

SCIENCE

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

NATIONAL CURRICULUM STATEMENT

Purpose of study

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

Aims

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

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

OUR INTENT

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

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

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

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



The Federation of the Church Schools of Shalfleet and Yarmouth – Curriculum for Learning Overview

What are we achieving?

Lifelong Achievement and Wellbeing

Curriculum Values

Design principles to inspire & challenge

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

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

Personal Development

The curriculum as the entire planned learning experience

How do we implement?

Components

Teaching for Learning

Approaches

EYFS/National Curriculum

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**

What is the impact?

Successful Learning

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...

Our curriculum impact can be measured 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

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

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

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

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



OUR IMPLEMENTATION - 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.

 FEDERATION CURRICULUM ASSESSMENT 									
2	Computing			PE		RE		Art	
3	INFORMATION TECHNOLOGY			DANCE		COMMUNICATE		KNOWLEDGE	
		Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing	
	INFORMATION TECHNOLOGY - SKILLS	Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing	
		Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing	
		Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing		SKILLS	
	NOTE	Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing		REMARKS	Use the keyboard, mouse and touch screen to create a simple drawing
		Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing			Use the keyboard, mouse and touch screen to create a simple drawing
		Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing			Use the keyboard, mouse and touch screen to create a simple drawing
		Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing		Use the keyboard, mouse and touch screen to create a simple drawing			Use the keyboard, mouse and touch screen to create a simple drawing



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		Beginning to recognise linear measurements and utilise basic representation when working		Described/ explained my own responses to the concept of belonging.		Give detailed observations about notable artists', artists' and designers' work		
		Use common keyboard shortcuts		Demonstrate using measurements throughout a linear sequence.		Described/ explained my own responses to the concept of belonging.		Offer facts about notable artists', artists' and designers' lives		
		Organise files effectively using folders [or B]		Combine floor skills, techniques and movements to create a linear sequence.		Described/ explained my own responses to the concept of belonging.		SKILLS		
		Question 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 weight.		Described/ explained my own responses to the concept of belonging.		DRAWING	Use a variety of techniques to add effects, e.g. shading, cross-hatching, hatching and screentone.	
		Design and create a database		Beginning to show a change of pace and timing in their movement.		Described/ explained my own responses to the concept of belonging.			Design movement and progression in drawing.	
		DATA		Use the space provided to his maximum potential.		Described/ explained my own responses to the concept of belonging.			Use a variety of tools and select the most appropriate.	
		Create a graph from a data [both databases and spreadsheet]							Use key vocabulary to	

Key area
of subject

Individual
target

Skills
specific to
Key Stage

Science		
KNOWLEDGE		
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

Impact of the implementation of the science 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

Link to Federation Long Term Planning for Science

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

OUR IMPLEMENTATION

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>

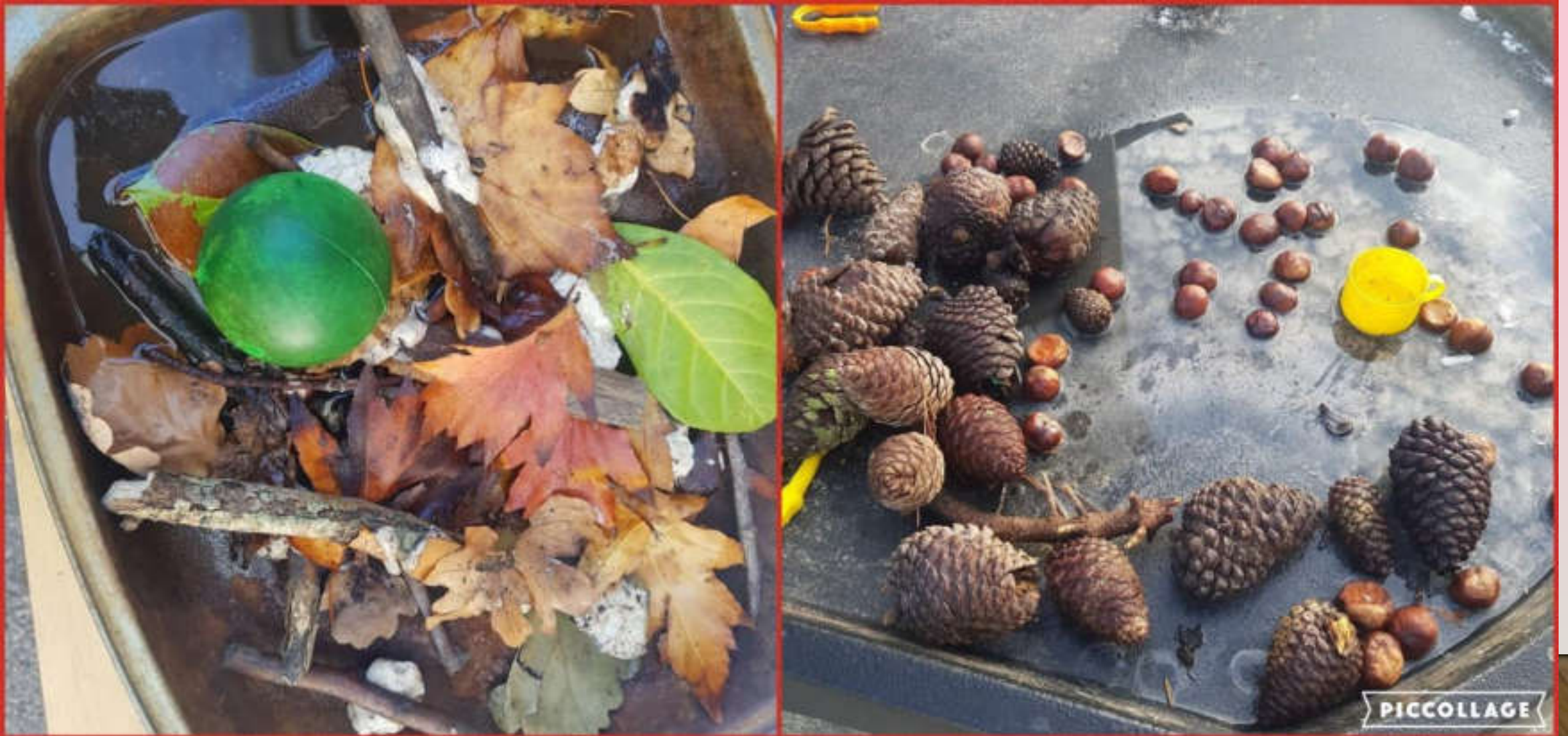
Link to Federation Planning for Summer Term:

https://drive.google.com/drive/folders/1_DUoVTQmR6iqsUelgrBV7MqMmjYHGMjF?usp=share_link



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



FEDERATION COVERAGE – SUMMER TERM

EYFS FRESHWATER & YARMOUTH:



SCIENCE SKILLS IN KEY STAGE I

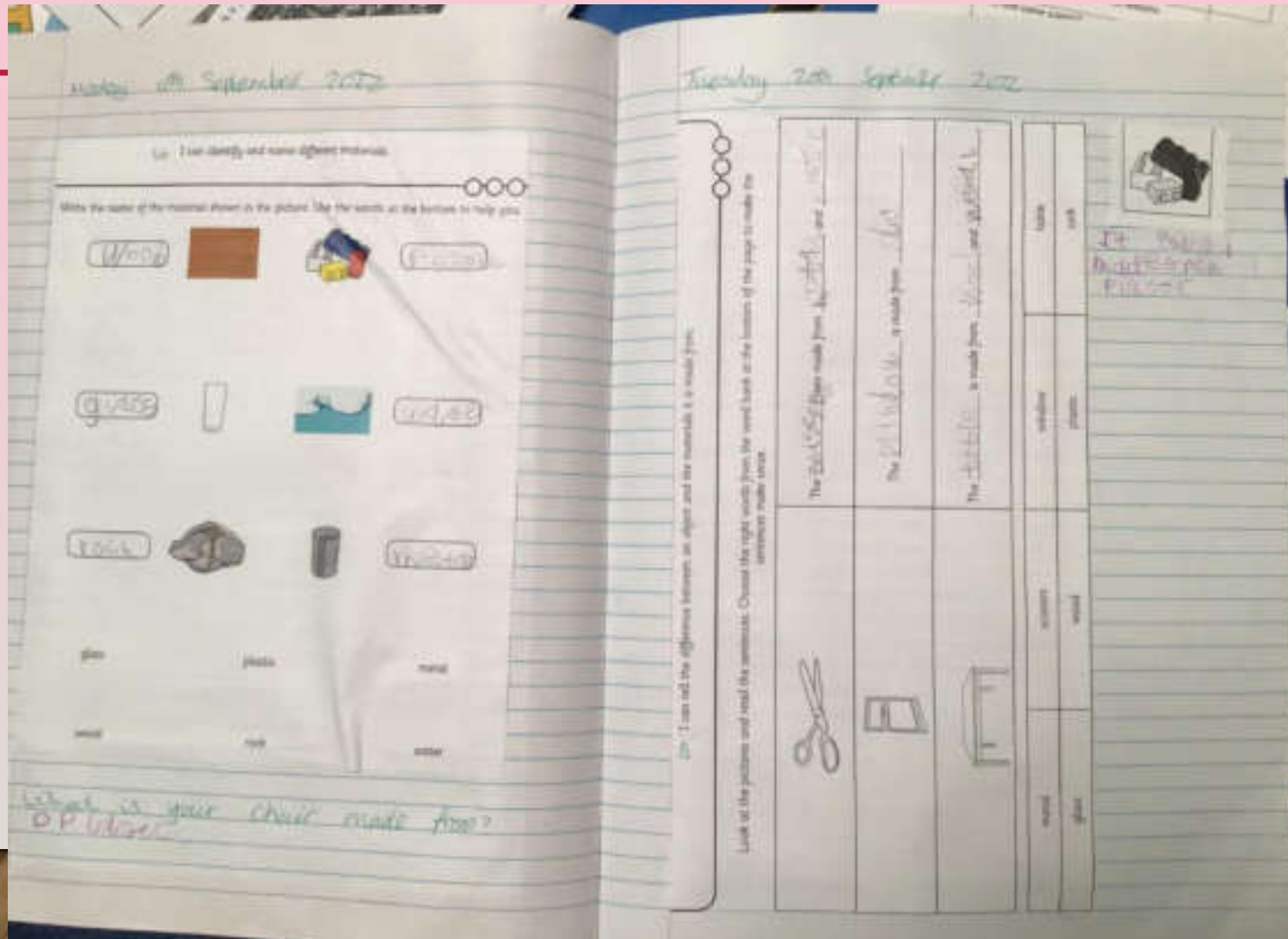
- Asking simple questions and recognising that they can be answered in different ways
- Observing closely, using simple equipment
- Performing simple tests
- Identifying and classifying
- Using their observations and ideas to suggest answers to questions
- Gathering and recording data to help in answering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

SCIENCE IN YEAR I

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

FEDERATION COVERAGE – AUTUMN TERM

Year One Yarmouth: Everyday Materials



Year One Shalfleet: Everyday Materials



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

Weather Notes

It has been cloudy.

What changes have you noticed in the weather conditions?

People wear coats.

Weather Chart

	Monday	Tuesday	Wednesday	Thursday	Friday
Cloud					
Windy					
Rainy					
Sunny					

Trees

The leaves are orange.

They have fallen off.

There is hot sun.

Daylight

Clothes

I am wearing a coat and hat.

Bees

The leaves are red and yellow and orange.

Daylight

Identify signs of autumn

Tick the boxes if you see any of these signs of autumn in your garden or school.

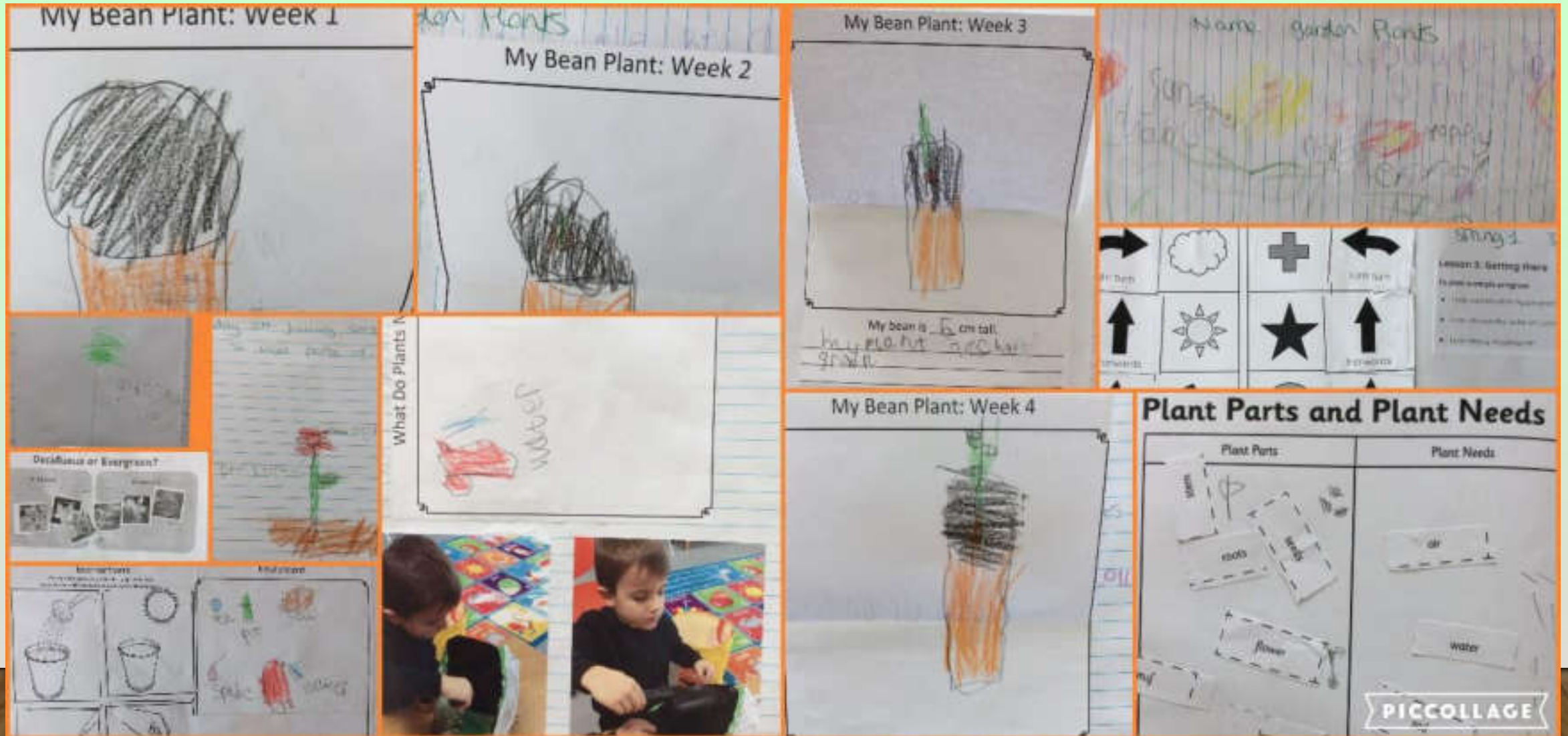
Red leaves	Brown leaves	Yellow leaves	Acorns
Orange leaves	Crickets	Cankers	Squirrels
Pine cones	Leaves on the ground	Blackberries	Moss

