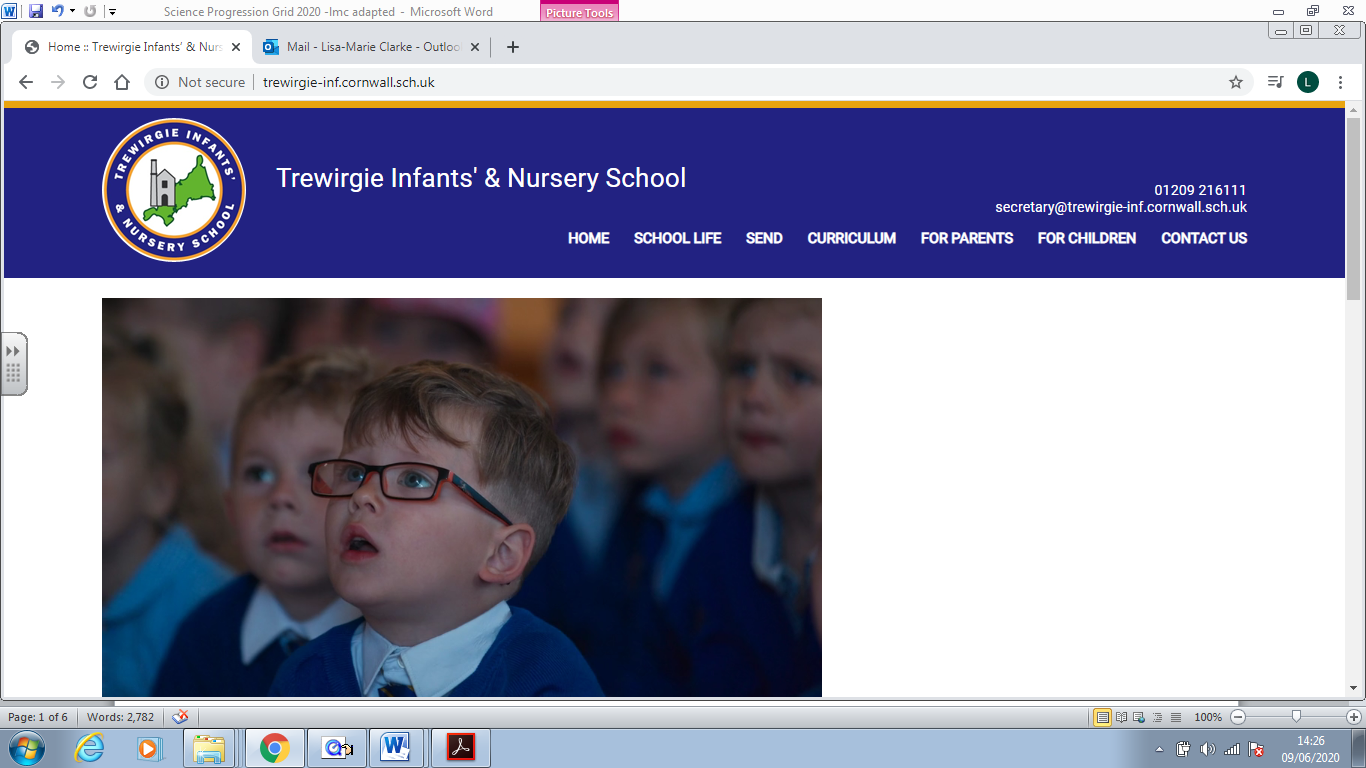
**Science Progression of Skills**

**OUR VISION FOR TREWIRGIE INFANTS’ SCHOOL**

**‘We care, we help, we succeed’**

**OUR MISSION:**

* To inspire children to engage in learning, and be valued members of a caring, supportive, and successful school.
* For all our children to develop life-long learning skills; to be independent and creative thinkers and to be socially confident.
* To enable children to be successful through a curriculum that captures their interests, stimulates their ideas, encourages inquisitiveness and critical thinking and meets their needs.



***At Trewirgie Infants’ & Nursery School, Science lessons are taught creatively and actively to enthuse and engage our children’s interest in the world around them. It follows the National Curriculum aims and objectives but is delivered to suit the level and need of our locality, so every child has a rich experience of investigating, exploring, observing their environment and the science that is embedded into their daily lives from our basic human needs to survive to the modern medicines that save lives.***

***We listen to the questions our children have and equip them with the skills to follow their own lines of scientific enquiry themselves. This enables them to be independent, critical thinkers, weighing up evidence and develop their own opinions in a safe environment.***

