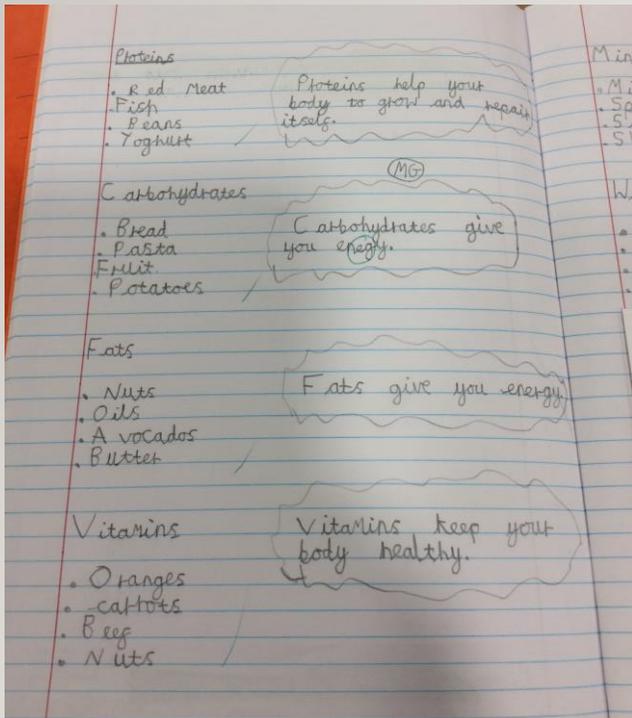


YEAR 3: SHALFLEET

Autumn 2

Animals including humans:

Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.



Animals including humans:

Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. Identify that humans and some other animals have skeletons and muscles for support, protection and movement.

Carnivores - Meat Eaters ✓
 Omnivores - Meat and Vegetation ✓
 Herbivores - Vegetation ✓
 All animals eat a variety of foods which provide them with a balance of nutrients to grow and live healthily.
 23.11.2020
Lo: To understand the function of the skeleton.
 ① Why do we have skeletons?
 ② To be able to be upright.
 ③ To protect vital organs (heart, lungs, brain.)
 The spine (back bone) keeps us upright. ✓

30.11.20
 Lo: To identify skeletal bones and joints.
 I constructed a model of a skeleton, labelling all the main bones. My model was displayed in the classroom.
 7.12.2020
 Lo: To explain how muscles allow movement.

Names	of bones
Skull	Cranium
Ribs	Sternum
Breast bone	Scapula
Pelvis	Clavicle (MG)
collar bone	Ulna, radius
Arms	Humerous
Upper arm	Carpals, Metacarpals
Hands	Phalanges
Legs	Femur, Tibia, Fibula
Knee	Patella
Toes	Tarsals, Metatarsals

Joints
 Ball and socket - Shoulder and hips/pelvis.
 Hinge - Elbow
 Gliding - Joint - Wrist

30.11.20
 Lo: To identify skeletal bones and joints.
 I constructed a model of a skeleton, labelling all the main bones. My model was displayed in the classroom.
 7.12.2020
 Lo: To explain how muscles allow movement.

Mighty Muscles

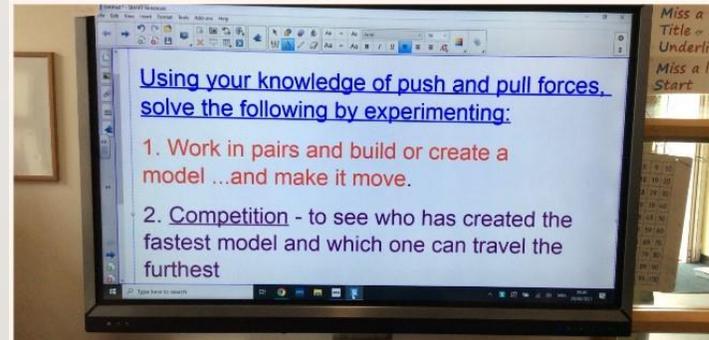
Activity	Prediction (Before the activity): Circle or highlight the muscles you think will be used.	Results (After the activity): Circle or highlight the muscles you used.
		

Activity	Prediction	Result
Jogging ✓	leg muscles and toes	used leg muscles and hips.
Running (MG) ✓	Knee, leg muscles and arms.	used arms.
Jumping ✓		

(MG) Muscles support movement. They work in pairs to give voluntary movement. The heart is a involuntary movement. We do not control its movement.
 Good work! ✓

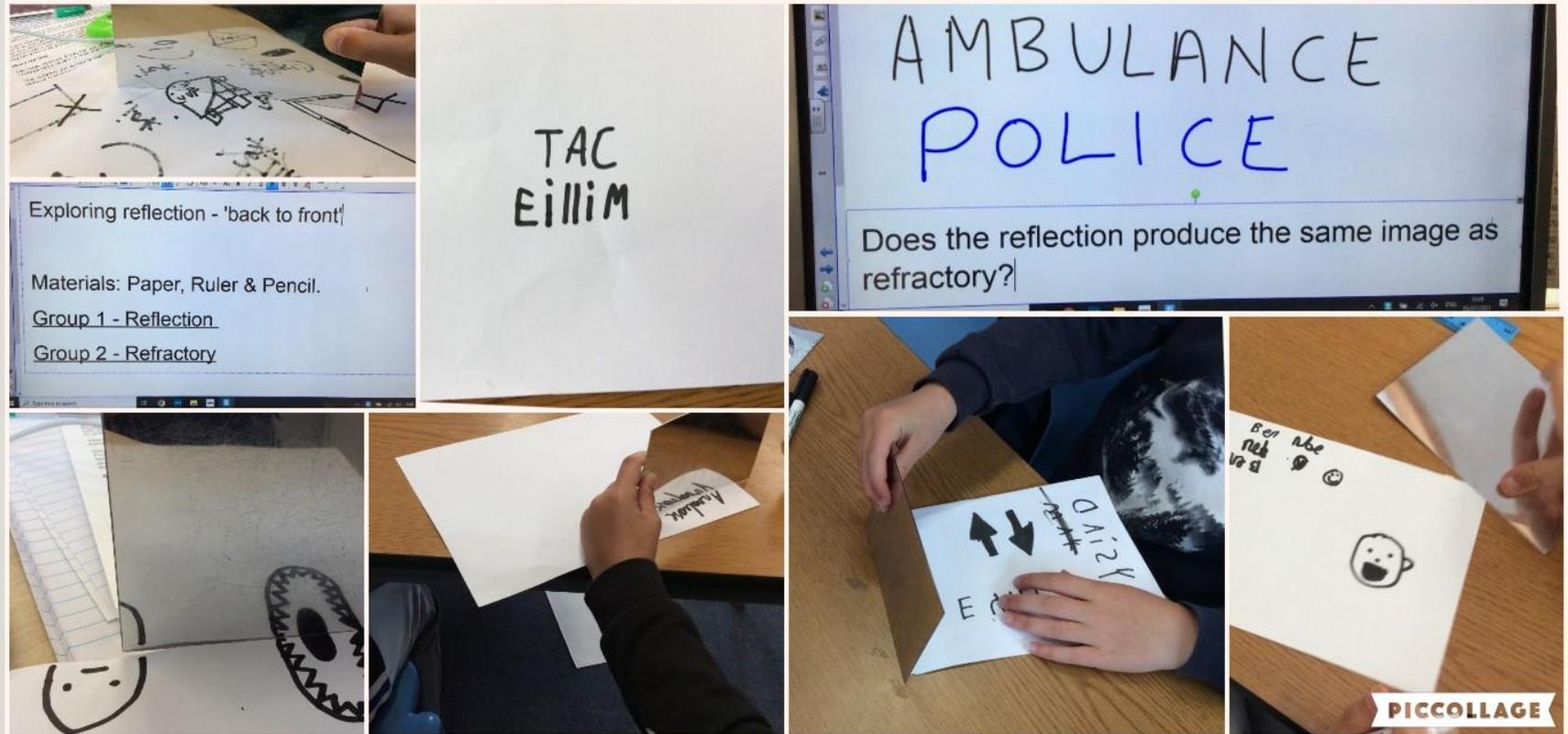
Shalfleet Year 3: Summer 2021

- Compare how things move on different surfaces
- Notice that some forces need contact between two objects, but magnetic forces can act at a distance
- Observe how magnets attract or repel each other and attract some materials and not others
- Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
- Describe magnets as having two poles
- Predict whether two magnets will attract or repel each other, depending on which poles are facing



Shalfleet Year 3: Summer 2021

- Recognise that light is needed in order to see things and that dark is the absence of light
- Notice that light is reflected from surfaces
- Recognise that light from the sun can be dangerous and that there are ways to protect eyes
- Recognise that shadows are formed when the light from a light source is blocked by a solid object
- Find patterns in the way that the size of shadows change



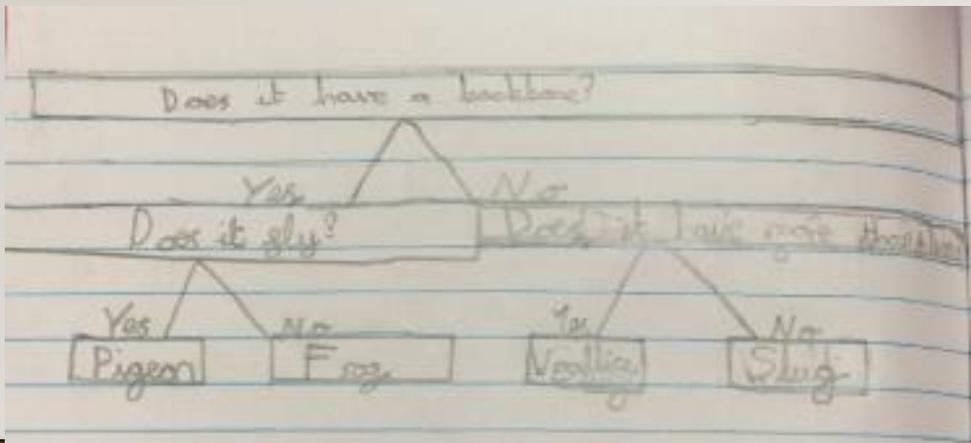
SCIENCE IN YEAR 4

- Living things and their habitats
- Animals including humans
- States of matter
- Sound
- Electricity

COVERAGE IN YEAR 4 SHALFLEET

Autumn 1

- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions



25-09-20 Vertebrate Groups

3. Here are some more vertebrates.

Sort these vertebrates into groups by writing their names in the table below. You can use the key in Question 2 to help you.

Fish	Bird	Reptile	Amphibian	Mammal
shark ✓	chicken ✓ pigeon ✓	lizard ✓ crocodile ✓	frog ✓	llama ✓ dog ✓

HINT: reptiles have scales

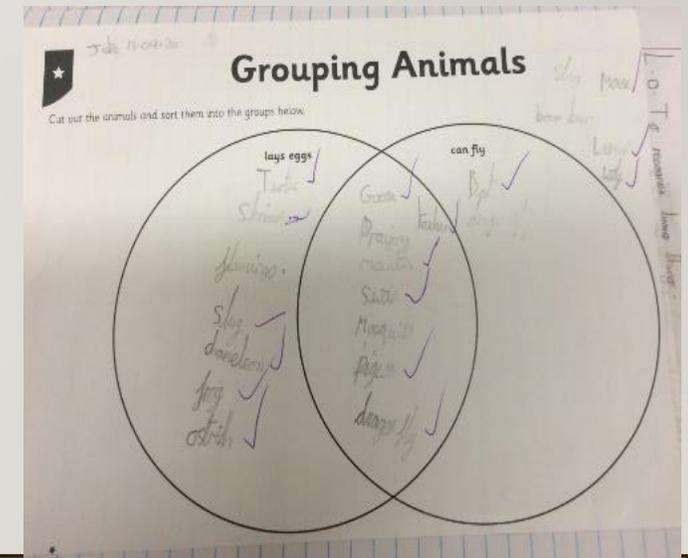
Each of these sentences describes a type of vertebrate. For each one, write mammal, bird, amphibian, reptile or fish to say what it is describing.

It has feathers and a beak. bird ✓

It gives birth to live babies. mammal ✓

It has fins, scales and gills. fish ✓

It has damp skin and is born with gills, but grows lungs as it gets older. amphibian ✓

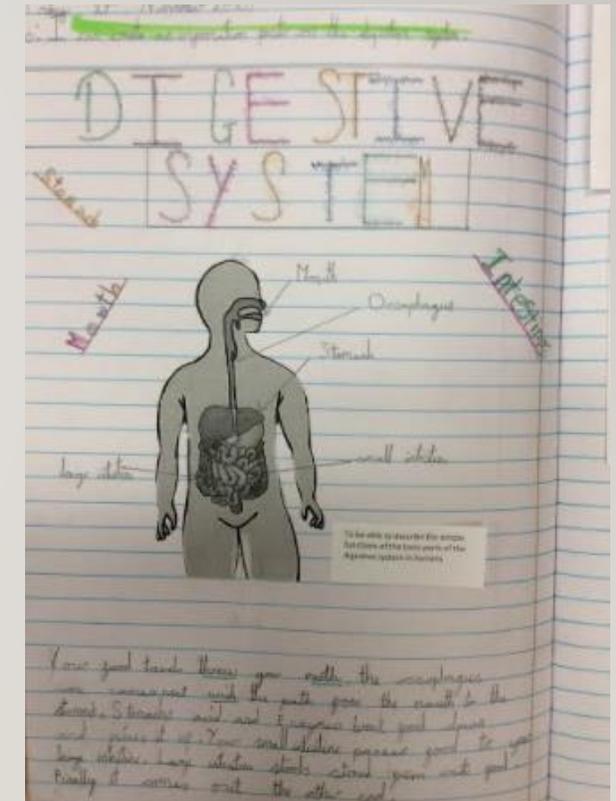
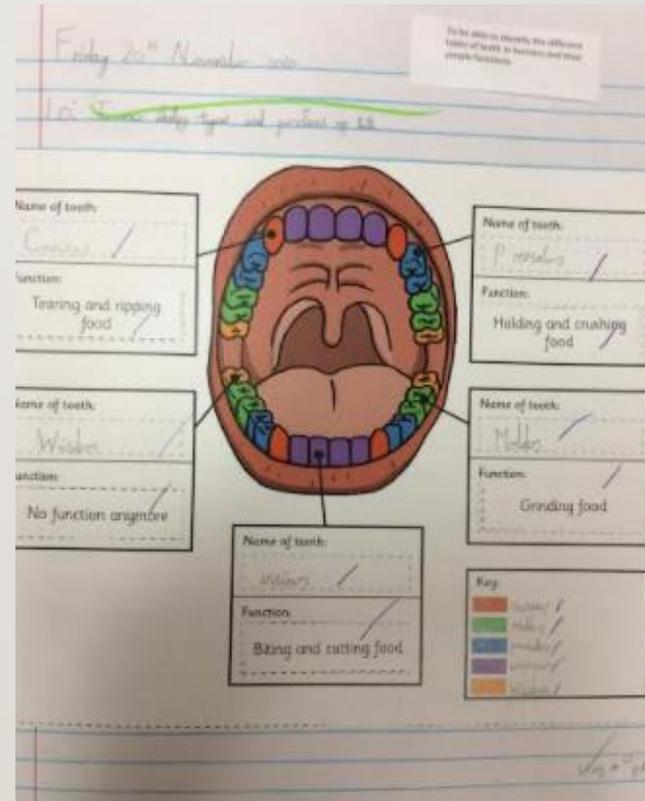


YEAR 4: SHALFLEET

Autumn 2

Animals including humans:

- Describe the simple functions of the basic parts of the digestive system in humans.
- Identify the different types of teeth in humans and their simple functions.