Year 1 identifying seasonal change

PICCOLLAGE

FEDERATION COVERAGE – SPRING TERM

Year One Yarmouth: PLANTS



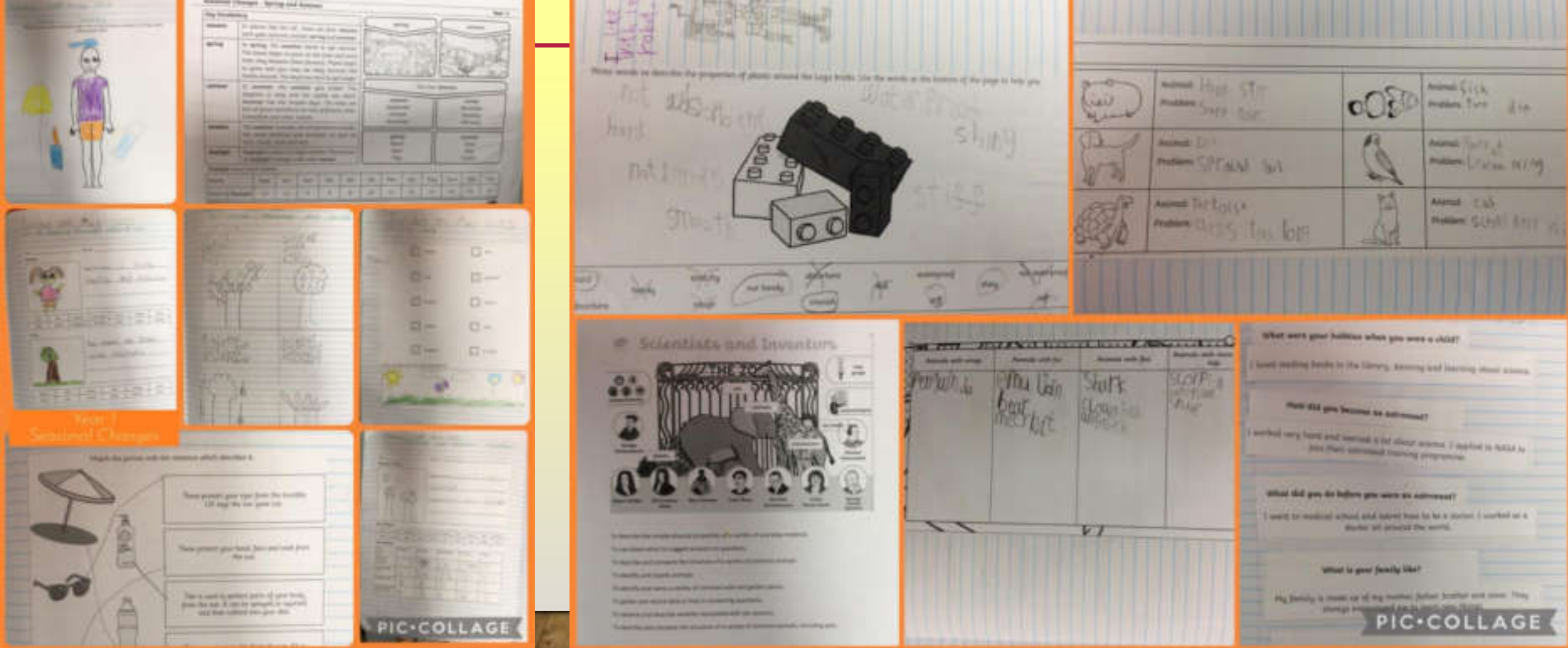
FEDERATION COVERAGE – SPRING TERM

Year One Shalfleet: PLANTS



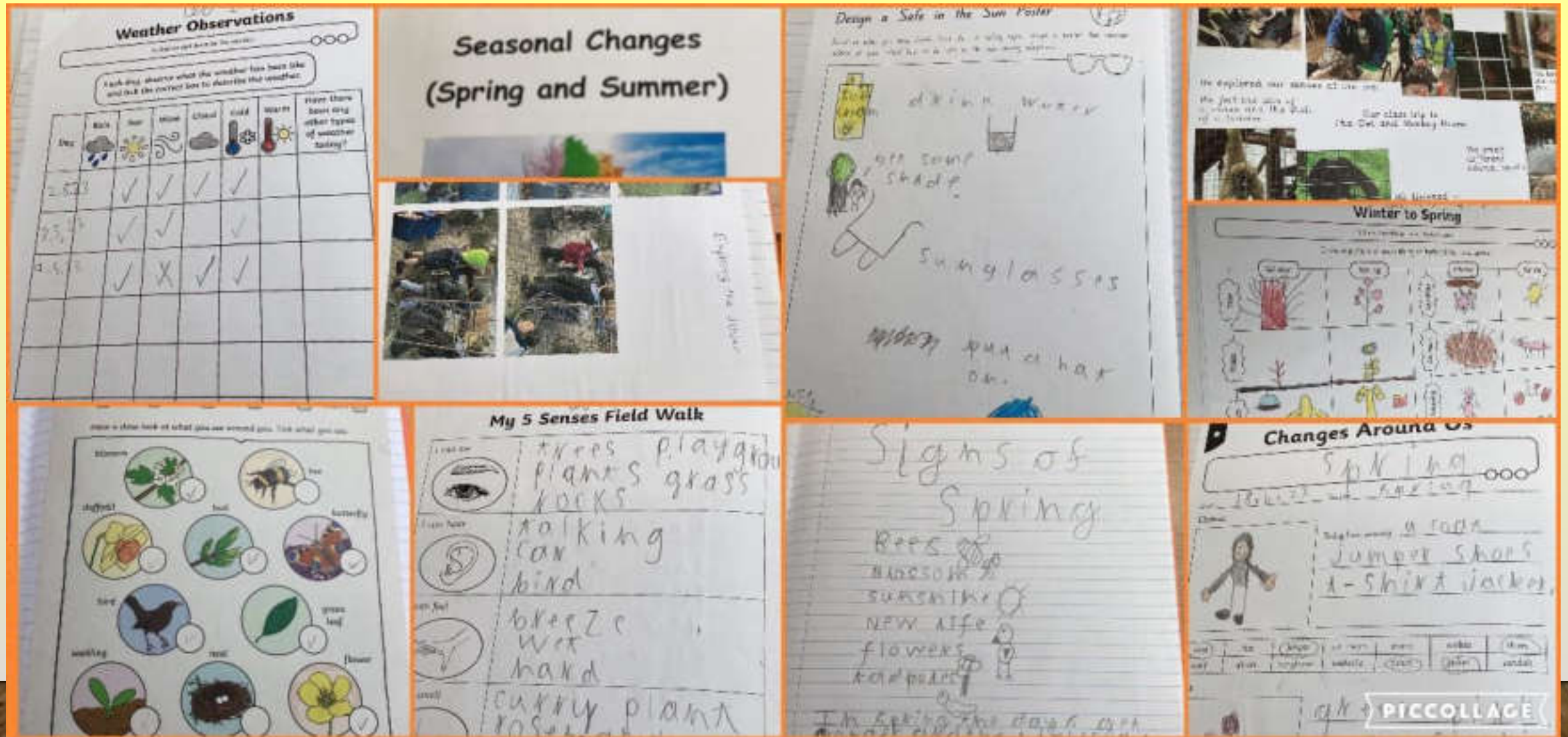
Year One Freshwater & Yarmouth: SEASONAL CHANGES and consolidation

Page 10 of 10



FEDERATION COVERAGE – SUMMER TERM

Year One Shalfleet: SEASONAL CHANGES and consolidation

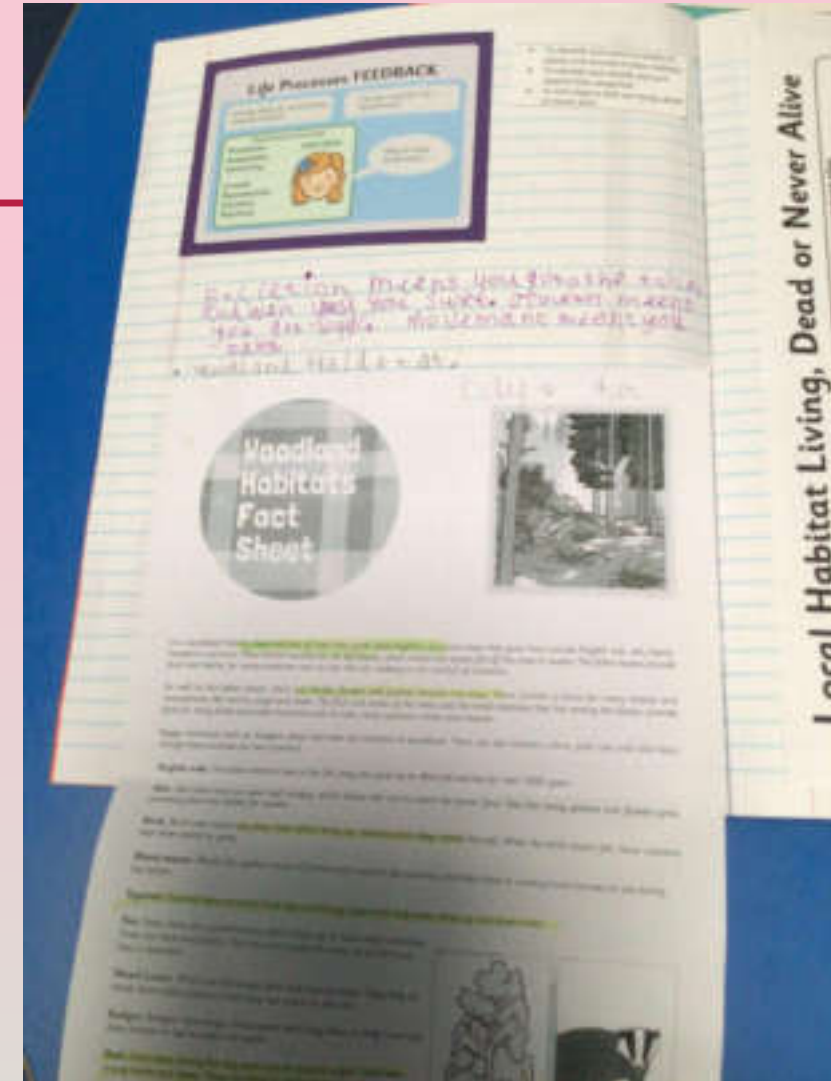


SCIENCE IN YEAR 2

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

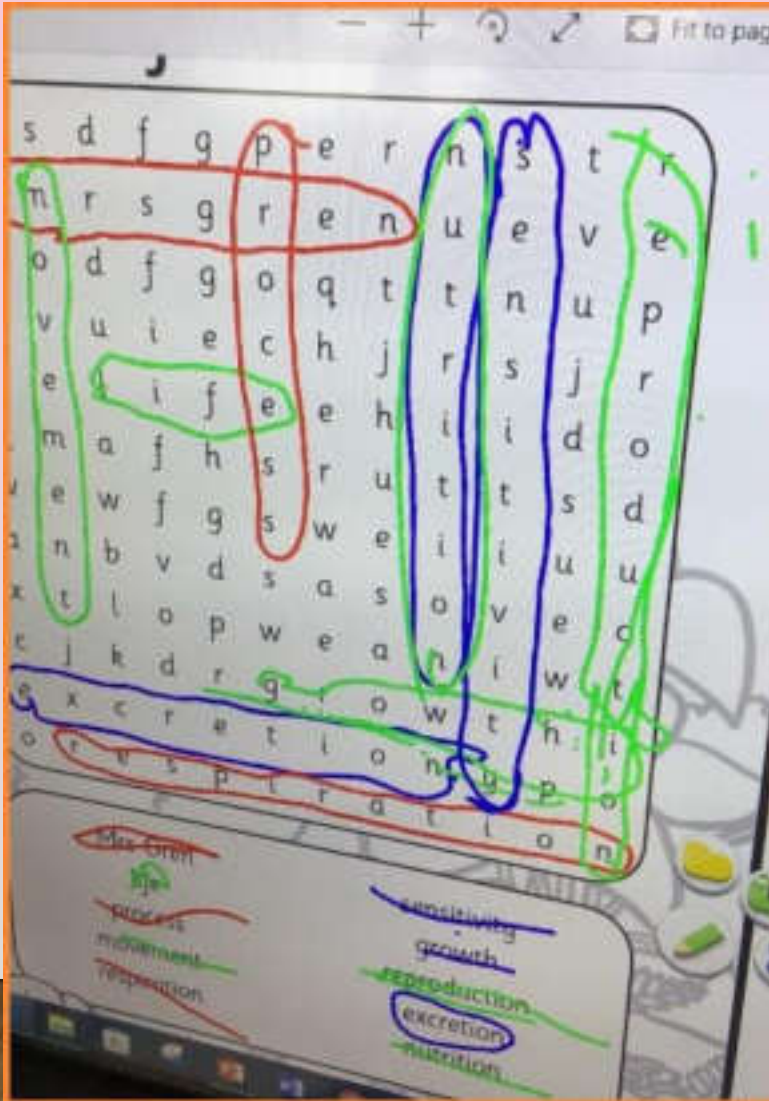
FEDERATION COVERAGE – AUTUMN TERM

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
chilly wet
small dark

undern

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

minibeasts like it because it's dark and damp and they can hide in it.


Microhabitats Enquiry

Edison I can identify animals in their habitats.

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


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

How Do I Survive?




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

How Do I Survive?



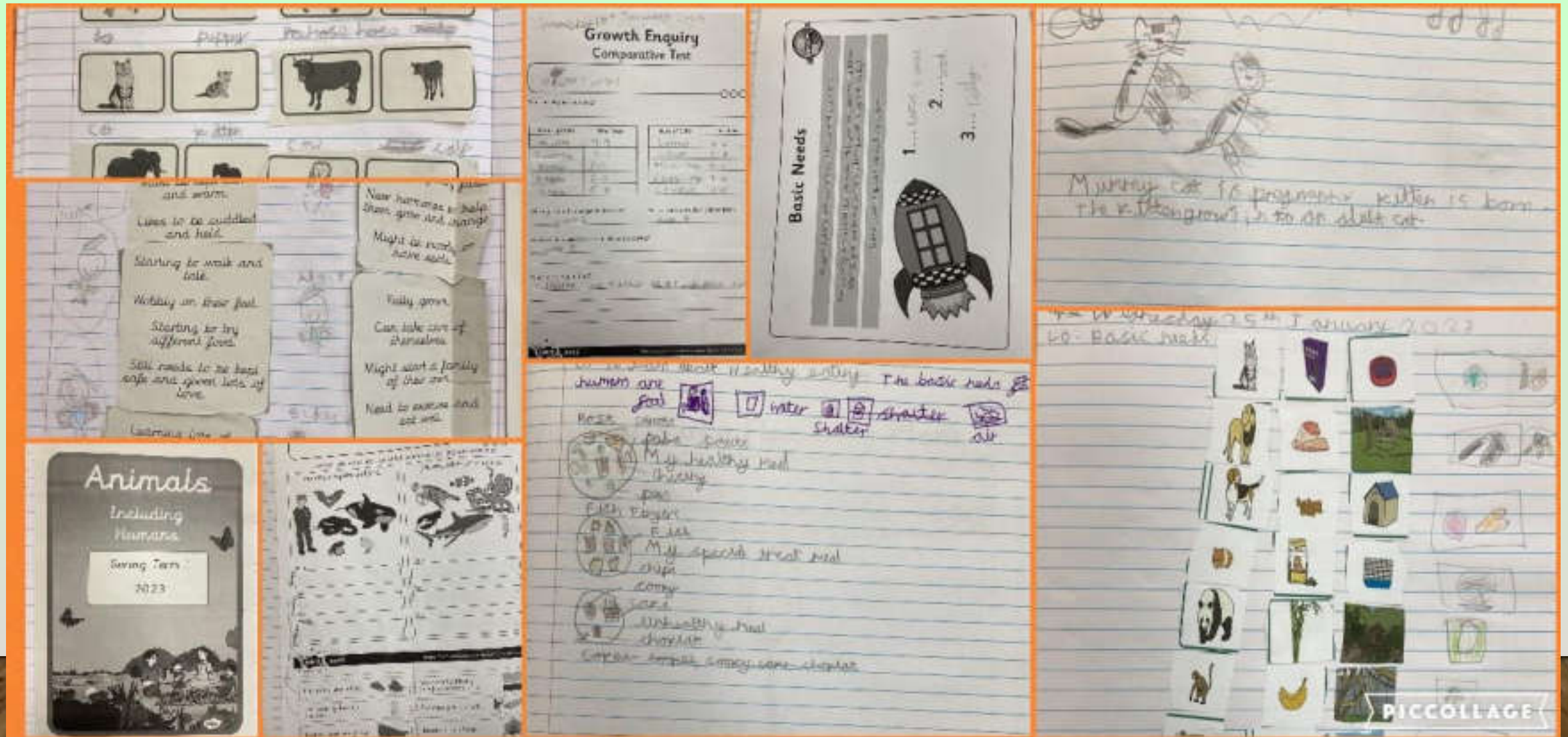
a polar bear must
live in the
desert because
it needs to not
get the polar
bear.

How Do I Survive?



FEDERATION COVERAGE – SPRING TERM

Year Two Shalfleet: Animals Including Humans



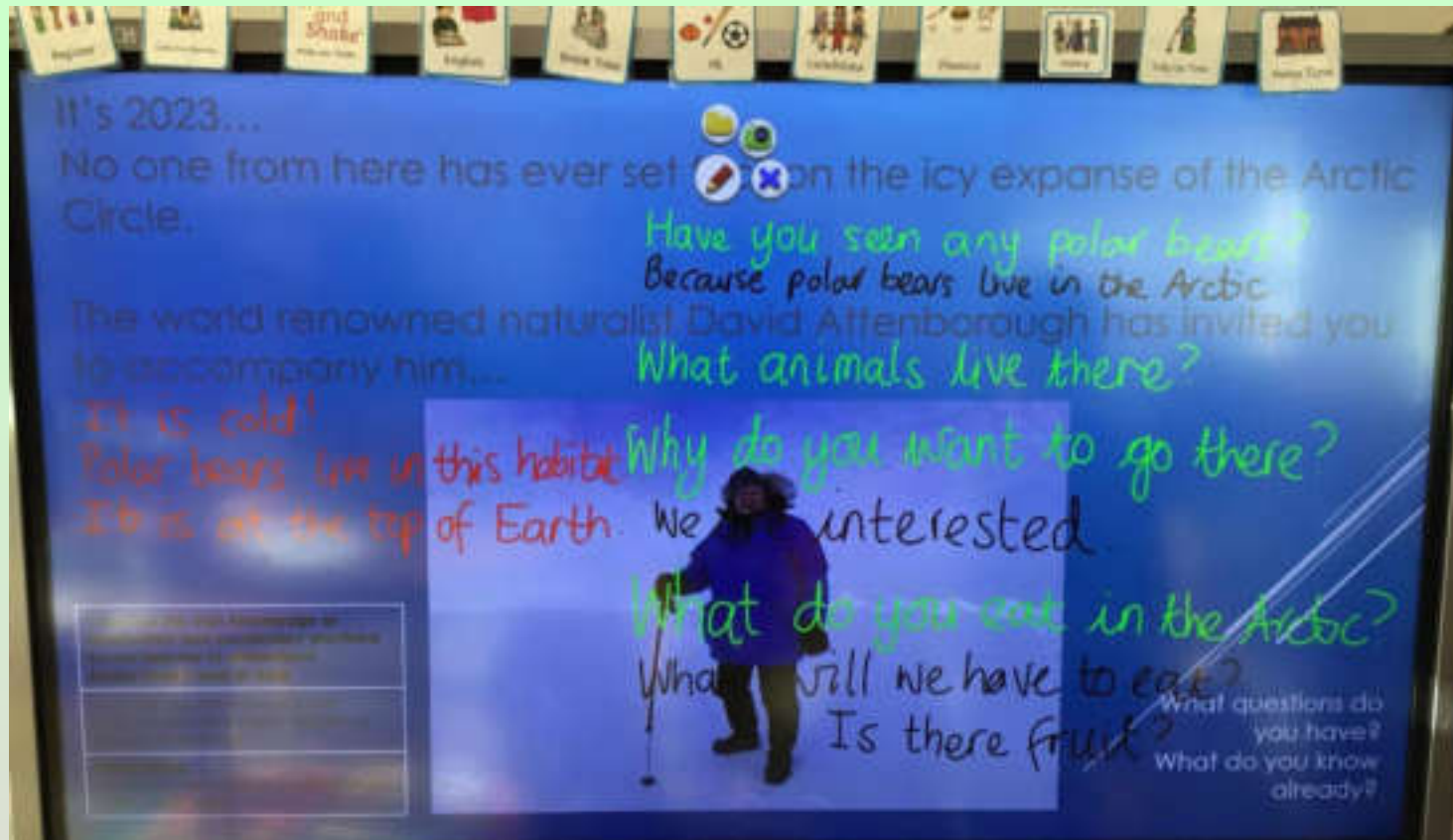
FEDERATION COVERAGE – SPRING TERM

Year Two Yarmouth:



FEDERATION COVERAGE – SPRING TERM

Year Two Yarmouth Animals Including Humans



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

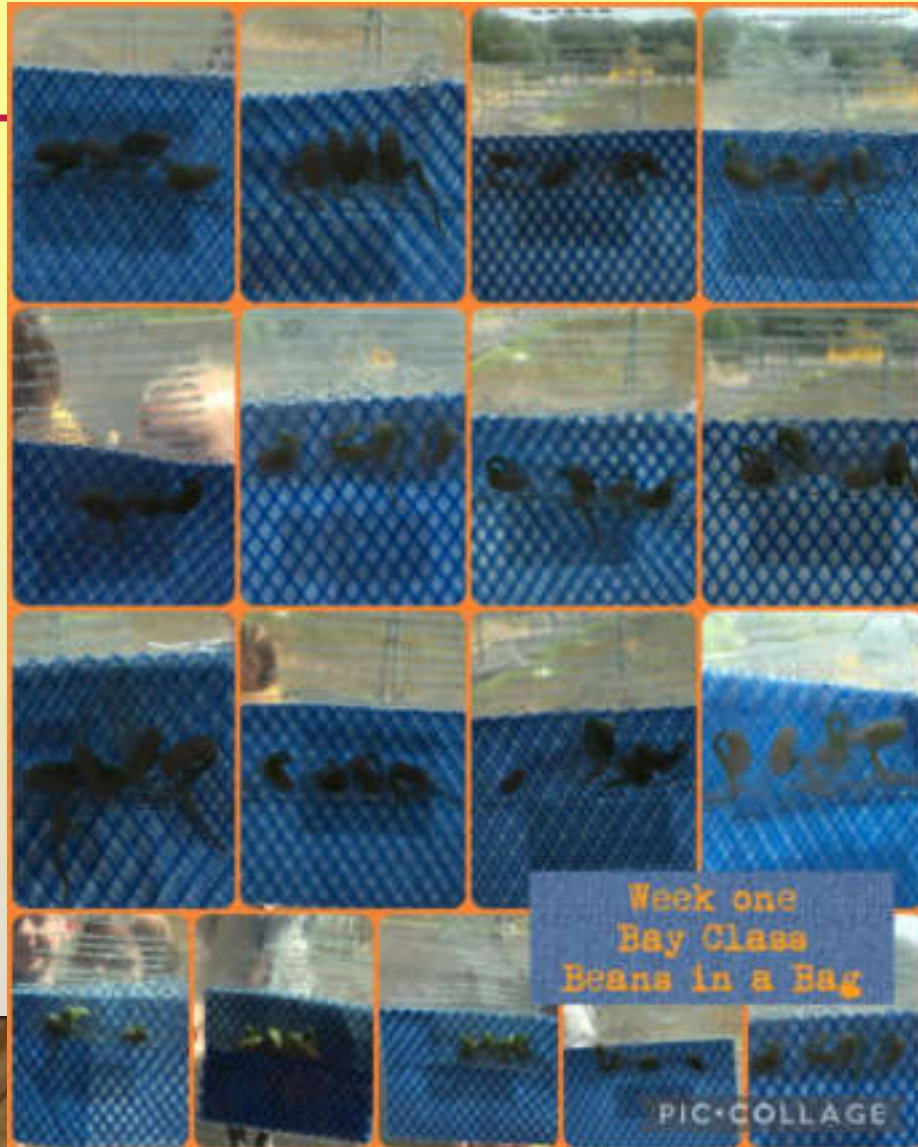
FEDERATION COVERAGE – SPRING TERM

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



FEDERATION COVERAGE – SUMMER TERM

Year Two Freshwater & Yarmouth: Plants part ii



FEDERATION COVERAGE – SUMMER TERM

Year Two Freshwater & Yarmouth: Plants part ii



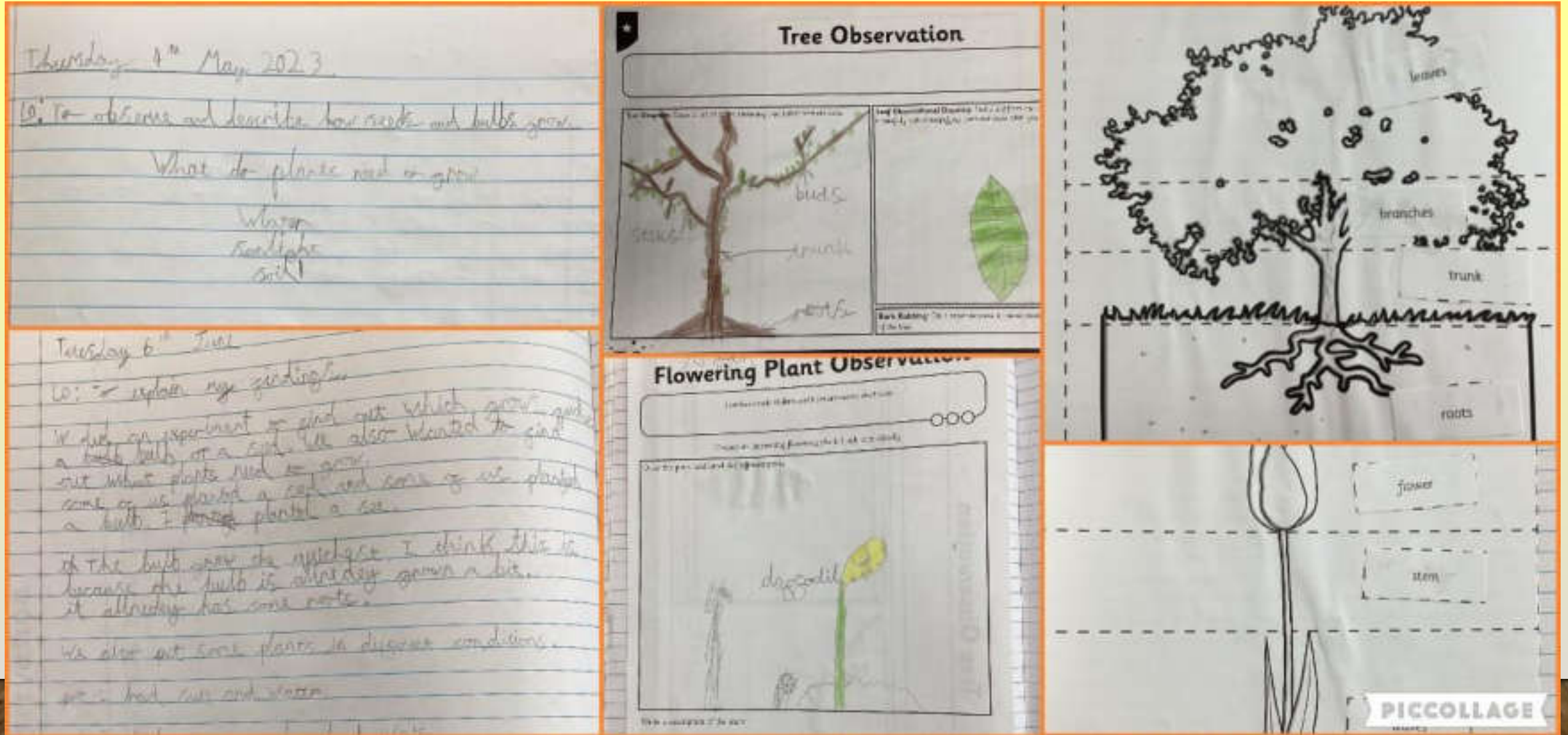
FEDERATION COVERAGE – SUMMER TERM

Year Two Freshwater & Yarmouth: Materials



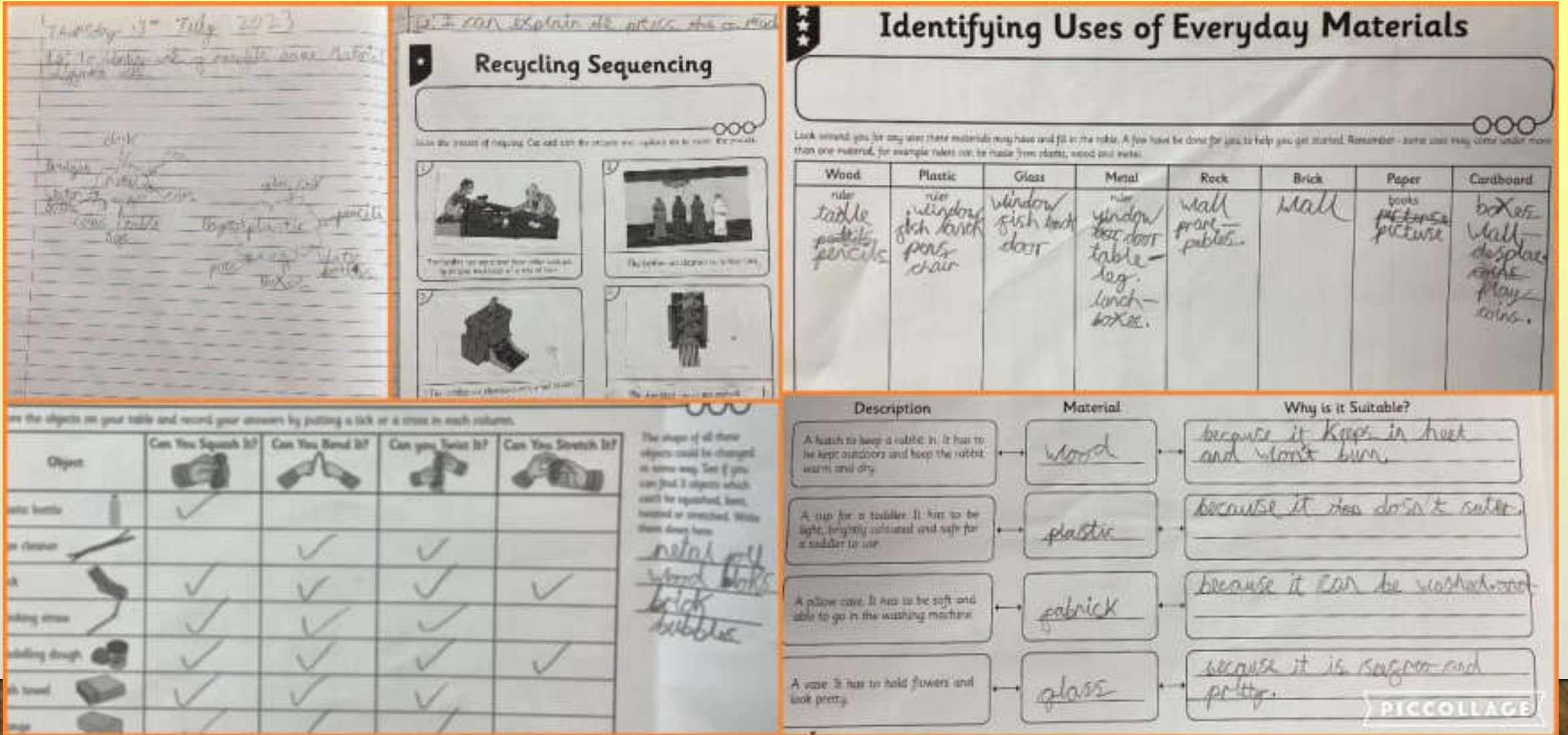
FEDERATION COVERAGE – SUMMER TERM

Year Two Shalfleet: Plants



FEDERATION COVERAGE – SUMMER TERM

Year Two Shalfleet: Materials



SCIENCE

SKILLS IN KEY STAGE 2

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

SCIENCE IN YEAR 3

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

FEDERATION COVERAGE – AUTUMN TERM

Year Three Yarmouth: Rocks and Soil

Rock Type	Description
igneous rock	Rock that has been formed by the cooling of molten magma. When cooled, these form and sticking together, they can see the layers of molten in the rock.
sedimentary rock	Rock that started out as igneous or sedimentary rock but changed due to being pressed to extreme heat or pressure.
metamorphic rock	Rock that started out as igneous or sedimentary rock but changed due to being pressed to extreme heat or pressure.
igneous	Rock that remains underground.
lava	Rock that comes out of the ground in a liquid form.
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	
Granite	Chalk	Marble	Brick
Concrete	Sandstone	Quartzite	Concrete
Basalt	Limestone	Slate	Coarse 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).

2. This rock is fossiliferous limestone

3. This rock is Granite

5.

6.

Rocks

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

Rocks and Soil

absorbent, permeable, impermeable, impermeable

particles

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

PICCOLLAGE

FEDERATION COVERAGE – AUTUMN TERM

Year Three Shalfleet: Rocks and Soil

Palaeontology
(pay-lee-on-to-lo-jee)

the scientific study of fossils

Palaeontologist
(pay-lee-on-to-lo-jist)

A person that studies fossils

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

Thursday 6 October 2021
Loi To receive more knowledge contribution to palaeontology