**Curriculum statement**

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| **INTENT**  (curriculum design, coverage and appropriateness) | **IMPLEMENTATION**  (curriculum delivery, teaching and assessment) | **IMPACT**  (attainment and progress) |
| At Trewirgie, we ensure all children have a holistic understanding and view of the world around them by allowing them to be curious, inquisitive and investigative in their learning. The whole school curriculum approach to science is to make it fun, practical and applied to everyday science in real life. Using real life scientists to visit the school and talk to the children about the uses of everyday science and how different scientists can look but all equally as important and vital to change and discovery.  Lessons support scientific enquiry and the development of basic scientific language, which is progressive from EYFS to Year 2. Children develop independent learning behaviours through choice and challenge, becoming confident, curious, and passionate learners. All children have access to a range of scientific equipment and are supported to understand how to use it appropriately. Our science curriculum is carefully sequenced, planned and delivered to ensure that every child progresses from to EYFS to Year Two with a solid base to enter KS2 | All science lessons are planned to incorporate a retrieval task linked to previous learning, an oracy task to provoke scientific discussions which include songs, debates and stories linked to the learning. If appropriate, some science topics are linked to other cross curricular areas, but children are made aware that the focus is science. Lessons have a strong focus on practical exploration and questioning supporting children in the role of being active ‘Scientists’. As a school, teachers have access to CPD to improve their confidence and ability to teach science effectively especially using outdoor learning when possible. Children will be assessed at the beginning of each topic to see what they know and again at the end to assess what they have learnt. Retrieval tasks will be completed at a distance between topics to assess what they the children have retained, and the gaps identified will be retaught. Progression and coverage are monitored closely to ensure continuation from EYFS to Year Two. The science Leader ensures the quality of teaching throughout the school, using regular book looks, learning walks to check coverage and progression and pupil conferencing. Resources are checked to ensure they are suitable, appropriate, and useful. | The children are more inquisitive, curious and have a greater understanding of the world around them, communicating their understanding using the correct scientific vocabulary. They can apply reasoning, enquiry, and communication skills to all aspects of their everyday lives.  Our children have the experiences of meeting everyday scientists within the community, discussing their roles and important contributions to science or the application of it in our daily lives. Our children leave our school inspired by science and understand how vital it is to the world’s future development by participating in World Science Day and Science weeks. |

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| **Science**  **Working Scientifically**  **– these skills should be an integral part of all scientific teaching**  ***National Curriculum aim:***  Children should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways | | |
| EYFS | YEAR 1 | YEAR 2 |
| C&L – Speaking  30-50 \* I can retell a past event in order.  \* I can question why things happen and give an explanation.  40-60 \* I can use talk to organise & clarify my thinking.  ELG \* I can use past, present and future forms correctly when talking about events that have happened.  \* I can develop my own explanations by connecting ideas and events. | \* I can ask simple questions and recognise that they can be answered in different ways.  \* I can make careful observations using simple equipment.  \* I can carry out simple tests.  \* I can use my observations to identify and classify.  \* I can use my ideas to suggest answers to questions.  \* I can gather and record data to help in answering questions. | \* I can ask simple questions and recognise that they can be answered in different ways.  \* I can make careful observations using simple equipment.  \* I can carry out simple tests.  \* I can use my observations to identify and classify.  \* I can use my ideas to suggest answers to questions.  \* I can gather and record data to help in answering questions.  \* I can say what I think might happen (linking to a fair test).  \* I can say whether my predictions were supported. |
| **RECORDING FINDINGS**  *All children will have the opportunity to record their science knowledge and understanding in a variety of ways that are suitable to the needs of the individual child.*  *These can be*   * *Using ICT – cameras, speech recording devices, iMovie and similar apps* * *Drawing & labelling* * *Scribing by an adult or within a group* * *Whole class recording using a given format (particularly during experiments and investigations)* * *Child choice* | | |

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|  | **EYFS** | **YEAR 1** | **YEAR 2** |
| **Autumn** | Observing changes and making predictions –Making bread/yeast  Looking at Space( famous scientists-Galileo)Hubble telescope, what is an astronaut, what do they need to do to go to space (training, food, etc)  Yeast experiment – noticing change over time and the role yeast plays in bread making  Balloon rocket experiment – forces on objects  Crater experiment – what happens when objects are dropped from different heights, and what happens when different objects are dropped from the same height?  Light sources – day and night – sorting objects that are sources of light/not, the role of reflectors | **Seasonal changes**  Observe changes in Autumn and describe the weather associated with the season and how day length varies.  **Seasonal Visits to the woods**  Autumn focus –   * Changes to the leaves – introduce the terms evergreen and deciduous. * Animals – hibernation – build a den for an animal to hibernate in * Visit the badger sett in the woods.   Winter focus   * Changes to the trees – consolidate the terms evergreen and deciduous. * What clothes do we wear in winter * If possible have a fire in the woods and toast marshmallows.   **Everyday Materials**  Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock, describing their properties in order to group them. | **Uses of Everyday Materials**  Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses.  Explore how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.  Discuss inventors linked to materials-John McAdam |
| **Spring** | Gingerbread experiment – observing change, changing states, learning the word absorb and dissolve linked to this  Winter - Hibernation – why and what it is.  Noticing changes with the change in seasons – Fletcher and the Springtime Blossoms story  Looking at plants growing in our environment. Planting cress and sunflowers. Looking at what these seeds will need to grow. | **Seasonal changes**  Observe changes in Winter and Spring and describe the weather associated with the season and how day length varies.  **Seasonal Visits to the woods-** Spring focus   * Changes to the trees – discuss buds and assess the terms evergreen and deciduous. * Spring flowers and trees – naming them * Nature Bracelets   **Humans**  Name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.  **Plants**  Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Describe the basic structure of a variety of common flowering plants, including trees. | R **Plants**  Observe and describe how seeds and bulbs grow into mature plants.  Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.  \*Trip to the Eden Project- Ready Steady Sow workshop  \* Trip to Victoria Gardens to observe our poppy seeds we scattered linked to Remembrance.  **Living things & their habitats**  Explore and compare the differences between things that are living, dead, and things that have never been alive.  Identify that most living things live in habitats and Microhabitats describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other in a food chain. |
| **Summer** | Minibeast hunt in the Wild Tribe area – where do they live and why?  Floating and sinking – identifying objects that will float or sink and explaining how they know this.  Identifying materials that would be waterproof and keep a story character dry – solving a problem by selecting the correct material.  Using this knowledge of floating and sinking and being waterproof to design and make a boat that would carry a passenger and float in the water tray. | **Seasonal changes**  Observe changes in Summer and describe the weather associated with the season and how day length varies.  **Seasonal Visits to the woods-**Summer focus   * Changes to the trees – Why is it dark in the woods in summer? * Consolidate and assess the naming of flowers and trees – naming them * Scents of Summer – Woodland potions.   **Animals**  Identify and name animals including, fish, amphibians, reptiles, birds and mammals.  Identify them into carnivores, herbivores and omnivores. | **Animals & Humans**  Identify that animals and human, have offspring which grow into adults, looking at life cycles.   * Trip to Trevaskis Farm   Find out about and describe the basic needs of animals, and humans, for survival (water, food and air)  Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (cross curricular links to DT & PSHE)   * Health & Wellbeing week |

