

# SCIENCE

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

# NATIONAL CURRICULUM STATEMENT

## Purpose of study

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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

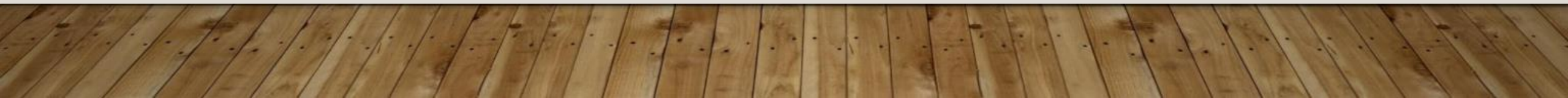
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By the time our children leave our school, our science provision will have encouraged them to develop a questioning mind about ways in which science influences everyday life.

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 and Wellbeing

Curriculum Values

Design principles to inspire & challenge

How do we implement?

Components

Teaching for Learning

Approaches

EYFS/National Curriculum

What is the impact?

Successful Learning

Our curriculum impact can be measured by...

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

Conscious Community, Community Map, Cultural Capital

**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

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

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

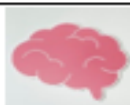
Motivated teams & positive learning culture

Confident, kind, respectful, determined learners



**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.

## Big Ideas



Working scientifically – questioning, formulating investigations, performing tests, recording, concluding and evaluating

Biology – habitats, living things, animals, evolution, humans, plants,

Chemistry – materials and their properties, uses of materials, rocks, states of matter,

Physics – forces, Earth and space, light, electricity, sound, seasonal changes

## Content and Sequencing (Broad, relevant and balanced)



**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)

**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)

**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)

**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) **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)

**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)

## 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.

## Links with English and Maths



Maths – measurement, data analysis, decimals, fractions, percentages, four operations, shape.

Literacy – report writing, research skills,

## Progress



Evidence will be seen in books showing development within scientific enquiry.

Investigations will be recorded and evaluated in a depth suitable for the year group.

Scientific vocabulary will be shown to progress in complexity throughout the year groups.

## Support



Everyone has access to the science National Curriculum. 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.

# PROGRESSION OF SKILLS

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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"> <li>- Knowing similarities and differences in relation to places, objects, materials and living things.</li> <li>- Knowing features of their own immediate environment and how environments might vary from one another.</li> <li>- To make observations of animals and plants, explaining why some things occur and talk about changes.</li> </ul>	<p><b>Plants</b></p> <ul style="list-style-type: none"> <li>- To be able to identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</li> <li>- To be able to identify and describe the basic structure of a variety of common flowering plants, including trees.</li> </ul> <p><b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>- To be able to identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</li> <li>- To be able to identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>- To be able to describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</li> <li>- 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</li> </ul> <p><b>Everyday Materials</b></p> <ul style="list-style-type: none"> <li>- To be able to distinguish between an object and the material from which it is made</li> <li>- To be able to identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</li> <li>- To be able to describe the simple physical properties of</li> </ul>	<p><b>All living things and their habitats</b></p> <ul style="list-style-type: none"> <li>- To be able to explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>- 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</li> <li>- To be able to identify and name a variety of plants and animals in their habitats, including micro-habitats</li> <li>- 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.</li> </ul> <p><b>Plants</b></p> <ul style="list-style-type: none"> <li>- To be able to observe and describe how seeds and bulbs grow into mature plants</li> <li>- To be able to find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul> <p><b>Animals, including humans</b></p> <ul style="list-style-type: none"> <li>- To be able to notice that animals, including humans, have offspring which grow into adults</li> <li>- To be able to find out about and describe the</li> </ul>	<p><b>Plants</b></p> <ul style="list-style-type: none"> <li>- To be able to identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>- 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</li> <li>- To be able to investigate the way in which water is transported within plants</li> <li>- To be able to explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul> <p><b>Animals, including humans</b></p> <ul style="list-style-type: none"> <li>- 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</li> <li>- To be able to identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul> <p><b>Rocks</b></p> <ul style="list-style-type: none"> <li>- To be able to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> </ul>	<p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>- To be able to recognise that living things can be grouped in a variety of ways</li> <li>- 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</li> <li>- To be able to recognise that environments can change and that this can sometimes pose dangers to living things.</li> </ul> <p><b>Animals, including humans</b></p> <ul style="list-style-type: none"> <li>- To be able to describe the simple functions of the basic parts of the digestive system in humans</li> <li>- To be able to identify the different types of teeth in humans and their simple functions</li> <li>- To be able to construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul> <p><b>States of matter</b></p> <ul style="list-style-type: none"> <li>- To be able to compare and group materials together, according to whether they are solids, liquids or gases</li> <li>- To be able to observe that some materials change state when they are heated or cooled, and measure or research the</li> </ul>	<p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>- To be able to describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>- To be able to describe the life process of reproduction in some plants and animals.</li> </ul> <p><b>Animals, including humans</b></p> <ul style="list-style-type: none"> <li>- To be able to describe the changes as humans develop to old age.</li> </ul> <p><b>Properties and changes of materials</b></p> <ul style="list-style-type: none"> <li>- 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</li> <li>- I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>- To be able to use knowledge of solids,</li> </ul>	<p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>- 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</li> <li>- To be able to give reasons for classifying plants and animals based on specific characteristics.</li> </ul> <p><b>Animals, including humans</b></p> <ul style="list-style-type: none"> <li>- 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</li> <li>- To be able to recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>- To be able to describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul> <p><b>Evolution and inheritance</b></p> <ul style="list-style-type: none"> <li>- 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</li> <li>- To be able to recognise that living things produce</li> </ul>



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



<b>Vocabulary</b>	<ul style="list-style-type: none"> <li>- Environment</li> <li>- Living things</li> <li>- Materials</li> <li>- Change</li> <li>- Animal</li> <li>- Plant</li> <li>- Observation</li> <li>- Feature</li> <li>- Similarity</li> <li>- Difference</li> </ul>	<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"> <li>- Outdoor classroom</li> <li>- Non-fiction and fiction books</li> <li>- Whole class internet use to research and find images</li> <li>- Pens and other recording materials</li> <li>- iPads for pictures</li> <li>- Reading labels and captions</li> <li>- Consumables</li> <li>- Visits</li> </ul>	<ul style="list-style-type: none"> <li>- Outdoor classroom</li> <li>- Animal pictures/models</li> <li>- Online research</li> <li>- Book research</li> <li>- Online videos</li> <li>- Posters</li> <li>- Outside visitors</li> <li>- Material samples</li> <li>- Everyday objects using curriculum specific materials</li> <li>- iPads for pictures</li> <li>- Magnifying glasses</li> <li>- Consumables</li> <li>- Visits</li> </ul>	<ul style="list-style-type: none"> <li>- Outdoor classroom</li> <li>- Animal pictures/models</li> <li>- Online research</li> <li>- Book research</li> <li>- Online videos</li> <li>- Posters</li> <li>- Outside visitors</li> <li>- Material samples</li> <li>- Everyday objects using curriculum specific materials</li> <li>- iPads for pictures</li> <li>- Magnifying glasses</li> <li>- Gardening equipment</li> <li>- Seeds and bulbs</li> <li>- Consumables</li> <li>- Visits</li> </ul>	<ul style="list-style-type: none"> <li>- Outdoor classroom</li> <li>- Seeds and bulbs</li> <li>- Plant diagrams</li> <li>- Animal pictures/models</li> <li>- Online research</li> <li>- Book research</li> <li>- Online videos</li> <li>- Posters</li> <li>- Outside visitors</li> <li>- iPads for pictures</li> <li>- Different rock samples</li> <li>- Torches</li> <li>- Mirrors</li> <li>- Magnets</li> <li>- Magnetic/non-magnetic objects</li> <li>- Everyday objects/materials using curriculum specific materials.</li> <li>- iPads for pictures</li> <li>- Skeleton model</li> <li>- Consumables</li> <li>- Dark tent</li> <li>- Visits</li> </ul>	<ul style="list-style-type: none"> <li>- Animal internal pictures/models</li> <li>- Teeth pictures/models</li> <li>- Online research</li> <li>- Book research</li> <li>- Online videos</li> <li>- Posters</li> <li>- Outside visitors</li> <li>- iPads for pictures</li> <li>- Musical instruments</li> <li>- iPads for pictures</li> <li>- Data logger</li> <li>- Apps relevant to sound and light capture</li> <li>- Thermometer</li> <li>- Examples of different liquids, gases and solids</li> <li>- Digital scales</li> <li>- Electrical circuit kit</li> <li>- Bulbs and batteries</li> <li>- Tape measure</li> <li>- Heating and cooling equipment</li> <li>- Filter paper</li> <li>- Sieve</li> <li>- Solar system model</li> <li>- Space camp equipment</li> <li>- Torches</li> <li>- Lever</li> <li>- Pulleys</li> <li>- Gears</li> <li>- Water tray</li> <li>- Stop watch</li> <li>- Consumables</li> <li>- Visits</li> </ul>	<ul style="list-style-type: none"> <li>- Lifecycle pictures</li> <li>- Outdoor classroom</li> <li>- Diagrams of reproduction</li> <li>- Online research</li> <li>- Book research</li> <li>- Online videos</li> <li>- Posters</li> <li>- Outside visitors</li> <li>- iPads for pictures</li> <li>- Data logger</li> <li>- Thermometer</li> <li>- Examples of different liquids, gases and solids</li> <li>- Digital scales</li> <li>- Electrical circuit kit</li> <li>- Bulbs and batteries</li> <li>- Tape measure</li> <li>- Heating and cooling equipment</li> <li>- Filter paper</li> <li>- Sieve</li> <li>- Solar system model</li> <li>- Space camp equipment</li> <li>- Torches</li> <li>- Lever</li> <li>- Pulleys</li> <li>- Gears</li> <li>- Water tray</li> <li>- Stop watch</li> <li>- Consumables</li> <li>- Visits</li> </ul>	<ul style="list-style-type: none"> <li>- Outdoor classroom</li> <li>- Pictures of humans, animals and micro-organisms</li> <li>- Animal organs for dissection</li> <li>- Scalpel</li> <li>- Model/pictures of the human circulatory system</li> <li>- Online research</li> <li>- Book research</li> <li>- Online videos</li> <li>- Posters</li> <li>- Outside visitors</li> <li>- iPads for pictures</li> <li>- Data logger</li> <li>- Digital scales</li> <li>- Electrical circuit kit</li> <li>- Bulbs and batteries</li> <li>- Tape measure</li> <li>- Torches</li> <li>- Mirrors</li> <li>- Stop watch</li> <li>- Consumables</li> <li>- Visits</li> </ul>



# OUR IMPLEMENTATION - ASSESSMENT

Class teachers use assessment to track the achievements of pupils through the science topics. This can influence next steps for pupils and the level of support needed.

*Key science targets for each sequence of lessons and children should be assessed against these.*

*The assessment model is designed to support all pupils to access the science curriculum and also challenge higher attaining pupils.*

The assessment of science is supported by the targets from the science progression map and the assessment document is designed to support staff with accurate assessment measures by identifying children who have achieved targets and importantly inputting the names that have yet to achieve a target.

<div>  <div> <b>FEDERATION CURRICULUM ASSESSMENT</b>  </div> </div>									
Y E	Computing			PE		RE		Art	
	INFORMATION TECHNOLOGY			DANCE		COMMUNICATE		KNOWLEDGE	
		Use the keyboard confidently to type at a suitable pace		Beginning to recognise dance movements and motifs (using sequences when moving)		Describe/ explain my own responses to the concept of belonging.		Give detailed observations about notable artists', artists' and designers' work	
	INFORMATION TECHNOLOGY - GENERAL	Use common keyboard shortcuts		Describe/ explain my own responses to the concept of interpretation.				Offer facts about notable artists', artists' and designers' lives	
		Organise files effectively using folders (p. 1)		Describe/ explain my own responses to the concept of understanding.				SKILLS	
	DATA	Describe a database using more complex searches		Move appropriately and with the required style in relation to the situation, e.g. using various levels, range of travelling and motifs.		Describe/ explain my own responses to the concept of justice.		Use a variety of techniques to add effects, e.g. shading, reflection, labelling and cross-hatching	
		Design and create a database		Beginning to show a change of pace and timing in their movements.		Describe/ explain my own responses to the concept of sound/pattern.		Display movement and progression in drawings	
		Create a graph from a data (both databases and spreadsheets)		Use the space provided to his maximum potential.		Describe/ explain my own responses to the concept of space.		Use a variety of tools and select the most appropriate	
								Use key vocabulary to	



# FEDERATION CURRICULUM ASSESSMENT



Key area  
of subject

Individual  
target

Insert  
names of  
individuals  
not  
achieving  
target

Key sub-  
area of  
subject

Y E	Computing INFORMATION TECHNOLOGY			PE DANCE		RE COMMUNICATE		Art KNOWLEDGE		
	INFORMATION TECHNOLOGY - GENERAL	Use the keyboard confidently to type at a suitable pace		Recognising the appropriate finger movements and multi-finger sequences when typing		Described/ explained my own progress in the context of learning		Give detailed observations about suitable artists', artists' work and designers' work		
		Use common keyboard shortcuts		Demonstrate short movements throughout a dance sequence.		Described/ explained my own progress in the context of learning		Offer facts about suitable artists', artists' work and designers' work		
		Organise files effectively using folders [or S]		Combine floor skills, techniques and movements to create a fluid sequence.		Described/ explained my own progress in the context of learning		SKILLS		
	DATA	Generate a database using more complex queries		Move appropriately and with the required style in relation to the situation, e.g. using various levels, ways of travelling and multi.		Described/ explained my own progress in the context of learning		DRAWING	Use a variety of techniques to add effects, e.g. shading, reflection, halftone and cross-hatching	
		Design and create a database		Recognise the value of pace and timing in their movements.		Described/ explained my own progress in the context of learning			Draft movement and progression in drawing	
		Create a graph from a data [both databases and spreadsheet]		Use the space provided to his maximum potential.		Described/ explained my own progress in the context of learning			Use a variety of tools and select the most appropriate	
									Use key vocabulary in drawing	

Key area  
of subject

Individual  
target

Skills  
specific to  
Key Stage

Science		
<u>KNOWLEDGE</u>		
ALL LIVING THINGS AND THEIR HABITATS	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	

Asking simple questions and recognising that they can be answered in different ways

Observing closely, using simple equipment

Performing simple tests

Identifying and classifying



# MONITORING AND EVALUATING

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Impact of the implementation of the computing curriculum is measured in a variety of ways.

These include:

- Pupil Conferencing
- Work Scrutiny – alongside teacher's planning
- Assessment data
- Learning walks
- Learning environment

**EVIDENCE ATTAINED FROM THESE FOLLOWS ON THE NEXT SLIDES (SPLIT INTO YEAR GROUPS)**



# OUR IMPLEMENTATION: Long Term Planning

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Link to Federation Long Term Planning for Science

<https://drive.google.com/drive/folders/1loE0Zj-8RTvoyzaKmAxL5ZS8MWtZjXc0?usp=sharing>

# OUR IMPLEMENTATION

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Link to Federation Planning for Autumn Term:

<https://drive.google.com/drive/folders/1-qrBJrKjbQwraNKv9V1pZuGjAF4KGEyu?usp=sharing>

Link to Federation Planning for Spring Term:

<https://drive.google.com/drive/folders/1koAF6Sgl6IKnoNBz9-55i31p7CC63nvO?usp=sharing>

Link to Federation Planning for Summer Term:

[https://drive.google.com/drive/folders/1\\_DUoVTQmR6iqsUelgrBV7MqMmjYHGMjF?usp=share\\_link](https://drive.google.com/drive/folders/1_DUoVTQmR6iqsUelgrBV7MqMmjYHGMjF?usp=share_link)





# FEDERATION COVERAGE – AUTUMN TERM

## EYFS Shalfleet





# FEDERATION COVERAGE – AUTUMN TERM

## EYFS Shalfleet





# FEDERATION COVERAGE – AUTUMN TERM

## EYFS Yarmouth





# FEDERATION COVERAGE – SPRING TERM

## EYFS Yarmouth: Child-Led and Adult-Led opportunities in Science





# FEDERATION COVERAGE – SPRING TERM

## EYFS Yarmouth: Adult-Led Investigations based on interests





# FEDERATION COVERAGE – SPRING TERM

## EYFS Yarmouth: Adult-Led investigations linked to a text





# FEDERATION COVERAGE – SPRING TERM

## EYFS Shalfleet: Adult-Led Investigations based on seasonal changes in our environment





# FEDERATION COVERAGE – SPRING TERM

## EYFS Shalfleet: Adult-Led Investigations based on interests



# SCIENCE SKILLS IN KEY STAGE 1

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- 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 I

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



# FEDERATION COVERAGE – AUTUMN TERM

## Year One Yarmouth: Everyday Materials

Monday 12th September 2022

I can identify and name different materials.

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

Wood

Plastic

glass

water

rock

metal

glass

plastic

metal

wood

rock

water

What is your chair made from?  
PPU3500

Tuesday 20th September 2022

I can tell the difference between an object and the materials it is made from.