Types of Fossils

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

Footprints and

Rock Cycle Diagram

volcanic eruption

Magma

Igneous Rock

Sediment

Sedimentary Rock

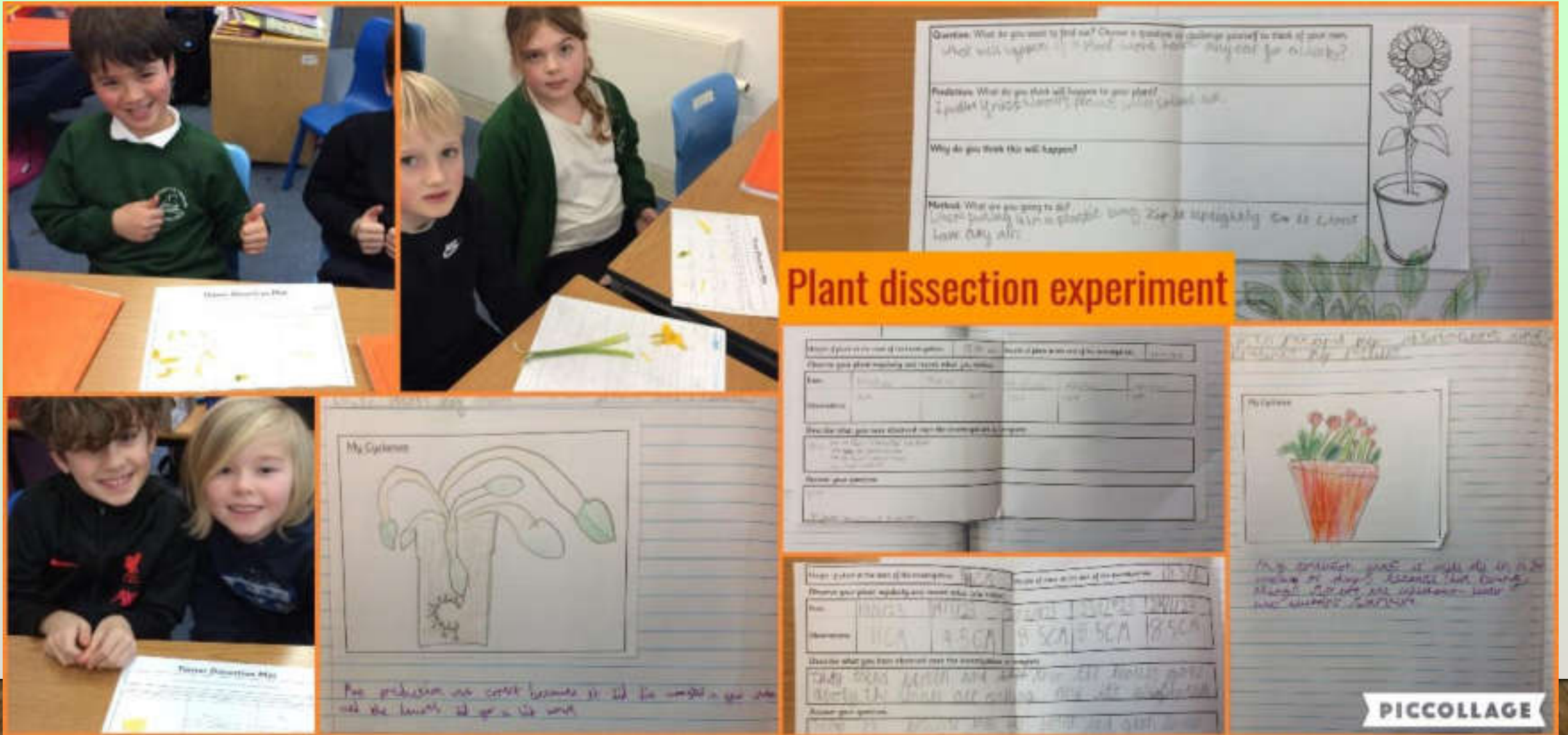
Metamorphic Rock

Sediment

PICCOLLAGE

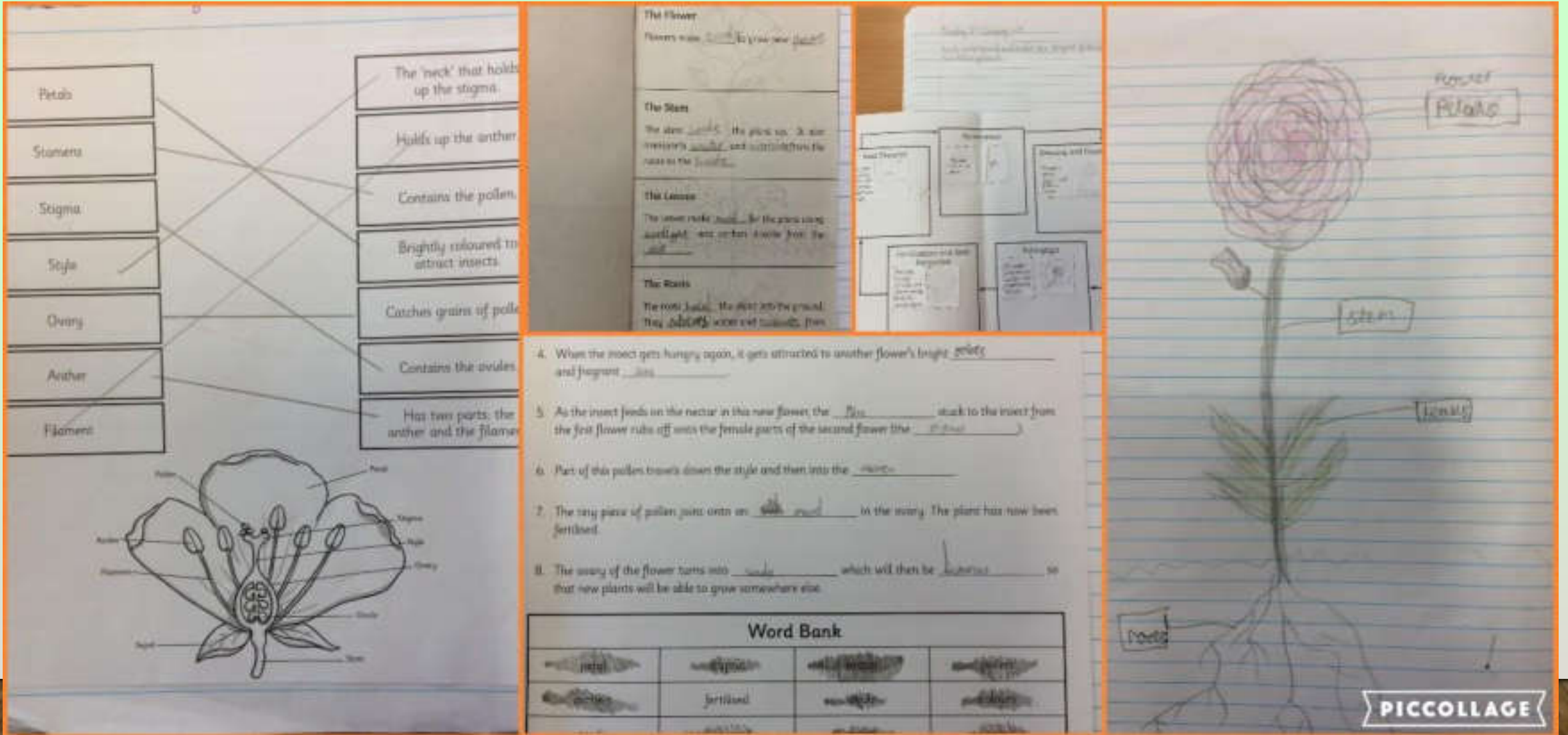
FEDERATION COVERAGE – SPRING TERM

Year Three Shalfleet: Plants



FEDERATION COVERAGE – SPRING TERM

Year Three Shalfleet: Plants



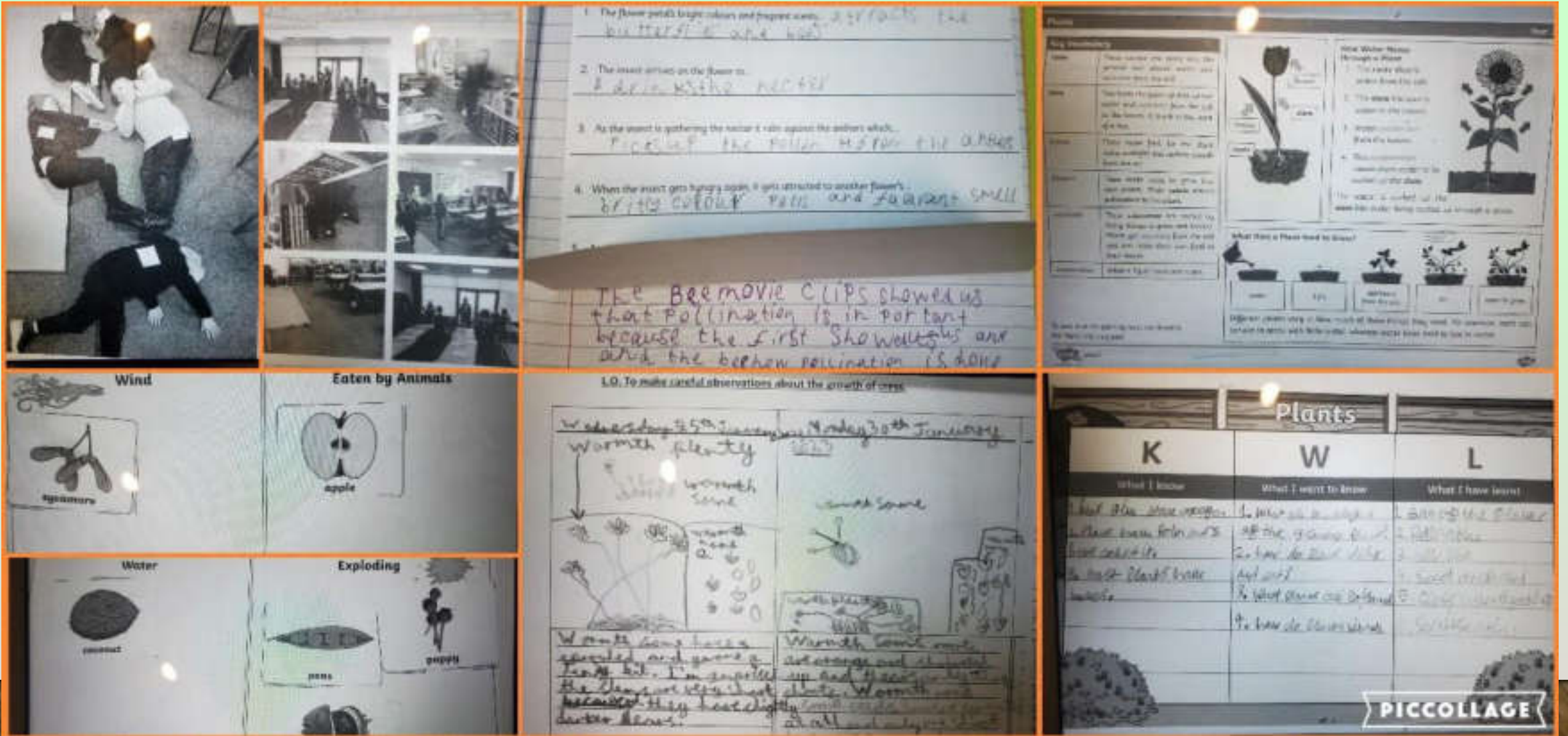
FEDERATION COVERAGE – SPRING TERM

Year Three Shalfleet: Plants - Water Transportation Process



FEDERATION COVERAGE – SPRING TERM

Year Three Yarmouth: Plants



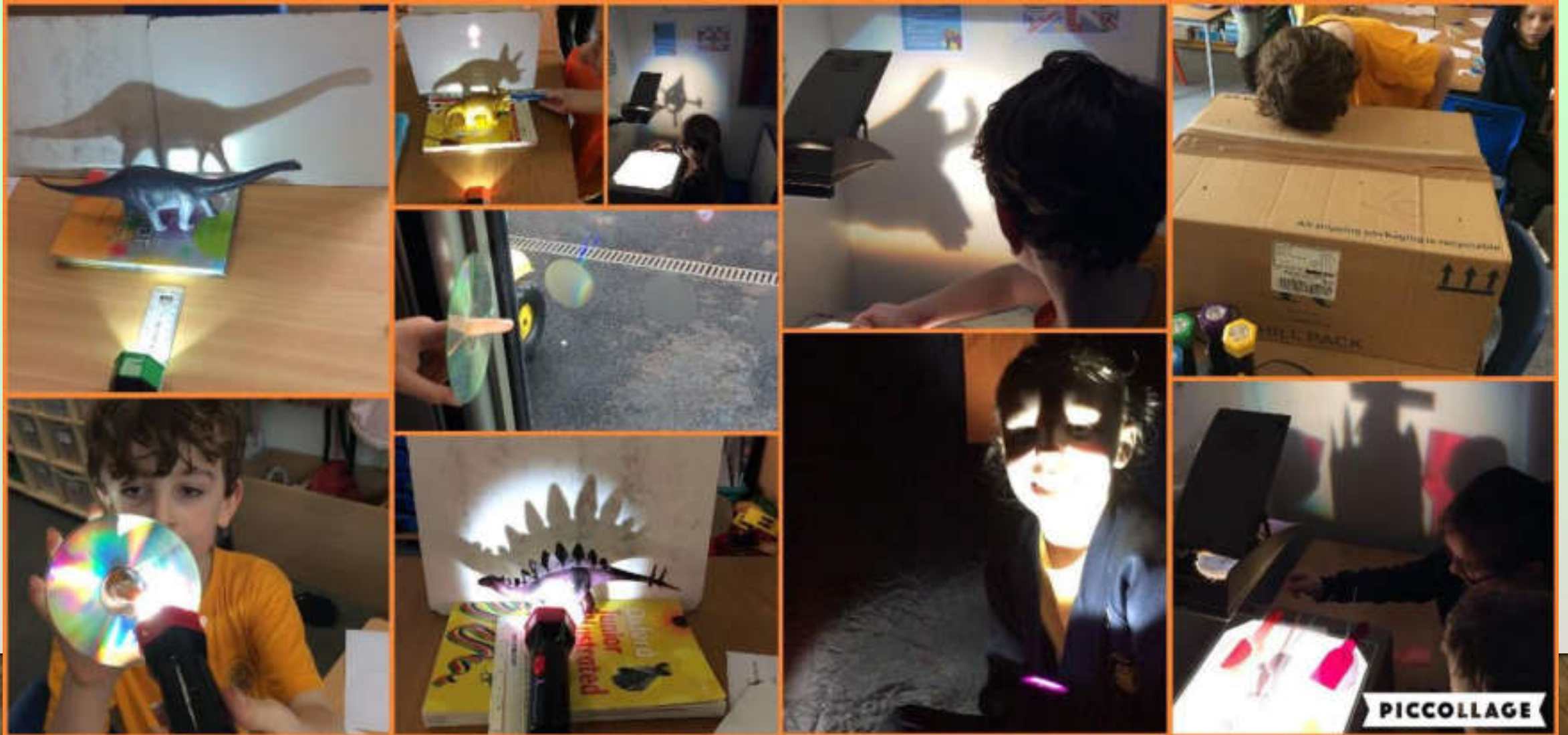
FEDERATION COVERAGE – SPRING TERM

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



FEDERATION COVERAGE – SPRING TERM

Year Three Yarmouth: **LIGHT** understanding shadows



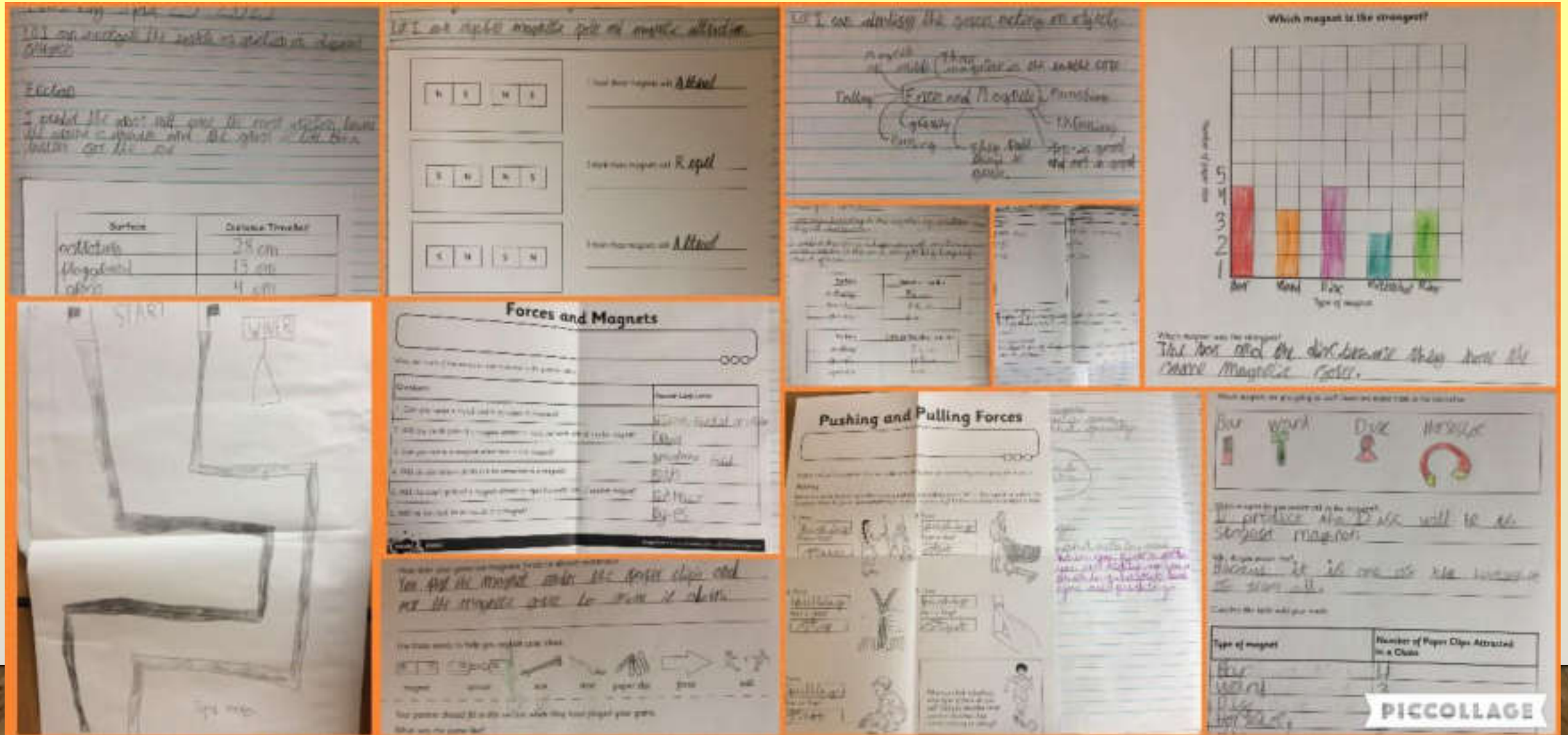
FEDERATION COVERAGE – SUMMER TERM

Year Three Freshwater & Yarmouth:FORCES



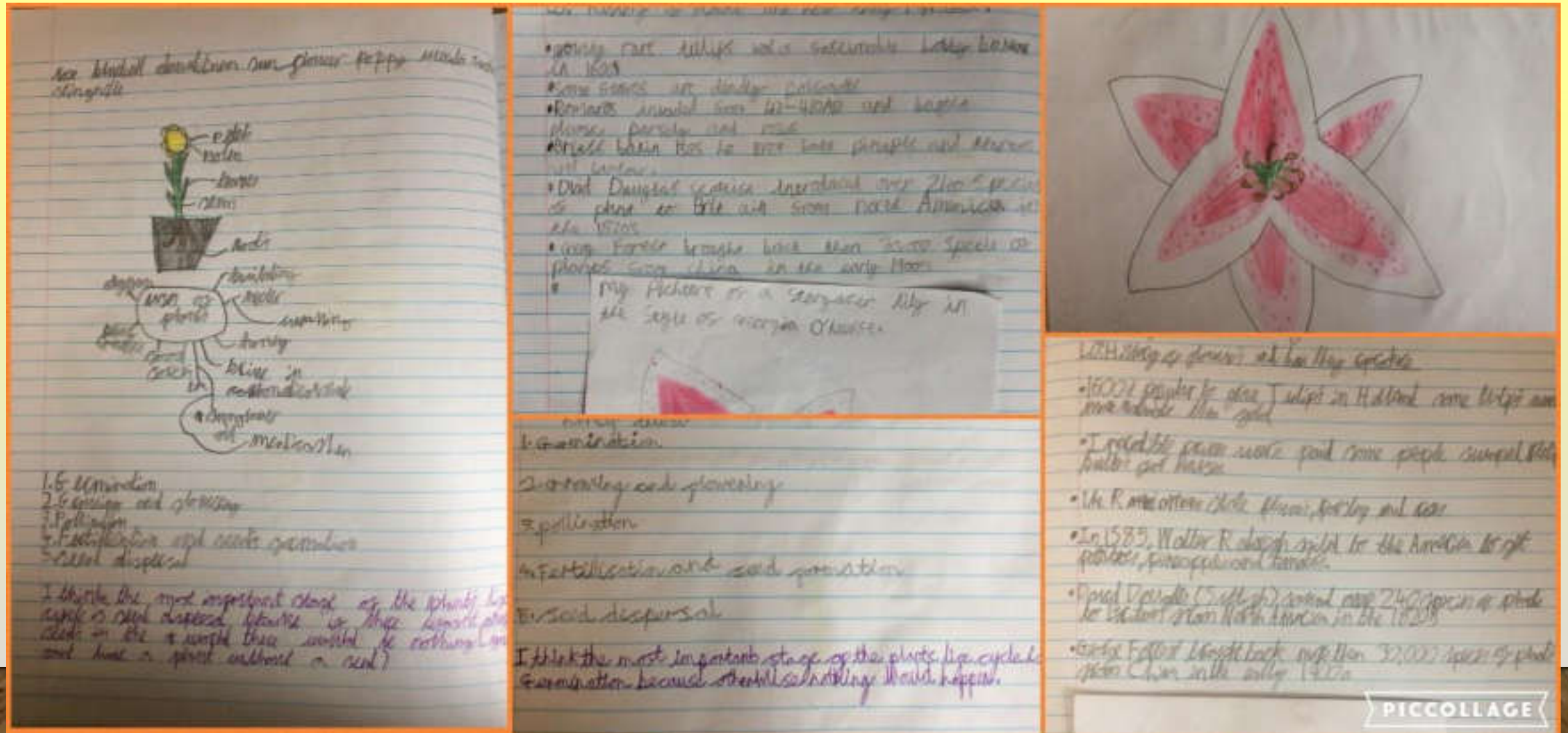
FEDERATION COVERAGE – SUMMER TERM

Year Three Shalfleet: FORCES



FEDERATION COVERAGE – SUMMER TERM

Year Three Shalfleet: PLANTS including wider curriculum Art work



SCIENCE IN YEAR 4

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

FEDERATION COVERAGE – AUTUMN TERM

Year Four Yarmouth: Living Things

How do we know living things are alive?

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!

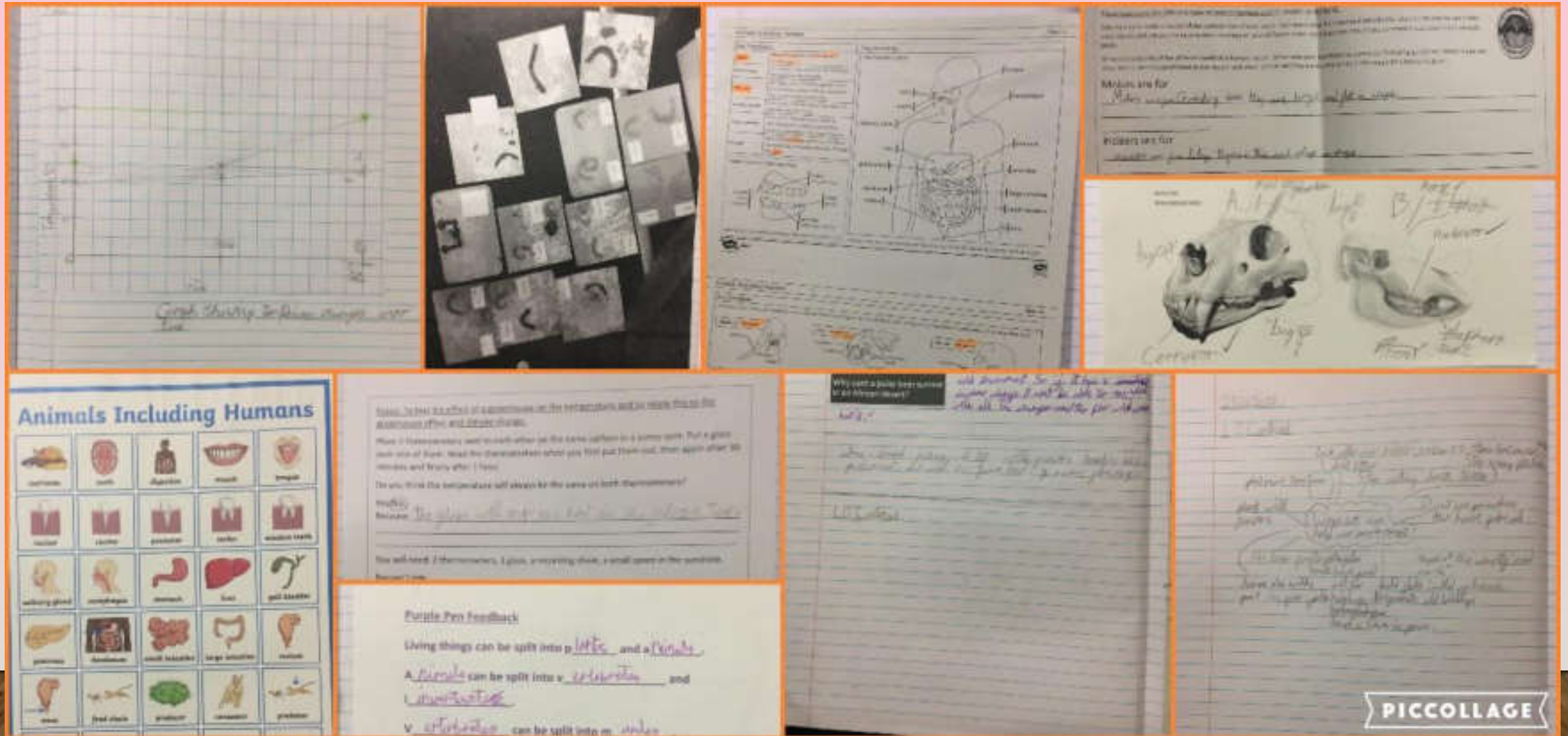
Green plants make their own food using sunlight, carbon dioxide and water. Animals eat plants and/or other animals.