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| **Science**  ***National Curriculum aim:***   * ***To enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them.*** | | |
| EYFS | YEAR 1 | YEAR 2 |
| PLANTS | | |
| ELG \* I can make observations of plants and explain why some things occur.  \* I can talk about changes. | \* I can identify and name a variety of common wild and garden plants found in Cornwall, including deciduous and evergreen trees.  \* I can identify and describe the basic structure of a variety of common flowering plants, including trees. | \* I can observe and describe how seeds and bulbs grow into mature plants.  \* I can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. |
| Intent: Children will experience planting seeds and caring for plants inside and outside the classroom. They begin to use language to describe plants and identify/name familiar ones. They will begin to talk about how plants change over time and suggest reasons for this.  Implementation: Links to developing our outdoor spaces, improving our inside provision, caring for plants in our outdoor areas, regular outdoor learning sessions, visits to the local area as part of our Explorers topic – looking at plants seen on the way.  Future Learning: Year 1 - Identifying a variety of common plants in our school and local environment as well as an opportunity to label the basic structure of common flowering plants (and trees) | **Lesson 1 – What do we know about plants? Can we find any plants growing around school?**  Builds on: EYFS – will experience planting seeds and caring for plants inside and outside the classroom. They begin to use language to describe plants and identify/name familiar ones. They will begin to talk about how plants change over time and suggest reasons for this.  Intent: To recognise and name a range of plants and trees in and around our local area.  Working Scientifically:  I can make careful observations using simple equipment.  Implementation: Explore the school grounds to discover and discuss plants that thrive there. Use ICT (Seek app) to learn the names of garden plants and to photograph what is seen. Children to label observational drawings.  Future learning: Y2 – Adaption of plants to suit their habitats.  **Lesson 2 – Can we identify plants that are special to Cornwall?**  Builds on: Previous Yr1 lesson on plants.  Intent: To recognise and identify plants specific to Cornwall.  Working Scientifically:  I can use my ideas to suggest answers to questions.  Implementation: Field trip to the woods (linked to Spring) look for wild plants. Children use their Cornish plant identification key to find local species. Use ICT (Seek app) to learn the names of wild plants.  Future Learning: Y2 – Adaption of plants to suit their habitats.  **Lesson 3 – What are the 6 main parts of a plant?**  Builds on: Previous Yr1 lesson on plants.  Intent: To identify and describe the different parts of familiar flowering plants using scientific language (stem, trunk, branch, leaf, root, bud, petal, bulb, seed).  Working Scientifically:  I can make careful observations using simple equipment.  I can ask simple questions and recognise that they can be answered in different ways.  Implementation: Teacher to model dissecting a flowering plant under the visualiser; children to follow and dissect their own flowering plant – naming 6 main parts of the flower. Children then put the plant back together and create a labelled diagram. Compare to a tree.  Future Learning: Y2 – Describe the process of seeds growing into mature plants and find out what plants need in order to thrive.  **End of unit assessment on plants** | **Lesson 1 – What do plants need to grow and survive?**  Builds on: EYFS and Y1 – Children have experience of planting seeds, caring for plants and identifying a range of common plants and trees in the local area. They will also describe the different parts of a flowering plant.  Intent: To describe what plants need to grow.  Working Scientifically:  I can use my ideas to suggest answers to questions.  Implementation: Recapping on previous knowledge about plants and what they need to grow .Discuss what a plant needs to grow &thrive and what might happen if these conditions change. This can include how plants thrive in different parts of the world.  <https://www.bbc.co.uk/teach/class-clips-video/science-ks1-ks2-ivys-plant-workshop-what-do-plants-need-to-survive/zkw2gwx>  (Curriculum link to hot and cold countries from geography)  Future learning: Lesson 2 – growing a bean plant.  **Lesson 2 – Who likes gardening?**  Builds on: Previous Yr2 lesson on plants.  Intent: To set up a simple test and predict what might happen.  Working Scientifically:  I can carry out simple tests.  Implementation: Children plant a bean and start a bean diary, describing how it looks and changes on a weekly basis. Teacher to set up ‘control’ beans experiment to show different conditions (water, no water, light, no light, etc) to show how they change if light, water or heat are limited linked to the four main needs(light, warmth, water, nutrition) needed for healthy growth.  Future learning: Weekly observations to growth and record changes in bean plant.  **\*Weekly – What’s happened to your bean plant?\***  Builds on: Previous Yr2 lesson on plants.  Intent: To observe and describe how seeds and bulbs grow over time.  Working Scientifically:  I can make careful observations using simple equipment.  Implementation: Children to monitor the growth of their bean plant and record in their bean diary. Compare and contrast with ‘control’ beans. Were their predictions correct?  Future learning: Yr3–How water is transported in plants-Food dye experiment. |