Shalfleet Year 4: Summer 2021

Friday 11th June 2021

L.O. To describe living things in Madagascar's parts

Cut out the pictures of the Madagascar living things and sort them into groups. When you're finished, give each group a label.

Reptiles	Birds
Plants	Mammals

Oxygen experiment

We will need:

- 3 tea lights
- 3 different size glasses
- stop watch

What we will do:

We will light the tea lights and put glasses over each. We will then see how long it takes before the 'poos' out.

I predict that glass one will go out first and glass 3 and 2 will go out just after glass 1 that glass 1 has a small amount of oxygen so it can't get it easily.

I noticed the different letters and letters in the experiment that I did through the water.

When the bottles were put at different heights, water came out and it was so thick that it was hard to see. I noticed that the water was so thick that it was hard to see. I noticed that the water was so thick that it was hard to see.

Friday 2nd July 2021

Garrett Morgan was the son of a famous scientist.

False he did school in grade 8 & 10

Garrett Morgan went to a well-known American university

Garrett Morgan owned a sewing machine repair shop.

False he did work at these shops before he invented the traffic light.

One of Garrett's inventions saved trapped workers after an accident.

Garrett's traffic light was cone-shaped.

False his traffic light was a round one with a cone on top.

Can you conduct an experiment to determine object's properties?

Can you get a cube to go out when it is covered by each different glass?

Glass	Predicted Time	Actual Time
1	40 seconds	30 seconds
2	50 seconds	40 seconds
3	1 minute 30 seconds	1 minute

What do you think? What do they tell you about the link between the size of the glass and the time for the candle to go out?

Can you explain why this happens? Think about the amount of oxygen inside the glasses.

I think it will be a square of the glass and the candle will take a bit longer.

Friday 1st July 2021

L.O. To construct a simple circuit

To build a simple circuit using an energy source, a lamp, and a switch.

- 1. Draw a diagram of the circuit.
- 2. Label the components.
- 3. Connect the components.
- 4. Test the circuit.
- 5. Record the results.

The light will work when I press the switch because the switch will allow the current to flow and then the light will turn on.

L.O. To construct a simple circuit

To make a circuit to show a lamp light up.

The light will work when I press the switch because the switch will allow the current to flow and then the light will turn on.

Friday 15th June 2021

Your area of research is 'Work With Sound'

Alfred Bell was involved in special work for the deaf. He was a deaf man and he was a scientist. He was a deaf man and he was a scientist. He was a deaf man and he was a scientist.

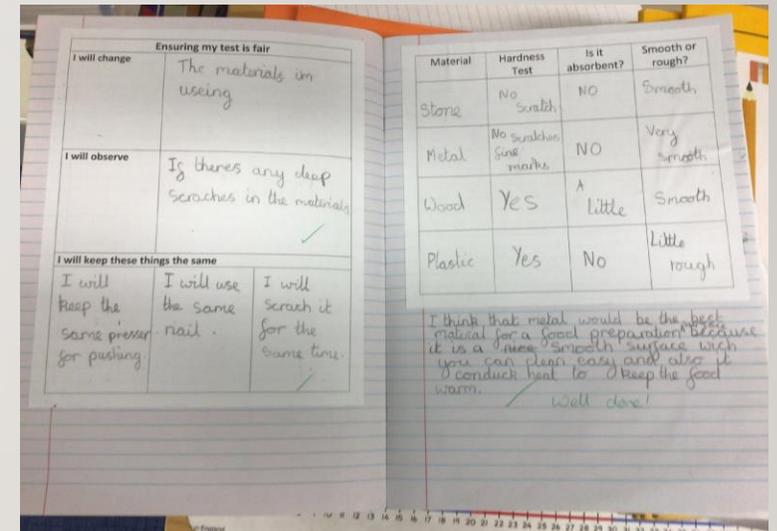
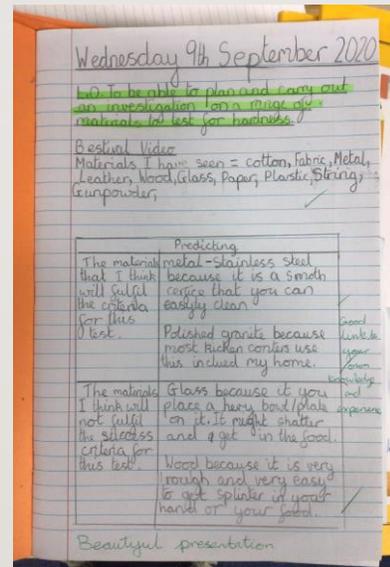
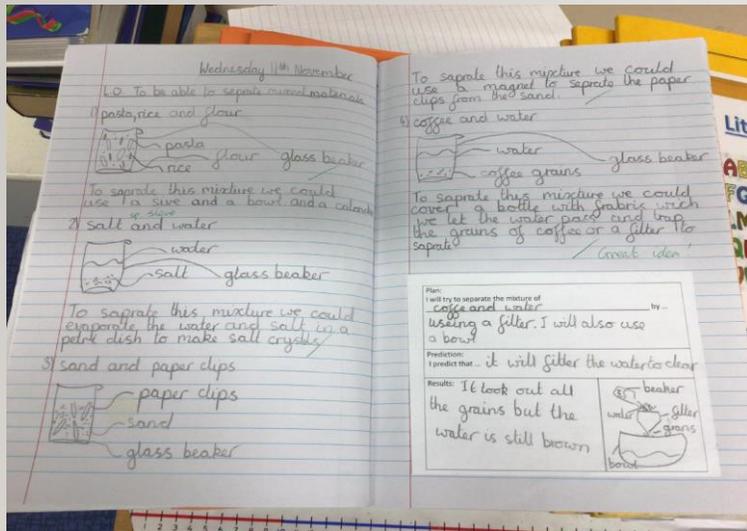
He made a telephone for the deaf and it was a success.

He made a telephone for the deaf and it was a success.

SCIENCE IN YEAR 5

- Living things and their habitats
- Animals including humans
- Properties and changes of materials
- Earth and space
- Forces

COVERAGE IN YEAR 5/6 FRESHWATER Autumn 1



- Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating

- Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets

YEAR 5/6 FRESHWATER

Autumn 2

Results

Material	Dissolved	Did not dissolve (formed sediment)	Reacted with water to form new substance	Observations/explanation
Biscuit crumbs	NO	NO	Yes	It turned yellow
Flour	Yes	Yes	Yes	It turned white
Baking powder	Yes	Yes	Yes	It turned white
Coffee	NO	NO	Yes	It turned brown
Salt	Yes	Yes	Yes	Dissolved straight away.
Oil	NO	NO	NO	It floated
Sugar	NO	NO	NO	It sank
Cocoa powder	Yes	Yes	Yes	turned brown
Ready Brek	NO	NO	NO	It sank
Alka Seltzer	Yes	Yes	Yes	Fizzed and made it orange
small seeds	NO	NO	NO	Big seeds sunk, small floated

Good work

Wednesday 18 November 20

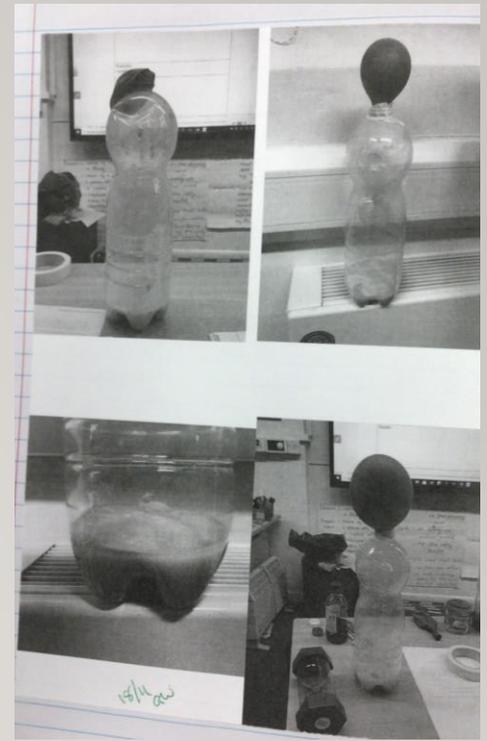
To be able to explore irreversible working investigations



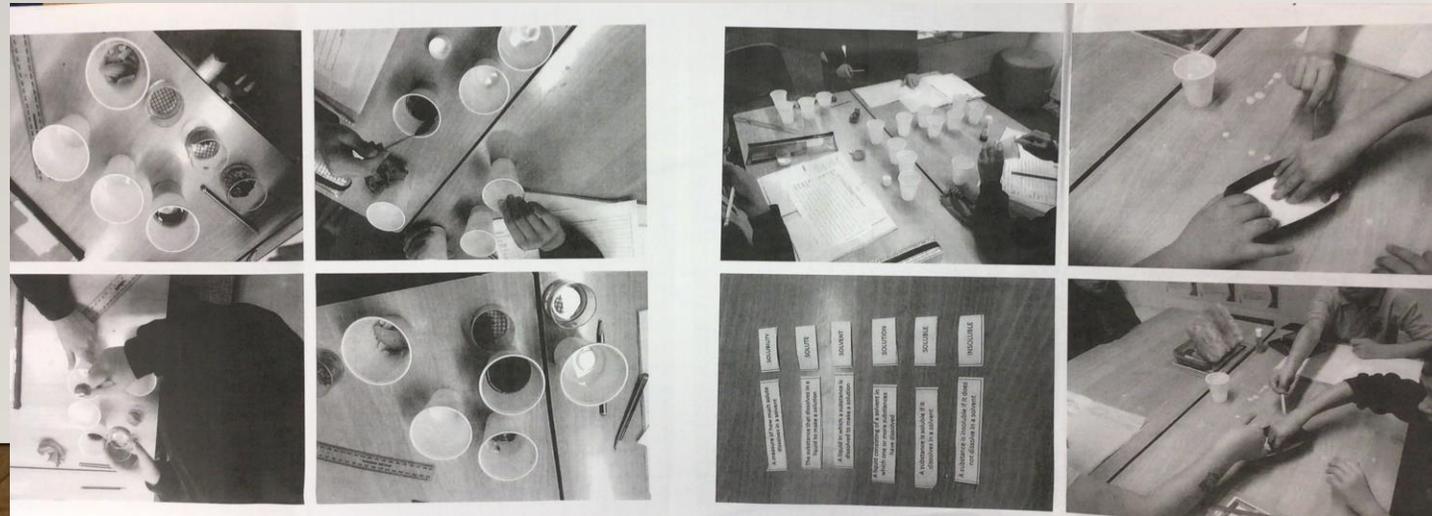
(print off and separate the images from the ingredients)

- Butter
- Bread flour
- Dried yeast
- Salt
- Sugar
- Oil
- Warm water

- Demonstrate that dissolving, mixing and changes of state are reversible changes



- 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.



Wednesday 25th November

To explore rusting through observation.

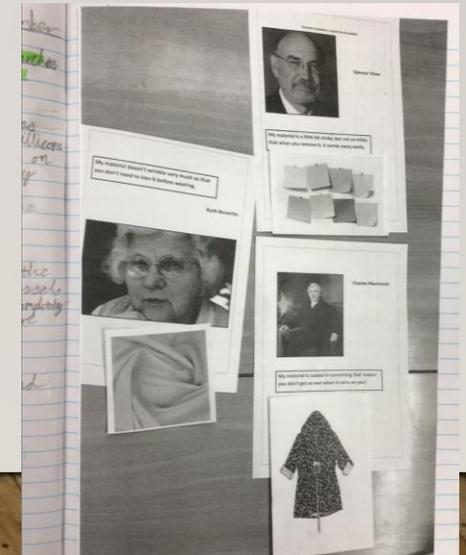
Rusting is an irreversible change. It is created when iron is exposed to moisture and oxygen from the air. This sets off a chemical reaction called oxidation. This irreversible reaction makes a new solid called rust.

Toby 25/11: It has metallic paint on it. The paint has got scratched so the water can get to the metal.

Toby 25/11: Iron rusts - I have seen iron nails that are really, really rusty.

Toby 25/11: Rust is acidic.