Science

PICCOLLAGE

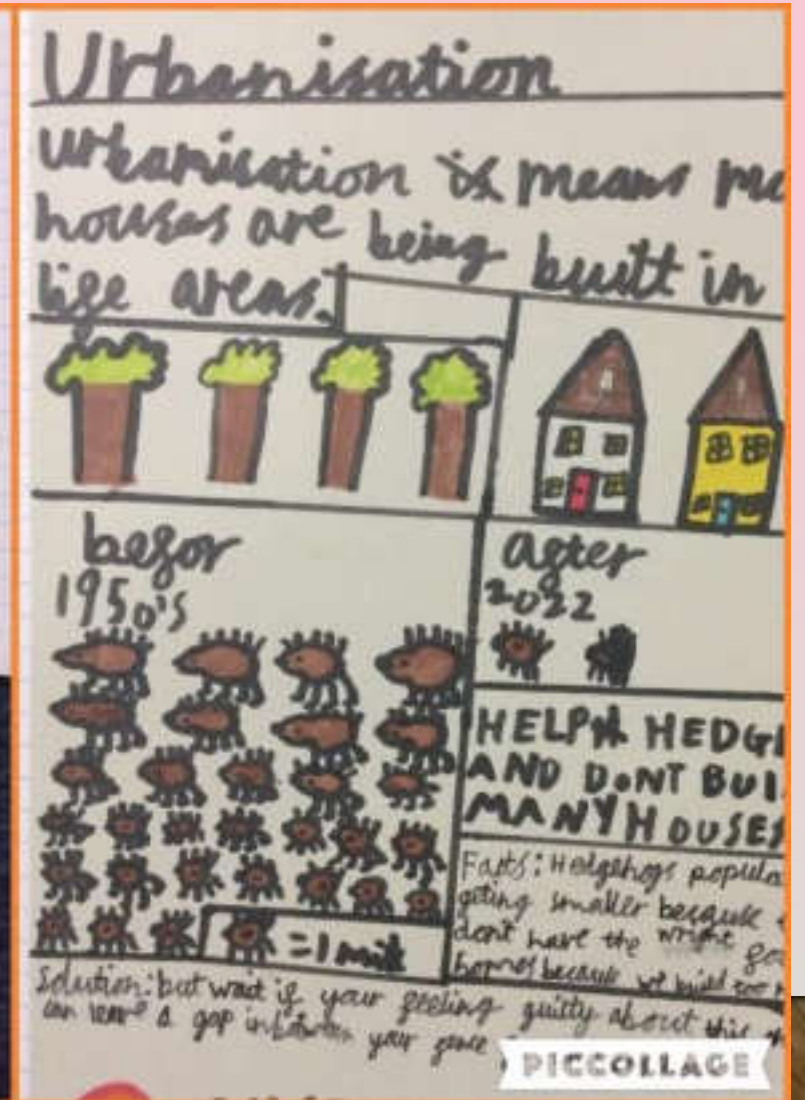
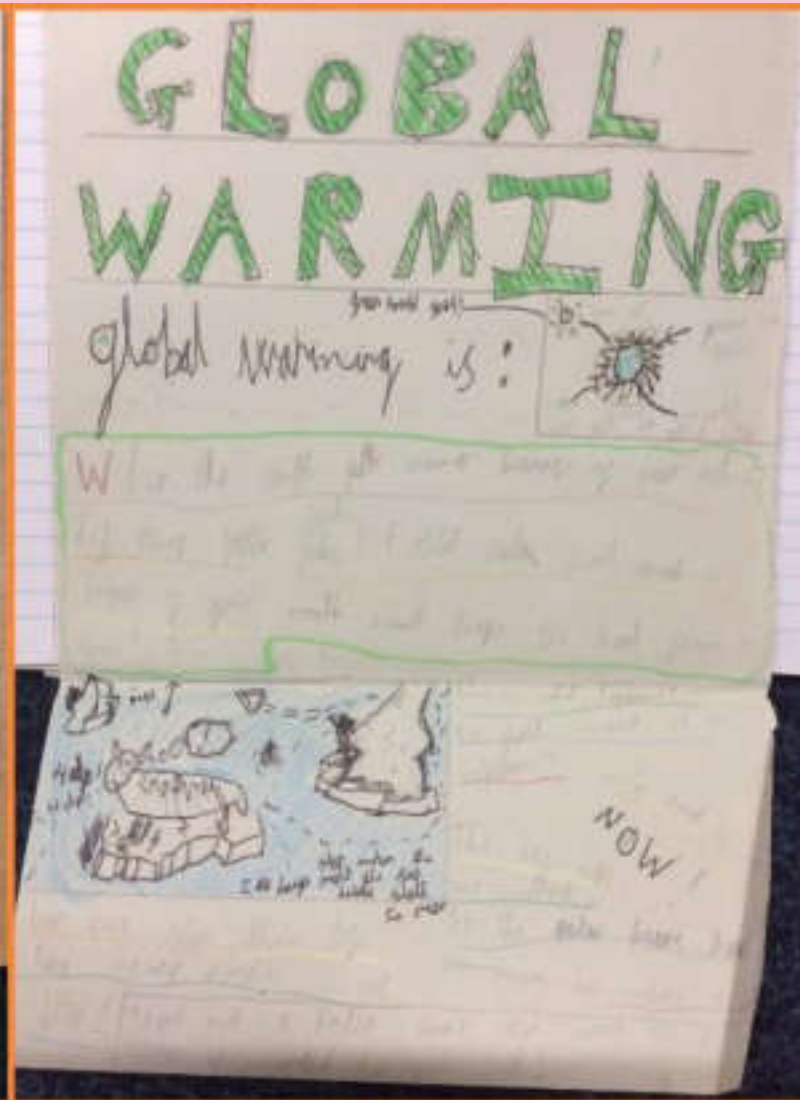
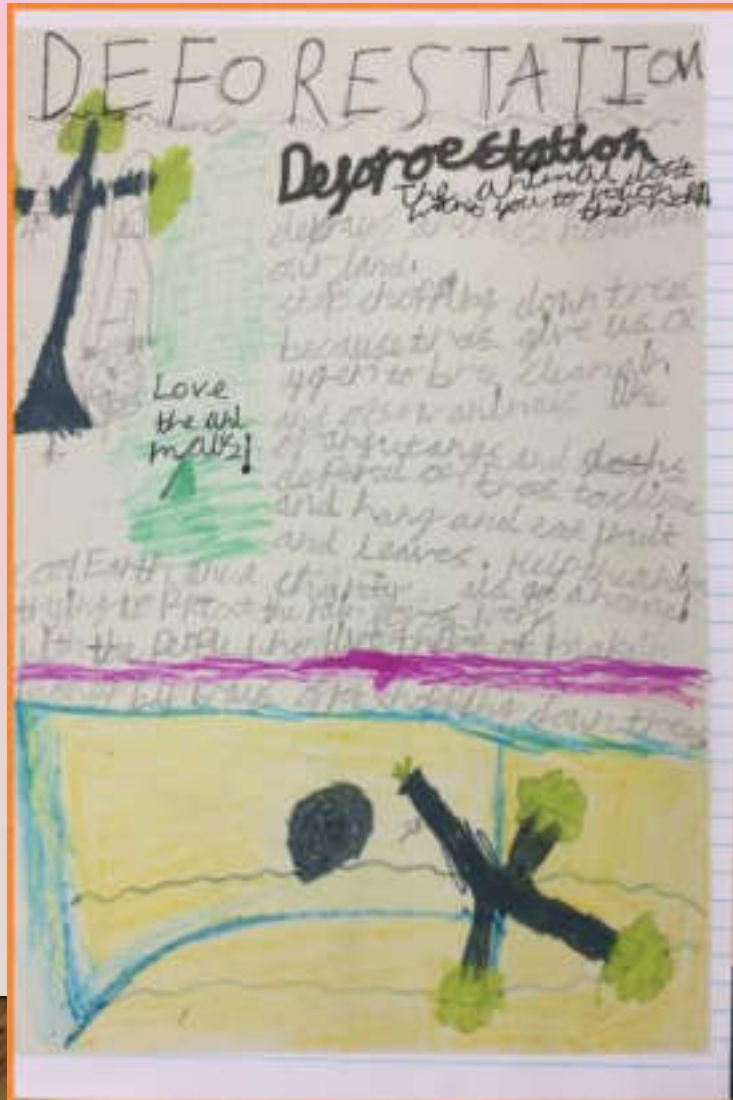
FEDERATION COVERAGE – AUTUMN TERM

Year Four Yarmouth: Animals Including Humans



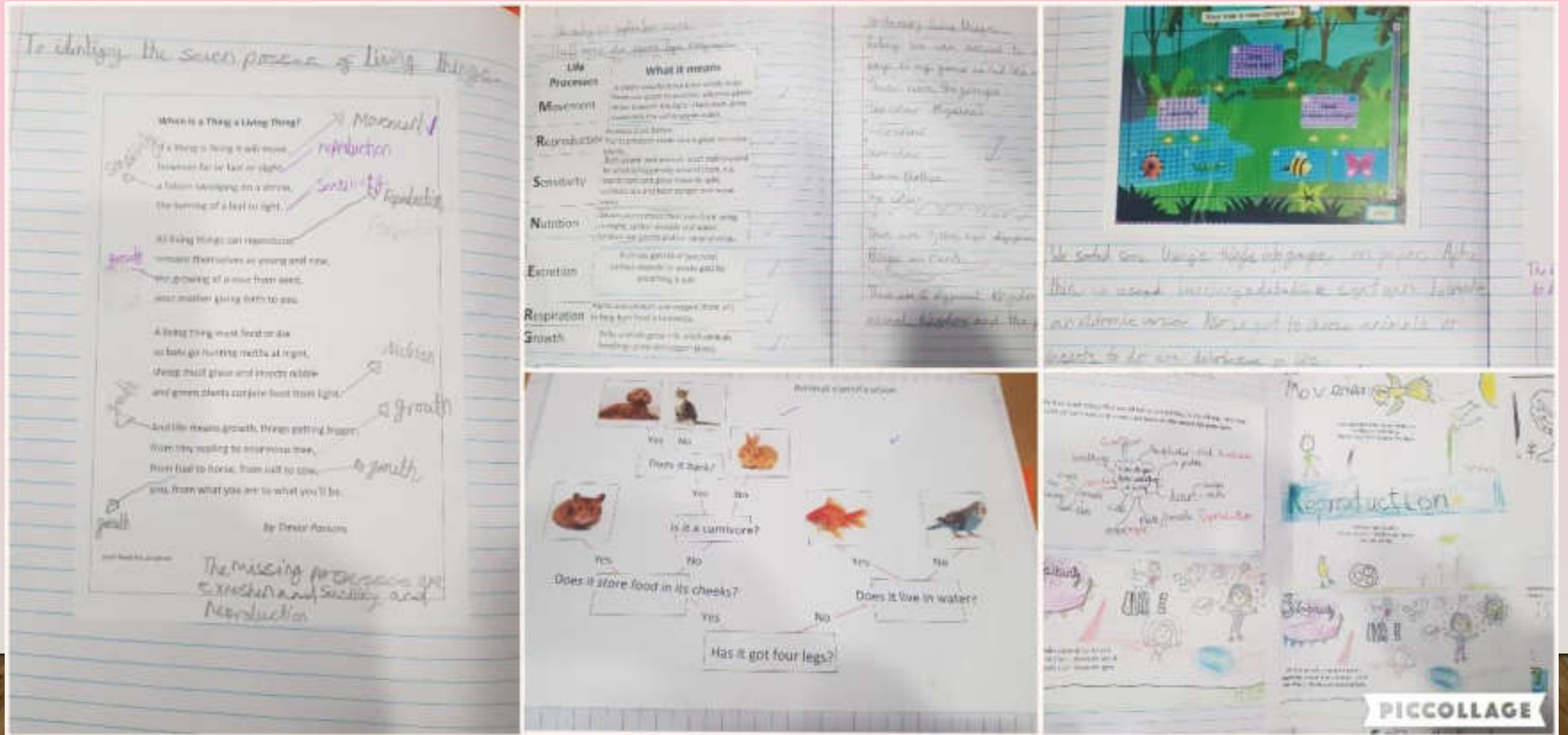
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Year Four Yarmouth:



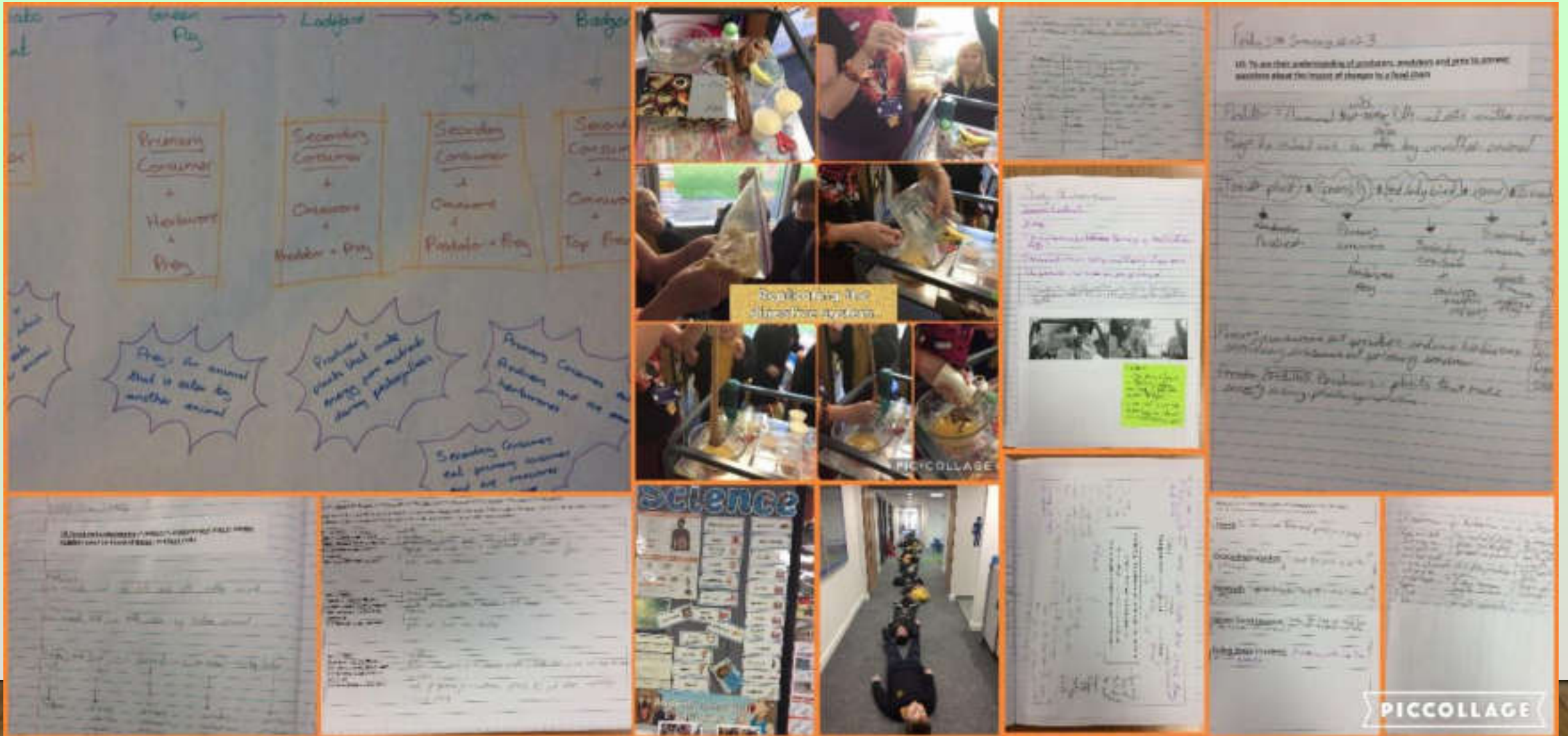
FEDERATION COVERAGE – AUTUMN TERM

Year Four Shalfleet: Living things and their habitats



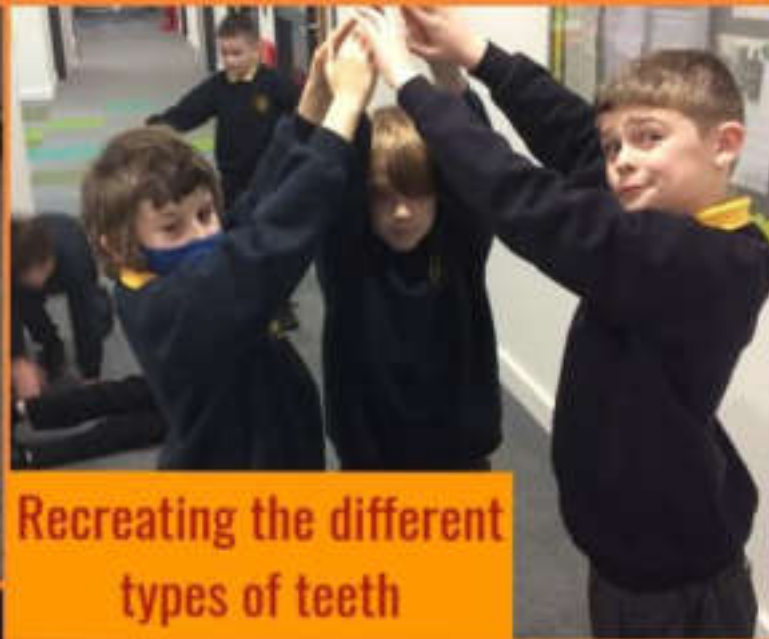
FEDERATION COVERAGE – SPRING TERM

Year Four Yarmouth: Animals Including Human THE DIGESTIVE SYSTEM



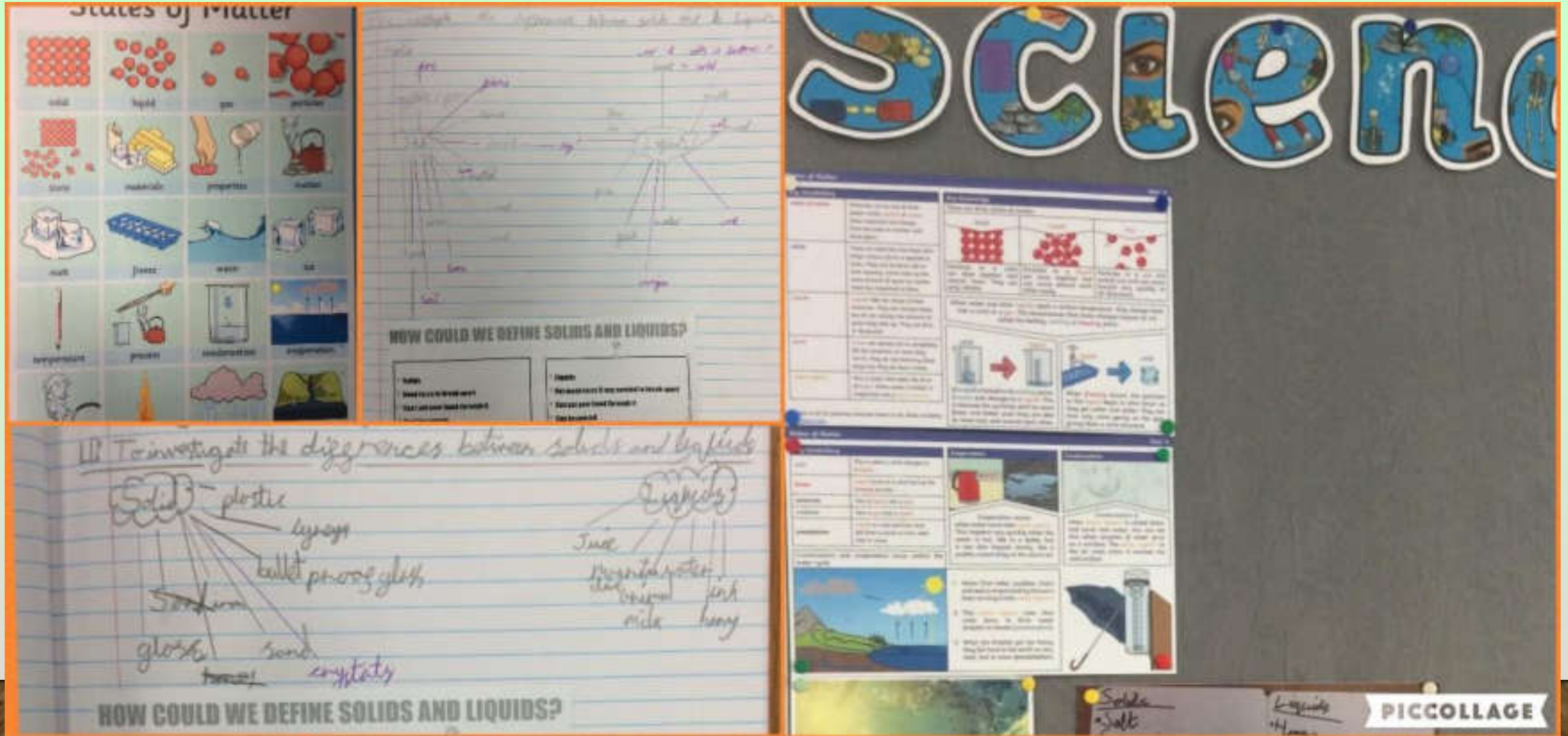
FEDERATION COVERAGE – SPRING TERM

Year Four Yarmouth: Animals Including Human TEETH



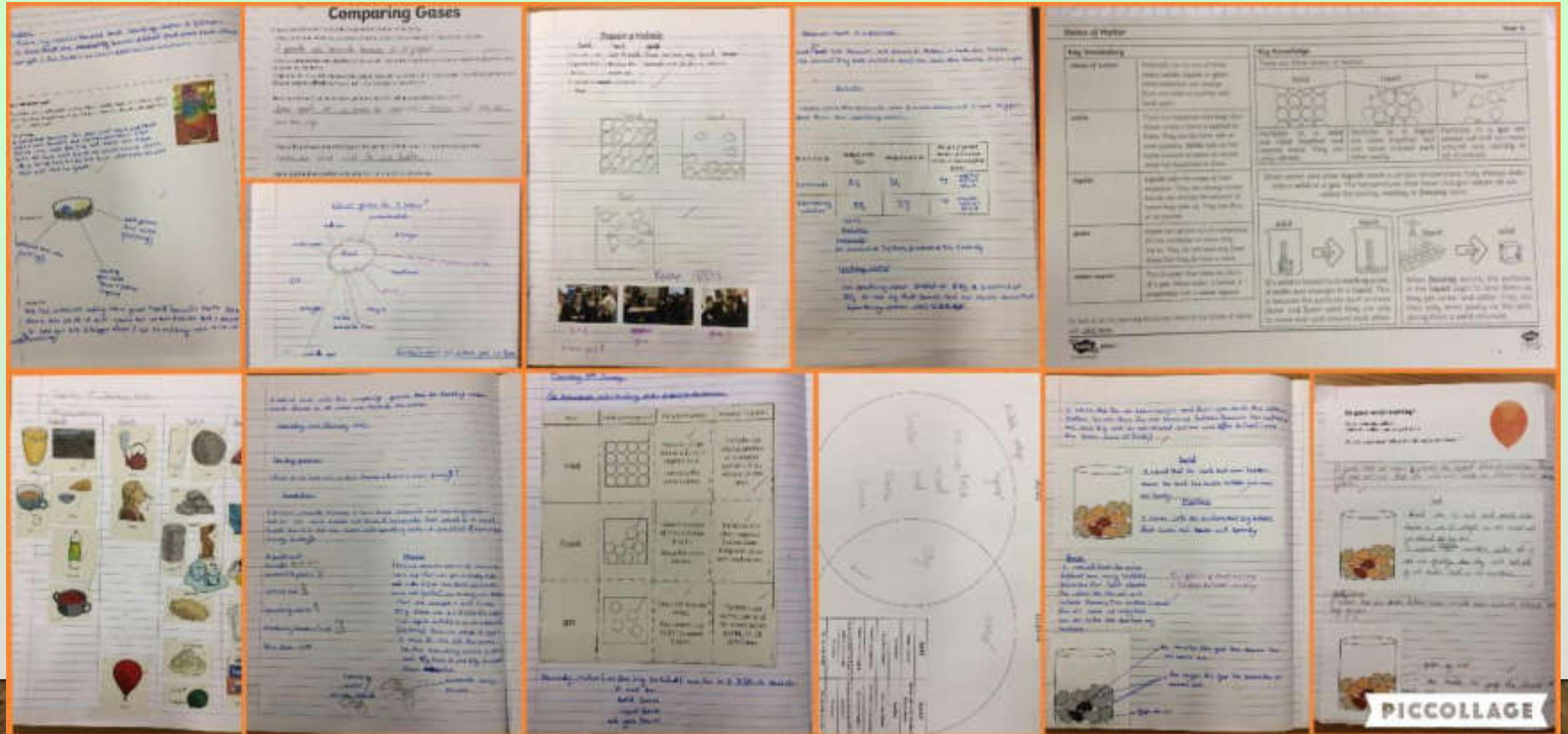
FEDERATION COVERAGE – SPRING TERM

Year Four Yarmouth: States of Matter



FEDERATION COVERAGE – SPRING TERM

Year Four Shalfleet: States of Matter



FEDERATION COVERAGE – SPRING TERM

Year Four Shalfleet: States of Matter



FEDERATION COVERAGE – SPRING TERM

Year Four Shalfleet: States of Matter



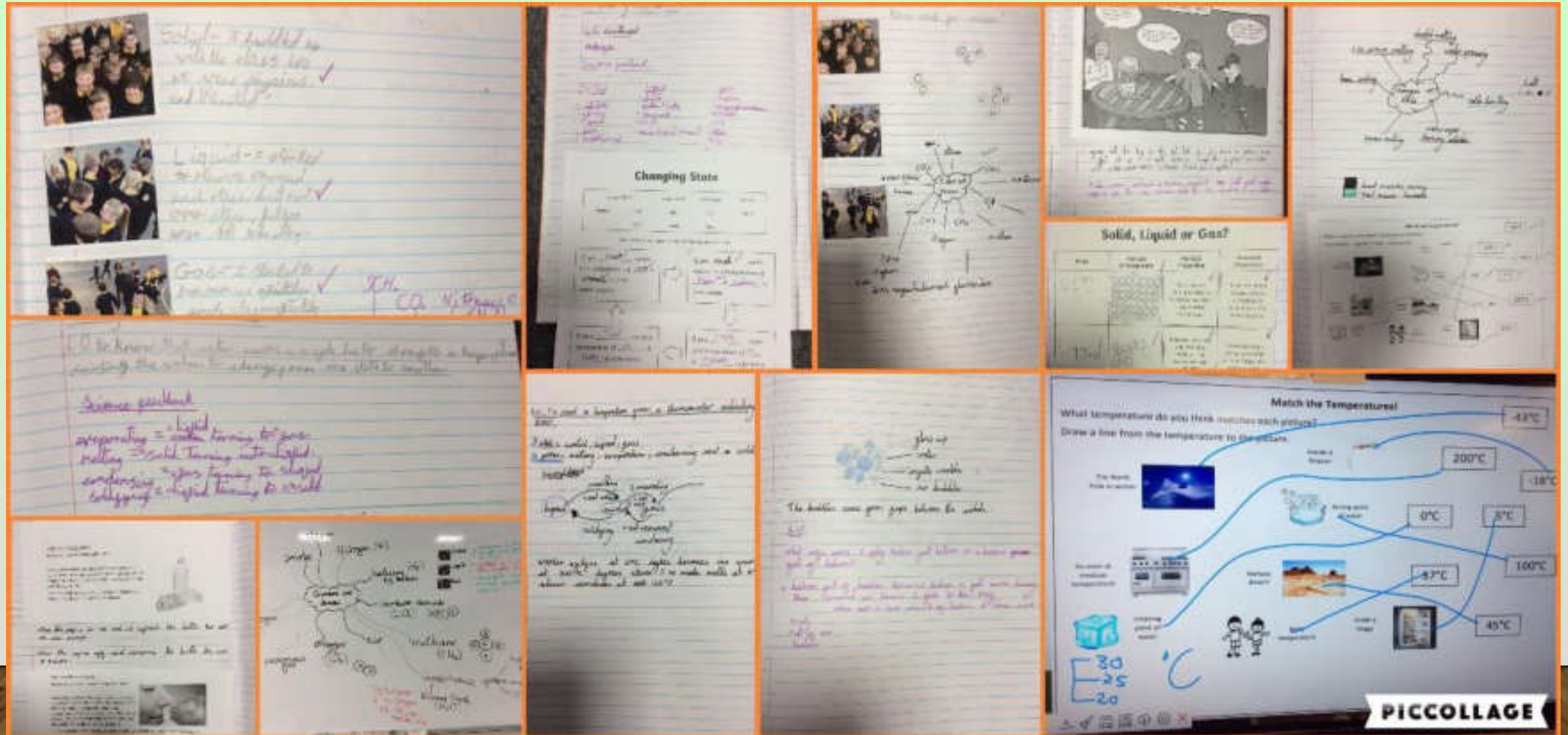
FEDERATION COVERAGE – SPRING TERM

Year Four Freshwater and Yarmouth: States of Matter



FEDERATION COVERAGE – SPRING TERM

Year Four Freshwater and Yarmouth: States of Matter

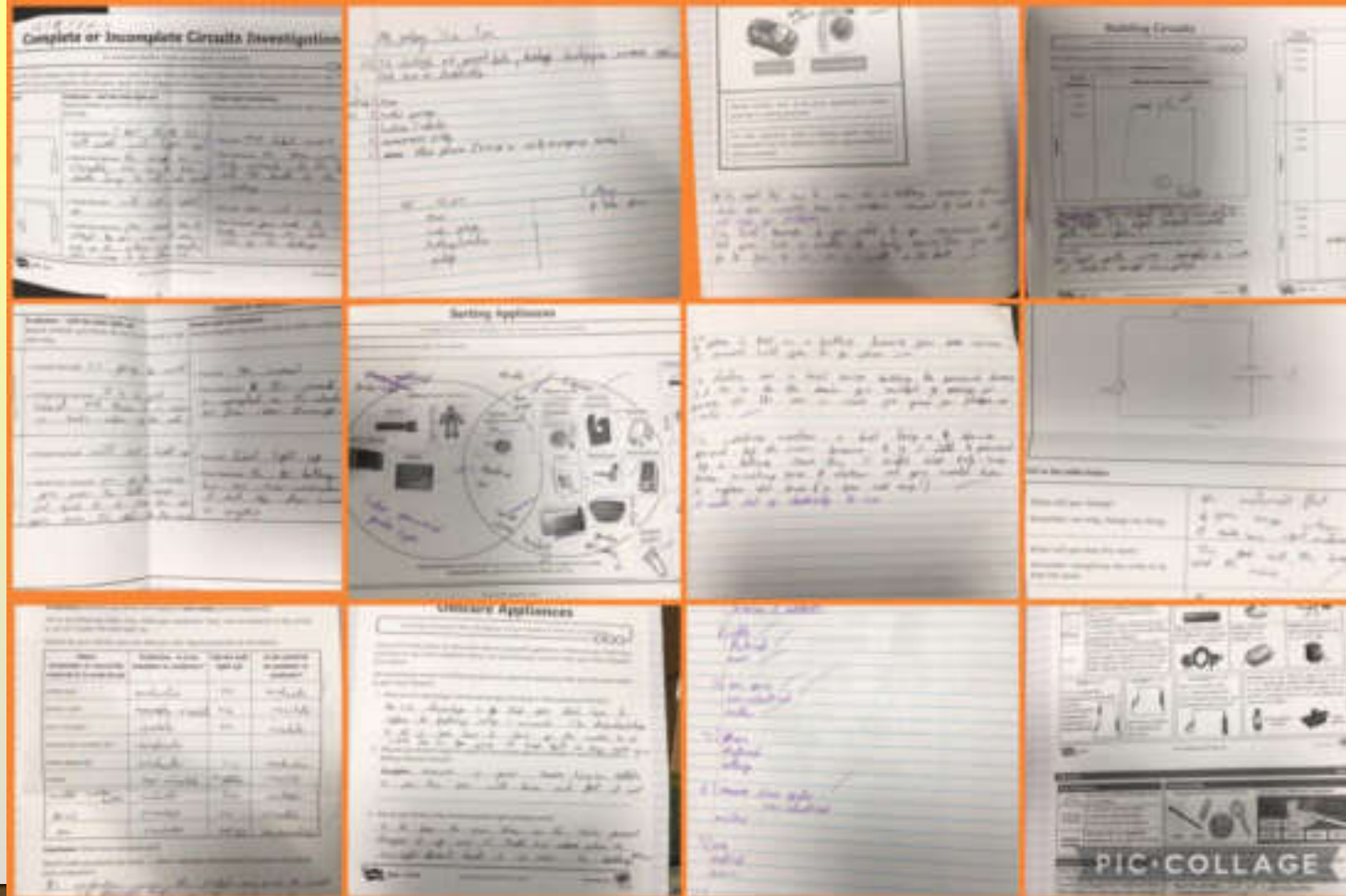


Year Four Freshwater and Yarmouth: SOUND



FEDERATION COVERAGE – SUMMER TERM

Year Four Freshwater and Yarmouth: ELECTRICITY



SCIENCE IN YEAR 5

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

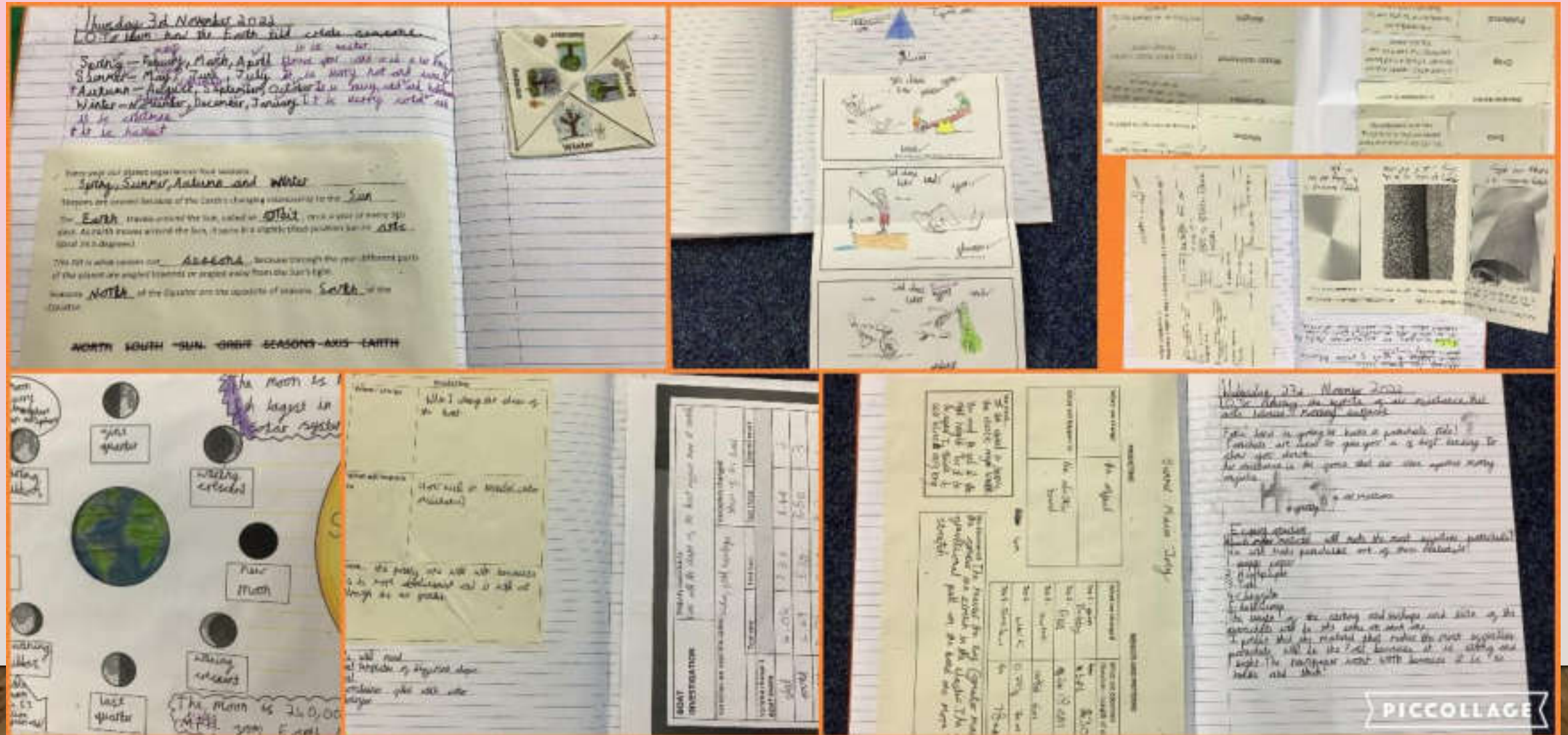
FEDERATION COVERAGE – AUTUMN TERM

Year Five Yarmouth: Earth and Space



FEDERATION COVERAGE – AUTUMN TERM

Year Five Yarmouth: Earth and Space and Forces



FEDERATION COVERAGE – AUTUMN TERM

Year Five Yarmouth: Earth and Space and Forces



FEDERATION COVERAGE – AUTUMN TERM

Year Five Yarmouth: Earth and Space and Forces



FEDERATION COVERAGE – AUTUMN TERM

Year Five Shalfleet: Earth and Space

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FEDERATION COVERAGE – SPRING TERM