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| LIVING THINGS & THEIR HABITATS |
| YEAR 2 |
| \* I can explore and compare the differences between things that are living, dead, and things that have never been alive.  \* I can 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.  \* I can identify and name a variety of plants and animals in their habitats, including microhabitats.  \* I can 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. |
| **Lesson 1 – What is a living thing?**  Builds on: EYFS & Yr 1 will learn about plants and animals that live in different countries – linked to the Geography curriculum. They will identify and name a range of plants and animal species.  Intent: To investigate the characteristics of a living thing.  Working Scientifically:  I can use my observations to identify and classify.  I can use my ideas to suggest answers to questions.  Implementation: Discuss with children the following questions;  Q. what are living things? Animals, plants and humans.  Q. What do you notice about living things?  Q. What do all living things need to stay alive? Food, sleep, poo, air etc….explain that these needs and changes like growth are characteristics of living things. When we stop doing those things, we wouldn’t be alive. : Discuss MRS NERG and characteristics of living things. Explore the outdoor learning area to find things that they can classify into living, dead and never been alive. Discuss and record findings using photos and sorting into Venn diagrams.  Mini-reflection: How can we classify something as alive? What do all living things do?  Create Mrs Gren poster in their science books to illustrate their understanding of the characteristics of living things.  Future Learning: Yr 2 – Habitats, food chains and adaptation.  **Lesson 2 – How can we classify something as alive? What do all living things do?**  Builds on: EYFS & Yr 1 will learn about plants and animals that live in different countries – linked to the Geography curriculum. They will identify and name a range of plants and animal species.  Intent: To explore & compare things that are alive, dead or never been alive.  Working Scientifically:  I can use my observations to identify and classify.  Implementation: What differences can you see between Luna and a toy dog? What’s the difference between a dead dog and a living one?  Trees are living things. Dogs, cats, fish, snakes, bees and people are also living things. They can all move, respire, sensitive, need nutrition, excrete, reproduce and grow. Create mind map of this on board and go through each word to establish vocabulary understanding.  Let’s think…. Dry leaves on the ground are dead, but they were once part of a living tree. Bones were once part of a living animal that now is dead. Can we think of anymore examples? Draw as mind map on the board. Anything metal, plastic or stone has never been alive. Then play this 'Is it Alive?' clip on the BBC Bitesize website (<http://www.bbc.co.uk/guides/zs73r82>  The clip ends with the question: "Take a look around you. How many living and non-living things can you see?" Explain that we will work with their partners outside to compile a list of living and non-living (dead) things.  Mini-reflection: How can we classify something as alive? What do all living things do?  Walk around the school ground with diagram sheet and discuss what we can find that is dead, alive, never been alive.  Future Learning: Yr 2 – Habitats, food chains and adaptation.  **Lesson 3– Where do you live?**  Intent: To understand that a habitat is a home.  Working Scientifically:  I can use my ideas to suggest answers to questions.  Implementation: What can we remember about the main characteristics of living things? Can you name something dead, living or never been alive?  <https://www.youtube.com/watch?v=byvf7jwdvOI>  Explain that today, we are learning all about habitats, does anyone know what a habitat is? A habitat is a home that provides everything that provides everything a living thing needs to live there.  Q. What do we think all living things need from their habitats? What do our homes provide? Shelter, food, water, sunlight, warmth, protection, air  The animals and plants that live in habitats are cleverly adapted to live there.  Q. Do you think a polar bear gets cold? How about a lizard getting hot in the desert? (link to hot & cold places in geography)  Watch clip to find out more: https://www.bbc.co.uk/bitesize/clips/zyx76sg  Task: Let’s discuss the living things on the ppt and use the information to draw a picture of a chosen habitat and the animals that live there.  Ext: can they tell you what’s special about the animal that helps it to survive in its habitat? Complete 2 animal fact files.  Draw a comic strip of habitats of your choice once fact files are completed.  Future Learning: Links to Yr2-Food chains  **Lesson 4 – Where do you live?**  Intent: To investigate a microhabitat and identify the plants/animals living there.  Working Scientifically:  I can use my observations to identify and classify.  I can gather and record data to help in answering questions.  Implementation:.Recap on previous lessons and habitats, what can you remember? <https://www.youtube.com/watch?v=byvf7jwdvOI>  Explain that today, we are learning all about micro- habitats, does anyone know what a micro-habitat is? Discuss that within a habitat there are lots of micro (tiny) habitats suited to very small creatures or living organisms like plants. Like rocks, logs, webs, trees, hedgerows, soil etc  Look at the ppt and discuss the different microhabitats and what you can find. Then go outside on a mini-beast hunt to explore some microhabitats around school. Take pictures to make a pic collage!  Q. What is the difference between a habitat and a micro-habitat? The animals and plants that live in habitats are cleverly adapted to live there.  Task; Let’s discuss the living things we found in the micro-habitats around our school.  Children to independently tick off their minibeast micro-habitat record sheets, then write a recount of what we did, what we found and the purpose of our learning today. Ext; draw a micro-habitat and a mini beast found there.  Future Learning: Links to Yr2-Food chains & adaption  **Lesson 5 – What is a food chain?**  Builds on: Yr 2 lessons 1&2  Intent: To understand a food chain and its purpose.  Working Scientifically:  I can make careful observations.  I can use my ideas to suggest answers to questions.  Implementation: Look at ppt. Look at examples of animals and Talk about a circle of life and how living things depend on each other for food to survive, with the smallest thing at the bottom and the biggest creature at the top. Introduce vocabulary of predator & prey, producers and consumers. Draw and explain that we call this dependency a food chain where the energy consumed from one living thing is transferred to the next living ting that eats it. However, all food chains stat with the sun, that gives energy to a plant that is eaten by a small creature which is in turn eaten by a bigger creature. A food chain stops with the largest creature who is at the top of the chain with no predators to eat it. When that creature dies, its body will give back the nutrients to the soil, which will feed the plants along with the sun’s energy. Draw illustrations on the board and role play in class to show a food chain.  Explore the school grounds, looking for examples of food chains. Children to draw and label food chains in their books using scientific vocab.  Future Learning: Links to Yr2-Animals & Humans  **End of unit assessment on Living things and their habitats.** |