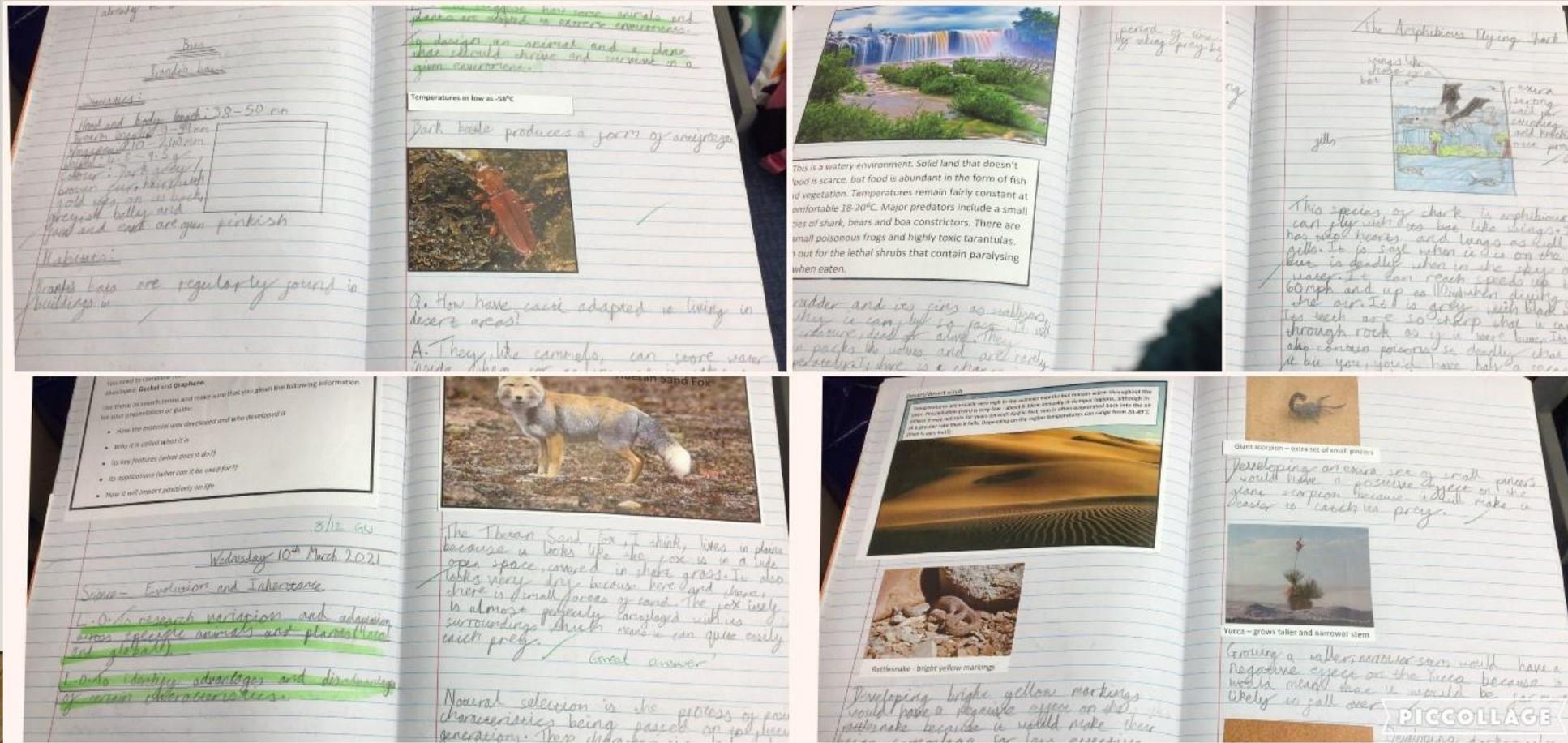
Toby 25/11: Corrosion is wear- it's worn down.



Freshwater Years 5 & 6: Spring and Summer 2021

Evolution & Inheritance:

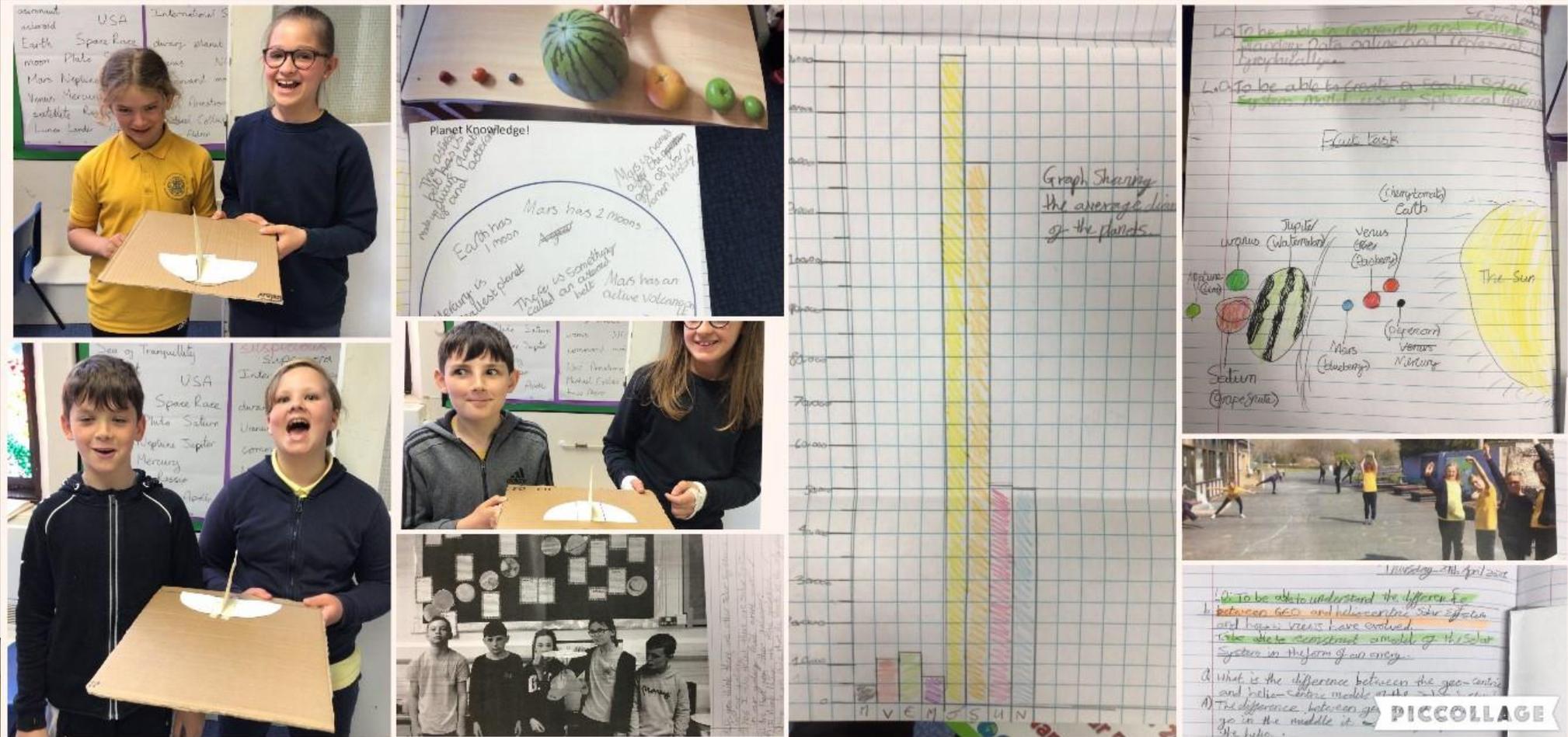
- recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago
- recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
- identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.



Freshwater Years 5 & 6: Spring and Summer 2021

Earth & Space:

- 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.



Freshwater Years 5 & 6: Summer 2021

Wednesday 16 June 2021

Natural Light Source	Artificial Light Source
the Sun Candle flame flame Lightning	Torch Lightbulb Lamp Head Lights Computer Screen LED Lights electric fire

LO: ...

fire electronic Screen

How do we see objects?

Sun

Material	What I observed
Mirror	The Mirror works well because I can see the image as clear as day.
Metal	The metal works well because I can see my picture as clear as day. But there are a few scratches on the metal so it makes it a tiny bit blurry.
Shiny plastic	The Shiny plastic does not work that well because there is mostly no shiny plastic.
Retro-reflective	The retro-reflective does not work that well. It shows up a tiny bit because well made.

70 + 0 = 70

$70 \times 2.54 = 177.8$

6 x 12 = 72
72 + 3 = 75 inches

75 x 2.54 = 190.5

Oliver
70 + 0 = 70

70 x 2.54 = 177.8

Conclusion: we can eliminate blue from our list of suspects because she is too short to see the lower beam of light.

17/6 60

LO: To describe the movement of light beams off of reflective surfaces.
To plan and carry out an investigation into the reflectiveness of given materials.

Tuesday 22nd June 2021

Torch mirror The torch light reflected off the mirror and onto the

Handwritten notes and diagrams, including a table with columns for Name, Age, Height, and Weight, and a diagram of a person's eye and light rays.

Handwritten notes and diagrams, including a diagram of a person's eye and light rays.

Handwritten notes and diagrams, including a diagram of a person's eye and light rays.

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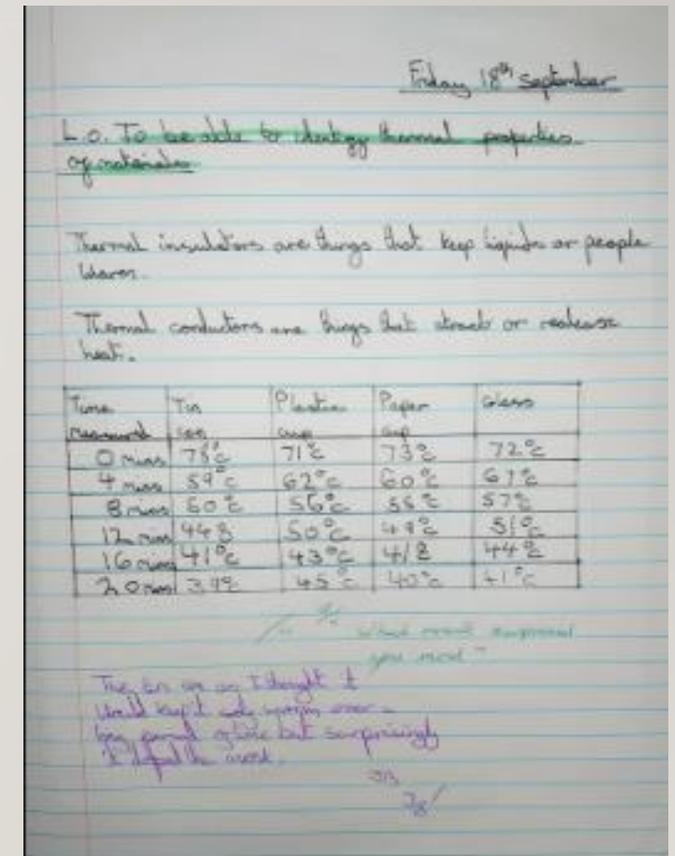
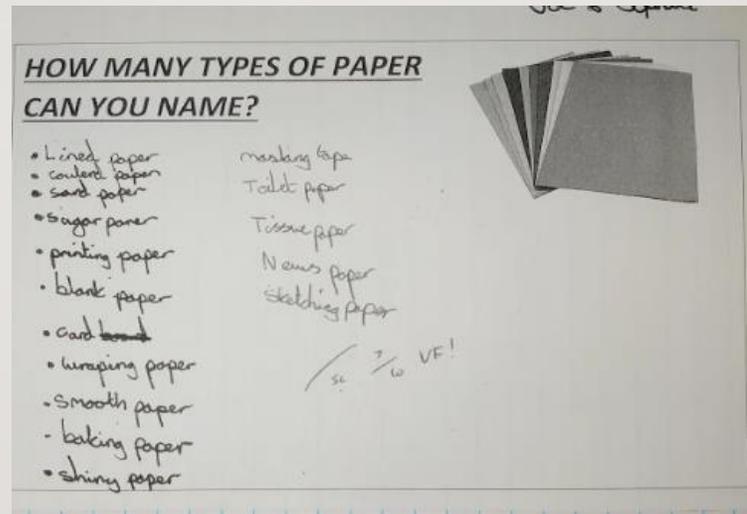
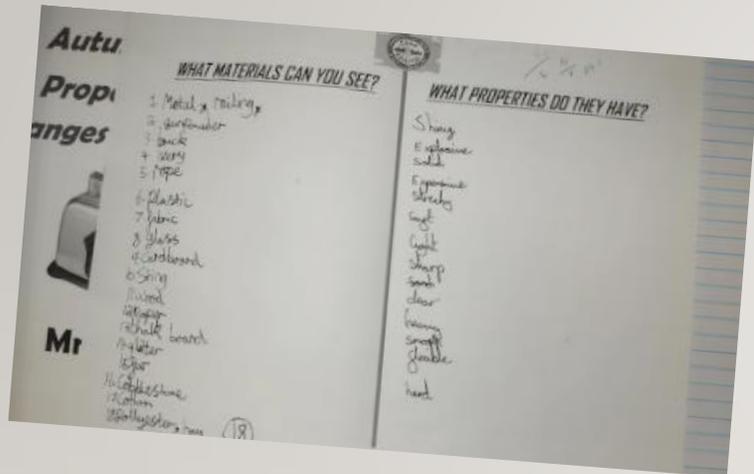
Handwritten notes and diagrams, including a diagram of a person's eye and light rays.

Handwritten notes and diagrams, including a diagram of a person's eye and light rays.

Handwritten notes and diagrams, including a diagram of a person's eye and light rays.

COVERAGE IN YEAR 5/6 YARMOUTH

Autumn I



- Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets

3.15 and Joe

Sticky notes Investigation (after Goldworthy and Fensy, 1997)

Please fill in sticky notes on the board before the lesson progress through - the sticky notes can be moved as the lesson goes on

Enquiry question: Whether materials are electrical conductors, insulators or water proof

VARIABLES

Things I could change/vary

- the material

Things I could observe or measure

- How well each material works for the test.

What is it?
What is the best?
Electrical conduction and insulation
00 g

Tuesday 8th October

Lo To explore a variety of materials based on their characteristics, strength and durability

Make a difference	Make no difference
Highly absorbent	Beautiful patterns
Hard wearing	Robust
light weight	Durable for fragile surfaces
Array of sizes	Disposable
Tactile for stubborn dirt	Non-scratch
strong	Array of colours
	strong

Friday 13th November

Lo To enable to identify how soundproof materials are



portable
Compactible
good insulator for ruffle sounds.
cleanable
light
water proof
adjustable light protective

Material	Decibel level (Db)
Foil	59 Db
Wood	67 Db
Metal	85 Db
Plastic	83 Db
Card board	77 Db
Foam	81 Db
Fur (Polyester)	78 Db
Paper	86 Db
Glass	78 Db
Satin	84 Db
Noise	92 Db

I predict the best material for sound proofing will be foam as its quite well known for being a good insulator.

I predict the worst material for sound proofing will be paper because its very thin.