Look at the pictures and read the sentences. Choose the right words from the word bank at the bottom of the page to make the sentences make sense.

The scissors are made from plastic and metal.

The window is made from wood.

The table is made from wood and plastic.

metal	scissors	table
glass	wood	rock


It is made from plastic and metal.

# FEDERATION COVERAGE – AUTUMN TERM

## Year One Shalfleet: Everyday Materials

Autumn 1

Materials and their properties



### Labelling Materials

I can identify and name different materials.

Match the label to the same material.

Label	Material
plastic	plastic
metal	metal
glass	glass
wood	wood
rock	rock

What is the object? Draw a picture of the object. What material is the object made from?

Object	Material
glass	glass
log	wood
water in a glass	water

### Labelling Materials

I can identify and name different materials.

Match the label to the same material.

Label	Material
plastic	plastic
metal	metal
glass	glass
wood	wood
rock	rock

What is the object? Draw a picture of the object. What material is the object made from?

Object	Material
cup	plastic
paper	paper
pot	metal
cup	plastic
pen	plastic

PICCOLLAGE



# FEDERATION COVERAGE – AUTUMN TERM

## Year One Yarmouth: Seasonal Changes

### Seasonal Changes - Autumn and Winter

Key Vocabulary	
seasons	There are four seasons each year, autumn, winter, spring and summer.
autumn	In autumn, the weather begins to get colder. The leaves start to fall from the trees. The amount of daylight becomes less. This means the daytimes are shorter and the night times are longer.
winter	In winter, the weather is much colder. Sometimes it is cold enough to freeze, leaving frost and ice on the ground. It sometimes snows. Many trees have bare branches as all their leaves have fallen off. The daytimes are the shortest in the year and the night times are the longest.
weather	The weather includes the temperature outside, the wind direction and strength, as well as rain, cloud, snow and sun.
daylight	Daylight is when it is light outside. The amount of daylight changes with each season.

The Four Seasons	
autumn September October November	winter December January February
spring March April May	summer June July August

Autumn

Winter

### Weather Today:

it has been cloudy

What changes have people had to make to adapt to the weather conditions?  
People wear coats

### Weather Chart

	Monday	Tuesday	Wednesday	Thursday	Friday
Date					
Weather					
Temperature	9	9	11	12	10
Rainfall	2	4	1	2	3

### Identifying Signs of Autumn

Tick the boxes if you see any of these signs of autumn on your autumn walk

Red leaves <input checked="" type="checkbox"/>	Brown leaves <input checked="" type="checkbox"/>	Yellow leaves <input type="checkbox"/>	Acorns <input type="checkbox"/>
Orange leaves <input type="checkbox"/>	Conker husks <input type="checkbox"/>	Conkers <input type="checkbox"/>	Squirrels <input type="checkbox"/>
Pine cones <input checked="" type="checkbox"/>	Leaves on the ground <input checked="" type="checkbox"/>	Blackberries <input type="checkbox"/>	Mushrooms <input type="checkbox"/>

### Year 1 identifying seasonal change

### Seasonal Changes - Autumn and Winter

Key Vocabulary	
seasons	There are four seasons each year, autumn, winter, spring and summer.
autumn	In autumn, the weather begins to get colder. The leaves start to fall from the trees. The amount of daylight becomes less. This means the daytimes are shorter and the night times are longer.
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daylight	Daylight is when it is light outside. The amount of daylight changes with each season.

The Four Seasons	
autumn September October November	winter December January February
spring March April May	summer June July August

Autumn

Winter

### Weather Today:

it has been cloudy

What changes have people had to make to adapt to the weather conditions?  
People wear coats

### Weather Chart

	Monday	Tuesday	Wednesday	Thursday	Friday
Date					
Weather					
Temperature	9	9	11	12	10
Rainfall	2	4	1	2	3

### Identifying Signs of Autumn

Tick the boxes if you see any of these signs of autumn on your autumn walk

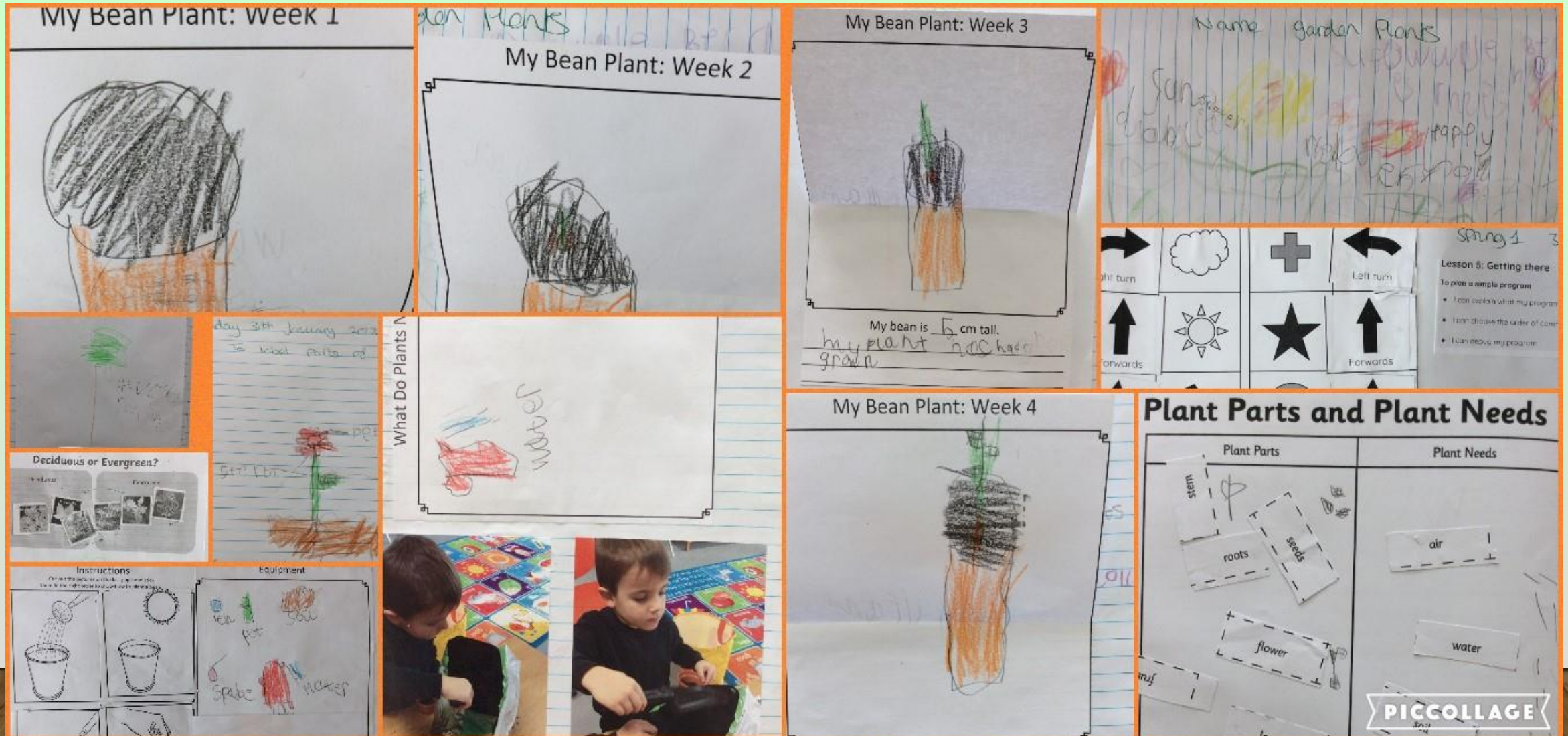
Red leaves <input checked="" type="checkbox"/>	Brown leaves <input checked="" type="checkbox"/>	Yellow leaves <input type="checkbox"/>	Acorns <input type="checkbox"/>
Orange leaves <input type="checkbox"/>	Conker husks <input type="checkbox"/>	Conkers <input type="checkbox"/>	Squirrels <input type="checkbox"/>
Pine cones <input checked="" type="checkbox"/>	Leaves on the ground <input checked="" type="checkbox"/>	Blackberries <input type="checkbox"/>	Mushrooms <input type="checkbox"/>

### Year 1 identifying seasonal change



# FEDERATION COVERAGE – SPRING TERM

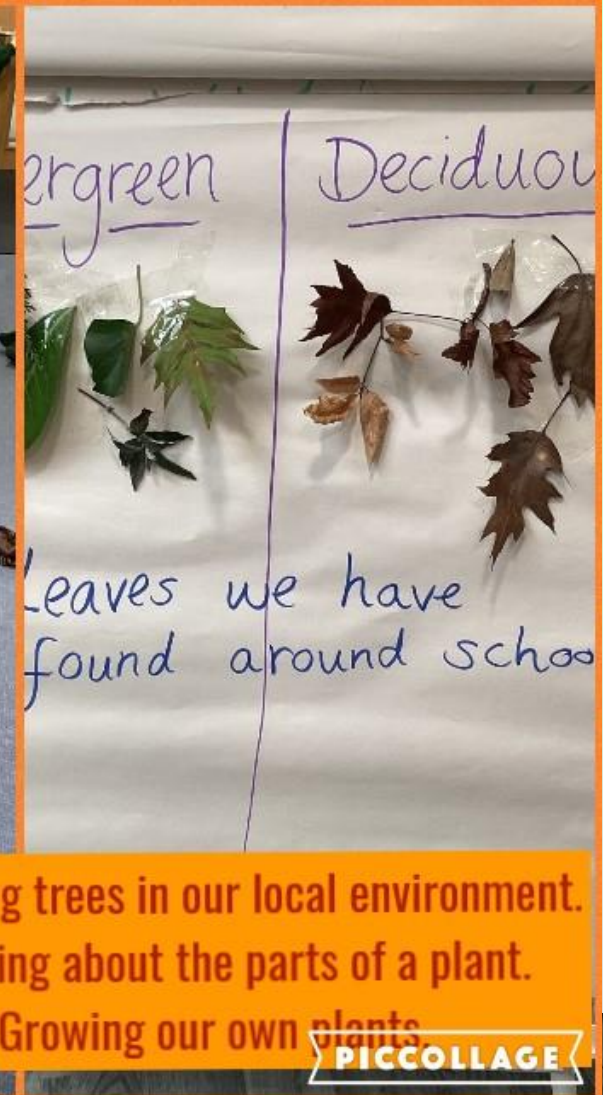
## Year One Yarmouth: PLANTS





# FEDERATION COVERAGE – SPRING TERM

## Year One Shalfleet: PLANTS



Observing trees in our local environment.  
Learning about the parts of a plant.  
Growing our own plants.

PICCOLLAGE

# SCIENCE IN YEAR 2

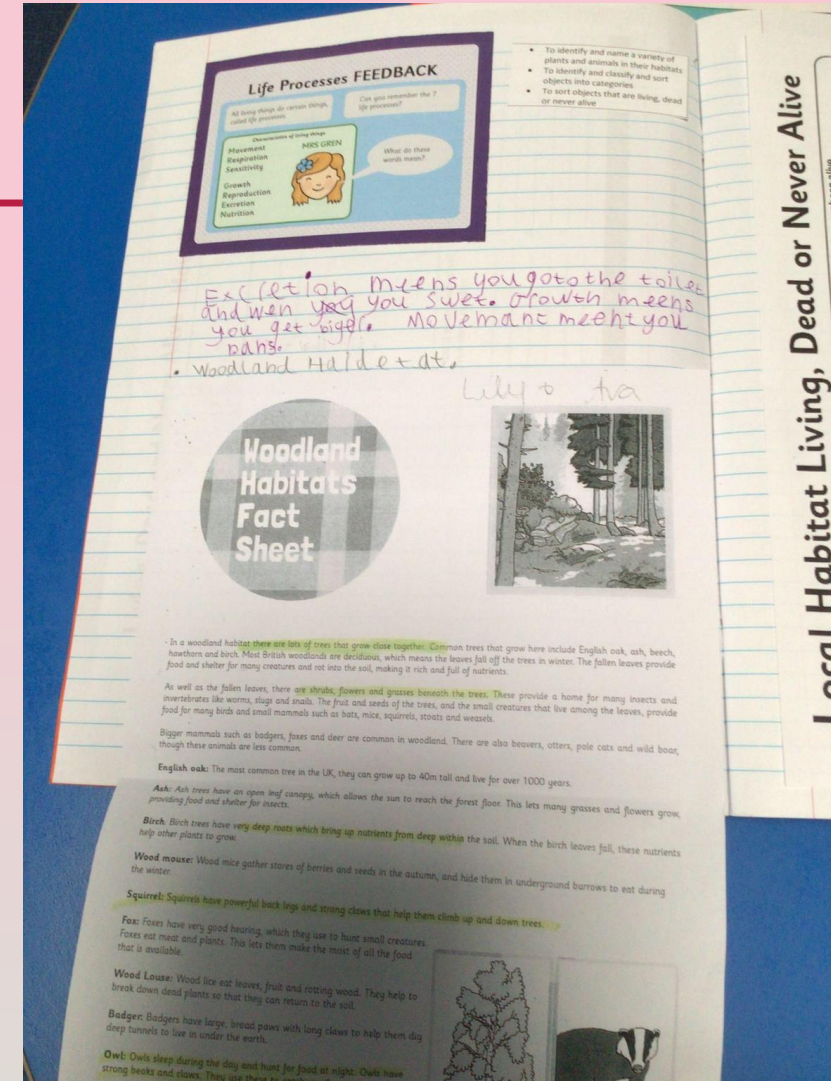
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- All living things and their habitats
- Animals including humans
- Plants
- Uses of everyday materials
- Plants revisited



# FEDERATION COVERAGE – AUTUMN TERM

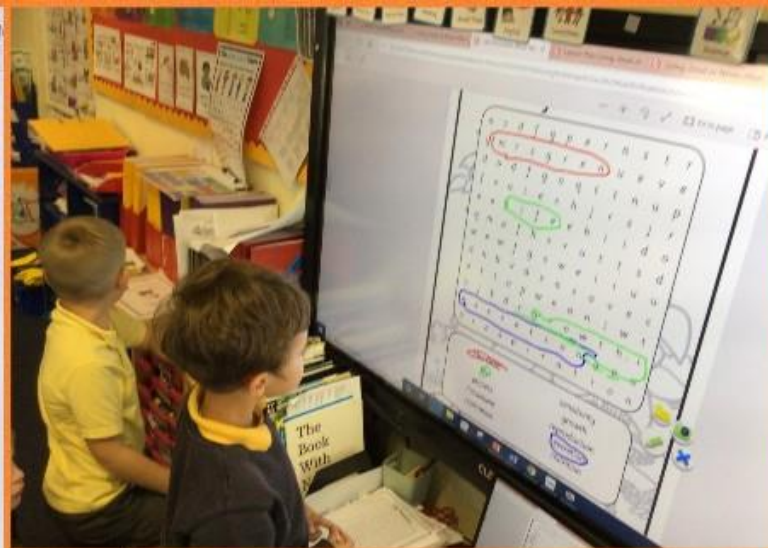
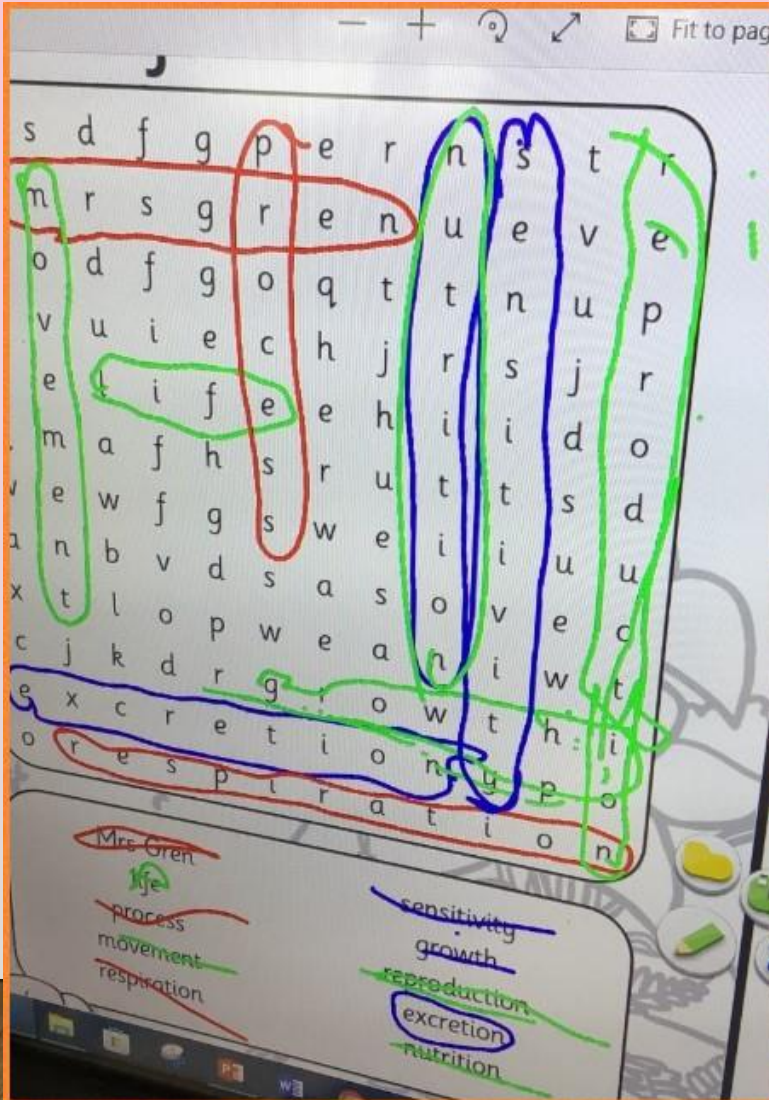
## Year Two Yarmouth: All Living Things and Their Habitats





# FEDERATION COVERAGE – AUTUMN TERM

## Year Two Yarmouth: All Living Things and Their Habitats



**All  
Living  
Things  
&  
Their  
Habitats**

We can move!  
We breathe oxygen  
We have 5 senses  
We grow  
We have babies when  
we are adults  
We get rid of waste  
by excretion  
We get our nutrition  
from food and drink

PICCOLLAGE




# FEDERATION COVERAGE – AUTUMN TERM

## Year Two Shalfleet All Living Things and Their Habitats

Oliver's

What is a microhabitat like?



damp muddy  
cool wet  
small dark

undern

Why do you think it is like this and why do minibeasts like it?

minibeasts like microhabitats because they can hide in the right temperature and the can find food and water.