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| **ANIMALS & HUMANS** | | | |
| EYFS | | YEAR 1 | YEAR 2 |
| ELG \* I can think about similarities and differences in relation to living things.  \* I can make observations of animals and explain why some things occur.  \* I can talk about changes. | \* I can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.  \* I can identify and name a variety of common animals that are carnivores, herbivores and omnivores.  \* I can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).  \* I can identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. | | \* I can recognise that animals, including humans, have offspring which grow into adults.  \* I can find out about and describe the basic needs of animals, including humans, for survival (water, food and air).  \* I can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. |
| Intent: Children will look at living things that live in and around our school grounds. They will investigate living things that live in other parts of the world. They will compare the living things they see in a variety of ways. They will talk about changes that occur in animals and humans linking this to first-hand experience.  Implementation: Linked to Outdoor Learning and PE sessions as well as linked to Geography when looking at animals that live in the Arctic. Link to Oceans topic. Visits to our local area to explore animals and insects that live there. Thinking of ways that we can encourage animals and insects to visit our outdoor areas – plants, feeding ideas, dens/homes.  Future Learning: Year 1 – broadening their knowledge of common animals, identifying and naming them as well as grouping them. They will have an opportunity to label parts of the human body and identify the sense linked to these body parts. | **Lesson 1 – Can you name all your body parts?**  Builds on: EYFS – will investigate living things locally and globally, identifying similarities and differences as well as changes in both animals and humans.  Intent: To identify, name, draw and label parts of the human body  Implementation: Draw around children on giant paper and work together to label body parts. Introduce the 5 senses and label the body parts associated with each sense.  Future Learning: Future Yr1 lessons on what makes humans special and senses. Links to PSHE – RSE and PE “Brilliant Balancing” lesson, “How can our bodies improve?” Y2 – learning about life cycles as well as what animals and humans need in order to survive. Explore the impact exercise, eating different food types and hygiene has on the human body.  **Lesson 2 – How are our bodies special?**  Builds on: Previous Yr1 lesson and EYFS experiences.  Intent: To recognise similarities and differences in individuals. To recognise the five senses and say which part of the body is associated with each sense.  Working Scientifically:  I can make careful observations using simple equipment.  I can use my observations to identify and classify.  Implementation: Popcorn Senses  Sight – Examine and compare a popped and unpopped popcorn kernel.  Sound – Sound identification challenge and listen to the sound of the popcorn pop as it is made.  Smell – Smelly pots of flavours – can the children identify the smell?  Taste – Classify tastes into sweet / savoury  Touch – How can we keep our popcorn crispy? Try different containers and squish it to test after 24 hours.  Future Learning: Links to PSHE – RSE and PE. Y2 – learning about life cycles as well as what animals and humans need in order to survive. Explore the impact exercise, eating different food types and hygiene has on the human body.  **End of unit assessment on humans & senses**  **Lesson 1 – How many different animal species can you name?**  Builds on: Previous Yr1 lessons and EYFS experiences.  Intent: To identify and name a variety of animals both locally and globally, including different animal types.  Working Scientifically:  I can use my observations to identify and classify.  Implementation: Links with trip to Newquay Zoo! How many different animal species can children identify and name?  Future Learning: Subsequent lesson on grouping animals. Y2 – learning about life cycles as well as what animals and humans need in order to survive.  **Lesson 2a – Herbivore or Carnivore**  Builds on: Previous Yr1 lesson.  Intent: I can identify and name a variety of common animals that are carnivores, herbivores and omnivores.  Working Scientifically:  I can use my observations to identify and classify.  I can make careful observations using simple equipment.  I can carry out simple tests.  Implementation: Recap animals seen at the zoo and other animals to get a broad range of common animals. Discuss what each animal eats and introduce the term herbivore, carnivore and omnivore. Present the children with fake animal poo and the children dissect this to find bones or plant materials to classify into herbivore and carnivore.  Future Learning: Future lessons on ocean animals. Y2 – learning about life cycles as well as what animals and humans need in order to survive.  **Lesson 2b – Which animal category?**  Builds on: Previous Yr1 lesson.  Intent: To identify and name a variety of animals both locally and globally, including different animal types. To identify different animal groups and categories. To explore the structure of these animals, using scientific vocabulary to compare and describe.  Implementation: Introduce children to 5 main animal groups (mammals, birds, fish, amphibians, reptiles). Discuss and sort animals into correct groups.  Future Learning: Future lessons on ocean animals. Y2 – learning about life cycles as well as what animals and humans need in order to survive.  **Lesson 3 – Ocean or not?**  Builds on: Previous Yr1 lesson.  Intent: To identify and name a variety of animals both locally and globally, including different animal types. To identify different animal groups and categories.  Implementation: Look at different examples of animals from each category and identify those that live in the ocean. Look at specific common misconceptions – whales, dolphins are mammals, penguins are birds but they can’t fly. Sort animals into Ocean or Land.  Future Learning: Future lesson on ocean animals. Y2 – learning about life cycles as well as what animals and humans need in order to survive.  **Lesson 4 – What’s the same? What’s different?**  Builds on: Previous Yr1 lesson.  Intent: To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).  Working Scientifically: I can gather and record data to help in answering questions.  Implementation: Children to examine ocean animals from different animal groups and identify key features (gills, fins, fur, scaly skin, backbone…).  Future Learning: Link with Habitats and Adaptation learning within Yr2 and then KS2.  **End of unit assessment on animals** | | **Lesson 1 – What is growing up?**  Builds on: EYFS and Year 1 investigate living things both locally and globally, naming and identifying them. Year 1 will look at the differing structures of these animals. They will name, draw and label parts of the human body.  Intent: To understand what is a life cycle.  Working Scientifically:  I can make careful observations using simple equipment.  I can use my ideas to suggest answers to questions.  Implementation: Identify and name animals that live locally and globally and think about their life cycle, What do they start off as and change into -noticing that offspring grow into adults. Looking at tadpoles and frogs, seeds to trees, eggs to adults etc. Create a life cycle poster to show the stages.  Future Learning: Link with growing plants, Habitats and Adaptation learning within Yr2 and then KS2.  **Lesson 2 – What is the difference between a need and a want?**  Builds on: Yr 2 lessons  Intent: To describe the basic needs of animals, including humans for survival.  Working Scientifically:  I can use my ideas to suggest answers to questions.  Implementation: What would you do if you crashed on a desert island? What would you need to survive? Can we separate the things we want from the things that will keep our bodies alive? Children to create a mind map as a class with each other and teacher to highlight that the basic needs include; food,air,water and shelter. Children to write about what each thing provides the body with to survive and draw illustrations.  Future Learning: Link with Habitats and Adaptation learning within Yr2 and then KS2.  **Lesson 3 – What does healthy look like?**  Builds on: Previous lesson  Intent: To understand the importance of healthy choices.  Working Scientifically:  \* I can ask simple questions and predict outcomes.  Implementation: Introduce concept of being healthy or unhealthy link to lifestyle choices. What we eat, how we play or explore, how we communicate, are we social? What are the effects of those choices on us? Recap on healthy plate and the main food groups from DT and PSHE. Children to compare a healthy diet and lifestyle with a non-healthy diet and lifestyle- predict what the outcomes might be for someone following either of those choices. Create a Healthy me poster, what healthy changes can we make for ourselves t live stronger for longer?  Future Learning: Link with Habitats and Adaptation learning within Yr2 and then KS2.  **Lesson 4 – Are you ready to go?**  Builds on: Previous lesson  Intent: To describe the importance of exercise, healthy food and hygiene for humans.  Working Scientifically:  I can use my ideas to suggest answers to questions.  Implementation: Recap on our previous learning in Jigsaw (Healthy me) and DT (Healthy wraps) on the main food groups and what a healthy diet should consist of. Draw the healthy plate showing the main food groups and water. Discuss the importance of exercise as part of a healthy lifestyle and the benefits to our minds and bodies. Talk about how we feel when we exercise in comparison to when we don’t and why washing our teeth and bodies keeps us clean and hygienic. Children to create a poster about what to do to stay healthy  Future Learning: Link with Habitats and Adaptation learning within Yr2 and then KS2.  **End of unit assessment on Animals & Humans.** |