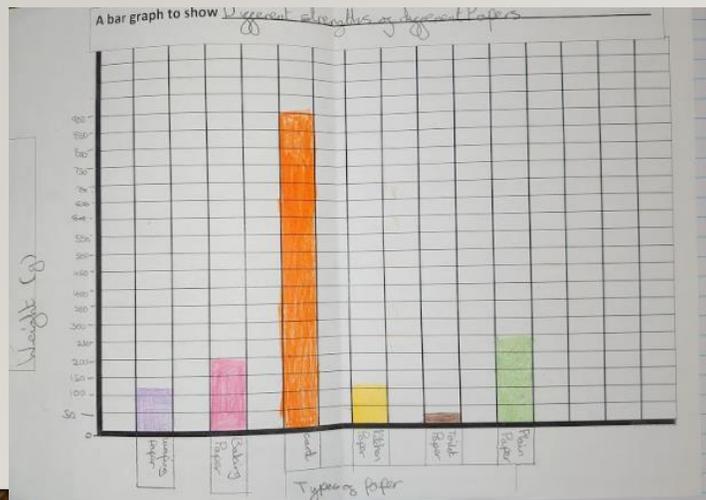
I know

Evaluation

I know the materials that had the best soundproofing was wood because it let through the least sound.

This material couldn't be used for ear defenders because its too heavy

Cardboard had good sound proofing as 77 Db. It was



- Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs

- Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic

Ensuring my test is fair

I will change: the materials which includes: spoon, foil, fabric, plastic, sandpaper, scissors, paper clip, coin, screws, Pen, Brass wire, Glass.

I will observe: which material works best by seeing if its a conductor or an insulator by the light bulb burning.

I will keep these things the same: the light bulb, the battery, the wires.

Tris and Joe

Sticky robot investigations (after Galbraith and Ferry, 1997)

Enquiry question: whether materials are electrical conductors, insulators or water proof

VARIABLES

Things I could change/vary: -the material

Things I could observe or measure: -How well each material works for the test.

what is the best electrical insulator and conductor 100g

Tris and Joe

Material to be tested	Prediction	light bulb brightness	Conductor or Insulator	Waterproof
Spoon	conductor	right	conductor	YES
Foil	conductor	bright	conductor	Yes
Fabric	insulator	off	insulator	NO
Plastic	insulator	off	insulator	Yes
sand paper	insulator	off	insulator	NO
scissors	conductor	right	conductor	Yes
Paper clip	conductor	bright	conductor	Yes
coin	conductor	bright	conductor	Yes
Pen	conductor	bright	conductor	NO Yes
glass	insulator	off	insulator	YES
scour pad	insulator	off	insulator	NO
Pen	conductor	line	conductor	NO

Which is the best replacement for our wire? / foil because it was the best conductor and it is easy to get hold of.

Which is the best replacement for our plastic casing? / plastic because it was waterproof and an insulator.

What is the worst combination we could use? Why? / the worst insulator would be the scour pad because its not waterproof. And the worst conductor would be a glass because its an insulator and its fragile.

Wednesday 7th October

so I am able to explore the strength of materials

Paper	weight until rips (g)
Plain paper	240g
Told paper	30g
wrapping paper	120g
kitchen paper	110g
Baking paper	200g
card	900g
card board	I think this will break at 1500g = 1500g

Why do you think paper was double the strength of wrapping paper? / wrapping paper is built for rip eg Christmas

- Using test results to make predictions to set up further comparative and fair tests

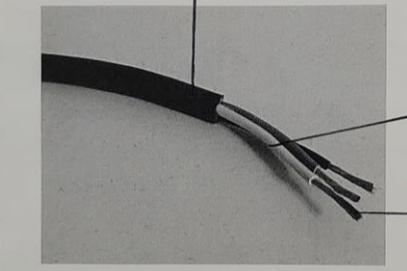
- Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs

COVERAGE IN YEAR 5/6 YARMOUTH

Autumn 2

Friday 6th November 2020

L.O. To explore electrical conductors and insulators.



electrical insulator

electrical insulator

Conductor electrical

Friday 13th November 2020

L.O. To identify how soundproof materials are.



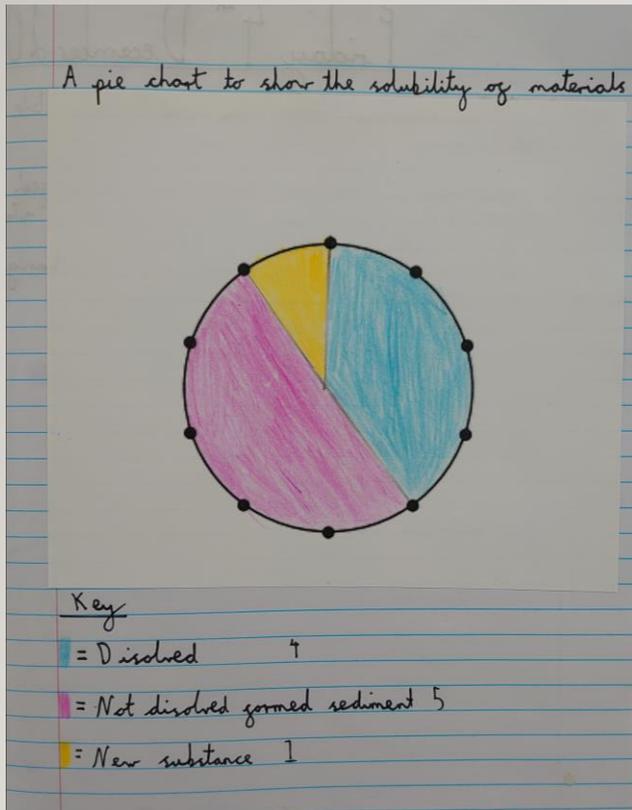
- Comfortable
- Only let a minimal amount of sound in. Protects sound
- Warm if it is cold.
- Sturdy / secure
- Size adjustable
- thick
- Portable
- Light
- Durable

Material	Number of DB/Decibal
glass	78 DB
paper	86 DB
metal	81-87 DB
satin	84 DB
plastic	83 DB
soil	89 DB
jumper (polyester)	78 DB
wood	67 DB
foam	81 DB
cardbord	77 DB
No material	92 DB

- Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic

COVERAGE IN YEAR 5/6 YARMOUTH

Autumn 2



Change	Reversible or Irreversible	Why?
melting Butter ^{toast}	Reversible ✓	When butter melts onto toast it dissolves into it.
melting chocolate	Reversible ✓	Although it won't look how it started you could put it in a freezer.
out of date milk	Irreversible ✓	When it is out of date you can't get it ok again.
bubble water	Reversible ✓	You can turn of what is making it bubble.
melting whisks	Reversible ✓	When you blow the candle out it would dry up and become good again.
Sugar into tea	Reversible ✓	You can put the tea on a hot making it hot, let it evaporate and be left with
taps water to sala water	Irreversible ✗	When you put carbon dioxide into a drink you can't get it back.
mixing ingredies	Irreversible ✓	When you mix ingredents you can add but never take away.
putting milk into glaze	Irreversible ✓	When you put milk into cereal, the cereal becomes soggy and non moveable
kitchen on fire	Reversible ✗	You can put a fire out.
cooking pasta	Irreversible ✓	Once you cook it you can't un cook it.
banana ripening	Irreversible ✓	Once it is cooked ripe it can't be reverse it.

- Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs

Sticky-notes investigations (after Goldsworthy and Feasy, 1997)

Place filled in sticky-notes on the blank boxes to help organise thoughts - the sticky-notes can be moved as the investigation plan progresses

Enquiry question: TO find out whether the different metals are Electrical conductors, Electrical insulators Waterproof:

VARIABLES

Thing I could change/vary

The Material

Things I could observe or measure

If they are good conductors or insulators by seeing if the light bulb turns on

If its waterproof

- Using test results to make predictions to set up further comparative and fair tests

Yarmouth Years 5 & 6: Spring and Summer 2021

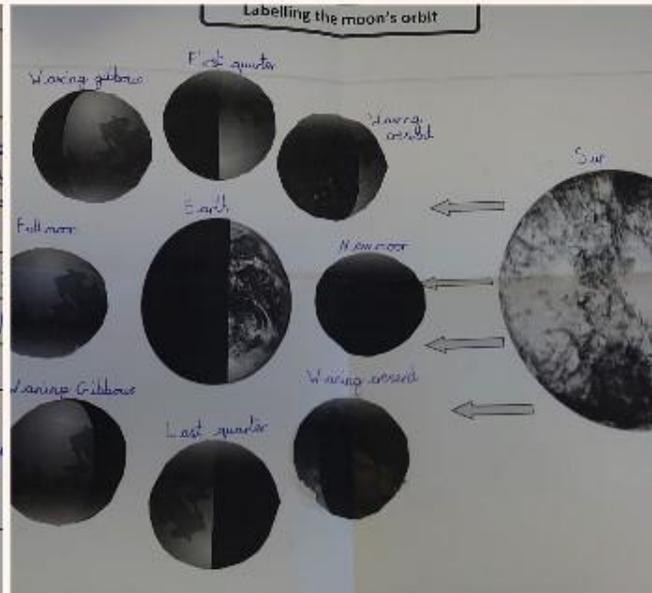
SHADOW INVESTIGATION

Enquiry question/s: How do shadows change over time?

Variables we kept the same: Where the post is and the same sun.

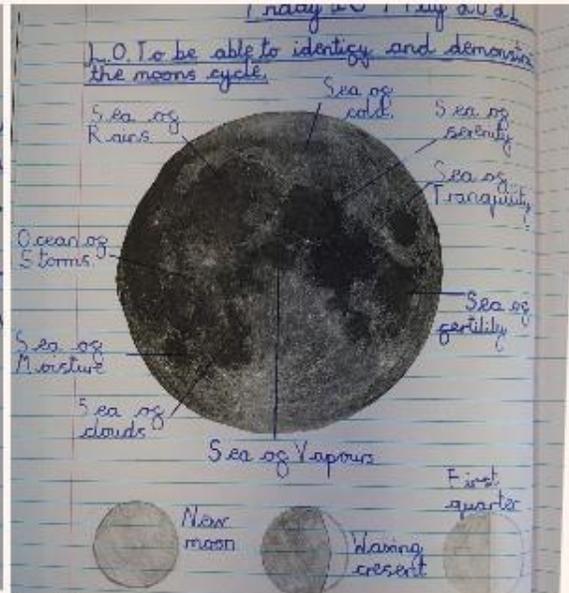
Variable changed: The shadow and the sun and the time

Time of day	9.30	10.30	11.30	12.00	12.30	1.00	1.30	2.00
Length of shadow in cm		53 cm	44 cm	41 cm	22 cm	28 cm	4	
How defined is the shadow?		Very	Just	Very	Very	Very	M	
Direction of shadow		NW	NW	NW	N	NE	N	
Position of sun		SE	SE	SE	S	SW	S	
Patterns noticed	The length got shorter but after 1 o'clock and then longer again							
Scientific explanation								



Solar eclipse - A solar eclipse happens when the moon is blocking the sun from the earth. This creates a solar eclipse.

Lunar eclipse - A lunar eclipse happens when the earth is blocking the sun from the moon. This creates a blood moon.



TIMEZONES AROUND THE WORLD

UNITED KINGDOM	PERU	
06:40	06:40	5pm
Sleeping	Sleeping	On my phone
SOUTHERN AUSTRALIA	WESTERN CANADA	EASTERN CANADA
11:40	2:40	11:40
Sleeping	Sleeping	Sleeping

EXT - Explore further countries you are interested in by continuing this task in your book

5. We could use a chart to record it.

How will we create the changing shadows? We will place the brick on the ball and spin the ball. We would then use the torch as the sun and cast a shadow.

When the earth rotates on its axis, the shadow cast by the sun changes length at different points in the day. Being long in the morning and long in the evening, its at its shortest at mid day.

L.O. To learn about time zones around the world.

The Earth spins on its axis so that when it is going the sun certain parts will have light. When the Earth spins away from the sun it will mean those certain parts will be in darkness until it faces the sun again.

The sun has turned a deep orange and pink colour and is spread across the western sky

Dawn
Shadows are at their longest

Evening
The sun is shining on exactly the opposite side of the Earth

Midnight
The sun set a couple of hours ago

The Earth will turn to face the sun again in a few hours

PICCOLLAGE

Yarmouth Years 5 & 6: Spring and Summer 2021

Geocentric - Why?

The sun got higher until June and then lower.
The sun looked it was circulating circling us, not us circling it.
He saw the stars moving to different places in the sky.
God created the earth first and god would have put his best creation in the centre.

GALILEO



1. He was able to use the telescope.
2. He saw Jupiter had 4 moons that proved not everything went around us because Jupiters 4 moons went around it.

COPERNICUS



1. He just used his eyes.
2. He decided that the sun was in the centre and we were rotating around it.
3. He also decided that the earth rotates giving us night and day.

The stars are seen there in but we can't see them because the sun is so bright they block them out.

What is your final decision (We agree/disagree because) We agree but we just can't see them in the day.
A question we can investigate based on that? Why can't we see stars in the day?

5 Statement: All of the planets have distinct characteristics.

What do we know that could mean its true? Saturn has rings, Earth has water, land and humans and Jupiter is the biggest from pictures.
What could make us doubt the statement? That the pictures aren't real and they were edited.

What is your final decision (We agree/disagree because) We agree because we have pictures evidence.

What do we know that could mean its true? What if I look up sometimes the moon is full, half and sometimes not even there.
What could make us doubt the statement? It does seem like you are like in front of a planet because you look at it different.
What is your final decision (We agree/disagree because) We agree because it appears to change shape when the sun's light hits the moon.
A question we can investigate based on this? What causes us to see it in different shapes.

2 Statement: The Earth and planets move around the sun?
What do we know that could mean its true? We rotate around the sun and we have day and night.
What could make us doubt the statement? People might think the sun rotates around the earth.
What is your final decision (We agree/disagree because) We agree because the sun spin around us and we spin around the sun?
A question we can investigate based on this? We agree because other wise the day in the summer it will be longer.

Improved Questions

- Does the location effect how you see the moon?
- What causes us to spin around the sun?
- What causes us to spin consistently?
- Why are stars visible during daytime?
- Why do planets need different features?
- Why is it called the sun when its a star?

Creating

Creating

Creating

Friday 7th May 2021

L.O. To be able to plan a shadow investigation.

- Do you think a shadow stays the same at all times of the day?
- How can we use the items we have to create a shadow?
- What would we need to do to track a changing shadow?
- What would we need to keep the same throughout the investigation?
- How would we record our findings?

1. No a shadow can grow taller and shorter through out the day depending on where the sun is. *dis the sun move?*
2. We could stand the cricket post up and use the sun to cast a shadow of it. Over time we would mark where it is over time.