### Microhabitats Enquiry

Edward


I can identify animals in their habitats.

Look carefully at your two habitats. Count up the number of each kind of mini

Minibeast	Habitat 1	Habitat 2
Woodlouse	11	
Slug	11	
Snail	11	
Spider	5	
Beetle	11	
Fly		
Bee		
Millipede		
Butterfly	5	
Caterpillar		


J.10.22

How Do I Survive?




a shark a shark  
Dung live in  
the rainforest  
it lives in  
the ocean but  
the ocean is  
so big.

How Do I Survive?



a polar bear Dung  
live in the  
desert because  
it ~~was~~ to hot  
fres the polar  
bear.

How Do I Survive?

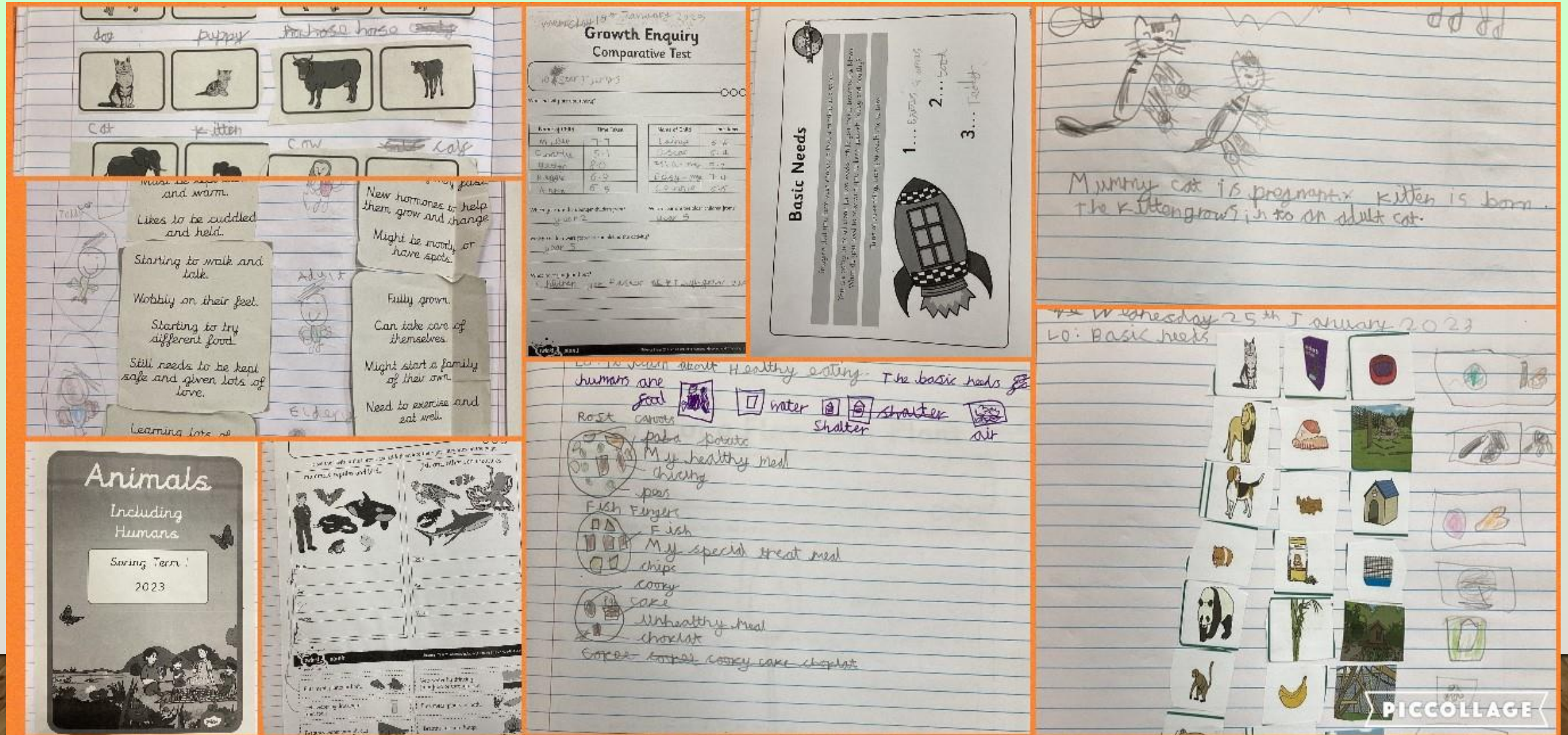


PICCOLLAGE



# FEDERATION COVERAGE – SPRING TERM

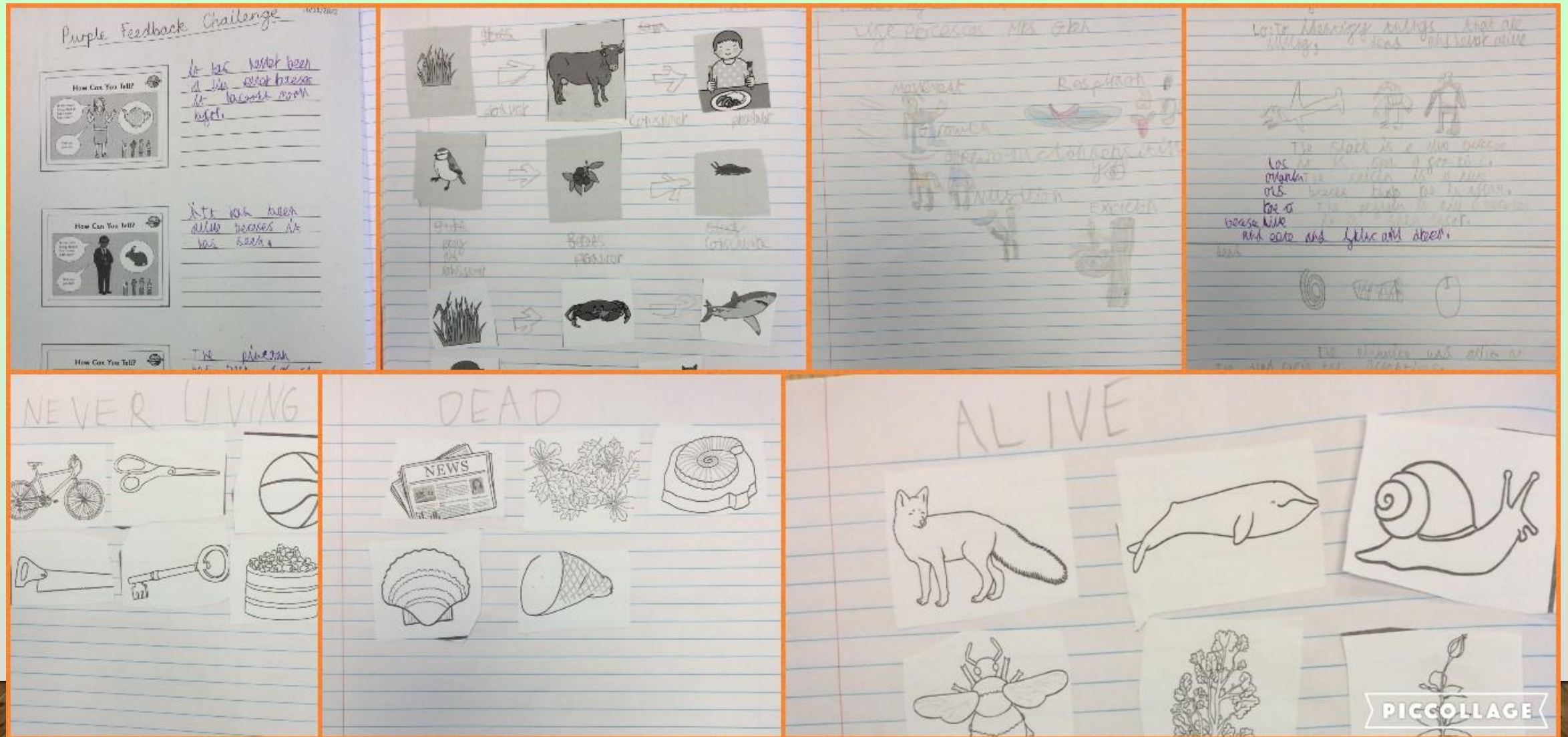
## Year Two Shalfleet: Animals Including Humans





# FEDERATION COVERAGE – SPRING TERM

## Year Two Yarmouth:





# FEDERATION COVERAGE – SPRING TERM

Year Two Yarmouth Animals Including Humans **HUMAN LIFE CYCLE**





# FEDERATION COVERAGE – SPRING TERM

## Year Two Yarmouth Animals Including Humans

The image shows an interactive whiteboard with a blue background. At the top, there is a row of icons representing different school activities: Register, Collective Worship, Wake and Shake, English, Break Time, PE, Lunchtime, Phonics, History, Tidy Up Time, and Home Time. The main text on the board reads: "It's 2023... No one from here has ever set foot on the icy expanse of the Arctic Circle. The world renowned naturalist David Attenborough has invited you to accompany him... It is cold! Polar bears live in this habitat. It is at the top of Earth." Handwritten in green ink are several questions: "Have you seen any polar bears?", "Because polar bears live in the Arctic.", "What animals live there?", "Why do you want to go there?", "What do you eat in the Arctic?", "What will we have to eat?", and "Is there fruit?". A small image of a person in a blue jacket and hat standing in the snow is also present. In the bottom left corner, there is a box with text: "I can use my own knowledge or information and vocabulary provided by my teacher to understand books/texts I read or hear." and "I can ask questions about a text and predict what might happen to follow my questions." Below this, there is a "CHALLENGE" section with the text: "To learn by using what we know to help us understand."

It's 2023...

No one from here has ever set foot on the icy expanse of the Arctic Circle.

The world renowned naturalist David Attenborough has invited you to accompany him...

It is cold!

Polar bears live in this habitat.

It is at the top of Earth.

Have you seen any polar bears?

Because polar bears live in the Arctic.

What animals live there?

Why do you want to go there?

We are interested.

What do you eat in the Arctic?

What will we have to eat?

Is there fruit?

I can use my own knowledge or information and vocabulary provided by my teacher to understand books/texts I read or hear.

I can ask questions about a text and predict what might happen to follow my questions.

**CHALLENGE**

To learn by using what we know to help us understand.

Prior learning linked to English when reading and writing about the **Arctic Habitat**.

# SCIENCE

## SKILLS IN KEY STAGE 2

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- 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

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

# FEDERATION COVERAGE – AUTUMN TERM

## Year Three Yarmouth: Rocks and Soil

igneous rock	Rock that has been formed from molten material or lava.
sedimentary rock	Rock that has been formed by layers of sediment being pressed down hard and sticking together. You can see the layers of sediment in the rock.
metamorphic rock	Rock that started out as igneous or sedimentary rock but changed due to being exposed to extreme heat or pressure.
magma	Molten rock that remains underground.
lava	Molten rock that comes out of the ground is called lava.
sediment	Natural solid material that is moved and dropped off in a new place by water or wind, e.g. sand.
permeable	Allows liquids to pass through it.
impermeable	Does not allow liquids to pass through it.

Natural Rocks			Human-Made Rocks
Igneous	Sedimentary	Metamorphic	
Obsidian	Chalk	Marble	Brick
Granite	Sandstone	Quartzite	Concrete
Basalt	Limestone	Slate	Cobble Stone

Some words you might use to discuss the properties of a rock:  
hard, soft, permeable, impermeable, durable (meaning resistant to weathering), high density, low density. Density measures how 'bulky' the rock is (how tightly packed the molecules are).

To look at all the planning resources linked to the Rocks unit, [click here](#).

Hand-drawn rock classification chart with handwritten labels:

- 2. *rain aid up* (pointing to a rock sample)
- 3. *Bumpy* (pointing to a rock sample)
- 5. *This rock fossiliferous limestone* (pointing to a rock sample)
- 6. *This rock Granite* (pointing to a rock sample)

### Rocks

K	W	L
What I know	What I want to know	What I have learnt
<i>A knistle is a form of a rock same for gems. jasper is a gem.</i>	<i>What is the world's most expensive gem? Is it gold and gems are artificial.</i>	

### Rocks and Soil

absorbent, permeability, permeable, non-permeable

particles, cliffs, hills, sandstone, limestone, marble, granite, clay

**Igneous Rock**  
Igneous rock is formed from molten material (magma or lava) that has cooled and solidified. It can be formed deep inside the Earth (intrusive) or on the surface (extrusive).

**Sedimentary Rock**  
Sedimentary rock is formed from layers of sediment (sand, silt, clay) that have been pressed together and cemented over time.

**Metamorphic Rock**  
Metamorphic rock is formed from existing rocks that have been changed by heat and pressure deep inside the Earth.

PICCOLLAGE



# FEDERATION COVERAGE – AUTUMN TERM

## Year Three Shalfleet: Rocks and Soil

**Palaeontology**  
(pay-lee-on-tolo-jee)

*the scientific study of fossils*

**Palaeontologist**  
(pay-lee-on-tolo-jist)

*A person that studies fossils*

Chemical Fossils	Body Fossils	Trace Fossils
Petroleum oil	Replacement	Coal
Footprints	Whole Body	Coprolites

Thursday 6 October 2023

To explain many meanings for contribution to palaeontology

**Types of Fossils**

- body Fossils**  
the remains of animals or plants
- Trace Fossils**  
Show animal activity  
Footprints and
- Chemical Fossils**  
Matter containing carbon

**Rock Cycle:**

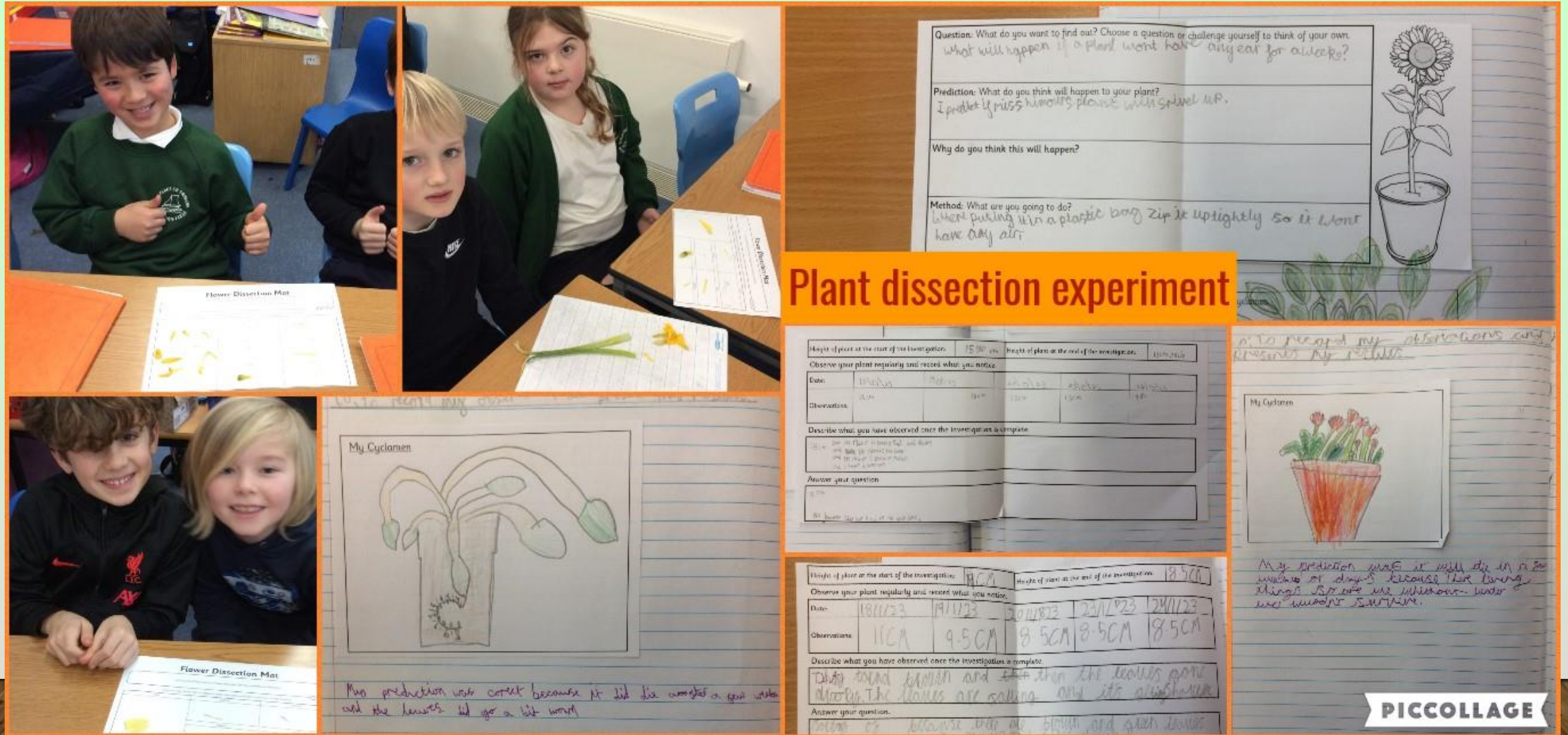
- Magma (checked)
- Igneous Rock (checked)
- Sedimentary Rock (checked)
- Metamorphic Rock (checked)
- Sediment (checked)

Processes shown: volcanic eruption, sedimentation, metamorphism, and melting.