Year Five Yarmouth: Materials and their Properties



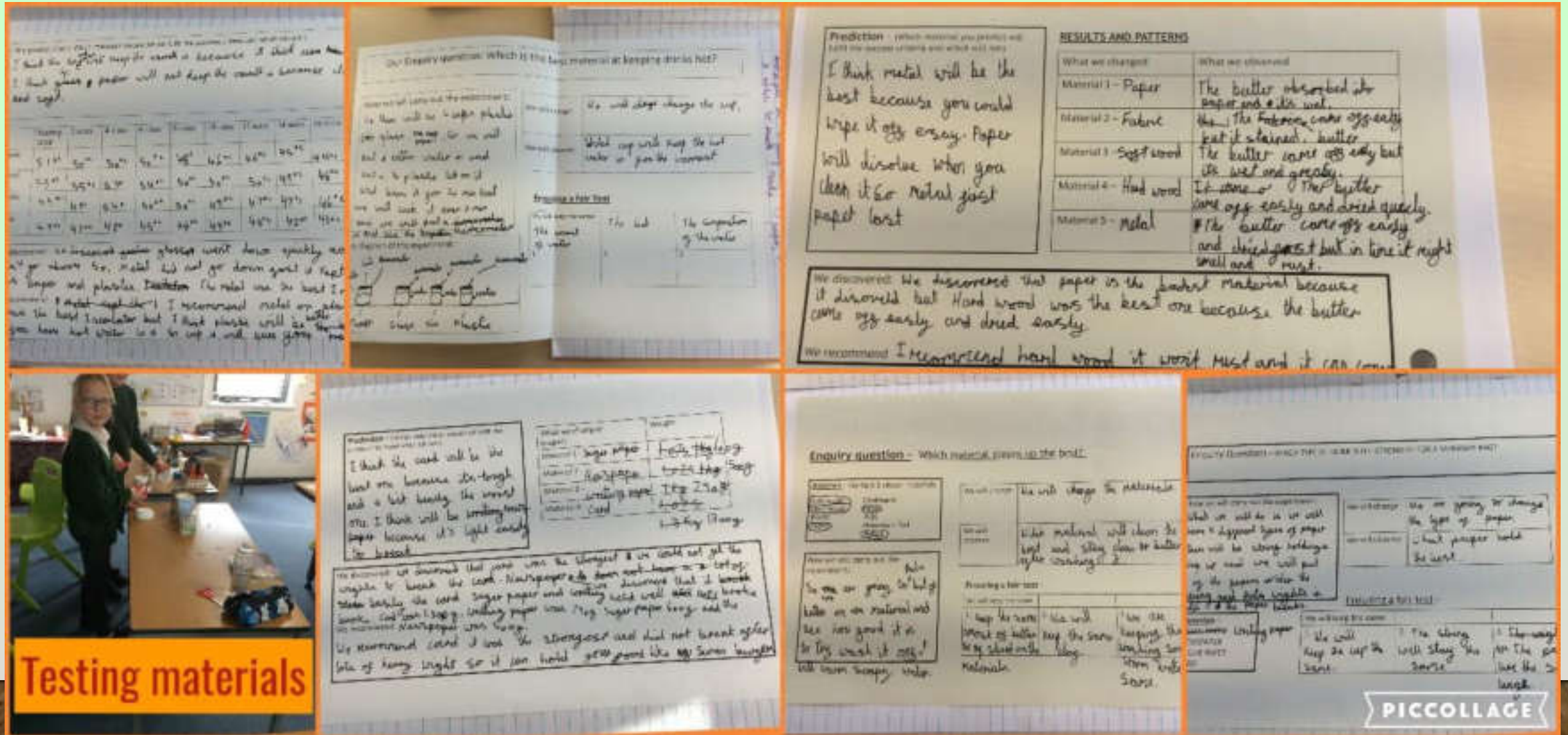
FEDERATION COVERAGE – SPRING TERM

Year Five Yarmouth: Materials and their Properties

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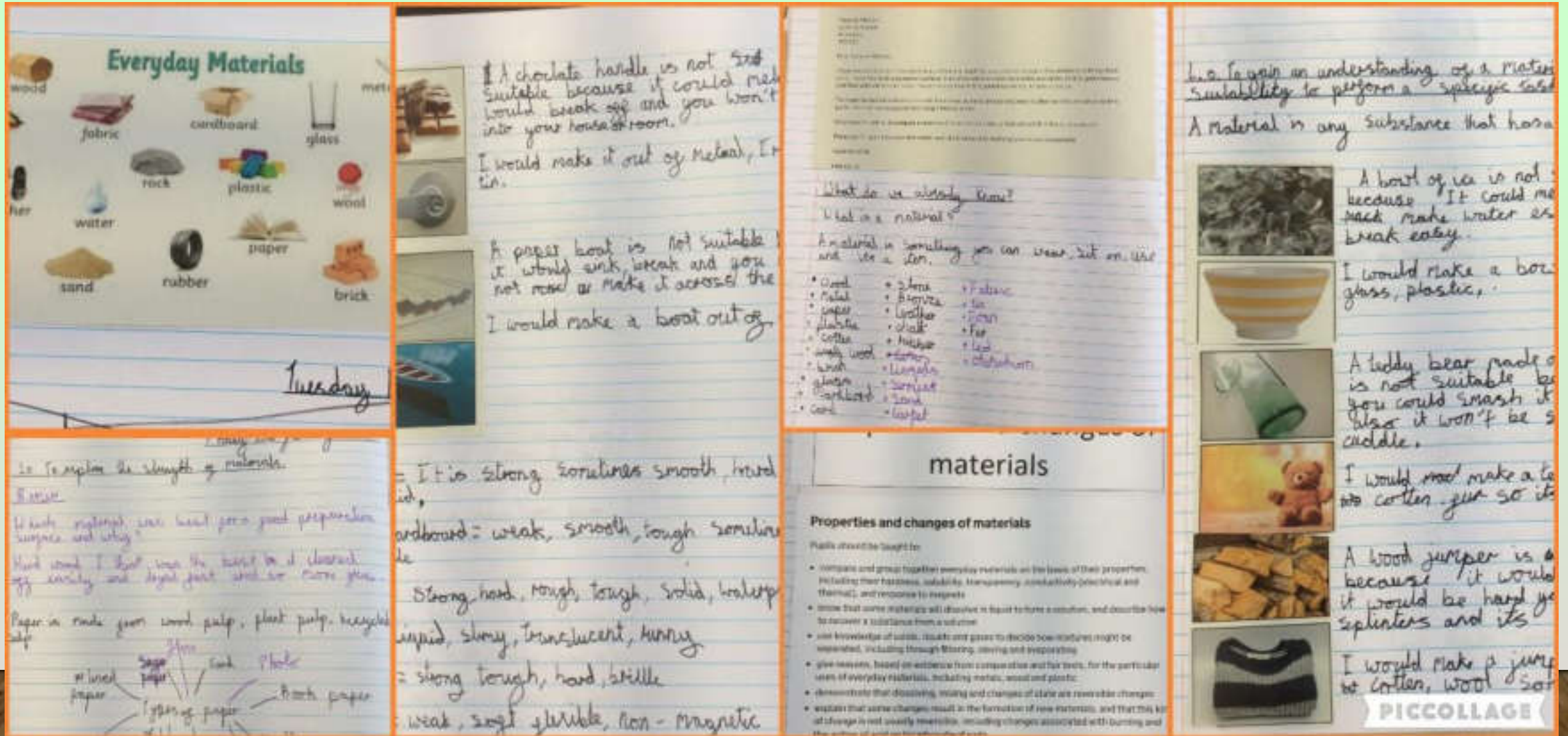
FEDERATION COVERAGE – SPRING TERM

Year Five Shalfleet: Materials and their Properties



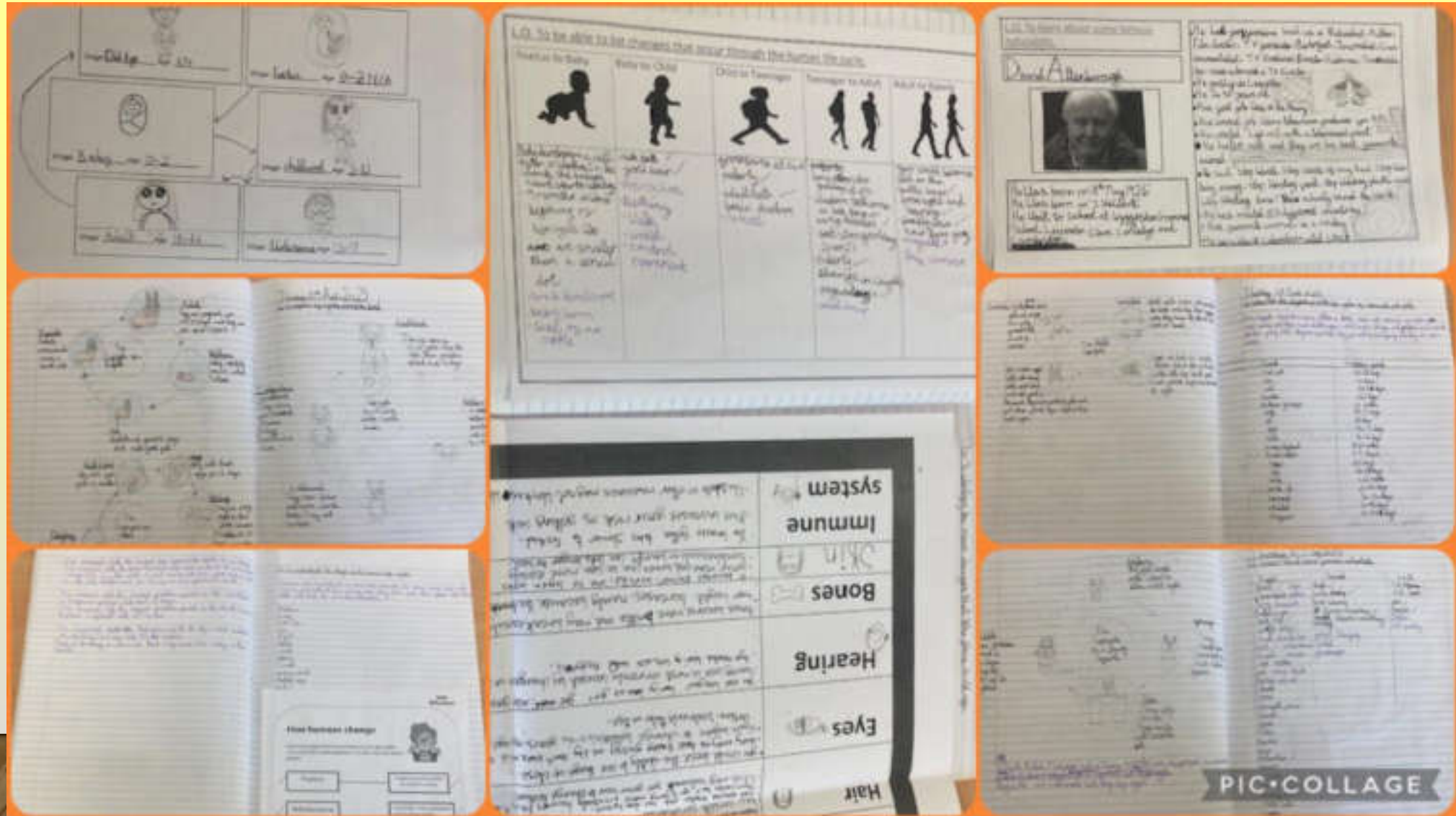
FEDERATION COVERAGE – SPRING TERM

Year Five Shalfleet: Materials and their Properties



FEDERATION COVERAGE – SUMMER TERM

Year Five Freshwater & Yarmouth: ANIMALS INCLUDING HUMANS Lifecycles



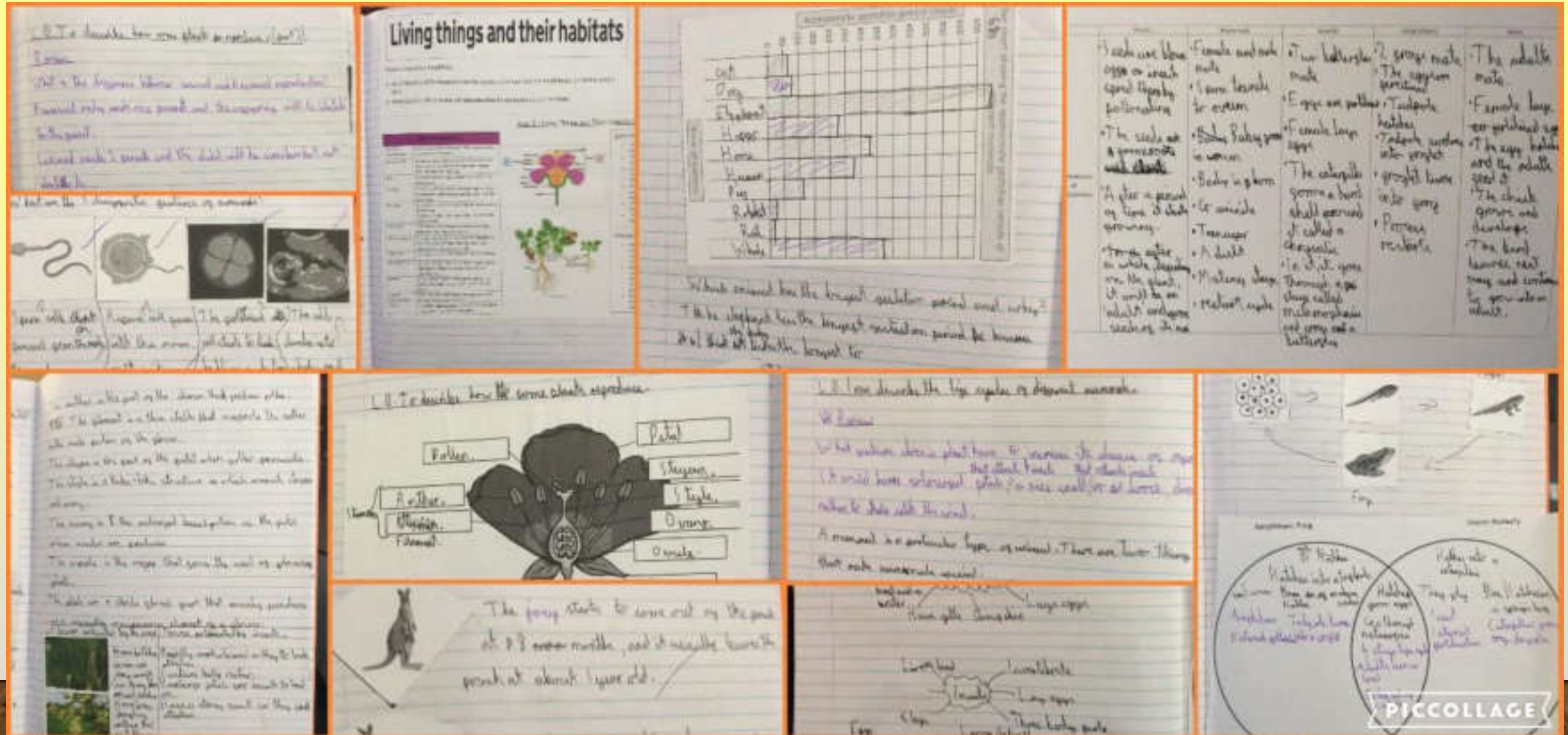
FEDERATION COVERAGE – SUMMER TERM

Year Five Shalfleet: ANIMALS INCLUDING HUMANS Lifecycles

[illegible]

FEDERATION COVERAGE – SUMMER TERM

Year Five Shalfleet: Living Things and Their Habitats



SCIENCE IN YEAR 6

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

FEDERATION COVERAGE – AUTUMN TERM


Year Six Yarmouth: Evolution and Inheritance

Handwritten notes on lined paper:

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

LO: To be able to make a classification key.

To show: What is the order of the most common? The order of the most common?




Handwritten notes on lined paper:

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.

Handwritten notes on lined paper:


Do they have a name?



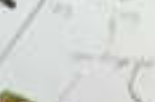
anything orange



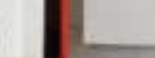
anything like a cat



anything like a dog




anything like a bird



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?



FEDERATION COVERAGE – AUTUMN TERM

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

Evolution & Inheritance

Inherited characteristics (Genes)	Environmental characteristics
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 ✓	

Student Work Examples:

- Wing of my species:** A drawing of a wing with a list of characteristics: Name - Blue, Colour - Blue, Shape - Oval, 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.
- Avatar Grid:** A 4x6 grid of 24 cartoon avatars with various features.
- PicCollage:** A collage of photos and text boxes, including a grid of photos and a text box with the text: "Do they have blue eyes? No. Do they have a scar? No. Do they have a pig? No. Do they have a pig? No."

FEDERATION COVERAGE – AUTUMN TERM

Year Six Shalfleet:

[illegible]

Year Six Yarmouth: Living Things and Their Habitats - classification

9/14

FALSE
TRUE

Large feathers for heat - in ground does weight on the back and you get covered ✓
Their lungs have water in them then released ✓
The ability to go for a long time without water - they live only 10 ✓
How water through filtration and permeation ✓
Their bodies can withstand temperatures 4 degrees higher than body temperature ✓
Their lungs have water in them then released ✓
Long necks that they can bury in the sand - this helps them ✓
They are able to drink water very quickly when available ✓
They can live in the desert for long periods of time ✓
They can live in the desert for long periods of time ✓

EXTREME SURVIVORS

WHAT COULD YOUR WORDS BE? EACH ONE!

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

AVERAGE WEIGHT - 4-5 POUNDS
TIME NEEDED WALKING - 4-12
INTELLIGENCE - 3/5
LIFE EXPECTANCY - 12 TO 15

AVERAGE WEIGHT - 15-20 LBS
TIME NEEDED WALKING - 15-20
INTELLIGENCE - 5/5
LIFE EXPECTANCY - 12 YEARS

EXF These characteristics could be affected by the environment. But looking after them and using such as the things that could affect their weight, if they want to stay healthy they could affect their intelligence. I think the best to be the best - a star up.

How have these foxes adapted to their environment?