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| **EVERYDAY MATERIALS** | | | |
| EYFS | | YEAR 1 | YEAR 2 |
| ELG \* I can think about similarities and differences in relation to materials and objects.  \* I can look closely at patterns and change. | \* I can distinguish between an object and the material from which it’s made.  \* I can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, rock.  \* I can describe simple physical properties of a variety of everyday materials.  \* I can compare and group together a variety of everyday materials based on their physical properties. | | \* I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.  \* I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. |
| Intent: The children will explore a range of materials on offer within the provision and investigate the suitability of these for different purposes, comparing them and assessing how successful they would be. They will look at what happens to change some of these materials.  Implementation: Explore materials linked to T4W texts – Goldilocks – porridge – which materials would be used as a spoon? How does the porridge change as it is cooked? Floating and sinking experiments linked to Mr Gumpy’s Outing T4W text – how can we make a boat that floats and holds all the animals?  Future Learning: Year 1 will investigate materials and group them according to their physical properties. They will be able to describe these and explain why a certain material is better suited to an object. | **Lesson 1 – Can you describe and name the different materials used to make each object?**  Builds on: EYFS will explore materials used with their settings and investigate how suitable some would be for particular uses.  Intent: To identify the material used in a variety of familiar objects. To begin to describe the properties of these materials to others.  Working Scientifically:  I can use my observations to identify and classify.  Implementation: Feely Bag – children to describe what they can feel and try and name the material that has been used to make it.  Future Learning: Subsequent lesson investigating physical properties and grouping materials.  **Lesson 2 – Can you describe the properties of each ice and water?**  Builds on: Previous Yr1 lesson and EYFS experiences.  Intent: To investigate the properties of these everyday materials and describe these properties to others. To group materials in different ways by considering their simple physical properties.  Working Scientifically:  I can use my observations to identify and classify.  Implementation:  Ice - Children to use magnifying glasses and simple tools to investigate and describe the physical properties of water as ice. Compare to the properties of water as a liquid.  Future Learning: Subsequent lesson and in Year 2 will be able to describe and explain the uses and properties of every day materials and talk about how a material can change and how we can make it change. They will also consider why not every material can be changed in the same way.  **Lesson 3 – Can you describe the properties of each material? How can we sort these materials?**  Builds on: Previous Yr1 lesson and EYFS experiences.  Intent: To investigate the properties of these everyday materials and describe these properties to others. To group materials in different ways by considering their simple physical properties.  Working Scientifically: I can use my observations to identify and classify.  Implementation: Children to use magnifying glasses and simple tools to investigate and describe the physical properties of wood, plastic, glass, metal, rock, fabric. Children to find different ways to sort the materials based on these properties. Share and discuss.  Future Learning: Subsequent lesson and in Year 2 will be able to describe and explain the uses and properties of every day materials and talk about how a material can change and how we can make it change. They will also consider why not every material can be changed in the same way.  **Lesson 4 – Which is the best material for the job?**  Builds on: Previous Yr1 lesson and EYFS experiences.  Intent: To investigate the properties of these everyday materials and describe these properties to others.  Working Scientifically: I can use my ideas to suggest answers to questions.  Working Scientifically: I can carry out simple tests.  Implementation: Explain the children that the teddy needs a coat/umbrella. Which material would be the best to use. Allow the children to handle and describe the properties of the samples in groups. Make a prediction from the samples.  How could we test them?  Use previous knowledge of water and waterproof (from EYFS) and support the children to set up a test using a paper towel under each sample and a pipet to drop water onto it.  Record the results in a simple table.  Future Learning: Year 2 will be able to describe and explain the uses and properties of every day materials and talk about how a material can change and how we can make it change. They will also consider why not every material can be changed in the same way.  **End of unit assessment on everyday materials and their properties.** | | USES OF EVERYDAY MATERIALS  **Lesson 1 – What are these materials used for? Why?**  Builds on: EYFS and Year 1 will explore how every day materials are used and the simple properties of these. They will identify and name a range of these materials. They will explore the suitability of these materials to overcome an everyday problem and group materials according to their properties.  Intent: L.O. To investigate everyday materials and their uses.  Working Scientifically:  I can use my observations to identify and classify.  I can use my ideas to suggest answers to questions.  