**PICCOLLAGE**

# FEDERATION COVERAGE – SPRING TERM

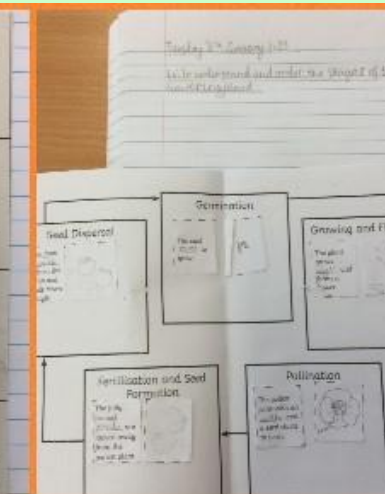
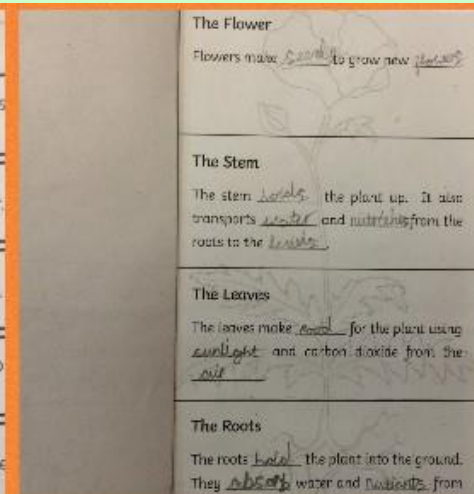
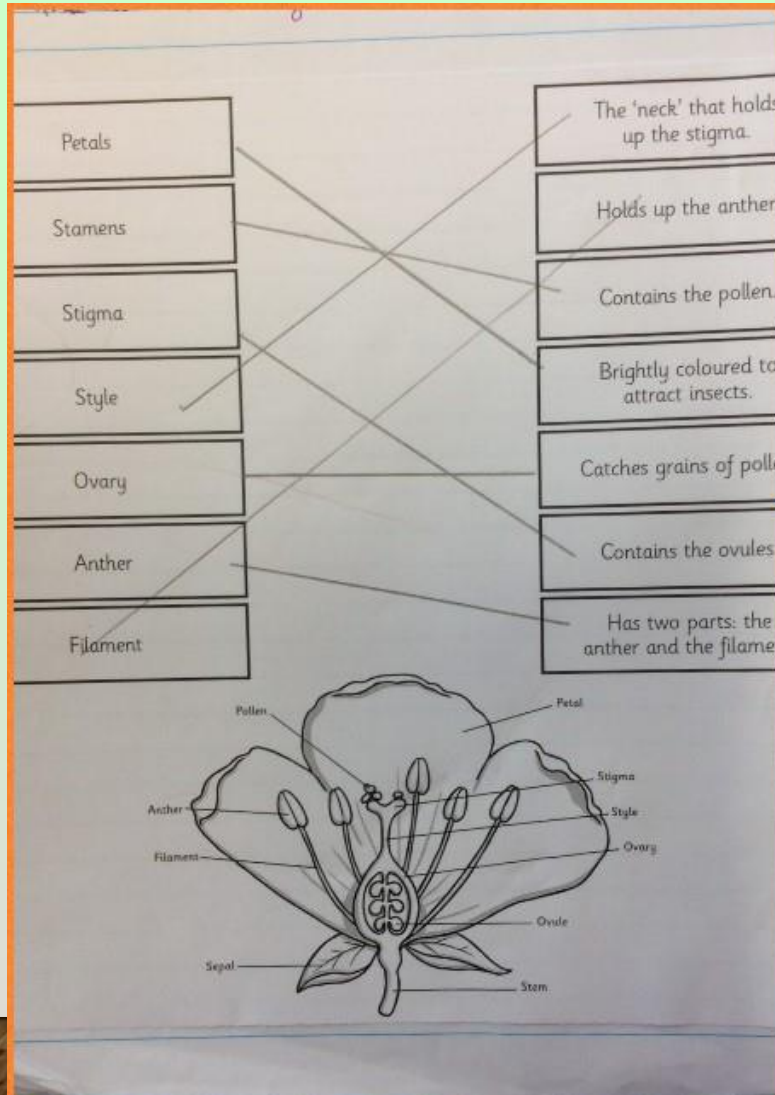
## Year Three Shalfleet: Plants





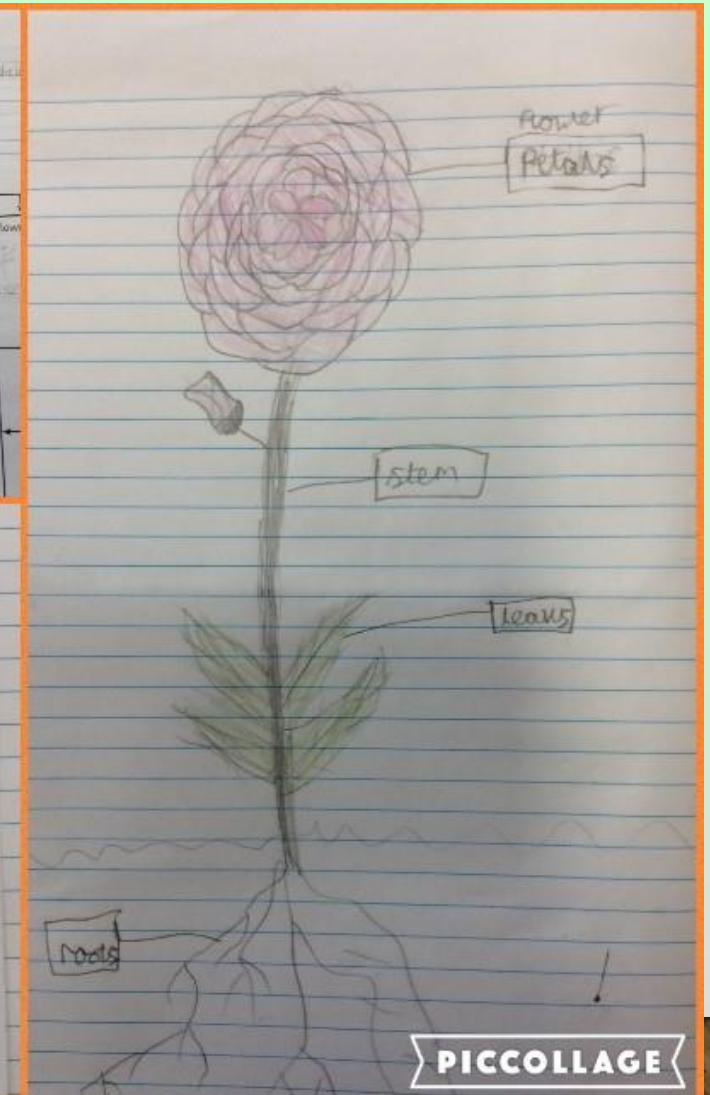
# FEDERATION COVERAGE – SPRING TERM

## Year Three Shalfleet: Plants



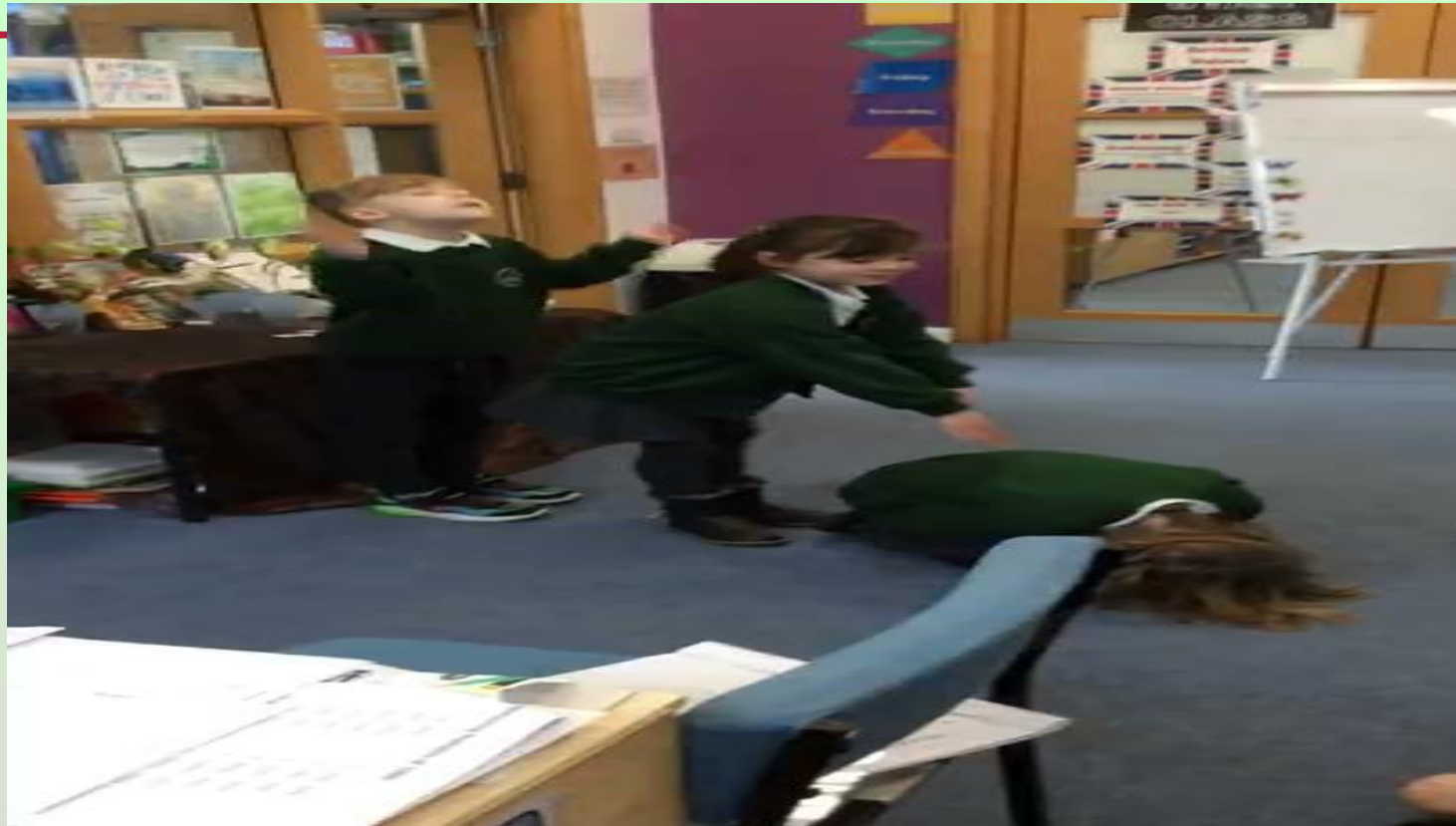
- When the insect gets hungry again, it gets attracted to another flower's bright colours and fragrant smell.
- As the insect feeds on the nectar in this new flower, the pollen stuck to the insect from the first flower rubs off onto the female parts of the second flower (the stigma).
- Part of this pollen travels down the style and then into the ovary.
- The tiny piece of pollen joins onto an egg in the ovary. The plant has now been fertilised.
- The ovary of the flower turns into seeds which will then be dispersed so that new plants will be able to grow somewhere else.

Word Bank			
petal	stigma	nectar	pollen
anthers	fertilised	ovule	colours



# FEDERATION COVERAGE – SPRING TERM

**Year Three Shalfleet:** Plants - Water Transportation Process





# FEDERATION COVERAGE – SPRING TERM

## Year Three Yarmouth: Plants

1. The flower petals bright colours and fragrant scents... attracts the butterflies and bees

2. The insect arrives on the flower to... drink the nectar

3. As the insect is gathering the nectar it rubs against the anthers which... picks up the pollen from the anthers

4. When the insect gets hungry again, it gets attracted to another flower's... bright colour petals and fragrant smell

5. ...

The Bee movie clips showed us that pollination is important because the first show we grew and and the bee how pollination is done

**Plants**

**Key Vocabulary**

roots	These anchor the plant into the ground and absorb water and nutrients from the soil.
stem	This holds the plant up and carries water and nutrients from the soil to the leaves. A trunk is the stem of a tree.
leaves	These make food for the plant using sunlight and carbon dioxide from the air.
flowers	These make seeds to grow into new plants. Their petals attract pollinators to the plant.
nutrients	These substances are needed by living things to grow and survive. Plants get nutrients from the soil and also make their own food in their leaves.
evaporation	When a liquid turns into a gas.

**How Water Moves through a Plant**

1. The roots absorb water from the soil.
2. The stem transports water to the leaves.
3. Water evaporates from the leaves.
4. This evaporation causes more water to be sucked up the stem.

The water is sucked up the stem like water being sucked up through a straw.

**What Does a Plant Need to Grow?**

water, light, nutrients from the soil, air, room to grow

Different plants vary in how much of these things they need. For example, cacti can survive in areas with little water, whereas water lilies need to live in water.

**Wind**

sycamore

**Eaten by Animals**

apple

**Water**

coconut

**Exploding**

peas

popped

**L.O. To make careful observations about the growth of cress.**

**Wednesday 25th January**  
warmth plenty  
30000 warmth sensor

**Monday 30th January**  
10000 warmth sensor

Warmth sensor has a green light and gave a beep. I'm surprised the stems are very short because they have slightly darker leaves.

Warmth sensor roots are orange and stretched up and there is a bit of green at the top. Some seeds haven't grown at all and only one short.

**Plants**

K	W	L
What I know	What I want to know	What I have learnt
1. What are the stages of the plant's life?	1. What are the stages of the plant's life?	1. About the plant's life cycle
2. Plants have roots and leaves.	2. How do plants drink water?	2. Pollination
3. Most plants have leaves.	3. What plants are called?	3. How to grow a plant
	4. How do plants drink water?	4. Seed dispersal
		5. Class investigation
		6. Self-reflection

**PICCOLLAGE**



# FEDERATION COVERAGE – SPRING TERM

Year Three Yarmouth: **LIGHT** To be able to notice that light is reflected from surfaces





A collage of nine photographs showing children's experiments with light and shadows. The photos depict various activities: a dinosaur shadow on a book, a child's shadow on a wall, a CD being used as a lens, a child holding a CD, a Stegosaurus shadow, a child's face in shadow, and a child working with a cardboard box. The PICCOLLAGE logo is in the bottom right corner.

**PICCOLLAGE**

# SCIENCE IN YEAR 4

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



## FEDERATION COVERAGE – AUTUMN TERM

# Year Four Yarmouth: Living Things

**Left Page (Handwritten Notes):**

Q: To understand the characteristics of a living thing and to begin to consider that living things can be grouped in a variety of ways.

**How do we know something is alive?**

- Eli + Birth
- T.T moves by its self
- Felt
- Eli - water
- Breathing
- Eli - Earth
- Hammertele Eli Die and Live.
- \* reproduce
- T.T eat?
- T.T drinking
- T.T breathe
- T.T heart beat breathing (icks die)
- T.T my chest chitons / Cose
- T.T communicate?
- Sounds
- T.T heart beat
- T.T reproduce

**Middle Section (Printed Text):**

Animals usually move their whole body from one place to another, whereas plants move towards the light. Plant roots grow down into the soil towards water.

Animals have babies. Plants produce seeds which grow into new plants.

Both plants and animals react and respond to what is happening around them, e.g. plants turn and grow towards light; animals see and hear danger and move away.

Baby animals grow into adult animals. Seedlings grow into bigger plants.

Plants and animals use oxygen (from air) to help turn food into energy.

Plants and animals get rid of (excrete) carbon dioxide (a waste gas). Humans breathe it out. Deciduous trees get rid of waste products when their leaves fall in autumn. Animals also wee!