Friday 30th April 2021

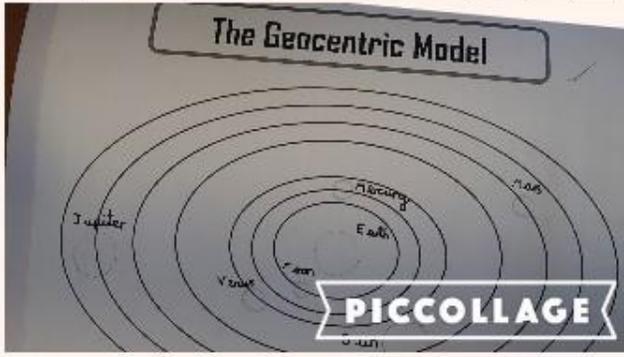
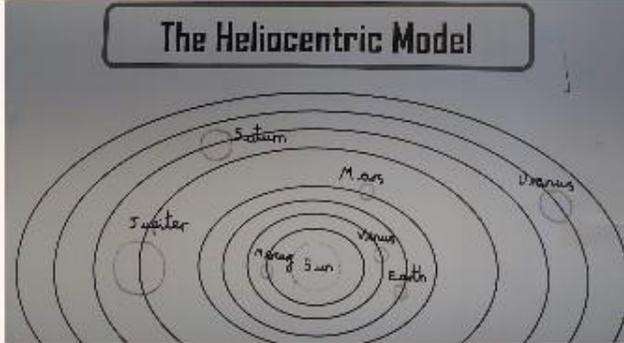
L.O. To understand how views on the solar system have evolved.

Same
They both have the sun.
They both have the planets earth, venus, mercury, mars, jupiter and saturn.
They both have something.
Mercury is always closest in the middle.

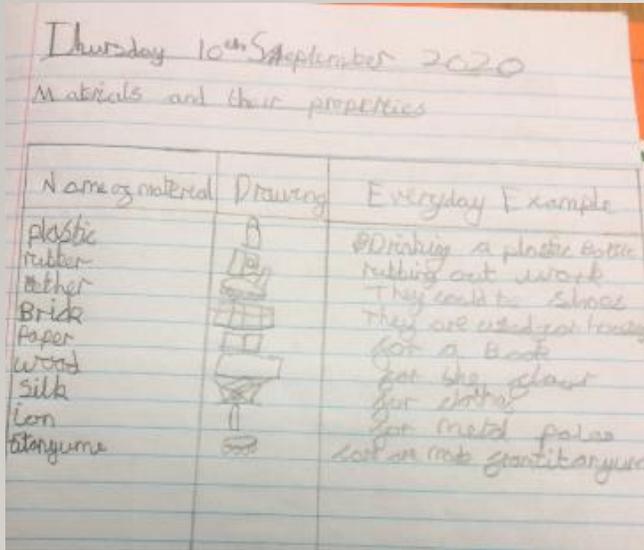
Different.
One is called the heliocentric model and the other is the geocentric model.
One has the sun in the middle and one has the earth in the middle.
The geocentric model doesn't have moons.

Name	Distance from the sun (million km)	Average temperature (°C)	Diameter (km)	Time to orbit the sun (in earth days)	Time to rotate on axis (in hours)	Type of planet
Mars	58.1	473°C	4879	88 Day	590 Day	Rocky
Venus	108	462°C	12104	225 Day	243 Day	Rocky
Earth	149.6	15°C	12756	365.256	24 hours	Gas
Jupiter	779	-120°C	142984	11.9 Years	9h 55m	Gas and liquid
Saturn	1488	-125°C	120536	29 Years	10h 39m	Gas
Uranus	2955	-210°C	51118	84 Years	17h 14m	Ice and gas
Neptune	4475	-200°C	49528	165 Years	16h 6m	Ice and gas

L.O. To be able to research and write a paragraph on the heliocentric model.

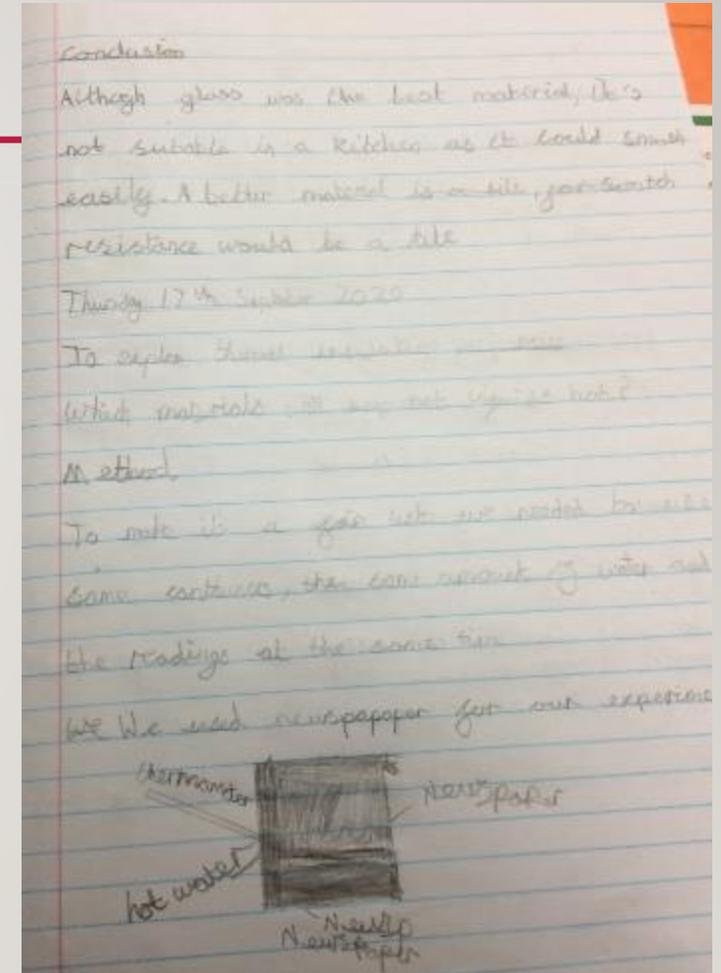
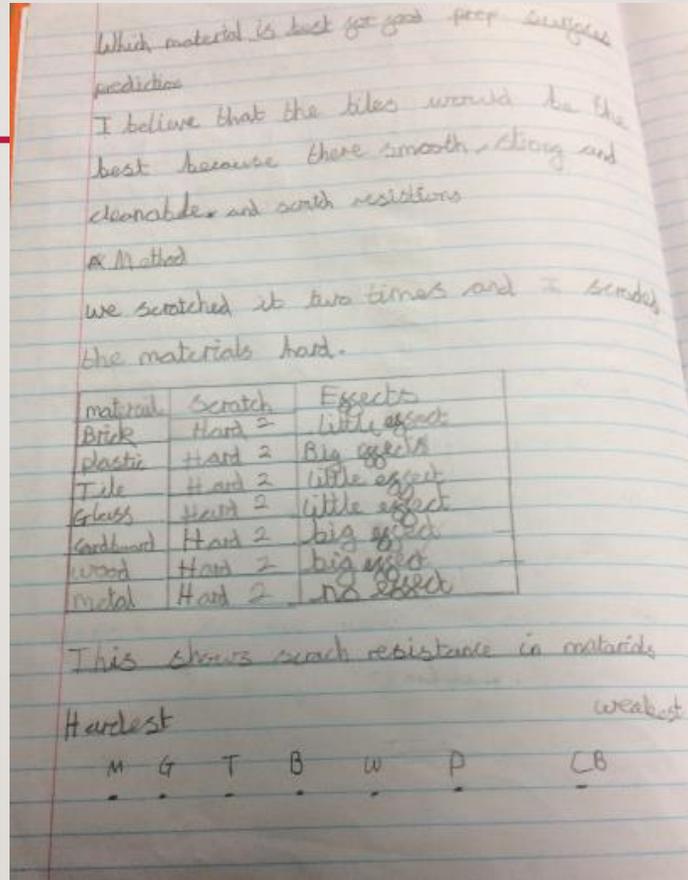


COVERAGE YEAR 5 SHALFLEET



PROPERTIES AND CHANGES IN MATERIALS:

- compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets



Material	1st	2nd	3rd	Average
Paper card	175	175	175	303
tracing	170	340	410	115
wrapping	120	100		275
cardboard	275	275		367.5
chipboard	375	360		158
brown	125	200	150	350
polythene	380	320		175

Conclusion
The conclusion is, the strongest material (paper) is the cartridge because it held the marbles very well and the tracing paper wouldn't be good at all.

diffuse You **diffuse** to Carter, because you are checking. You are **diffuse**!

different different different different

54

For Thursday 9th September 2020

to find out which materials are good conductors of electricity

Material to be tested	Prediction	Light bulb (glows, yes, no)	Conductor or Insulator	Waterproof
Nails	✓	no	insulator	
Paper clips	x	no	insulator	
Coins	✓	yes	conductor	
Scissors	x	no	insulator	
Spoons	x	no	insulator	
Aluminium foil	✓	yes	conductor	
Glass	x	no	insulator	
Fabric	x	no	insulator	
Iron wool	✓	yes	conductor	
Pens with metal bits on them	✓	yes	conductor	

In order to test the material, first we to build a circuit. All the materials were not checked to see how brightly they light bulb - were they conductors or insulators.

Materials: wood, metal, paper, plastic, glass, fabric, iron wool, aluminium foil, coins, paper clips, nails, pens with metal bits on them.

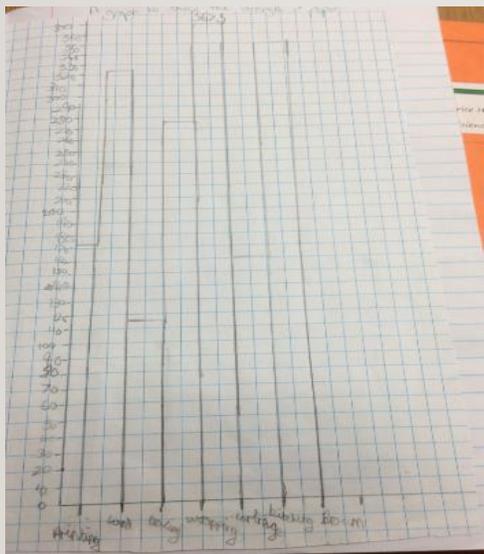
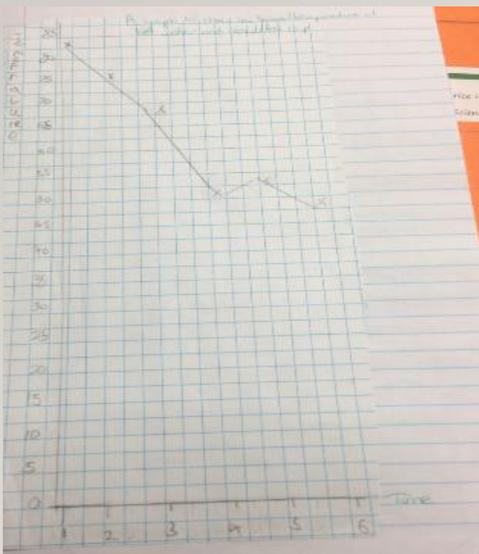
Material	First Reading	2nd Reading	Average
Wood	77	56	66.5
Iron	305	31	168
paper	55	47	51
plastic	83	APED	32
aluminium	69	43	56
glass	76	26	51
chipboard	55	22	38.5
cardboard	20	22	21
polythene	60		32

Conclusion
The sponge was used the most water but for the longest because of the air pockets but the tin foil was the one that kept it warm for the second longest time and it was more suitable to carry than sponge and the worst was newspaper because even though it started as 83 and the water to 22.

Extension
How would you keep ice cream/lollies cold?
Plan out a similar enquiry to find the best insulator to keep ice-cream cold.

E.g. old newspaper would be good to use

- Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations



Friday 25th September

To test the strength of paper

Prediction
I predict that brown will be the strongest because it is really thick and it looks quite strong.

Method
The method is that we would test out what paper would be the strongest paper out of all of them. We used had some sized paper so it would be a very quiet test. We put marbles in the pots and on a paper clip and different types of paper to see which is the strongest.