Implementation: Start lesson by retrieving what was learnt in Year 1 about materials. Then use scientific enquiry skills to ask questions, give possible answers and ideas at each Science station. Children work together in partners to explore the various objects and discussed what was the same, different, how could it be used and what materials were in each object. Use scientific vocabulary to describe materials and their properties to their partners to guess what they were holding.  Future Learning: yr2 lesson 2  **Lesson 2 –Where do different materials come from?**  Builds on: Previous lesson and Yr1 lesson 2  Intent: L.O. To investigate everyday materials and where they come from.  Working Scientifically:  I can carry out simple tests.  I can use my observations to identify and classify.  Implementation: Set up a table for each material for the children to investigate in a round robin style activity. Each table should have an information sheet on it. A challenge sheet to complete and objects linked to that material to touch and feel.  Q. What is your favourite thing to hold and why? Do you like hard things or soft things? What do you notice about the temperature of hard/solid objects and softer objects? Show slideshow of images. Children to decide if the object was man made or it is naturally produced. Discuss vocab or man-made and natural. Explain that we are learning about the main materials we use every day and investigating where they come from. Go through what to do at each station and let children rotate in table groups, recording their answers as a group and encouraging discussions.    Future Learning: yr2 lesson 3  **Lesson 3 –**  Builds on: yr1, lesson 4  Intent: L.O. To explore how some solid objects can be changed through bending, squashing, twisting and stretching  Working Scientifically:  I can carry out simple tests.  I can use my observations to identify and classify.  I can use my ideas to suggest answers to questions.  I can say whether my predictions were supported.  Implementation: Explain we are investigating how solid objects can change shape. Can they think of any ways which we can change a shape of an object like a ruler? How about a piece of paper? How about playdough? Children should start saying things like pinch, roll, squash etc. Go through the vocab cards to show the children any words they missed. Explain that on each station, they are going to explore changing the shapes of objects by using the ways we just discussed. Take photos of children exploring the different ways to change shape.  Clear away materials and complete grid worksheet  Future Learning: yr2, lesson 4  **Lesson 4 –**  Builds on: Previous lesson and how materials can be manipulated to change size and strength.  Intent: L.O. To Design and create a structure using purposeful materials.  Working Scientifically:  I can carry out simple tests.  I can say whether my predictions were supported.  Implementation: Discuss that paper can be thin, thick or in card but thin paper can be made stronger by how it is folded or shaped. Split the chn into teams to design and build a bridge strong enough to hold at least one toy car  Ask groups who are stuck to consider the question: what happens if the paper is folded into a concertina shape? Children to make, test and evaluate their bridges.  Future Learning: ks2  **Lesson 5 –**  Builds on:  Intent: L.O. To investigate everyday road surface materials.  Working Scientifically:  \* I can make careful observations using simple equipment.  I can carry out simple tests.  I can use my observations to identify and classify.  I can use my ideas to suggest answers to questions.  I can say whether my predictions were supported.  Implementation: Go through vocab grid so children know the meaning of each word used in this unit. Talk about how materials have been used to improve our everyday lives and discuss roads, tracks, paths and the different surfaces they have because of the different vehicles that use them. Ask if anyone has a dad that works for Cormac on the roads. Explain that road surfaces are important for safety, speed and the type of travelling we are doing on it. Dirt racing, Grand Prix, Country roads etc. Explain that there are different trays with materials that could be used for roads and that we are exploring which ones are the best and which ones are not to find the best surface to travel along in a car. Complete cars worksheet with what they found out for each material.  Future Learning: yr 2 lesson 6  **Lesson 6 – Who made a significant difference to science through uses of materials?**  Builds on: Yr 2, lesson 6  Intent: L.O To find out about a scientific inventor who improved Cornish roads.(John McAdam)  Working Scientifically:  I can ask simple questions and recognise that they can be answered in different ways.  I can gather and record information to help in answering questions.  Implementation: Go through ppt on John McAdam and discuss with children as you move through the slides. Macadamisation: Explain the process of macadamisation and emphasise that this was a significant change in road building. Until then rural roads were often muddy, slippery and dangerous and urban roads were cobbled making them bumpy and uncomfortable to travel over. Model in a tray, the process of macadamisation using real materials.  Explain how macadam roads were developed and how the use of tar was added to stabilise them. These roads then became known as tarmacadam roads and then tarmac.  Oracy: Children discuss where they think tarmac is used today. Are children able to explain how his invention has impacted on life today? Create a fact file on John McAdam  Future Learning:  **End of unit assessment on understanding everyday materials and their uses.** |