Green plants make their own food using sunlight, carbon dioxide and water. Animals eat plants and/or other animals.

**Right Page (Science Board):**

**Science**

**Classification:**

- Kingdom
- Phylum
- Class
- Order
- Family
- Genus
- Species

**Life Processes:**

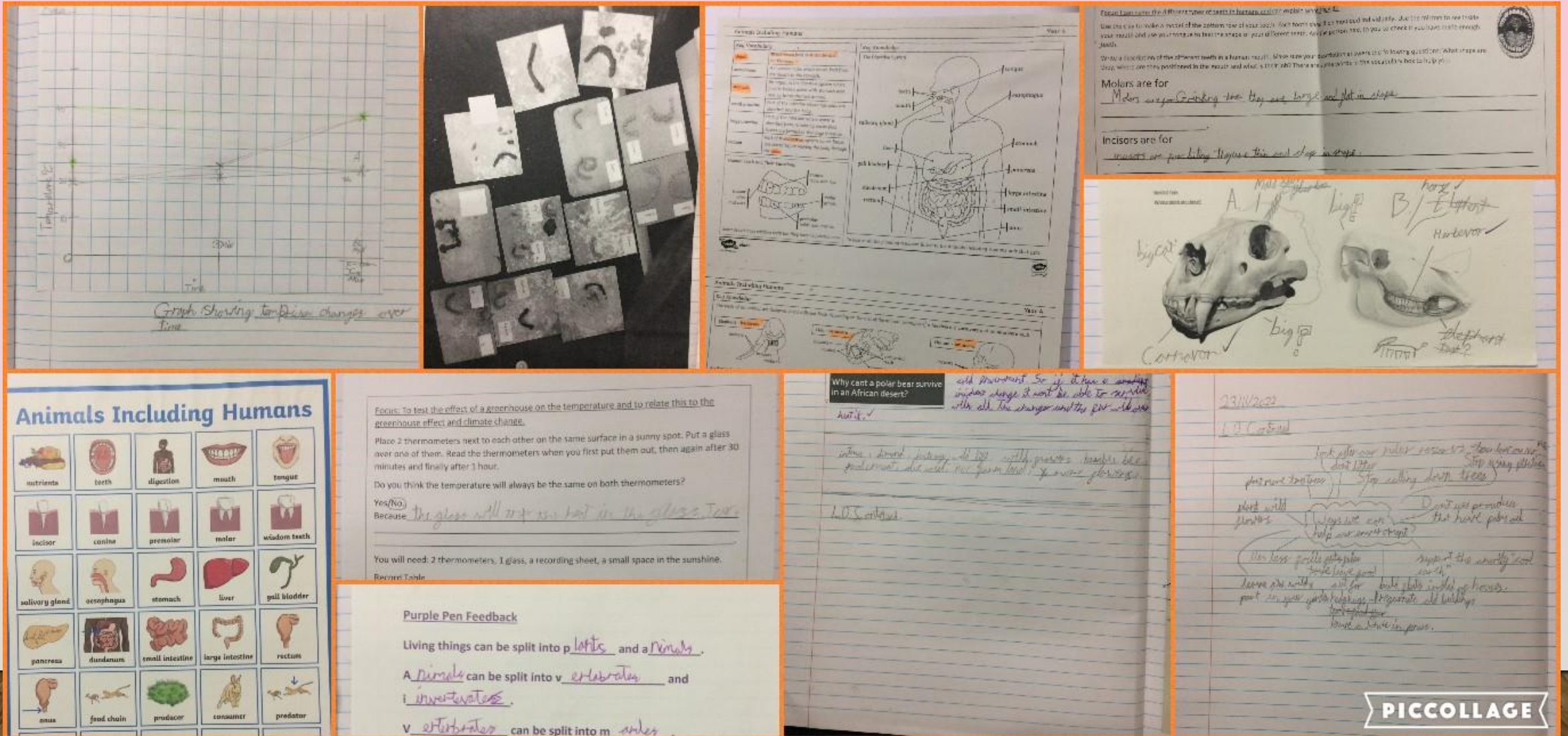
- Movement
- Reproduction
- Sensitivity
- Growth
- Respiration
- Excretion
- Nutrition

**PICCOLLAGE**



# FEDERATION COVERAGE – AUTUMN TERM

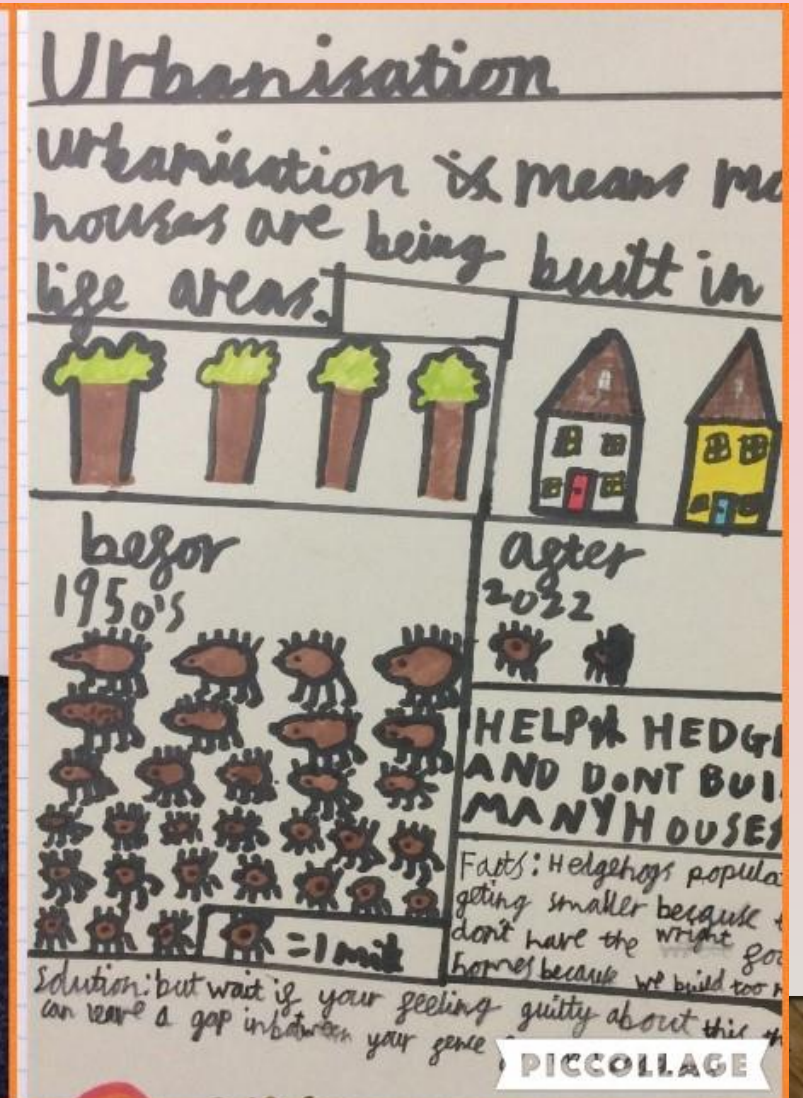
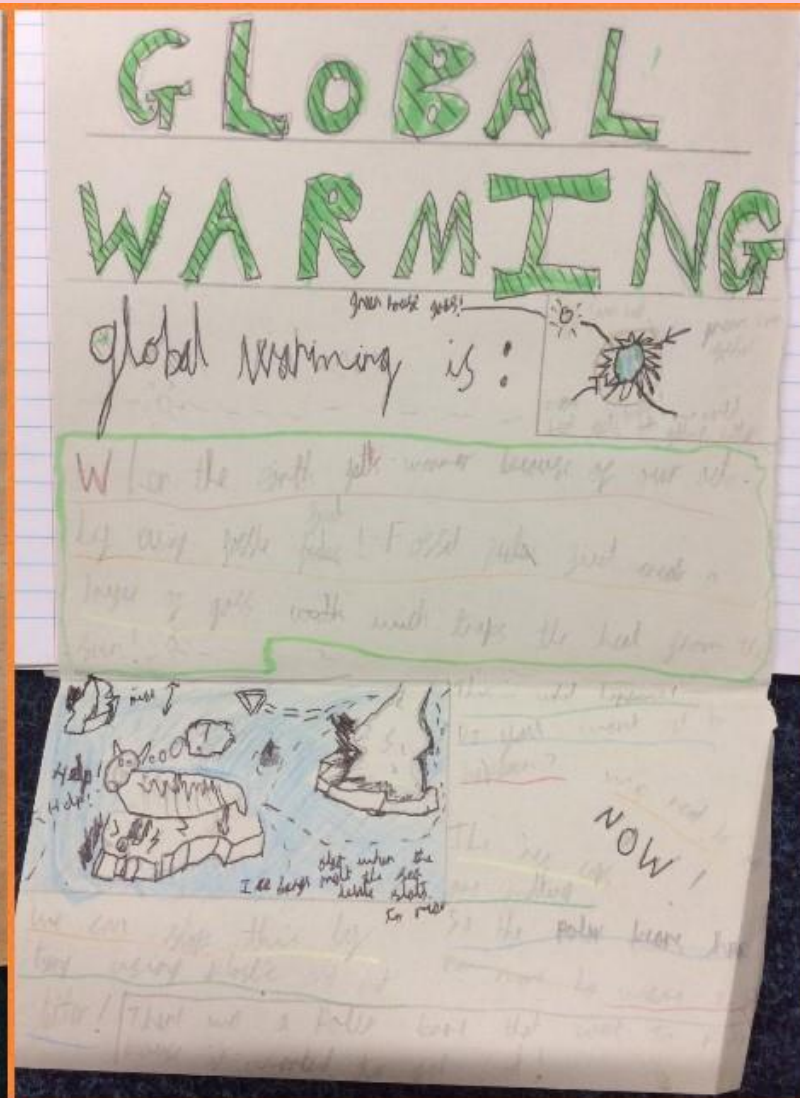
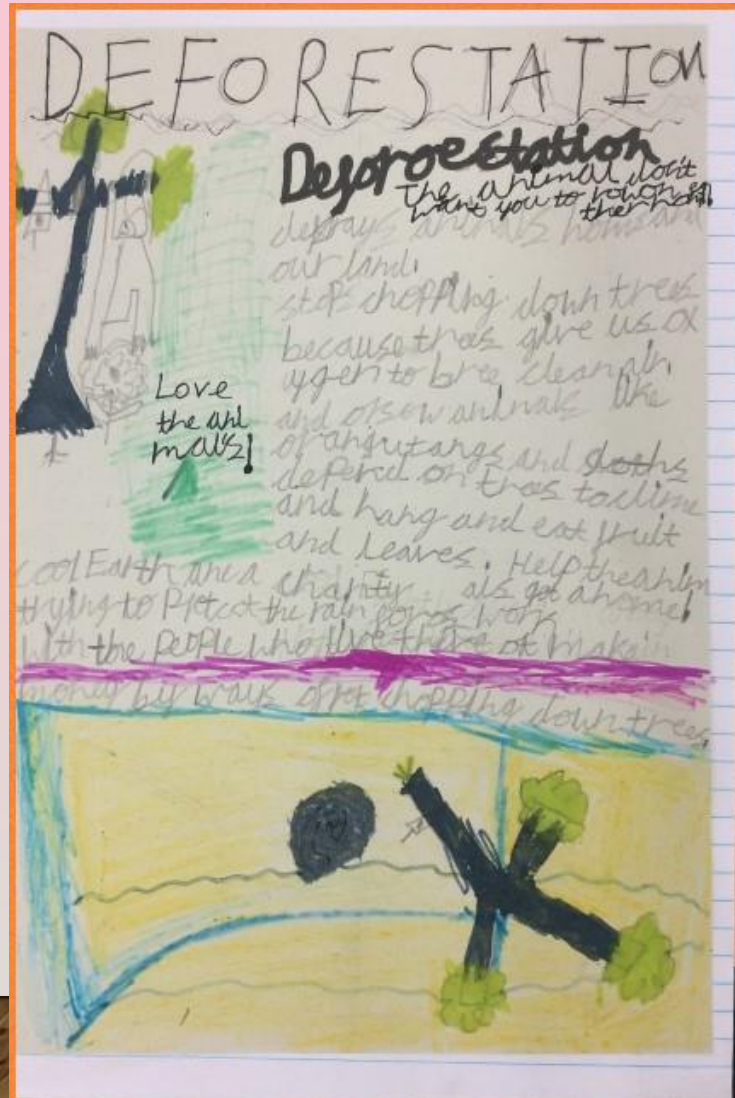
## Year Four Yarmouth: Animals Including Humans





# FEDERATION COVERAGE – AUTUMN TERM

## Year Four Yarmouth:





# FEDERATION COVERAGE – AUTUMN TERM

## Year Four Shalfleet: Living things and their habitats

To identify the seven processes of living things.

**When is a Thing a Living Thing?**

If a thing is living it will move, however far or fast or slight.

a falcon swooping on a shrew, the turning of a leaf to light.

All living things can reproduce, remake themselves as young and new, the growing of a rose from seed, your mother giving birth to you.

A living thing must feed or die so bats go hunting moths at night, sheep must graze and insects nibble and green plants conjure food from light.

And life means growth, things getting bigger, from tiny sapling to enormous tree, from foal to horse, from calf to cow, you, from what you are to what you'll be.

by Trevor Parsons

*The missing processes are excretion and sensitivity and reproduction*

*Labels: Sensitivity, Movement, Reproduction, Growth, Nutrition*

Thursday 27 September 2022

To recap the seven life processes

Life Processes	What it means
<b>Movement</b>	Animals usually move their whole body from one place to another, whereas plants move towards the light. Plant roots grow down into the soil towards water.
<b>Reproduction</b>	Animals have babies. Plants produce seeds which grow into new plants.
<b>Sensitivity</b>	Both plants and animals react and respond to what is happening around them, e.g. plants turn and grow towards light, animals see and hear danger and move away.
<b>Nutrition</b>	Green plants make their own food using sunlight, carbon dioxide and water. Animals eat plants and/or other animals.
<b>Excretion</b>	Animals get rid of (excrete) carbon dioxide (a waste gas) by breathing it out.
<b>Respiration</b>	Plants and animals use oxygen (from air) to help turn food into energy.
<b>Growth</b>	Baby animals grow into adult animals. Seedlings grow into bigger plants.

To classify living things

Today we were asked to group in my group named like a group. These were the groups:

- Stimulus Physical
- Unicellular
- Shore colour
- From the tree
- eye colour

There are 9,000,000 different things on Earth.

There are 5 different kingdoms: animal kingdom and the...

**Animal classification**

Yes No

Does it bark?

Yes No

Is it a carnivore?

Yes No

Does it store food in its cheeks?

Yes No

Does it live in water?

Yes No

Has it got four legs?

Your tree is now complete.

We sorted some living things into groups, on paper. After this, we used branching database software to create an electronic version. Also, we got to choose animals or insects to do our database on line.