INCREASED EAR SIZE FOR HEARING
INCREASED EAR SIZE FOR HEARING
INCREASED EAR SIZE FOR HEARING

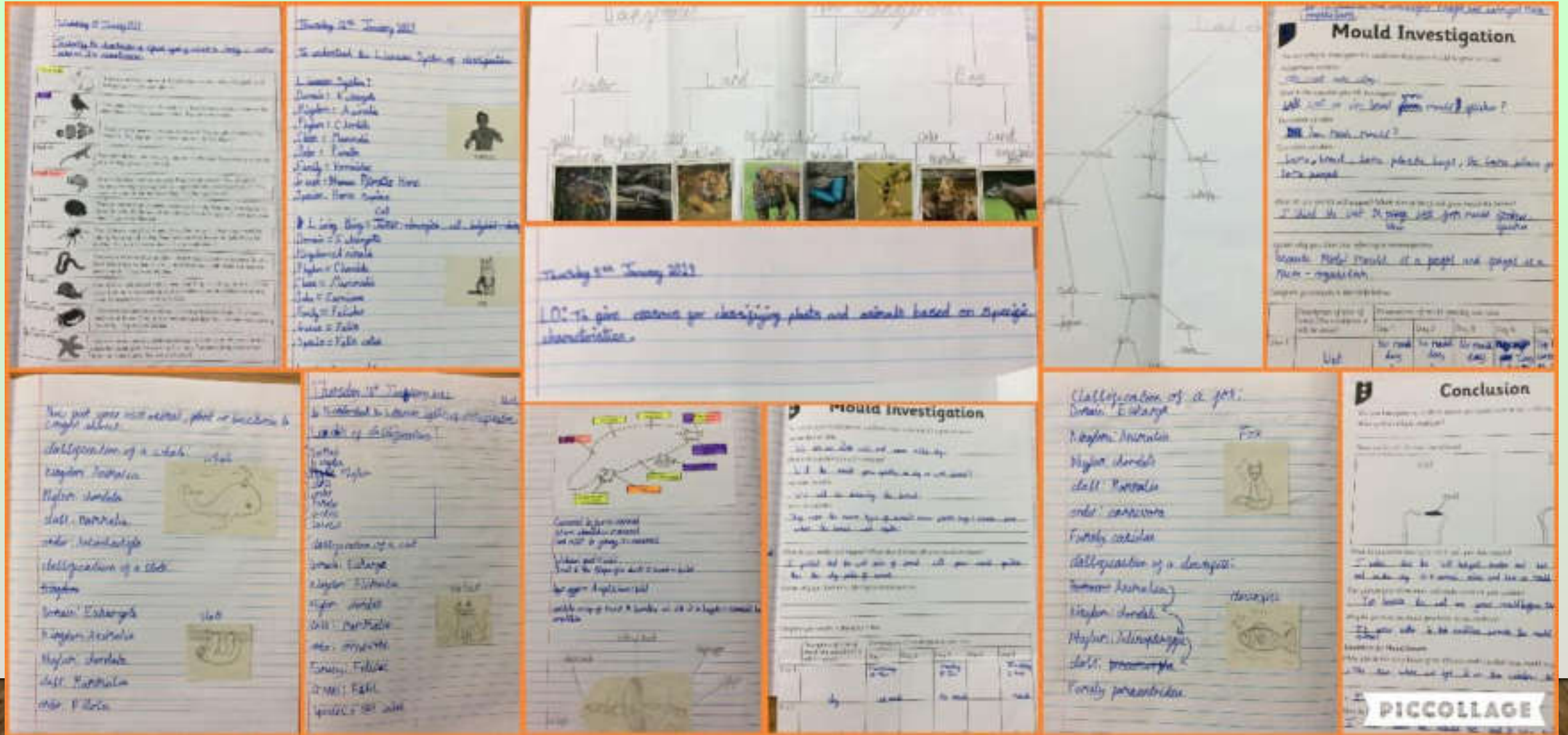
WHAT COULD BE THE NEGATIVE WHEN GIRAFFES HAVE TO USE THESE LONG NECKS TO DRINK WATER?

The negative of giraffes have to use their long necks to drink water is that the giraffes have to go into the water and then they have to bend down for their heads to get to the water and they will get to the ground. They will get to the ground and they will get to the ground.

PICCOLAGE

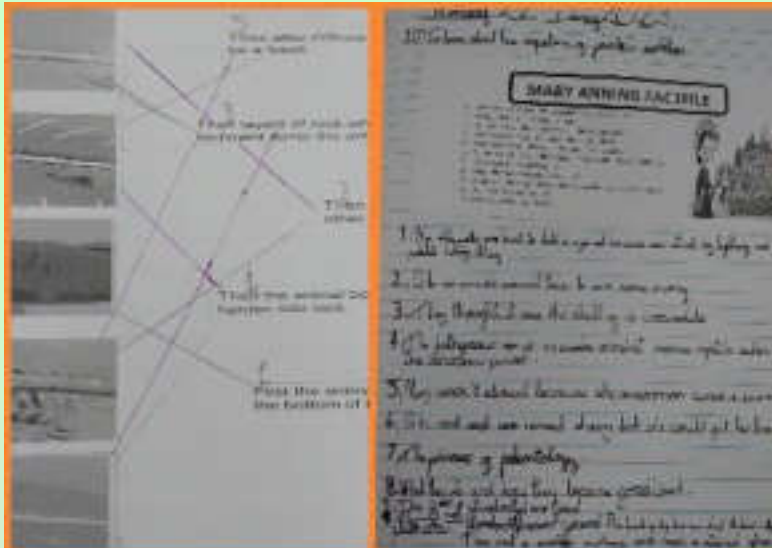
FEDERATION COVERAGE – SPRING TERM

Year Six Shalfleet: Living Things and Their Habitats - Classification



FEDERATION COVERAGE – SPRING TERM

Year Six Yarmouth



Handwritten notes on a grid background. The notes include a title 'MARY ANNE'S FACILE' and several numbered points. There are also small sketches of a person and a horse.

Jaw

- Larger and stronger
- Able to withstand food that's harder to chew.

Arm

- Longer arms.
- Longer fingers

Chest

• Lungs organs vulnerable

Spine

• Axis in a straight line

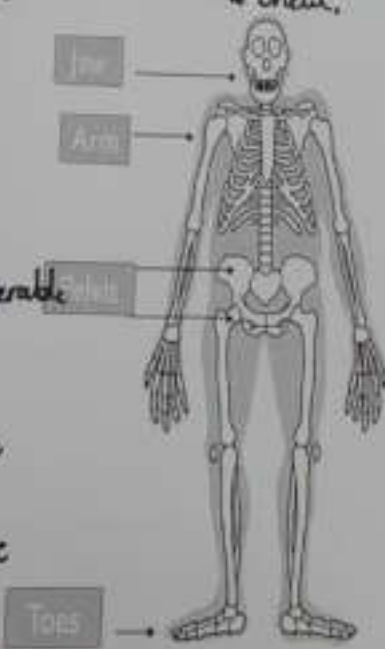
Pelvis

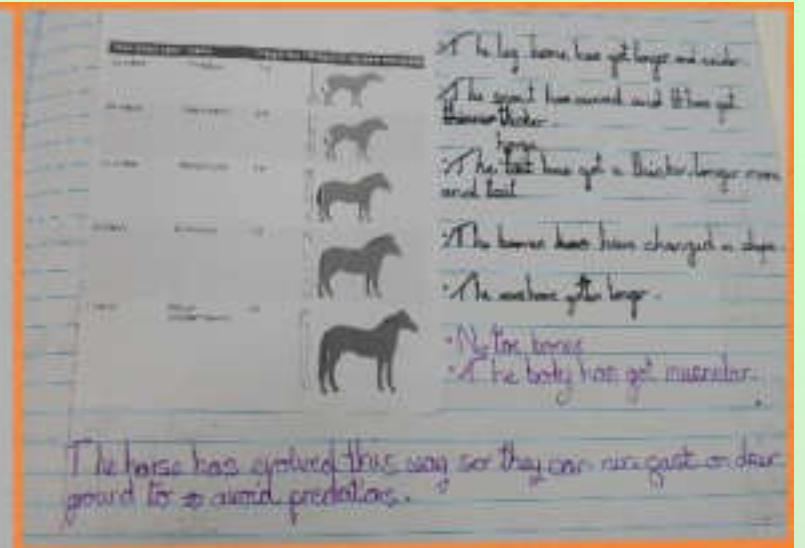
• Spradded out more

eggs

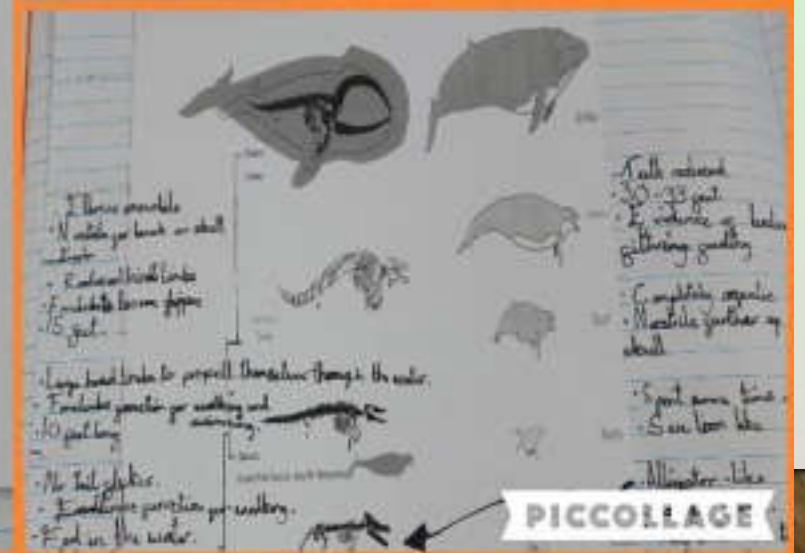
• shorter

Australopithecus
(facultative biped)





Handwritten notes on a grid background. The notes include a title 'The horse has evolved this way so they can run fast on hard ground to avoid predators.' and several numbered points. There are also sketches of horses.

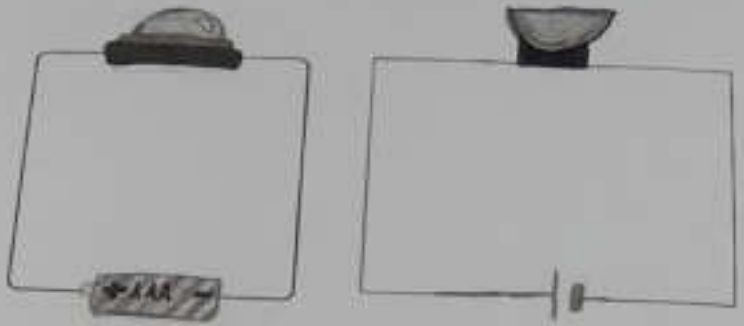


Handwritten notes on a grid background. The notes include a title 'The whale has evolved this way so they can run fast on hard ground to avoid predators.' and several numbered points. There are also sketches of a whale.

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.

Wires	Batteries	Buzzers
1. They are long and thin.	1. They are short and thick.	1. They are small and round.
2. They are made of metal.	2. They are made of metal.	2. They are made of plastic.
3. They are used to connect components.	3. They are used to provide power.	3. They are used to make sound.


WHAT'S THE SAME, WHAT'S DIFFERENT?

Same	Different
1. They are both made of metal.	1. They are both made of plastic.
2. They are both used to connect components.	2. They are both used to provide power.
3. They are both used to make sound.	3. They are both used to make light.


Wednesday 1st 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~~ ^{active} ~~activated~~ wires.



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

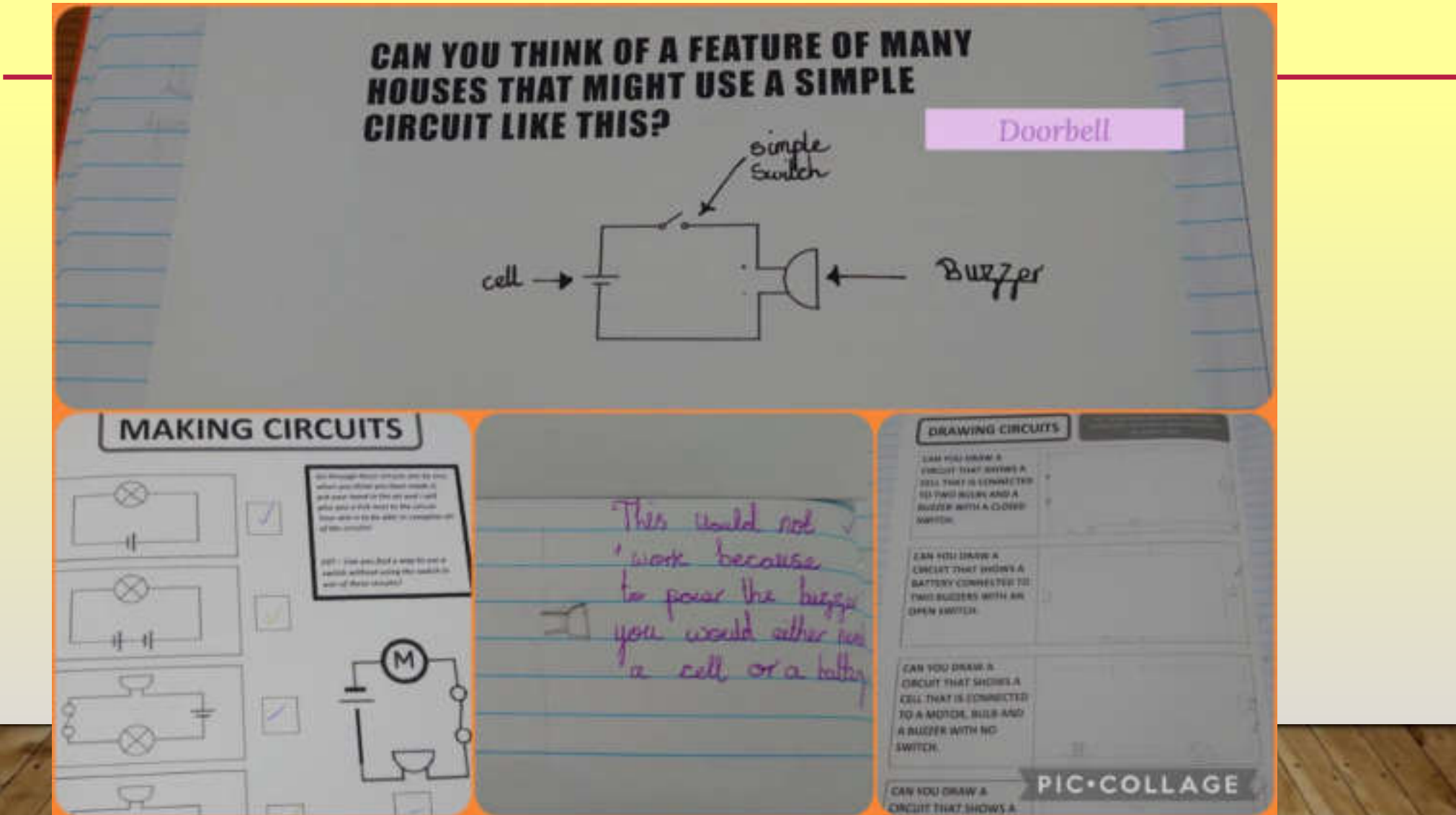


Bad Broken wires.
~~Someone~~ ~~Someone~~ Someone could touch the wires.



A Too many plugs connected to

...THAT MIGHT USE A SIMPLE




FEDERATION COVERAGE – SUMMER TERM

Year Six Shalfleet:

To describe a species


Adaptation is the change of a species to survive in its environment. This can be physical, behavioural, or physiological. For example, a polar bear's white fur is a physical adaptation that helps it blend in with the snow. Its thick layer of fat is a physiological adaptation that helps it stay warm in the cold. Its ability to walk on ice is a behavioural adaptation that helps it find food.



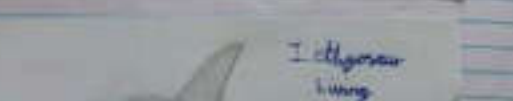
A polar bear's fur is white, which helps it blend in with the snow. Its thick layer of fat helps it stay warm in the cold. Its ability to walk on ice helps it find food.

To describe a species


The polar bear is a large, white, furry animal that lives in the Arctic. It has a thick layer of fat under its skin to keep it warm. It can swim for long distances and is a great hunter. It is a carnivore, meaning it only eats meat.




Ichthyosaurus fossil



Ichthyosaurus living




Mr. and Mrs. Smith




Mr. and Mrs. Smith

To describe a species

The polar bear is a large, white, furry animal that lives in the Arctic. It has a thick layer of fat under its skin to keep it warm. It can swim for long distances and is a great hunter. It is a carnivore, meaning it only eats meat.









Ichthyosaurus fossil



Ichthyosaurus living

Adaptive Traits

Living Things	Habitat	Adaptive Traits
		It has a hump to store fat. It can go for long periods of time without drinking water.
		It has a blowhole to breathe air. It can swim very fast.
		It has a hard, calcium carbonate skeleton. It can live for a long time.

MARY ANNING


Mary Anning was born on 21st May 1794 and lived all her life in Lyme Regis, Dorset, England. Her parents, Richard and Molly, had ten children and the family was very poor. The local squire, Mr. Knapp, was the only child of the local squire to be educated. Mary was the only child of the local squire to be educated.

Mary found three fossils of Ichthyosaurus skeletons, which were the first ever found. She was the first to describe them and to name them. She was the first to describe them and to name them.


Mary Anning has been named with the first discovery of the first Ichthyosaurus.

Adaptive Traits


Living Things	Habitat	Adaptive Traits
Camel	Desert	It has a hump to store fat. It can go for long periods of time without drinking water.
Ash Tree	Forest	It has broad leaves, which enables it to catch more sunlight.
Toucan	Rainforest	It has a large beak, which allows it to eat fruit.




Polar bear



Toucan



Cactus



Dolphin

BRITISH SCIENCE WEEK 2023 CONNECTIONS



BRITISH
SCIENCE
WEEK

10-19 March 2023





BRITISH SCIENCE WEEK 2023

BRIDGE BLUNDER

This activity is designed to get you thinking about the constraints to better designs, for fun and resources.

Check out our video below please here:

- [Link to 'The Bridge Blunder' video](#)

Can you build a bridge that supports heavy weight?

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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

Can you build a model bridge that supports heavy weights?

45 - 60 minutes

CREST
AWARDS



PICCOLLAGE



British Science Week Year 3





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

Can you build a model bridge that supports heavy weights?

45 – 60 minutes






This ~~draft~~ 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



Hand-drawn diagram showing a bridge structure with a marble in the center, labeled '20cm Taped'.

#11.



MONITORING THE SUBJECT:

Monitoring Report:

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

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



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
To ensure that Science Literacy is threaded through the wider curriculum 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	https://psstt.org.uk/resources/curriculum-materials https://www.planassessment.com/plan-knowledge-matrices-teacher			
To audit the CPD needs of teachers in the federation	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	https://psstt.org.uk/resources/curriculum-materials/subject-leader			

NEXT STEPS IN THE SUBJECT:

2022/2023 One Page Subject Action Plan

Subject – Science

Subject Lead – Sylvie Poulton

FDP Links –

Strategic Objective 1: Aspire

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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
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To audit the CPD needs of teachers in the federation	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	https://psth.org.uk/resources/curriculum-materials/subject-leader	Partly met	Responses indicated a need for more training regarding assessment and consistent planning/resources. Signed up for PSTT TAPS and White Rose Science. Subject lead training is ongoing	<ul style="list-style-type: none"> Integrate White Rose Science assessments Training on TAPS Sign up for LA subject leader sessions