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| SEASONAL CHANGES | |
| EYFS | YEAR 1 |
| 40-60 \* I can look closely at similarities, differences, patterns and change. | \* I can observe changes across the four seasons.  \* I can observe and describe weather associated with the seasons and how day length varies. |
| Intent: Children will look closely at the similarities and differences in the weather daily. They will identify patterns and changes within the weather observed and describe these. Children will look at changes in weather daily and will notice similarities and differences and compare the weather in different seasons, linked to their own immediate environment. They will also make links when finding out about life in other countries, linked to the Geography curriculum.  Implementation: Opportunities will be provided to enable children to talk about the weather each day as part of a daily routine. Time will be given to talk about clothing we may need to wear due to seasonal changes or changes in the weather. There are opportunities to record the weather as part of our daily routine, with children taking ownership of this. Using maps, weather forecasts and video clips we can show the children what the climate and the weather is like in different parts of the world. Allow children to draw on their own personal experiences of places they have visited in this country and abroad.  Future Learning: Year 1 will look closely at seasonal changes, designing and making apparatus to monitor rainfall and observe wind direction when considering the weather daily. | **Lesson 1 – What are seasons?**  Builds on: In the EYFS children will look at changes in weather daily and will notice similarities and differences and compare the weather in different seasons, linked to their own immediate environment. They will also make links when finding out about life in other countries, linked to the Geography curriculum.  Intent: To recognise and name the four seasons. To know that there are differences in weather across the four seasons.  Working Scientifically: I can use my ideas to suggest answers to questions.  Implementation: Use BBC clip <https://www.bbc.co.uk/teach/class-clips-video/science-ks1-ks2-wonders-of-nature-the-changing-seasons/zh4rkmn> as a prompt to explore and discuss the changing seasons.  Future Learning: Visit to the woods each season in Year 1 looking at the changes. Year 2 Links with Geography and looking at different climates – hot & cold countries. KS2 Links with seasonal change with regard to living things and hibernation.  **Lesson 2 – How can we monitor and record changes in the weather? (Rain)**  Builds on: Previous Yr1 lesson and EYFS experiences.  Intent: To observe and describe weather associated with the seasons. To observe changes across the four seasons. To observe and describe how day length varies across the four seasons.  Working Scientifically: I can make careful observations using simple equipment.  Working Scientifically: I can carry out simple tests.  Implementation: Children will make a rain gauge that will enable them to monitor rainfall. They will use these for a focus week each season. Discuss what changes they might see during each season and link it to their own experience.  Future Learning: Subsequent daily monitoring of the weather and discussions about changes and patterns observed.  **Lesson 3 – How can we monitor and record changes in the weather? (Wind)**  Builds on: Previous Yr1 lesson and EYFS experiences.  Intent: To observe and describe weather associated with the seasons. To observe changes across the four seasons. To observe and describe how day length varies across the four seasons.  Working Scientifically: I can make careful observations using simple equipment.  Working Scientifically: I can carry out simple tests.  Implementation: Children will create a weather vane to show the wind direction. They will discuss what changes they might see during each season and link it to their own experience. They will use these for a focus week each season.  Future Learning: Subsequent daily monitoring of the weather and discussions about changes and patterns observed.  **Daily for a week each season – What’s the weather like today? How much rainfall? What is the wind direction?**  Builds on: Previous Yr1 lesson and EYFS experiences.  Intent: To observe and describe weather associated with the seasons. To observe changes across the four seasons. To observe and describe how day length varies across the four seasons.  Working Scientifically: I can gather and record data to help in answering questions.  Implementation: Children will spend time looking at the weather daily and noticing changes during different seasons of the year. They will use their created resources that will enable them to monitor rainfall and observe wind direction. They will discuss what changes they might see during each season and link it to their own experience.  Future Learning: Year 2 Links with Geography and looking at different climates – hot & cold countries. KS2 Links with seasonal change with regard to living things and hibernation. |