**Reproduction**

**Sensitivity**

**Movement**

**PICCOLLAGE**



# FEDERATION COVERAGE – SPRING TERM

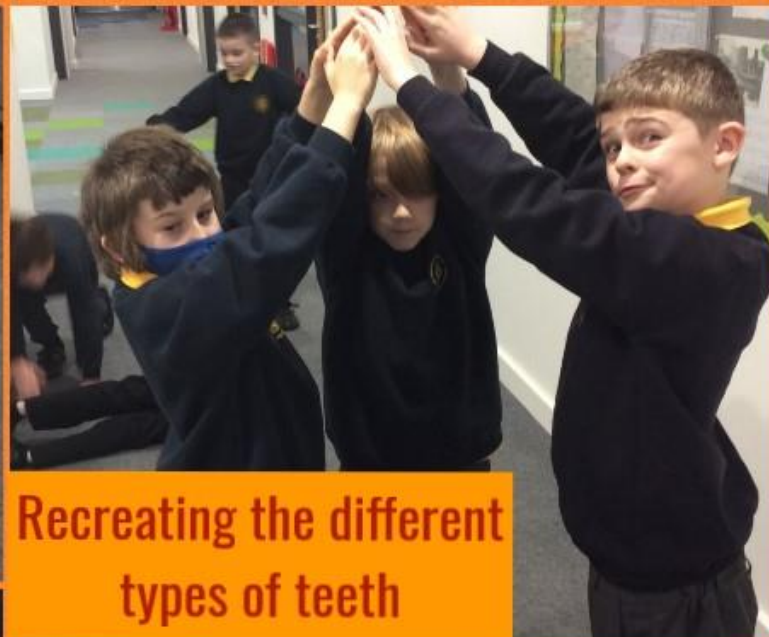
## Year Four Yarmouth: Animals Including Human THE DIGESTIVE SYSTEM





# FEDERATION COVERAGE – SPRING TERM

## Year Four Yarmouth: Animals Including Human TEETH



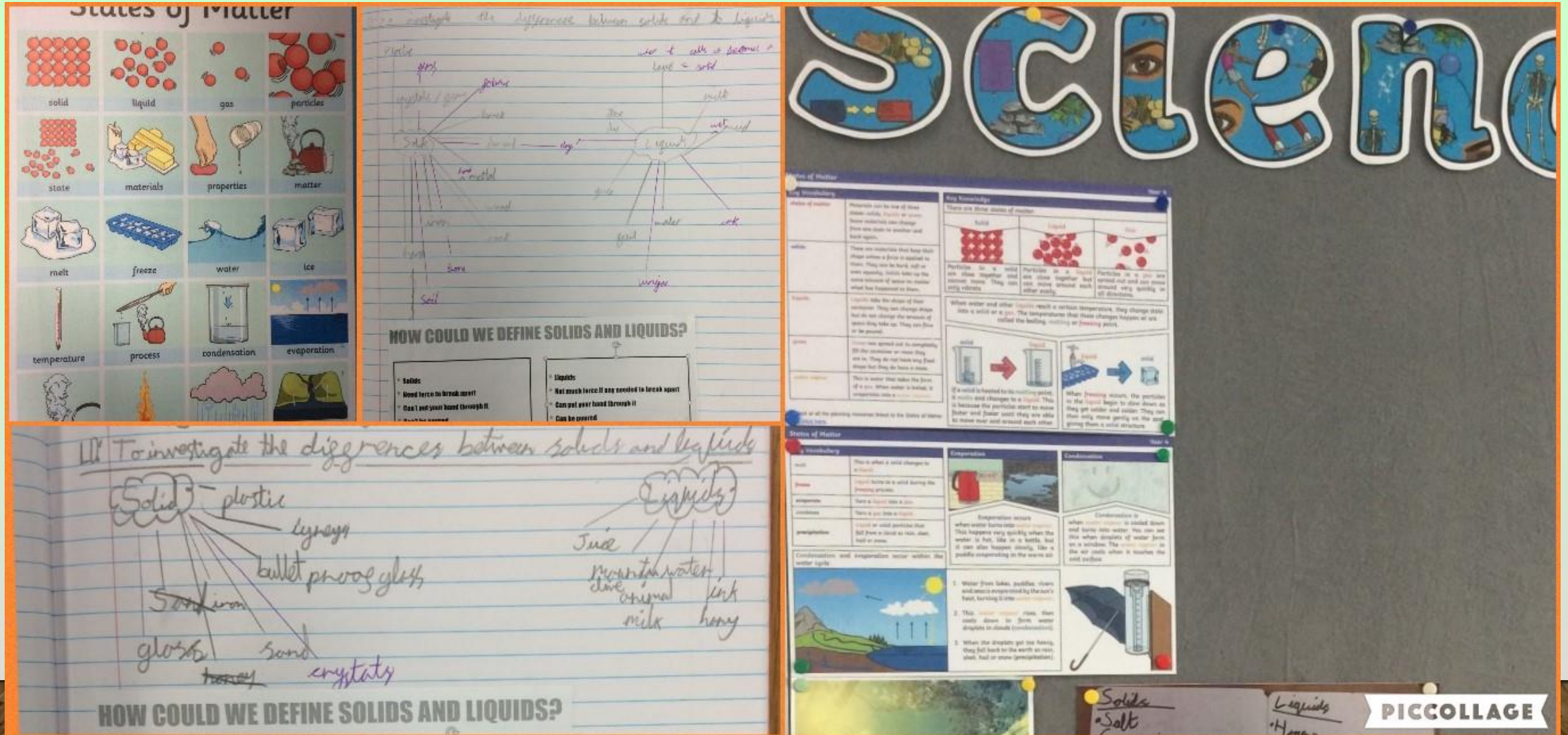
Recreating the different types of teeth





# FEDERATION COVERAGE – SPRING TERM

## Year Four Yarmouth: States of Matter





# FEDERATION COVERAGE – SPRING TERM

## Year Four Shalfleet: States of Matter

### States of Matter

During my research I found that something called a substance can change from one state to another. For example, water can be a solid, liquid or gas.

**Solid**  
A solid has a fixed shape and volume. The particles are packed closely together and can only vibrate in place.

**Liquid**  
A liquid has a fixed volume but no fixed shape. The particles are close together but can move around.

**Gas**  
A gas has no fixed shape or volume. The particles are far apart and move quickly in all directions.

### Comparing Gases

There are three states of matter: solid, liquid and gas. Gases are different from solids and liquids because they have no fixed shape or volume.

**Properties of Gases:**

- They have no fixed shape.
- They have no fixed volume.
- The particles are far apart and move quickly.

**Changes of State:**

- Evaporation:** Liquid turns into a gas.
- Condensation:** Gas turns into a liquid.
- Freezing:** Liquid turns into a solid.
- Melting:** Solid turns into a liquid.

### Properties of Materials

Materials can be solid, liquid or gas. Each state has different properties.

State	Shape	Volume	Particle Arrangement
Solid	Fixed	Fixed	Packed closely together
Liquid	Not fixed	Fixed	Close together but can move
Gas	Not fixed	Not fixed	Far apart and moving fast

### States of Matter

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### States of Matter

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A solid has a fixed shape and volume. The particles are packed closely together and can only vibrate in place.

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A gas has no fixed shape or volume. The particles are far apart and move quickly in all directions.

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**Properties of Gases:**

- They have no fixed shape.
- They have no fixed volume.
- The particles are far apart and move quickly.

**Changes of State:**

- Evaporation:** Liquid turns into a gas.
- Condensation:** Gas turns into a liquid.
- Freezing:** Liquid turns into a solid.
- Melting:** Solid turns into a liquid.

### Properties of Materials

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There are three states of matter: solid, liquid and gas. Each state has different properties.

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# FEDERATION COVERAGE – SPRING TERM

## Year Four Shalfleet: States of Matter





# FEDERATION COVERAGE – SPRING TERM

## Year Four Shalfleet: States of Matter

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# FEDERATION COVERAGE – SPRING TERM

## Year Four Freshwater and Yarmouth: States of Matter





# Year Four Freshwater and Yarmouth: States of Matter

**Solid** - I huddled up with the class like we were penguins and huddled.

**Liquid** - I started to move around each other but not over the other, but we were still interacting.

**Gas** - I started to run around quickly each other quickly.

**Changing State**

**Science feedback**

evaporating = a liquid turning to gas  
 melting = a solid turning into a liquid  
 condensing = a gas turning to a liquid  
 boiling = a liquid turning to a gas

**Match the Temperatures!**

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

The North Pole in winter: -43°C  
 Inside a freezer: -18°C  
 Boiling point of water: 100°C  
 Hottest desert: 50°C  
 Inside a fridge: 4°C  
 Freezing point of water: 0°C  
 An oven at medium temperature: 180°C

**Gases in Area**

Hydrogen (H<sub>2</sub>)  
 Helium (He)  
 Neon (Ne)  
 Oxygen (O<sub>2</sub>)  
 Nitrogen (N<sub>2</sub>)  
 Carbon Dioxide (CO<sub>2</sub>)  
 Methane (CH<sub>4</sub>)  
 Ammonia (NH<sub>3</sub>)  
 Sulfur Dioxide (SO<sub>2</sub>)  
 Hydrogen Chloride (HCl)



# SCIENCE IN YEAR 5

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- Earth and Space
- Forces
- Properties and changes of materials
- All Living Things and their Habitats
- Animals Including Humans

# FEDERATION COVERAGE – AUTUMN TERM

Year Five Yarmouth: Earth and Space

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# Year Five Yarmouth: Earth and Space and Forces

[illegible]



# FEDERATION COVERAGE – AUTUMN TERM

## Year Five Yarmouth: Earth and Space and Forces





# FEDERATION COVERAGE – AUTUMN TERM

## Year Five Yarmouth: Earth and Space and Forces





## Year Five Shalfleet: Earth and Space

[illegible]



# FEDERATION COVERAGE – SPRING TERM

## Year Five Yarmouth: Materials and their Properties





# FEDERATION COVERAGE – SPRING TERM

## Year Five Yarmouth: Materials and their Properties

### Enquiry question - Which material will keep liquid hot?

Which material would be most effective as a cup?

Materials we will test:	
Tin can	Card cup
Glass jar	Plastic cup

How we will test the insulation properties of the containers.

We will fill the cups with hot water and then test the temperature every 2 minutes.

We will change:	We will observe:
the materials	how the temperature drops

We think the Plastic will be the best because it is the smoothest. We think the glass with any bacteria will be the worst because they will stain.

What we changed	What we observed
Material 1 - Fabric	stained a bit soaked they absorbed the water
Material 2 - Plastic	cleaned dirty well it did not stain or get wet.
Material 3 - Tissue	stained worse and soaked through soaked cloth
Material 4 - Hand cloth	cleaned pretty easily and well absorbed the water
Material 5 - Metal	cleaned well in 1 minute a bit greasy

We discovered: - the tissue got stained the most for the plastic the water didn't leak to go on and the plastic the water leaked less best. And the metal got stuck in the plastic.

We recommend the plastic because it cleans the easiest. The metal water is for you fill water with and get stuck. Would taste like metal.

Thinking about a clothing with which properties should be important?

I predicted	Results observed	and conclusion
Hard wearing	Array of sizes	Robust
Highly absorbent	Delicate for fragile surfaces	Array of colours
Strong	Disposable	Beautiful patterns
Light weight	Textured for pattern dot	Non-scratches

### PREDICTION

Which materials we predict will fail? The cotton clothes and paper will fail. I predict that the tin will keep the heat the longest because it is metal and metals are good for heat. I predict the plastic cup will keep the heat the longest because plastic can get pretty cold and the cotton is the worst. I think the water will.

### RESULTS AND PATTERNS

We discovered: That the metal in kept the heat in for the longest and the glass jar let the heat out the fastest. We also discovered that the card cup let keep the heat in for the second longest then the plastic then last but not least the glass jar!

We recommend the card cup because it will still keep the heat liquid hot and it won't burn your hands because it's insulation.

Glass jar	Cardboard cup	Tin	Plastic cup
-----------	---------------	-----	-------------

### What we changed

Material	Weight - number of water
Material 1 - Tissue paper	6
Material 2 - Tissue paper	7
Material 3 - Tissue paper	5
Material 4 - Card	100 ml

We discovered: The card kept the heat in for the longest and the tissue paper let the heat out the fastest. We also discovered that the card kept the heat in for the longest and the tissue paper let the heat out the fastest.

### Properties of materials

glass - transparent, smooth, hard, dull, rough, see - reflective, smooth, metal - strong, reflective, conductive, heat, wood - rough, hard, wax - brittle, smooth, leather - soft, smooth, water - liquid, reflective, strong, strong, strong, brick - rough, strong, stone - rough, hard.

### A line graph to show temperature to drop

glass jar  
plastic  
metal  
card

### Thinking about the Properties of Materials

to explore the strength of materials

card/  
normal paper/  
coloured paper/  
coloured card/  
tissue paper/  
absorbent paper/  
lined paper/  
cardboard/  
handwriting paper/  
recycled paper/  
recycled paper/  
squared paper/  
envelope/  
sticking paper/  
laminated paper

### Thermal Conductors

Materials that allow heat to pass through them easily are called thermal conductors.

### Thermal Insulators

Materials that prevent heat from passing through them are called thermal insulators.

### Prediction - (Which materials we predict will fail?)

The card and tissue will be the worst and the card and the paper will be the worst.

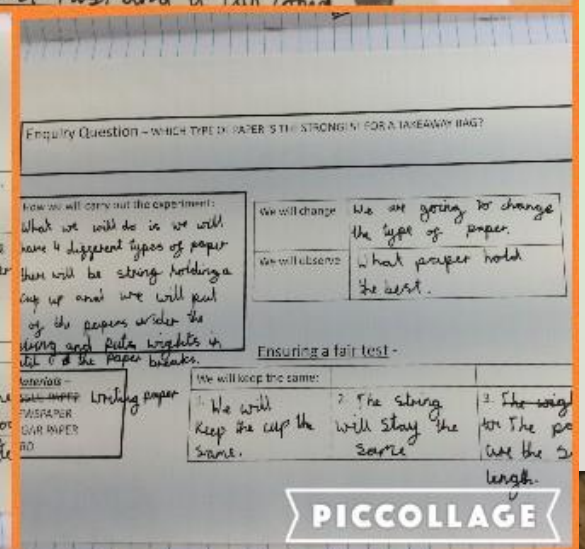
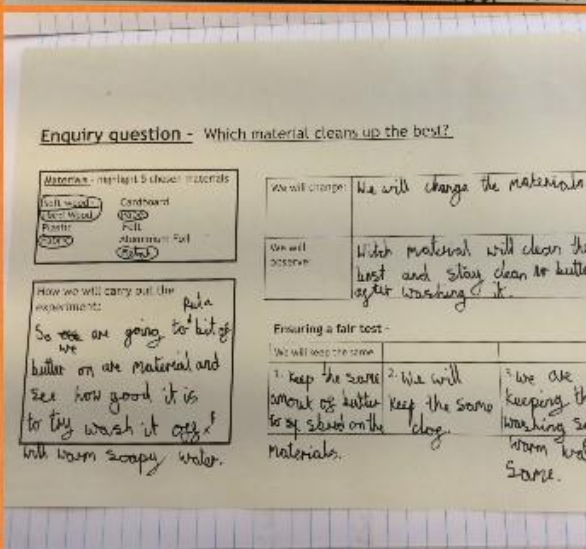
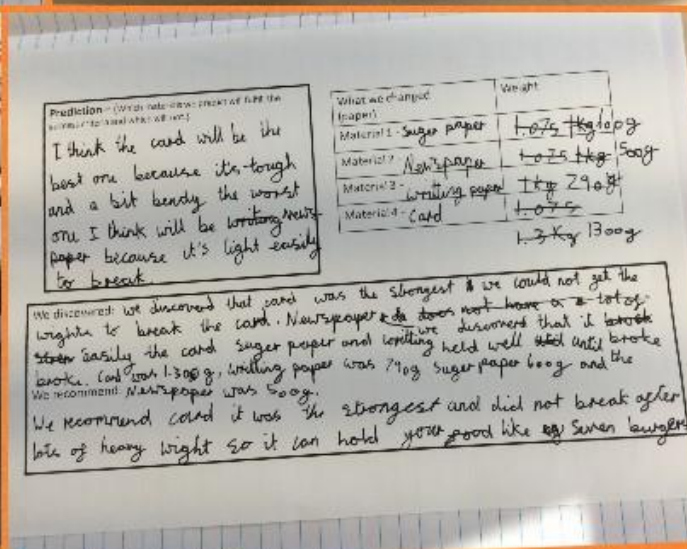
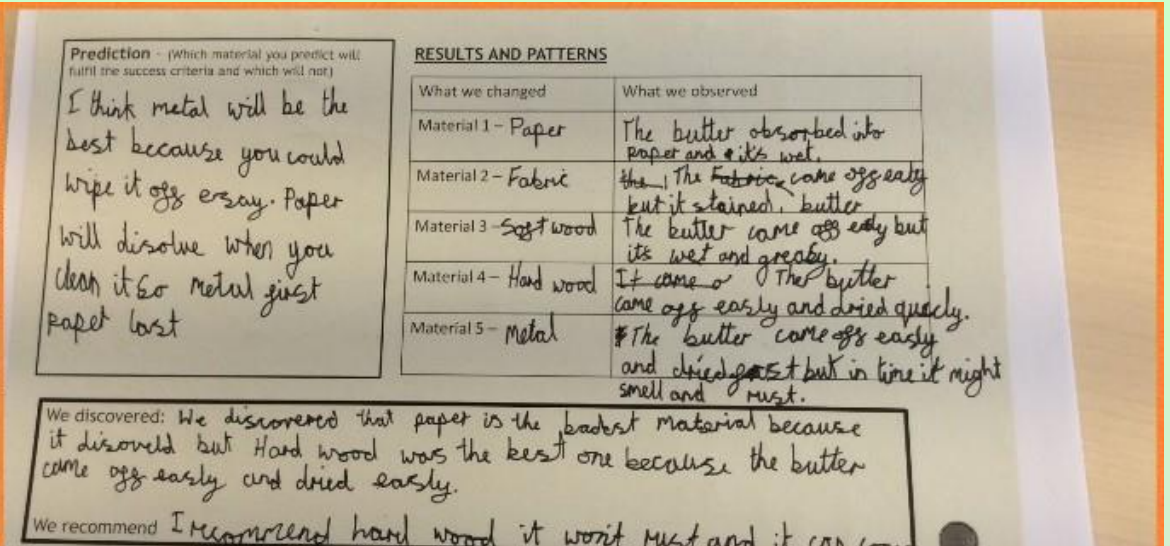
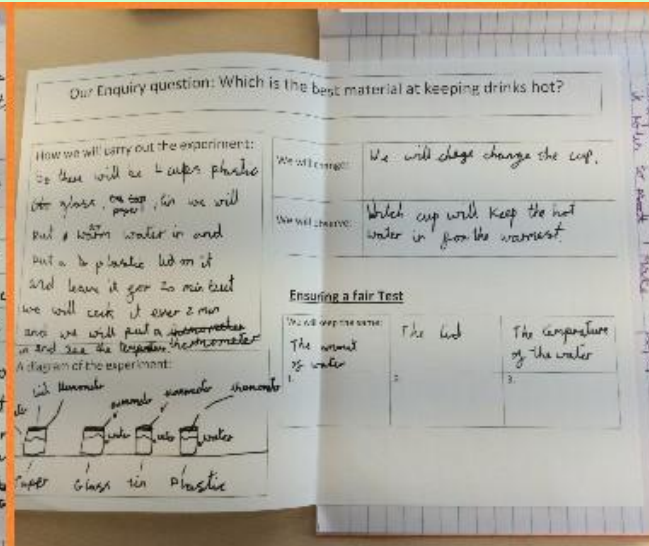
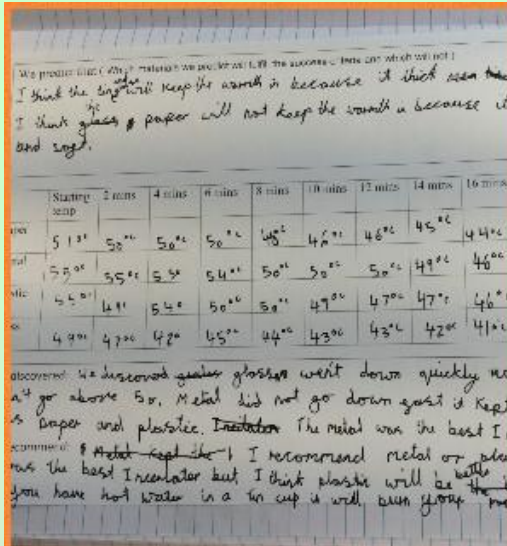
What we changed (paper)	Amount of water absorbed
Material 1 - tissue	100 ml
Material 2 - tissue	100 ml
Material 3 - paper	20 ml
Material 4 - card	20 ml
Material 5 - cotton fabric	20 ml
Material 6 - kitchen roll	10 ml
Material 7 - J-cloth	20 ml
Material 8 - paper towel	20 ml

We discovered: The J-cloth absorbed the most amount of water and the card absorbed the least amount of water. So that means the J-cloth is the best for cleaning and is the worst for cleaning.