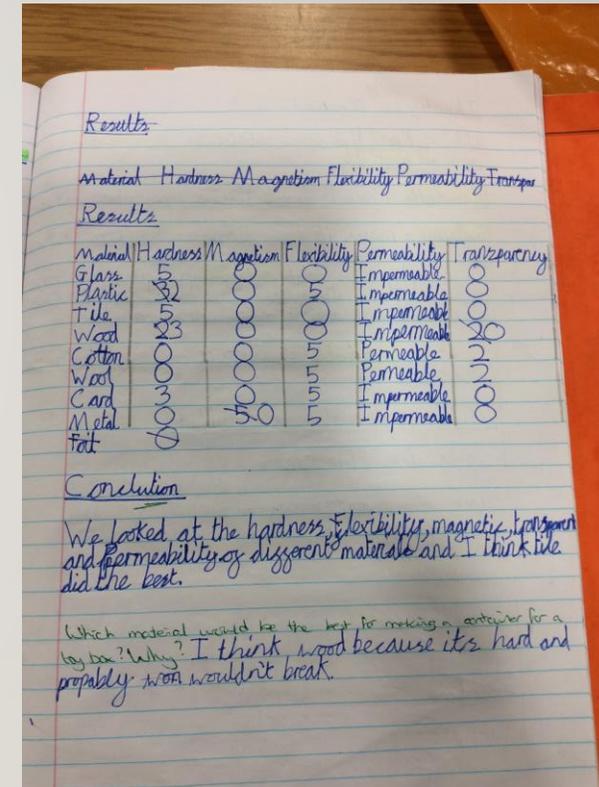
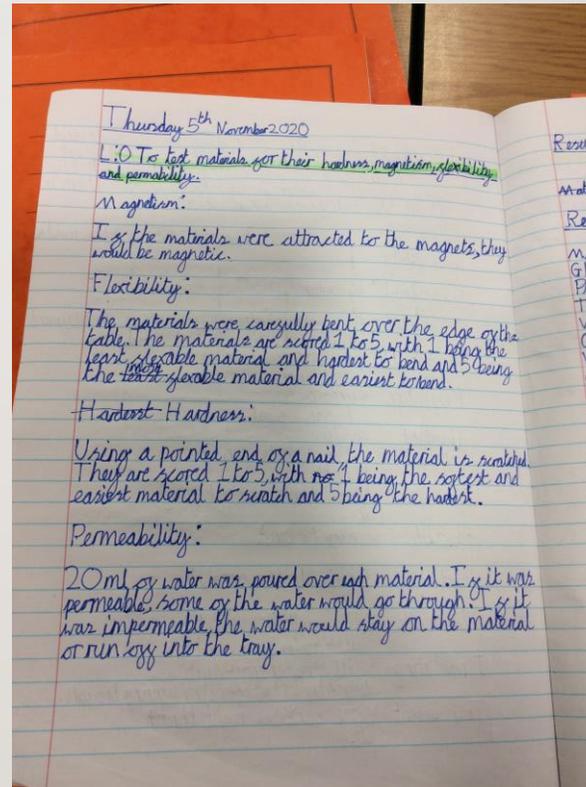
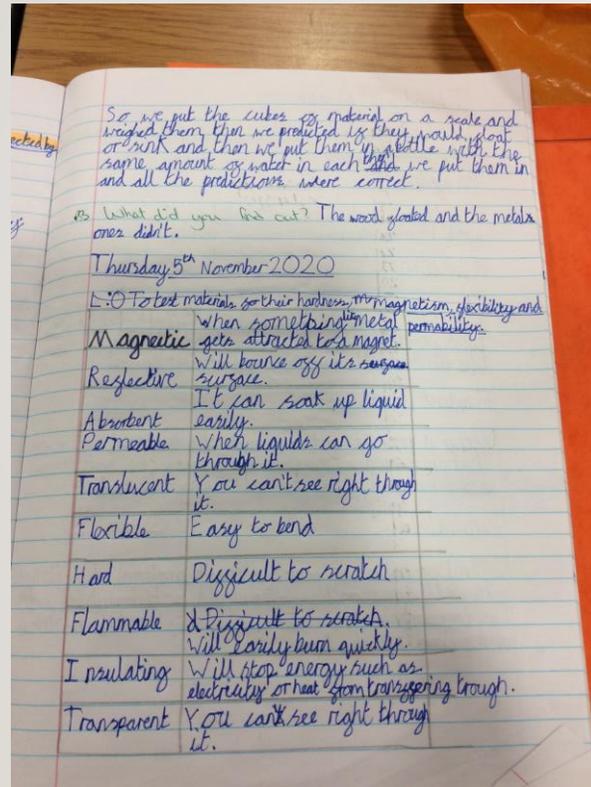
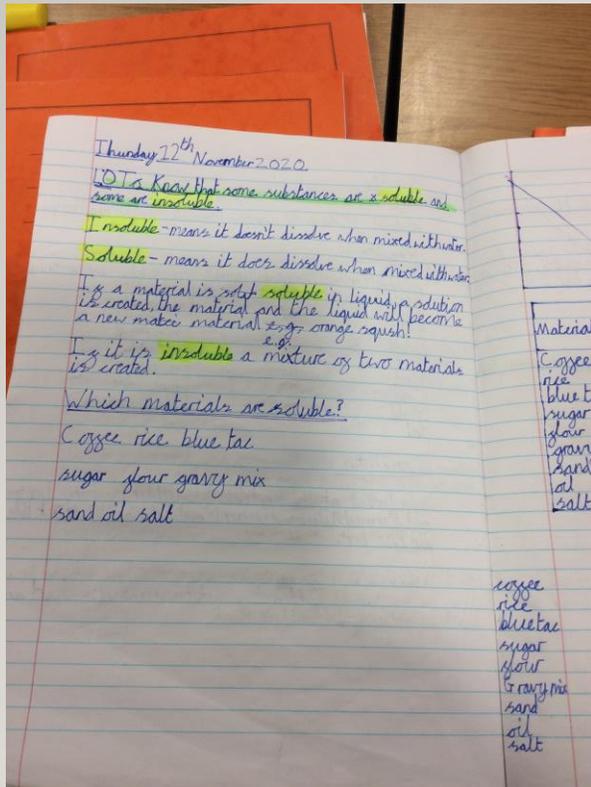
Materials: paper, marbles, container

YEAR 5: SHALFLEET

Autumn 2

Properties and changes of materials:

Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.



Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets

the eye

Material	Sieve	Observation	Result
Rice and water	Extra small	It got wet and stuck together	No rice went through the sieve.
Glitter and water	Filter paper and sieve	It got wet and fived sticky.	No glitter went through the filter paper or sieve.
Marbles and water	Fairy large Colander	They three just did nothing except being slippery.	They moved around and got through.

We set up another experiment to retrieve a substance from a solution. Using bicarbonate of soda and food colouring in water, with string dipped in between the two cups.

I predict that it will all become crystallized. Which colour? Shakes? I'm not sure what the shapes will be. One will become yellow one will become red.

le. and
with water
lubrication
als

Material	Prediction	Observation	Soluble	Insoluble
Coffee	Soluble	Soluble	Soluble	Insoluble
rice	Insoluble	Insoluble	Insoluble	Insoluble
blue tac	Soluble	Insoluble	Insoluble	Insoluble
sugar	Soluble	Insoluble	Insoluble	Insoluble
glor	Soluble	Insoluble	Insoluble	Insoluble
gravy mix	Soluble	Insoluble	Insoluble	Insoluble
sand	Soluble	Insoluble	Insoluble	Insoluble
oil	Soluble	Insoluble	Insoluble	Insoluble
salt	Soluble	Insoluble	Insoluble	Insoluble

Observation

water changed
normal
Hard
Normal
loopy
floopy
Brown water
Bubbly
Normal

coffee
rice
blue tac
sugar
glor
gravy mix
sand
oil
salt

Conclusion

I believe that some materials were soluble because some were reds and some were blue.

If we changed the temperature I would expect the materials to all become soluble, except for the blue tac.

Thursday 19th November 2020

LOT to describe how some materials can be separated.

How can we separate materials?

We need to separate these:

- rice and water
- glitter and water
- marbles and water.

Using the same amount of water we used different types of sieves.

Prediction

T

There were small crystals in the yellow one but none in the red.

Tuesday 1st December 2020

LOT to plan and carry out irreversible cooking investigations that may create some new materials.

Water and yeast Sugar and yeast Vinegar and sugar Vinegar and bicarbonate of soda.

The water and yeast just mixed together and turned it into goo.

The sugar and yeast popped and did not make gas!

The vinegar and sugar just fizzed.

The vinegar and B.O.S exploded out the top of the tube.

Demonstrate that dissolving, mixing and changes of state are reversible changes. 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. Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets

Handwritten: sand, rice, salt

Year 5 Science Program Test C
Section 3: Properties and changes of materials
HeadStart
Reversible and irreversible changes

Are the following changes reversible or irreversible? One has been done for you.

- 1. A piece of chocolate melts when it is heated. *reversible*
- 2. A car wheel races when it is left in the rain. *irreversible*
- 3. Crumbs won't become liquid when it melts. *irreversible*
- 4. A sheet of paper is set slight with a match. *irreversible*

Complete the following:

Explain why dissolving melting is a reversible change.
You could put it in a shape and make it solid in the freezer. Because the word can't go down again.

Year 5 Science Program Test C
Section 3: Properties and changes of materials
HeadStart
Dissolving and evaporation

Choose words from the box above to complete the sentences below.

A cube of sugar is dissolved in water. The water is then heated until only the sugar is left behind.

evaporation
solute
residue
solution

white vinegar

I predict the apple in salty water will be the quickest to turn brown.
I predict the apple in tap water will turn brown the slowest.

Thursday 10th December 2020.

I found out oxidation means that it's when something goes rusty or moldy.
Also fruit of metal can oxidate.
You can't put them in any type of liquid they will still oxidate.

Which changes result in the formation of a new material? What happened?

	Prediction- What do you expect to see happen? Will any new materials be made?	Reversible or irreversible	What happened
Milk and vinegar	<i>I think it will turn a different colour and not make a new material.</i>	<i>I predict it's irreversible.</i>	<i>It turns into curd casein and then proper plastic.</i>
Vinegar and bicarbonate of soda with balloon.	<i>I think it will mix and not make a new material.</i>	<i>I predict it's reversible.</i>	<i>They mixed in the bottle and formed carbon dioxide in the balloon.</i>

sand, rice, salt

Sieve | rice

water salt | sieve | sand | rice

water filter put it in hot water and it will evaporate.

water salt | water | salt

water | salt | water

evaporation salt evaporation

Water

None left.

The materials involved mix together to form new products including some gases such as carbon dioxide. Some reactions can be reversible, however some are not.

ASSESSMENT
LO: To decide how materials might be separated

Alien Soup
rice sand
salt water paper clips

How will you separate the ingredients? They all need to end up in separate cups! Explain what you will use for each step and what will be separated at each step.

START WITH:
Paper clips rice sand
Water salt

Magnet
Paper clips

Rice, sand, water and salt.

Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets

Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating

Type of liquid/ Time of observation made	After of 1 hour	After 1 day	After 4 days	After 1 week
Tap water		It's going brown.	Brown.	Brown.
Vitamin C in water	↑	Turned orange.	White, with streaks of brown.	bleached.
Lemon juice	Soj	Soft and yellow and squishy.	Yellow tinged apple.	Yellow, soft and squishy.
White vinegar		Turned the skin brown and the white bit.	bleached, soggy.	bleached brown squishy.
Sugar salty water		It's turned flexible.	White with brown streaks.	squishy and started to dissolve.
Orange juice		break's off brown.	Turned orange and soft.	

Prediction

I predict that the nail in the jelly submerged with a rust the most in sugar will rust the most.

I predict the apple in air will go brown the most.

I predict the nail in air will rust, but extremely slowly.

I predict the apple in sugar will absorb the sugar and then go brown.

I predict the nail will get rusty in vinegar the fastest.

I predict tap water will make the nail rust slowly.

Scrambled



Trail: 28130
Like: 28130

Hard boiled



Trail: 22150
Like: 24130

Soft boiled



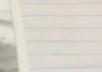
Trail: 22150
Like: 22130

Fried



Trail: 22130
Like: 22130

Poached



Trail: 28130
Like: 27130

My experiment: My experiment: scrambled

Vinegar and bicarbonate of soda.

and sugar just mixed together and exploded out the top of

Jelly experiment:

What will happen to the jelly in different temperatures of water?

With warm water it will turn into real jelly.

	Cold water	Warm water	Hot water
Predictions	It will go all soggy.	It could become a bit more squishy.	It will be a bit more firm.
Results	It changed colour a bit.	and the lumps made together.	It set into formal jelly.

I learnt that cooking is irreversible because once you make the bread or whatever your cooking you can't take the ingredients back. I also learnt that all of it was irreversible even the jelly. I learnt that what would happen with different cooking supplies mixed with water.

Thursday 3rd December 2020

NOT to plan and carry out oxidation investigation in observing and recording over time.

reactions

Description of pot/ Time of observation made	After of 1 hour	After 1 day	After 4 days	After 1 week
Nail in air	Nothing happened.	No change	No change	No change
Nail in partially submerged in water	The nail half of the nail in water turned a bit rusty.	The part in water went rusty also and the part in air was going rusty.	Rust formed on the head and up the stalk.	Rust formed on the head and up the stalk.
Nail totally submerged in water	It turned the water rusty.	Green. The nail is changing colour.	Faded.	Completely rusted.

Type of liquid/ Time of observation made	After of 1 hour	After 1 day	After 4 days	After 1 week
Tap water	Small amount of rust.		Turning brown all over.	Rusting
Boiled water	No rust.		No change	
Lemon juice	No change.	No change the bit out of water is rusty.	No change	The bottom half has rusted.
White vinegar	No change.		No change	Rusty
Sugar salty water	Water changed to an orange colour.	No change	No change	
Orange juice	No change.	It's turned orange.	Brown colour	Rust is climbing up stalk.

Which big liquid will make the apple go brown fastest?

	After 1 hour	After 1 day	After 4 days	After 1 week
No change Apple in air	It's steady oxidating.	It's steady oxidating.	Brown drying skin and some of the middle.	Very brown, not the skin.
Green Apple half in water	The apple has gone brown.	The apple has gone brown.	Brown, not squishy.	Brown, drying out further away from the water.
Apple in its water	oxidating a lot.	It's oxidating a lot.	Brown, not squishy and yellow.	

Earth & Space:

Shalfleet Year 5: Spring and Summer 2021

- 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.



Tuesday 27th April 2021
LO: To discover how theories about our solar system have changed.

A man called Ptolemy from ancient Greece had a theory that the Earth was in the centre of the solar system. He explained what people saw every night. He thought that the stars and planets stayed in exactly the same place. This theory lasted for 1400 years. This was the Geocentric theory.

The Heliocentric theory is that the Sun is in the centre of the solar system. Copernicus discovered this theory. He was proved right by Galileo as he saw 4 moons orbiting Jupiter. This theory shows us the Sun is in the centre and the planets orbit it. Due to technology today we can prove that the Heliocentric theory is the most accurate.

Tuesday 4th May 2021
LO: To explain how Earth rotation causes night and day.

While the Earth is rotating on its axis which takes 24 hours, the Sun is shining on one side of the Earth which means the light side is daytime and the other side is night time. At the same time the Sun is shining its Sunbeam on the Moon. The side of the Moon that is light will reflect on the dark side of the Earth. The reason we get day and night is because the Sun reflects on one side of the Earth meaning the other side is dark making it night.

Tuesday 18th May 2021
LO: To explain the phases of the Moon.

There is only one moon, even though we see a different type of moon every night the sun reflects in different places whilst the Moon is orbiting the Earth. First we see a New Moon which is where we have a chance to see a lunar eclipse. Then as it grows we will then see a Waxing Crescent then the First Quarter. A few nights later we see a Waxing Gibbous then a Full Moon. Next we would see a Waning Gibbous and after that the Last Quarter. On the last stage of our orbit we would see the Waning Crescent and that we create a full orbit or a month. This would keep repeating.

Shalfleet Year 5: Summer 2021

pack	6.16
shape	3.2

Can you predict an item which would have a greater gravitational pull force than the one you have already found? *The chair.*

Can you predict an item which would have a smaller gravitational pull force than the one you have already found? *pencil grip, sharpener*

Test them out. Were you correct? *The chair has 36N. The pencil grip had 0N.*

The item with the most gravitational pull and the most Newtons was the pack.

The items with the least Newtons and the smallest gravitational pull was the school pencil.