# FEDERATION COVERAGE – SPRING TERM

## Year Five Shalfleet: Materials and their Properties



Testing materials



# FEDERATION COVERAGE – SPRING TERM

## Year Five Shalfleet: Materials and their Properties

### Everyday Materials

wood, fabric, cardboard, glass, metal, paper, rubber, sand, water, rock, plastic, wool, brick

Tuesday

A chocolate handle is not suitable because it could melt and break off and you won't be able to get it into your house or room.

I would make it out of metal, iron.

A paper boat is not suitable because it would sink, break and you not make it across the river.

I would make a boat out of wood.

What do we already know?

What is a material?

A material is something you can wear, sit on, use and is a item.

- Wood
- Metal
- Paper
- Plastic
- Cotton
- Wool
- Glass
- Cardboard
- Coal
- Stone
- Bronze
- Leather
- Chalk
- Rubber
- Cotton
- Liquids
- Sugar
- Sand
- Carpet
- Fabric
- Lin
- Room
- Fur
- Lead
- Chromium

To gain an understanding of a material's suitability to perform a specific task.

A material is any substance that has a specific property.

A bowl of ice is not suitable because it could melt and make water and break easily.

I would make a bowl of glass, plastic.

A teddy bear made of cotton is not suitable because you could smash it and it won't be soft.

I would make a teddy bear of cotton, fur so it's soft.

A wood jumper is not suitable because it would be hard and have splinters and it's not comfortable.

I would make a jumper of cotton, wool so it's soft.

PICCOLLAGE

To explore the strength of materials.

Which material was best for a good preparation surface and why?

Hard wood I think was the best because it cleaned off easily and stayed just and no more glue.

Paper is made from wood pulp, plant pulp, recycled pulp.

Types of paper: lined paper, glossy, card, photo, book paper.

It is strong sometimes smooth, hard, and sometimes weak, smooth, tough sometimes strong, hard, rough, tough, solid, watery, liquid, slimy, translucent, funny.

cardboard = weak, smooth, tough sometimes strong, hard, rough, tough, solid, watery, liquid, slimy, translucent, funny.

strong, hard, rough, tough, solid, watery, liquid, slimy, translucent, funny.

strong, tough, hard, brittle.

weak, soft, flexible, non-magnetic.

### Properties and changes of materials

Pupils should be taught 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
- know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
- use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
- give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
- 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



# SCIENCE IN YEAR 6

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


# FEDERATION COVERAGE – AUTUMN TERM

## Year Six Yarmouth: Evolution and Inheritance

1. those days  
2.  
3.  
4.  
5.


1. Kingdom ✓  
2. class ✓ ← Phylum  
3. order ✓  
4. genus ✓ ← Family  
5. species ✓

LO: To be able to create a classification key.  
I think whale is the odd one out because it's the only one with  
gills.  
Which of these is the odd one out and why?



I think the crocodile is the odd one out because it's the only one with  
gills.

Friday 12th September 2022



Do they have a mane?

yes lion

no jaguarundi

are they orange?

yes

no

are they have stripes?

yes

no

are they not land animals?


yes

no

are they water?

yes

no



Wednesday 7th September 2022

LO: To understand how classification works.

What are these and how do you know?



1. It looks like a fish because it has fins.
2. It looks like a flower because it has leaves.
3. It looks like an insect because it has 6 legs.
4. It looks like a human because it's standing properly.
5. It looks like a bird because it has wings.
6. It looks like a tree because it also has leaves.

### Learning about Linnaeus

1. What does he specialise in?
2. What is his biggest scientific achievement called?
3. What is an organism?
4. Where was he when he came up with his idea?
5. What was a key skill he used to create classifications?
6. How many ways did he come up with to classify animals?
7. How are the organisms ordered?
8. Why is everything classified in Latin?
9. What was his book called?





## Year Six Yarmouth: Evolution and Inheritance and All Living Things and Their Habitats

Group names: Annie, Jason, Roni, Bonnie, Lisa, Megan and Ryland

Similarities in our description of the pink feathered eagle were that we both mentioned about the extreme curves.

The differences in our description of the pink feathered eagle were that one group said about feathers round its neck while the others didn't.

The three most important characteristics I felt would be appealing the target pattern and the entire business. I think knowing you is a real is good business to understand rather it's a mouse or a group.

<u>Inherited characteristics (Genes)</u>	<u>Environmental characteristics</u>
Eye colour ✓	Tanned skin from the sun ✓
Shape of nose ✓	Weight ✓
Height ✓	Intelligence ✓
Language →	Sporting ability ✓
General health →	Scar from an accident ✓
Skin colour ✓	
Migraines	
Ear lobes ✓	
Blood group ✓	
Tongue rolling ✓	
Hair colour ✓	

<p>Name - Pink feathered eagle</p> <p>Habitat - Mountains .. E</p>	<p><u>Description</u></p> <p>Long pink feathers black wings sharp long talons and a brown back long <sup>lastly</sup> spine <del>for</del> Pink neckless of black feathered feathers round its <del>eyes</del> neck.</p>
<p>Name - Dumbo Mouse</p> <p>Habitat - Desert F</p>	<p><u>Description</u></p> <p>Big long ears and long tail a thin brown layer of fur, big black eyes and two long thin honey legs. Some <sup>long</sup> teeth some small teeth <del>is</del> last a small body.</p>
<p>Name - Spotted cheetah</p>	<p><u>Description</u></p>

Hair colour	Blue eyes
Skin colour	Blonde hair
Ear lobes	White
Shape of nose	Detached
Height	1m 50cm
Tongue rolling	Yes
Dominant hand	Right hand

### ENVIRONMENTAL CHARACTERISTICS

- A scar on my left knee
- Quick learner
- I'm good at piano & maths
- I'm good at singing

[illegible]

Friday, 1 December 2011

Let's identify inherent characteristics in living things.



Do they have special hair? No

Is he a girl? No

Do they give you hair? No

Wednesday 16<sup>th</sup> November 2022

100 British wildlife descriptions for kids challenge

use the names on the TV in order to try and identify which eating thing is which, then use the definitions to further match these correctly.

Amie Senna Picture Number	Name	Description
1	Limp Slime	3
2	Vasey fly trap	2
3	Charm Frogspawn	6
4	Mothed Milk Tins	1
5	Dugong	4
6	Luttrell's shrike	5

1. A large, flat, oval-shaped object with a mottled pattern, likely a slug or snail.

2. A small, round, brown object with a textured surface, likely a fly trap.

3. A small, green, oval-shaped object with a mottled pattern, likely a frogspawn.

4. A small, brown, cylindrical object with a mottled pattern, likely a milk tin.

5. A small, brown, cylindrical object with a mottled pattern, likely a milk tin.

6. A small, brown, cylindrical object with a mottled pattern, likely a milk tin.

**PICCOLAGE**

# FEDERATION COVERAGE – AUTUMN TERM

## Year Six Shalfleet:

Year 6

# Light

light  
travels  
straight


object  
shadows

reflect  
reflection

mirrors  
periscope


light source

rainbow  
filters



To present scientific ideas about thinking about light.

there are many different light sources. one is LED which the human eye can see. light is a fast steady ray that helps you to see.



Light  
&  
Sight

lights can be seen by your eyes.

if you look at a blue light before bed it will disrupt your sleep.

### Light Sources

Which is the odd one out and why?

White lines in the road A car headlight A box reflector Cat's eyes in the road	Why? I think it is this one because it is not actually a light because it is a bright color and your eyes think that it is glowing.
A piece of white paper A picture A television A mirror	Why? I think it is this because it doesn't actually give off its light.
A Christmas tree decoration Aluminium foil A traffic warden's coat A torch	Why? I think it's this because this is the only one that has an actual light source.
The sun The moon The Earth The planet Venus	Why?
A knife A belt buckle A burning candle A drawing pin	Why?

of the object by changing its.

Thursday 22nd September 2022


I.D. To explain how the size of a shadow can be changed as distance varies explains the color of a shadow.

Prediction

I have predicted that if you take the torch away from the object the shadow will get bigger and if you move it forwards the shadow will get smaller.

Distance of torch (cm)	Height of shadow (cm)	
10 cm	33 cm	✓
15 cm	25 cm	✓
20 cm	21 cm	✓
25 cm	19 cm	✓
30 cm	18 cm	✓

Shadow of glass block



Height of shadow (cm)

Distance of torch (cm)

PICCOLLAGE



# FEDERATION COVERAGE – SPRING TERM

## Year Six Yarmouth: Living Things and Their Habitats - classification

9/9

**FALSE**  
**TRUE**

Camels

- Large, leathery flat feet - to spread their weight on the sand and not get burned. ✓
- Their humps store water to keep them hydrated. F ✓
- The ability to go for a long time without water - they lose very little water through urination and perspiration. ✓
- Their body can withstand temperatures 8 degrees higher than body temperature. ✓
- Their humps store fat to use for food to keep them energized. ✓
- Long necks that they can bury in the sand - this helps them cool down. F ✓
- They are able to drink water very quickly when available, 100 ✓
- lives in 10 minutes!
- Slit-like nostrils and two rows of eyelashes that they can close - to help keep out sand. ✓
- Their mouth automatically salivates whenever it's dry - this stops them becoming thirsty. ✓

1. I think that this is bad because it says darker fur which means it won't blend in with its environment.

2. I think this is good because the Arctic fox having thicker fur would be helpful so that the fox wouldn't get cold.

3. I think this is good because it is a good defense mechanism.

4. I think this is good because it can run faster.

Average weight - 4-6 pounds  
Time needed walking - up to 1 hour per day  
Intelligence - 3/5  
Life expectancy - 12 to 15

Average weight - 25-30 kg  
Time needed walking - More than two hours per day  
Intelligence - 5/5  
Life expectancy - 12 years

WHAT DO YOU NOTICE ABOUT EACH ONE?

1. What I notice about each one is that the bird gets smaller and smaller every time as does their beaks.

EXTREME SURVIVORS

Will they survive?

Sahara desert ant has long legs that keep it off the hotter sandy floor temperatures as high as 50°C.

Lantern fish has light producing organs and high levels of polyunsaturated fats that help keep the pressure inside the body the same as outside. They also have a low metabolism.

Very deep oceans where the pressure reaches 1000x that of the surface. The water is freezing and it is pitch black.

EXT- These characteristics could be affected by their owners not looking after them well enough such as not having fed enough which could affect their weight, if they weren't walked enough which could affect their intelligence, all this then leads to them having a short life.

How have these foxes adapted to their environment?

TENNESEE FOX  
Attempt 1: I think that the pennec fox has to wait for its ears to grow so that it can hear for its prey and so.  
Attempt 2: Increased ear size for hunting.

CAPE FOX  
Attempt 1: I think that the cape fox has adapted by its ears growing and just having to change.  
Attempt 2: Increased ear size for hunting.

Attempt 1: I think the Tibetan fox has adapted by its fur changing to adapt and blend in to its habitat also its bigger body size.  
Attempt 2: Increased ear size for hunting.

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100

WHAT COULD BE THE NEGATIVE WHEN GIRAFFES HAVE TO USE THESE LONG NECKS TO DRINK WATER?

The negative of giraffes have to use their long necks to drink the water is that the position of that giraffes have to go in to drink the water is that when they bend down for their legs will put and they will fall to the ground. They can't run away from predators because of their legs.

PICCOLAGE



# FEDERATION COVERAGE – SPRING TERM

## Year Six Shalfleet: Living Things and Their Habitats - Classification

Wednesday 12 January 2023

To identify the characteristics of a group of animals to classify a creature and its environment.

Thursday 12th January 2023

To understand the Linnaean System of classification

Linnaean System:

- Domain: Eukarya
- Kingdom: Animalia
- Phylum: Chordata
- Class: Mammalia
- Order: Primates
- Family: Hominidae
- Genus: Homo
- Species: Homo sapiens

Living thing = Jellies, corals, sea urchins, cat, jellyfish, etc.

Domain: Eukarya

Kingdom: Animalia

Phylum: Chordata

Class: Mammalia

Order: Carnivora

Family: Felidae

Genus: Felis

Species: Felis catus

Dangerous

Water Land Small Big

Thursday 5th January 2023

LO: To give reasons for classifying plants and animals based on specific characteristics.

Land and air

Mould Investigation

The aim of this investigation is to find out what conditions mould needs to grow on bread.

Independent variable: the bread and day

What is the condition you will investigate? grow with wet or dry bread from mould quicker?

Dependent variable: how much mould?

Control variable: same bread, same plastic bags, the same place for the people

What do you predict will happen? What does the bread will grow mould the fastest?

I think the wet bread will grow mould quicker.

Explain why you think this, referring to microorganisms

because Mould mould is a fungus and fungus is a micro-organism

Complete your results in the table below

Description of area of bread (the conditions it will be under)	Day 1	Day 2	Day 3	Day 4	Day 5
Wet	No mould	No mould	No mould	<u>lots of</u>	<u>lots of</u>

Now put your own animal, plant or bacteria to write about

classification of a whale: whale

Kingdom: Animalia

Phylum: chordata

class: Mammalia

order: Artiodactyla

classification of a sloth: sloth

Kingdom: Animalia

Phylum: chordata

class: Mammalia

order: Pilosa

Thursday 12th January 2023

To understand the Linnaean System of classification

Linnaean System:

- Domain: Eukarya
- Kingdom: Animalia
- Phylum: Chordata
- Class: Mammalia
- Order: Carnivora
- Family: Felidae
- Genus: Felis
- Species: Felis catus

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Classification of a fox:

Domain: Eukarya

Kingdom: Animalia

Phylum: chordata

class: Mammalia

order: Carnivora

Family: Canidae

classification of a downfish:

Domain: Animalia

Kingdom: chordata

Phylum: Actinopterygii

class: perciformes

Family: percenidae

Conclusion

You have been given a video about your project and the conditions it was under. What did you learn?

What did you learn about your project and the conditions it was under?

I think the wet bread will grow mould the fastest.

Explain why you think this, referring to microorganisms

because Mould mould is a fungus and fungus is a micro-organism

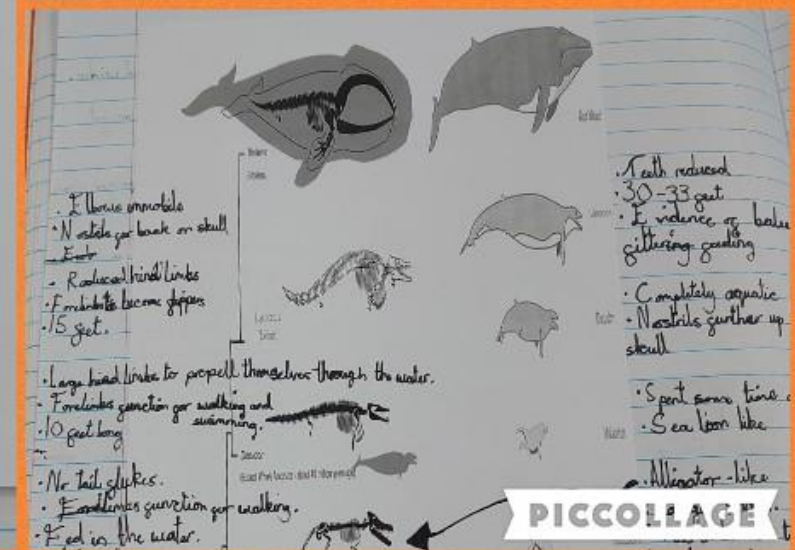
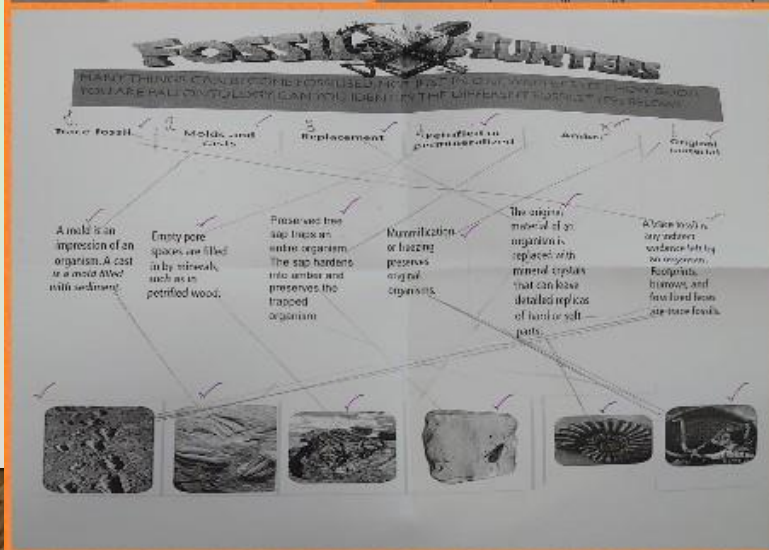
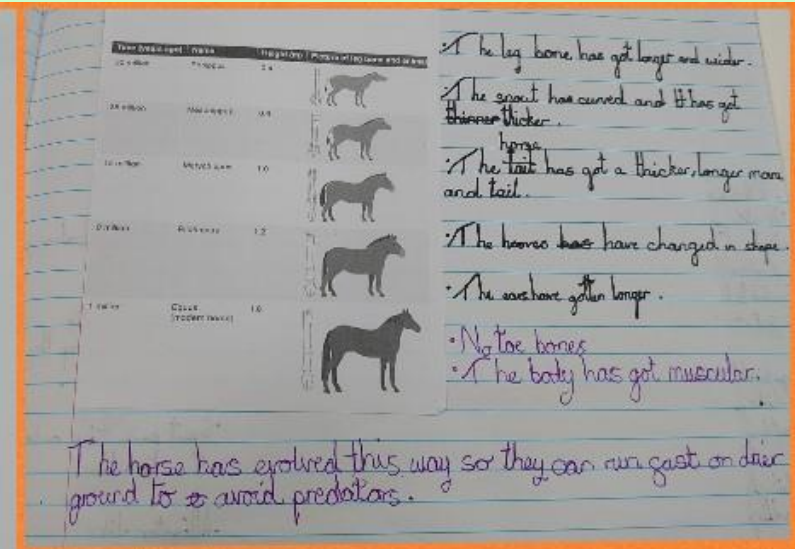
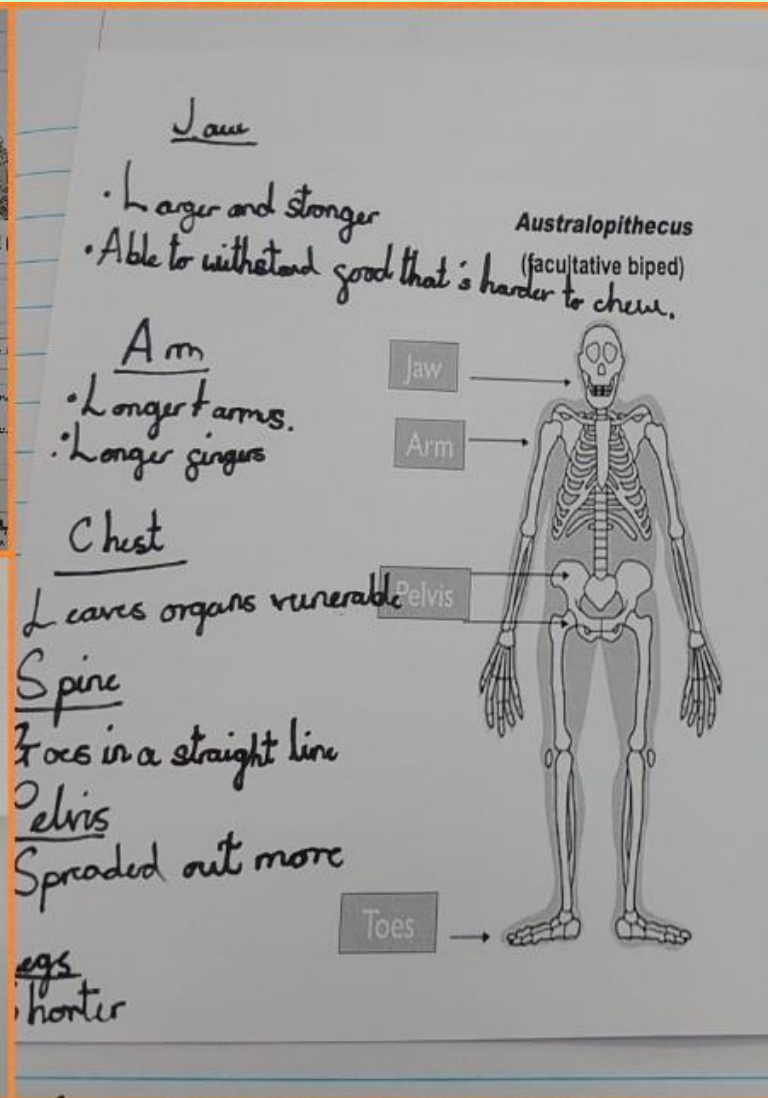
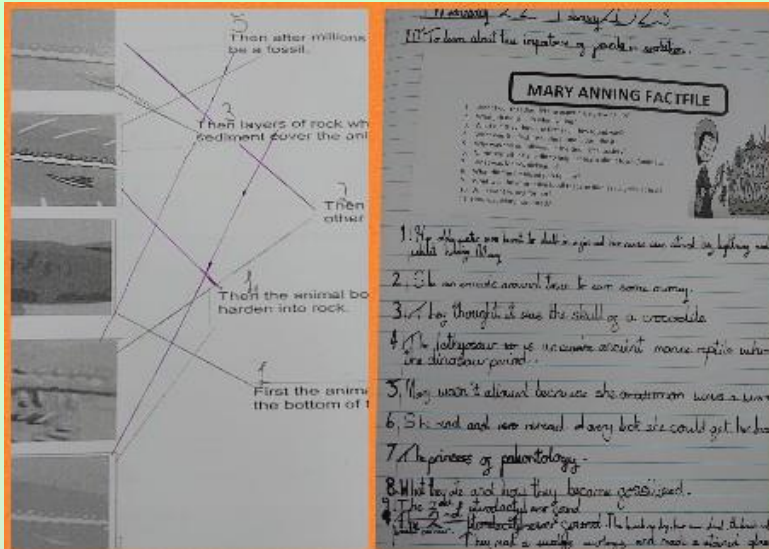
Complete your results in the table below

Description of area of bread (the conditions it will be under)	Day 1	Day 2	Day 3	Day 4	Day 5
Wet	No mould	No mould	No mould	<u>lots of</u>	<u>lots of</u>



# FEDERATION COVERAGE – SPRING TERM

## Year Six Yarmouth

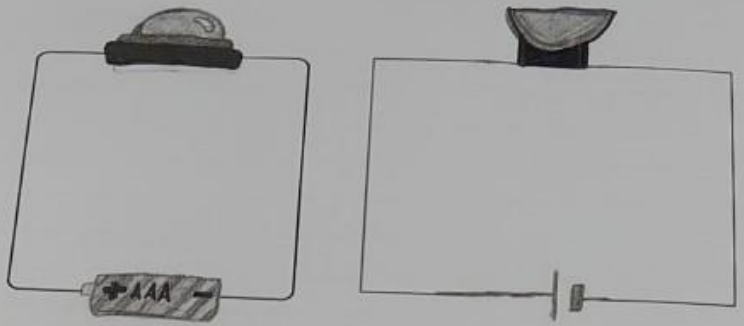




# FEDERATION COVERAGE – SPRING TERM

## Year Six Freshwater and Yarmouth: Electricity

Challenge – Draw a circuit with a single cell and a buzzer. First do it using your own pictures and then with the scientific symbols.

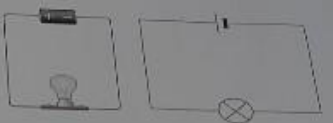


Symbols instead of pictures are used to draw circuits because it's easier to identify symbols and it's the less complicated way to design circuits when designing complex circuits.

Items that have circuits

Kitchen	Bedroom	Bathroom
• Toaster	• TV	• Shower
• Microwave	• X box	• Radiator
• Oven	• Lamp	• Electric toothbrush
• Fridge	• Light	• Hair dryer
• Mixer	• Radiator	• Clock
• Blender	• Phone	
• Stove	• Alarm	
• Whiskers		
• F. razers		
• Hair dryer		
• Kettle		
• Washing machine		

WHAT'S THE SAME, WHAT'S DIFFERENT?




Can you name at least one thing that is the same and one thing that is different?

Same	Same	Different
• They are both circuits	• They are both circuits	• One has a light bulb
• Same shape	• Same shape	• One has a battery
		• One has a buzzer
		• One has a symbol


Wednesday 1<sup>st</sup> March 2023

10. To be able to understand how circuits are represented in


ELECTRIC SHOCKS IN THE HOME: What ways do each of these pictures represent?




The socket has cracked. It will expose electricity-activated wires.



They are plugging in a plug with a wet hand. The electric will go on to your hand and spread through your body.



Bad Broken wires. Someone Someone Someone could touch the wires.



Too many plugs connected to

PICCOLLAGE



# BRITISH SCIENCE WEEK 2023 CONNECTIONS

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BRITISH  
SCIENCE  
WEEK

10-19 March 2023







**BRITISH SCIENCE WEEK 2023**

**BRIDGE BLUNDER**

This activity is designed to get you thinking about the connections between weights, forces and measures.

Check out our video demonstration here:  
[BSA.sc/YouTube-CREST-Bridge-blunder-demonstration-ig](https://www.bsa.sc/YouTube-CREST-Bridge-blunder-demonstration-ig)

Can you build a model bridge that supports heavy weights?  
15 - 60 minutes  
Skill set: Creative, Integrative, Logical







## BRIDGE BLUNDER

This activity is designed to get you thinking about the connections between weights, forces and measures.

Check out our video demonstration here:

[bsa.sc/YouTube-CREST-Bridge-blunder-demonstration](https://bsa.sc/YouTube-CREST-Bridge-blunder-demonstration)

Can you build a model bridge that supports heavy weights?

⌚ 45 – 60 minutes



PICCOLLAGE





British Science Week Year 3







BRITISH  
SCIENCE  
WEEK  
2023



CREST  
AWARDS

# BRIDGE BLUNDER


This activity is designed to get you thinking about the connections between weights, forces and measures.

Check out our video demonstration here:  
[bsa.sc/YouTube-CREST-Bridge-blunder-demonstration](https://bsa.sc/YouTube-CREST-Bridge-blunder-demonstration)

Can you build a model bridge that supports heavy weights?

45 - 60 minutes






This ~~design~~ design wasn't as effective since the pressure of 2 marbles was too much for the bridge. We are looking to improve this by adding more layers.

Design	How many marbles?
Draft	51
Final	

Inside part



- Two books (heavy)
- A ruler (to measure the distance between the books)
- It needs to be 20cm
- A4 Paper
- Marbles
- Glue
- Tape

Your challenge is to design a bridge that can hold the most marbles in a stable way. You could use all 5 places if you may decide to leave some, this is up to you. You can cut, fold and manipulate the paper in anyway you think will help you to hold the marbles.

2.11.





# MONITORING THE SUBJECT:

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Spring Term Monitoring Report:

[https://docs.google.com/document/d/1z91pdFqXB9sSzQIBY0SnWr9FQkJwcK9rEa95Qs4Jixw/edit?usp=share\\_link](https://docs.google.com/document/d/1z91pdFqXB9sSzQIBY0SnWr9FQkJwcK9rEa95Qs4Jixw/edit?usp=share_link)



# MONITORING THE SUBJECT:



## Working Scientifically Progression

Statements taken from:

Science programmes of study: key stages 1 and 2, National curriculum in England (2013) DfE

Statutory framework for the early years foundation stage (2017) DfE

stage skills	EYFS	KS1	Lower KS2	Upper KS2
<b>PLAN</b>	<ul style="list-style-type: none"> <li>choose the resources they need for their chosen activities and say when they do or don't need help</li> </ul>	<ul style="list-style-type: none"> <li>ask simple questions and recognising that they can be answered in different ways</li> </ul>	<ul style="list-style-type: none"> <li>ask relevant questions and using different types of scientific enquiries to answer them</li> <li>set up simple practical enquiries, comparative and fair tests</li> </ul>	<ul style="list-style-type: none"> <li>plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> </ul>
<b>DO</b>	<ul style="list-style-type: none"> <li>know about similarities and differences in relation to places, objects, materials and living things</li> <li>make observations of animals and plants</li> <li>explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</li> <li>select and use technology for particular purposes</li> </ul>	<ul style="list-style-type: none"> <li>observe closely, using simple equipment</li> <li>perform simple tests</li> <li>identify and classify</li> </ul>	<ul style="list-style-type: none"> <li>make systematic and careful observations and, where appropriate, take accurate measurements using standard units, use a range of equipment, including thermometers and data loggers</li> </ul>	<ul style="list-style-type: none"> <li>take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> </ul>
<b>RECORD</b>	<ul style="list-style-type: none"> <li>represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories</li> </ul>	<ul style="list-style-type: none"> <li>gather and record data to help in answering questions.</li> </ul>	<ul style="list-style-type: none"> <li>gather, record, classify and present data in a variety of ways to help in answering questions</li> <li>record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> </ul>	<ul style="list-style-type: none"> <li>record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> </ul>
<b>REVIEW</b>	<ul style="list-style-type: none"> <li>talk about the features of their own immediate environment and how environments might vary from one another</li> <li>explain why some things occur and talk about changes</li> </ul>	<ul style="list-style-type: none"> <li>use their observations and ideas to suggest answers to questions</li> </ul>	<ul style="list-style-type: none"> <li>report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> <li>identify differences, similarities or changes related to simple scientific ideas and processes</li> <li>use straightforward scientific evidence to answer questions or to support their findings</li> </ul>	<ul style="list-style-type: none"> <li>use test results to make predictions to set up further comparative and fair tests</li> <li>report and present 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</li> <li>identify scientific evidence that has been used to support or refute ideas or arguments</li> </ul>



## PUPIL VOICE QUESTIONNAIRE

Class / Year group:	Agree	Neutral	Disagree
I enjoy science lessons.			
My teacher enjoys science lessons.			
Science is difficult.			
I do lots of thinking and talking in science.			
I do lots of writing in science.			
I use lots of equipment in science.			
I work in small groups in science.			
I would like to do more science lessons.			
I can use some scientific words.			
You must be clever to be good at science.			

### Extra questions:

How often do you have a science lesson?

What is science?

What do you like about science?

Is there anything that you do not like about science?

What has been your favourite science lesson?

How could your science lessons be better?



# NEXT STEPS IN THE SUBJECT:

## 2022/2023 One Page Subject Action Plan

**Subject – Science**

**Subject Lead – Sylvie Poulton**

## **FDP Links –**

**Strategic Objective 1: Aspire**

Ensuring the provision of high quality curriculum

**Strategic Objective 3: Collaborate**

Sharing good practice – Federation. Seeking good practice further afield.

**Strategic Objective 5: Stabilise**

High quality CPD



ACTION	WHY?	HOW? <i>Success Criteria</i>	WHO?	COST/RESOURCES?	OBJECTIVE ACHIEVED?	EVALUATION <i>What has been the impact?</i>	NEXT STEPS
<b>To ensure that Science Literacy is threaded through the wider curriculum</b>  Develop knowledge organisers for whole school  Promote opportunities for science to be taught within other subjects	To show clear phase progression of vocabulary, sentence stems and key questions.  To ensure the profile of the subject and specific vocabulary is raised	Book checks – half termly  Portfolio evidence submitted  Pupil Voice  Science displays	Subject leader	<a href="https://psstt.org.uk/resources/curriculum-materials">https://psstt.org.uk/resources/curriculum-materials</a>  <a href="https://www.planassessment.com/plan-knowledge-matrices-teacher">https://www.planassessment.com/plan-knowledge-matrices-teacher</a>			
<b>To audit the CPD needs of teachers in the federation</b>	Supporting quality teaching of science  Supporting colleagues to cover a broad science curriculum	Create teacher's subject self-evaluation Gather responses  Source funding/CPD relevant to needs	Subject leader  Finance  SLT	<a href="https://psstt.org.uk/resources/curriculum-materials/subject-leader">https://psstt.org.uk/resources/curriculum-materials/subject-leader</a>			