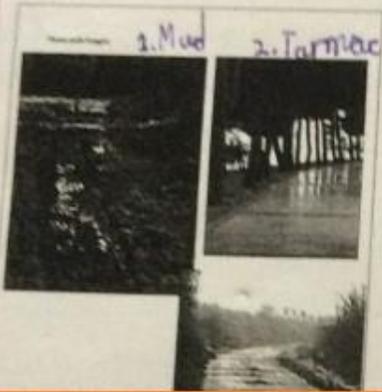
Tuesday 22nd June 2021

LO: To identify the effects of air resistance, the acts between moving surfaces

1. How would the length of the string affect the parachute?
It would make it go slower the longer the string is by creating more air resistance.
2. How would the size of the parachute affect the speed of the drop of the parachute? It would create more air resistance so it would stay in the air longer if it was stretched out.

variable change 2	2.80	1.43	2.2
J-cloth 396cm	1.30	1.43	1.26
J-cloth 353cm	1.42	1.50	1.389
J-cloth 774cm	2.20	2.06	1.4
Variable change 3 s=string			2.25
Black sack 850cm	1.75	1.60	1.49
Black sack 550cm	1.32	1.73	1.6
Black sack 570cm	1.42	1.50	1.6
Overall recommendations	MATERIAL: tissue paper	SIZE: J-cloth 774cm	STRING LENGTH: Black sack string 70cm
Scientific rationale	tissue paper was the best because it is	The J-cloth that was 774cm was the best because it had more	The 70cm string Black sack because there

LO: To identify the effects of friction, that gets between moving surfaces.



Which is the best surface for cycling?

I think the tarmac path is the best because it looks quite smooth and not so slippery, you'd have control, it also wouldn't be sticky or wet and it's not bumpy either making it difficult to cycle. The gravel would be worse.

SCIENCE IN YEAR 6

- Living things and their habitats
- Animals including humans
- Evolution and inheritance
- Light
- Electricity

COVERAGE YEAR 6 SHALFLEET

Autumn 1

- 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

LIGHT

Light sources

Which is the odd one out in the following & why? Circle the odd one out & explain.

- White lines in the road
- A car headlight
- A bike reflector
- 'Cats' eyes' in the road

Why?
White lines are not a light source

- A piece of white paper
- A picture
- A television
- A mirror

Why?
On a piece of paper you can't reflect anything.

- A Christmas tree decoration
- Aluminium foil
- A traffic warden's coat
- A torch

Why?
A torch is the only light source

- The Sun
- The Moon
- The Earth
- The planet Venus

Why?
The Sun is the only planet that gives up us light.

- A knife
- A belt buckle
- A burning candle
- A drawing pin

Why?
The candle is the only light source.

Thursday 10th September 2020

Not true as you the eye doesn't reflect in the dark. That's true as it's eyes as they shine in the dark and you don't see the body.

12.4 White Cat

Not true as you can see the cat's eyes

In glass light travels about two thirds as fast *breaks, bends, slow*

Light travels 186,000 miles per hour

The is 5.736 degrees

Light

Light moves in a straight creating shadows when the path of the light is blocked.

Refraction is the bending of rays when passing between transparent materials

Thursday 24th September 2020

The essential light travels in straight lines

How is this boy able to see the football?
Draw arrows to show.

- Recognise that light appears to travel in straight lines

Diagram of eye

What height is the external hole in the wall?

The height from the floor to the hole in the wall is 160 cm as the height from the floor to the concrete is 20 cm and the height from the concrete to the floor is 20 cm so it is 160 cm.

What position would the suspects have been in?

The suspects positions are heading to see the top of the gym, standing normally to see normally and on tip toes to see the bottom of the gym.

What angles would the torch have been held at?

The angles you use would be 180 degrees to look straight obtuse to look up and acute to look down.

Approximately, how big must the hole have been?

Approximate the hole must have been 7 by 5 cm. Ours was this size so in

Thursday 1st October 2020

iris ✓
Has muscles that controls the size of the pupil.

lense ✓
Concentrates and focuses the image.

cornea ✓
The eye's transparent covering.

muscle ✓
Allows movement of the eyeball.

retina ✓
Has sensors (rods/cones) that convert light into electric impulses that are sent to the brain via the optic nerve.

optic nerve ✓
This is how the information is sent from the eye to the brain.

pupil ✓
Lets the light into the eye.

If the surface is not shiny, smooth or flat the reflected light is scattered in all directions.

Irregular

Irregular is uneven not smooth and doesn't reflect light ray straight.

Thursday 15th October 2020

To investigate reflection

We are investigating which materials are the most reflective.

Materials:

Mirror

Metal

Coloured perspex

retro reflector

2. I predict that out of the materials Mirror will reflect the most 8/10 Retro Reflector 7/10 Metal 6/10 and Coloured perspex 4/10.

3. We have finished the experiment and have concluded that the mirror was most reflective 9/10 than the Coloured perspex 3/10 Metal 6/10 and the retro reflector 2/10.

Material	Score /10
Mirror	9
Metal	6
Coloured Perspex	3
Retro Reflector	2

A group of children carried out the same investigation and they used a light meter to record their results. Here is the table.

Friday 9th October 2020

To explain a scientific investigation



We shined a torch onto a mirror which is a smooth and shiny surface so it reflected onto the chair. When we moved the torch in ~~the~~ ^{the} ~~direction~~ ^{direction} made the light beams move towards the torch. ~~When~~ ^{When} we moved the torch inwards, if we moved the torch at an angle outwards the lightbeams move outwards.

* angle and angle

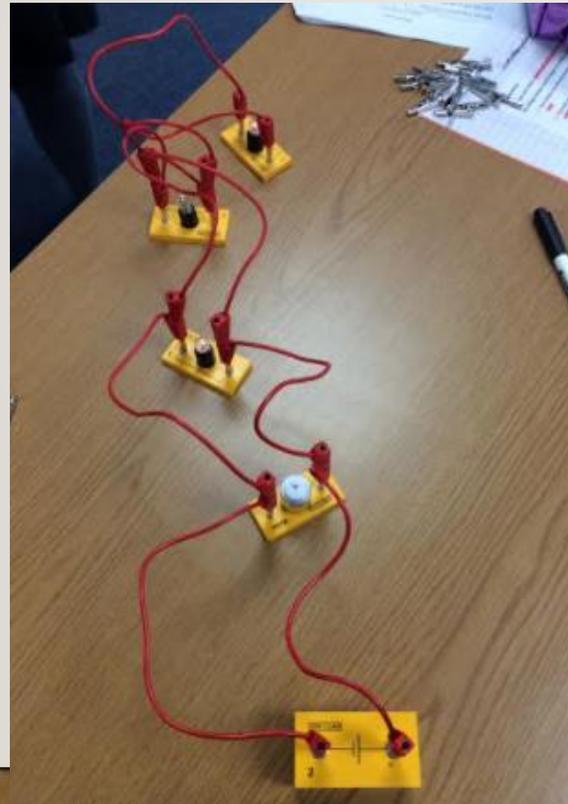
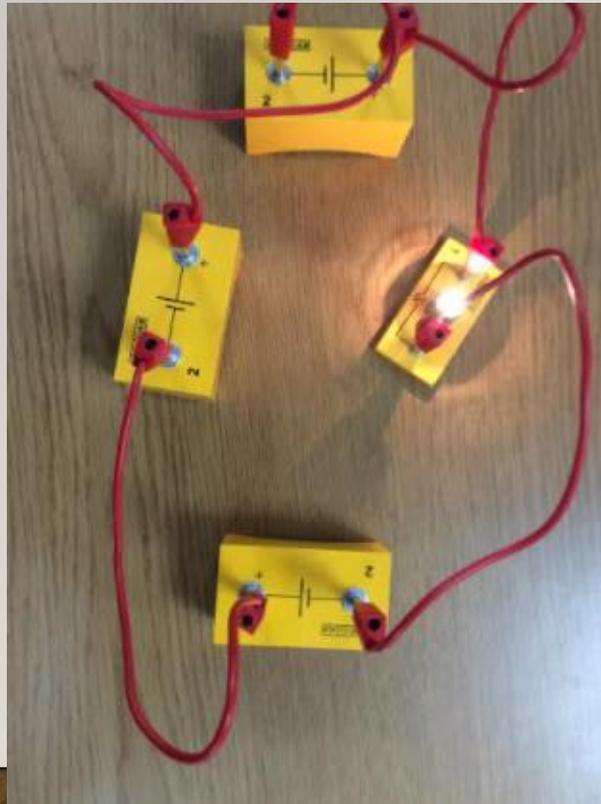
- Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations

YEAR 6: SHALFLEET

Autumn 2

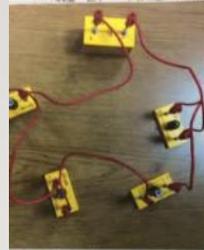
Electricity:

Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches



- Use recognised symbols when representing a simple circuit in a diagram.

Friday 27 November 2020



In this experiment, we made a simple circuit and we tested what happens to the brightness of a bulb if I increase or decrease the number of bulbs in a circuit?

The Big Question: What happens to the brightness of a bulb if I increase or decrease the number of bulbs in a circuit?

Method:
What we did first was, we made a simple circuit and then added another bulb then again, then again, we only kept one bulb only and kept it in a circle.

What did you observe?
I noticed that, the more bulbs you have, the less power each one has because there's more to go round.

Number of bulbs Brightness of bulb
1 Dim
2 Dim
3 One works (Dim)
4 None worked

James Karolina

Sticky-note investigations (after Goldsworthy and Feasy, 1997)
Stick placed in stick notes on the blank boxes to help organise thoughts - the Post-its™ can be moved as the investigation plus progresses

Enquiry question: What effect will the number of bulbs have on the brightness of a bulb?

VARIABLES
Things I could change/vary

Number of Bulbs	Number of Batteries! (they could be all)	Brightness of bulbs
-----------------	---	---------------------

Things I could observe or measure

Brightness of bulb with more or less power	Amount of bulbs	The amount of cells/volts times.
--	-----------------	----------------------------------

Friday 20 November 2020

The first circuit
In the experiment we made a simple circuit based.



Success criteria

Success criteria	Achieved?
Analogue	
Specific celebration	
Five bulbs min	
One buzzer min	
Two motor min	
One switch min	
clockwise moving part	
Two additional research	
To look pleasing	

Some success criteria - that will be signed please/okay

Terms which

An on-off switch allows current to flow only when it is in the closed (on) position. These are used for all light switches.

Motor

A transformer which converts electrical energy for movement or kinetic energy.

Motor

A transformer which converts electrical energy to heat.

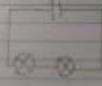
Plug socket

A push switch allows current to flow only when the button is pressed. This is the switch used to operate a doorbell.

Form of circuit symbols



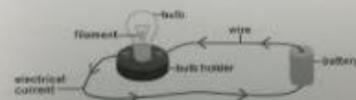
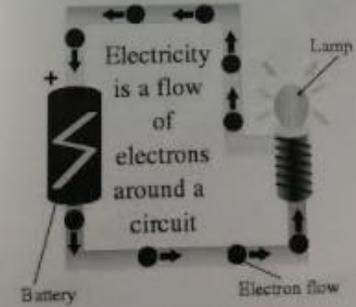
The bulb is dim with only one battery. With more batteries this is a simple circuit (Power) by 1.5v.



The bulbs are extremely dim, you can just see a tiny spark.

Electricity

- associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
- compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches
- use recognised symbols when representing a simple circuit in a diagram

Electricity is a flow of electrons around a circuit

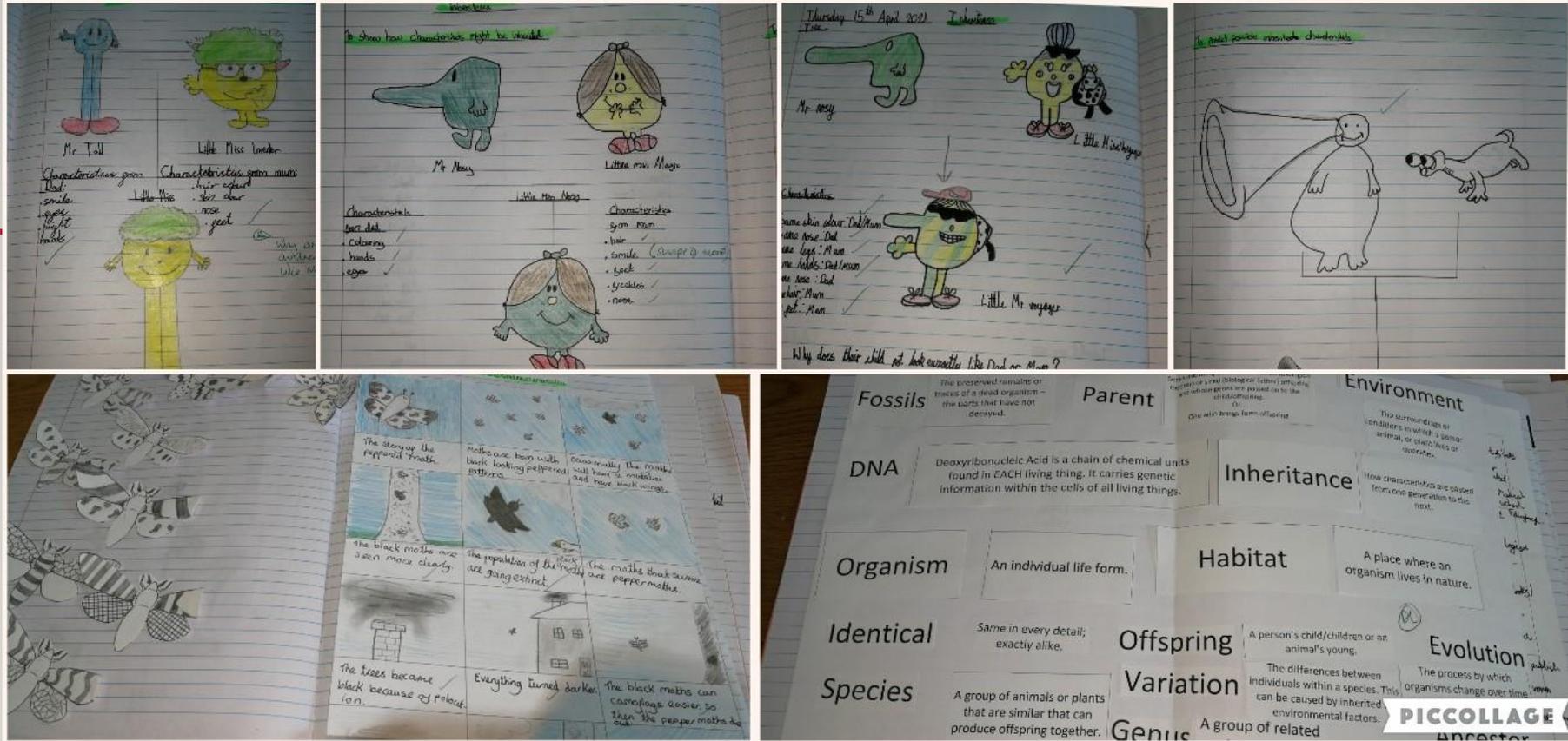
Battery

Lamp

Electron flow

www.explainthatstuff.com

Shalfleet Year 6: Spring and Summer 2021



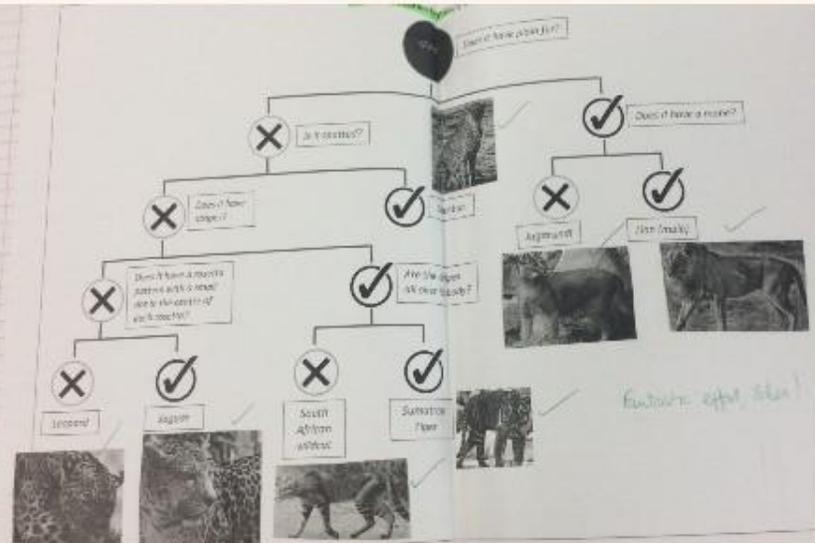
Evolution & Inheritance:

- Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago
- Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
- Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

Shalfleet Year 6: Spring and Summer 2021



Shalfleet Year 6: Summer 2021



Thursday 10 June 2021
 To recognise classification headings

Kingdom
 Animal Kingdom
 Plant Kingdom
 Monera Kingdom
 Fungi Kingdom
 Protist Kingdom

Class → Phylum

Order → Family

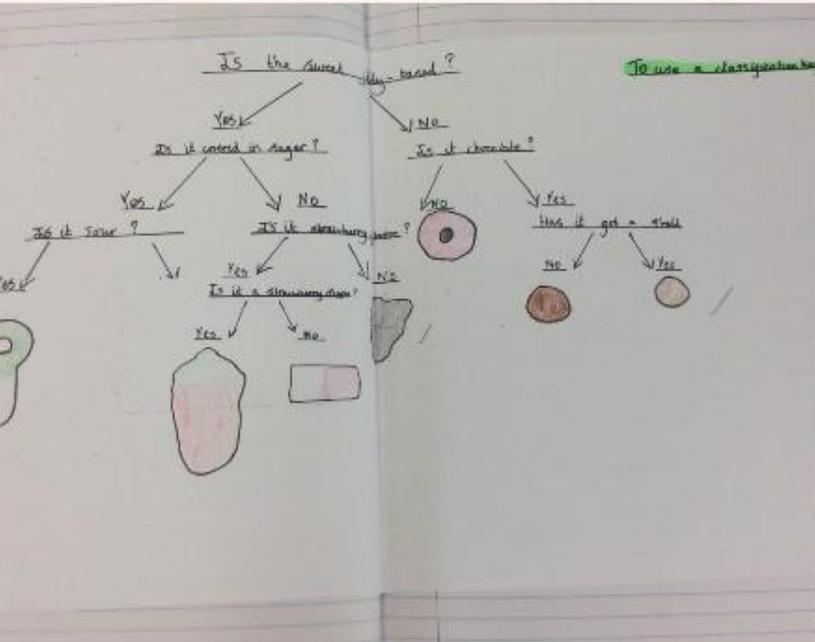
Genus

Koala bear

Kingdom: **Animalia**
 Phylum: **Chordata**
 Class: **Mammalia**
 Order: **Diprotodontia**
 Family: **Phascolarctidae**
 Genus: **Phascolarctos**
 Species: **Phascolarctos cinereus**

Humpback whale

Kingdom: **Animalia**
 Phylum: **Chordata**
 Class: **Mammalia**
 Order: **Artiodactyla**
 Family: **Balaenopteridae**
 Genus: **Megaptera**
 Species: **Megaptera novaeangliae**



Eukaryotes are organisms whose cells have a nucleus enclosed within a nuclear envelope. Eukaryotes belong to the domain Eukarya or Eukarya. Their name comes from the Greek εὐκαρυς and εἶδος. The domain Eukarya makes up one of the three domains.

Domain: **Eukarya**

Kingdom:	Animalia	Plantae	Protista	Fungi
Phylum:	Chordata	Tracheophyta		Basidiomycota
Class:	Mammalia	Magnoliopsida		Agaricomycetes
Order:	Primate	Saxifragales		Agaricales
Family:	Hominidae	Crossulaceae		Amanitaceae
Genus:	Homo	Ribes		Amanita

Odd one out

Reptile: Granite: Mammal: Bat: Grasshopper: Giraffe:

The odd one out is a **crab** as it is the only reptile. All the other are **mammals** who lay eggs.



Shalfleet Year 6: Summer 2021

Thursday 18th July 2021

To separate conception

When an **adult** couple are in a relationship they may make love. This is when they take pleasure in touching each other in a sexual way.

When a woman is having sex, she may have the penis go into her vagina. This is called sexual intercourse. It would feel nice.

After a while, liquid is pushed out of the end of the man's penis. Sometimes all the liquid are millions of sperm.

The sperm swim into the woman's body and then into the fallopian tube.

If there is an egg in one of the tubes, it may get up with one of the sperm. The egg is now fertilised.

When the sperm and the egg meet, they make a new life.

I know the different stages of the menstrual cycle

DAY 1 to 7
First day of a woman's period. The uterus contracts and sends blood through the vagina as blood.

DAY 8 to 13
Around day 7, it fine stops. At this time, an egg is mature in the ovary.

DAY 14
An egg is let by an ovary if pregnant.

DAY 15 to 21
By the egg is not fertilised, that the day in the uterus begins to break down.

DAY 22 to 28
The egg is lost up to 2 days after it is released from the ovary.

THE MENSTRUAL CYCLE

gradually changes during puberty

Boys:

- breasty hair will happen
- As you get older facial hair
- underarm hair
- Testicles expand
- moist things will happen
- Spots will become visible
- Adams apple will be there
- Pubic hair will appear

Girls:

- You will get some spots
- when you get older your breasts will be larger
- You will start to have a period
- As you get older your hair will become greasy
- You will start to have a period
- pubic hair will be there

Sex & Relationships Education

Shaving Foam	Teen magazine	Spot Cream
Sh	Sanitary Towel	Period Pad
		Deodorant

Unit 6: Sexual Orientation and Relationships

	True	False	Neither
1. A girl at the bottom of a class will be a lesbian.		✓	
2. When a woman is pregnant her breasts are sore.	✓		
3. A girl who has a crush on a boy will be a lesbian.			✓
4. A lesbian is a girl who likes to be with a girl.	✓		
5. The skin on your neck will turn pink when you are embarrassed.		✓	
6. A girl who is a lesbian will not like to be kissed.	✓		
7. A girl who is a lesbian will not like to be hugged.	✓		
8. A girl who is a lesbian will not like to be kissed on the cheek.	✓		
9. A girl who is a lesbian will not like to be kissed on the lips.		✓	✓
10. All people are born with a penis.			✓

Thursday 24th June 2021

To compare different stages of life

As a baby	As an 11 year old
• Drink / drink milk	• Make good / eat hard food
• No hair	• Lots of hair
• Crawl	• Walk, run
• Has no gear	• Can be sage
• Simple everywhere	• Draw
• Black and white	• colour
• Doesn't know when to stop	• Has control

Babyhood Adolescence

To classify changes that happen during puberty

Boys:

- Facial hair ✓
- Adams apple ✓
- Underarm hair (sweat) ✓
- Testicles descend ✓
- Voice becomes deeper ✓
- Wet dreams ✓

Girls:

- Curves ✓
- Periods ✓
- Breast become larger ✓

Both:

- breasty hair ✓
- moist things ✓
- Spots ✓
- Height ✓
- Pubic hair ✓
- Bo ✓

More out
lots
Adolescence

SUBJECT LEADER SELF-EVALUATION TOOL

Working towards excellent teaching of science

WHOLE SCHOOL APPROACH

1. Timetable

- Is science taught weekly?
- How much time is allocated?

2. Curriculum

- What are the statutory requirements?
- Do long and medium term plans show progression in both subject knowledge and enquiry skills?
- Are effective cross-curricular links made?

3. Scientific literacy

- Are children using scientific vocabulary with understanding?
- Are children learning to reason and to explain their ideas?

4. Science enquiry

- Are children taught enquiry skills?
- Do children regularly carry out practical investigations using a range of enquiry types?

5. Differentiation

- Is every child's prior knowledge considered when teachers plan units of work?
- Do teachers adapt the pace, challenge and content of activities for pupils, including SEND and EAL?
- Are all children able to demonstrate their science skills and knowledge in an appropriate way?

6. Assessment

- Are teachers using formative assessment to ensure children make progress with their subject knowledge and enquiry skills?
- Is summative teacher assessment reliable?

7. Safe science

- Does the school have access to informed advice and consider safety guidance and risk assessments?

8. Outdoor learning

- Are the school's outdoor spaces and the local environment being used as a learning resource for all science topics?

ROLE OF THE SUBJECT LEADER

1. Subject Leader development

- Does the subject leader have time allocated to the role?
- Does the subject leader have access to relevant CPD?
- Has the subject leader taken part in the PSQM CPD programme?
- Is the subject leader aware of PSTT Fellows and any science clusters in their locality?

2. Supporting colleagues

- Do teachers have access to advice from the subject leader and to relevant CPD?

3. Monitoring teaching and learning

- Does the subject leader review teaching and pupil progress across the school?

4. Resourcing science

- Do children have a range of suitable equipment for practical science?
- Does the subject leader access funding from external sources to support science?

5. Curriculum enrichment

- Does the curriculum link science to real world applications?
- Does the curriculum link science to your locality?
- Do children learn about the nature of science and the way scientists work?
- Does the curriculum support the development of science capital?

RAISING THE PROFILE OF SCIENCE

1. Science clubs

- Do children have the opportunity to join a science club?

2. Science competitions

- Do children take part in local and national science competitions and citizen science surveys?

3. Science visits

- Do children experience science outside school?

4. Science events

- Do children take part in school, local or national science events?

5. Wider community

- Do children share science with parents, e.g. family learning nights, interactive homework?
- Do children work with community groups, e.g. in local parks?
- Does the school publicise its science, e.g. on its website or email newsletters?

Action	Timescale	Individuals/ Team	Budget required	How will we achieve this?	Success and Impact
To ensure the timetabling of Science across the federation allows sufficient time for this core subject	½ termly checks	SP/SW	Subject leader time	<ul style="list-style-type: none"> Termly check of timetables uploaded Meetings with SLT 	<ul style="list-style-type: none"> Book checks – half termly Portfolio evidence submitted
To ensure that Science Literacy is threaded through the wider curriculum	½ termly	Subject leaders: SP/SW DI/DL		<ul style="list-style-type: none"> Develop knowledge organisers showing progression of vocabulary/sentence stems and key questions Promote opportunities for Science to be taught within English sessions (write-ups etc.) 	<ul style="list-style-type: none"> Book checks – half termly Portfolio evidence submitted Pupil Voice Science displays
Formalise assessment in Science across the federation	By Spring 1	SLT SP/SW	Subject leader time. SLT meetings	<ul style="list-style-type: none"> Meetings with SLT – SC/LR Create list of key objectives to add to Excel core subject document Develop use of floor books/evidence opportunities Develop Pupil Voice opportunities 	<ul style="list-style-type: none"> Clear and effective assessment in line with Maths and English core subjects Progress clearly evident and gaps quickly identified Children will have an input into developing the subject and engagement
To develop the leaders in the role	Ongoing	SP/SW Finance SLT	Pitch for PSQM - £850 Training courses – cost unknown	<ul style="list-style-type: none"> Self-evaluation tool – PSTT Liaise and work with CL Team teaching/coaching inhouse 	<ul style="list-style-type: none"> Equipped to review and monitor teaching and learning of science Equipped to resource topics and provide advice about the teaching of science
To audit the CPD needs of teachers in the federation	By Autumn 2	SP/SW Finance SLT	Subject leader time	<ul style="list-style-type: none"> Create teacher's subject self-evaluation Gather responses Source funding/CPD relevant to needs 	<ul style="list-style-type: none"> Supporting quality teaching of science Supporting colleagues to cover a broad science curriculum
To raise the profile of the subject within our whole school community	Ongoing	SP/SW CL	Trips/visitors tbc	<ul style="list-style-type: none"> Liaise with CL British Science Week March 2022 Engage local industry and services 	<ul style="list-style-type: none"> Supporting science capital Access to real world applications Pupil Voice

NEXT STEPS IN THE SUBJECT:

Next Steps	Individuals/ Team	Actions
To ensure that Science Literacy is threaded through the wider curriculum	Subject leaders: SP/SW DI/DL	<ul style="list-style-type: none"> • Develop knowledge organisers showing progression of vocabulary/sentence stems and key questions • Promote opportunities for Science to be taught within English sessions (write-ups etc.)
Formalise assessment in Science across the federation	SLT SP/SW	<ul style="list-style-type: none"> • Meetings with SLT – SC/LR • Create list of key objectives to add to Excel core subject document • Develop use of floor books/evidence opportunities • Develop Pupil Voice opportunities
To develop the leaders in the role	SP/SW Finance SLT	<ul style="list-style-type: none"> • Self-evaluation tool – PSTT • Liaise and work with CL • Team teaching/coaching inhouse
To audit the CPD needs of teachers in the federation	SP/SW Finance SLT	<ul style="list-style-type: none"> • Create teacher's subject self-evaluation • Gather responses • Source funding/CPD relevant to needs