Class 1 EYFS Long Term Overview – Science (Understanding the World) *The Natural World*

Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children’s personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children’s vocabulary will support later reading comprehension.

What an EYFS Scientist needs to understand;

* That observing, predicting, thinking critically, being curious and discussing is vital in making

sense of the scientific world around us

* *That asking simple questions is crucial to exploring the world around us and helps us to*

*explain how and why things happen*

* *Learning by trial and error is an important process when working scientifically*
* *That their senses helps them to explore the world around them*

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| **Role of adult:**   * Encourage children to talk about what they see. * Model observational and investigational skills. Ask out loud: “I wonder what will happen if…?” * Plan and introduce new vocabulary, encouraging children to use it to discuss their findings and ideas**.** | | | | | | |
| Term | Curriculum Content | Big Ideas/  Opportunities | Key Questions - Hypothesis | Powerful Knowledge | Misconceptions/Link to prior and future learning | Vocabulary |
| RECEPTION  Autumn 1  I’m special, I’m me! | * Body parts and the five senses * Animals and hibernation * Autumn seasonal changes- animals, weather, climate * Oral health | Observing and measuring  Practical Enquiry  Concluding  Evaluation | **Animals including humans**  What can our body do?  Which parts of our body do we use to smell, taste, hear etc?  How can we look after our teeth?  **Animals**  What does hibernate mean?  What animals hibernate?  Why might an animal hibernate?  **Seasonal changes**  What do you notice about the weather?  How is it changing? Why do you think this is?  How is it the same/different as the season before? | Our body has lots of different body part for doing different things with;   * Head * Shoulders * Arms * Elbows * Legs * Knee * Foot   We have five senses. They are;   * Sight – using our eyes * Smell – using our nose * Touch – Using out fingers (and other parts of body) * Taste – Using our tongue * Hearing – Using our ears   Stages of human growth;   * Baby, toddler, child   We must brush our teeth twice a day to clean off any old food, especially sugar, as this damages our teeth.  During autumn time, the leaves start on trees start to die on some trees. They change colour and fall off. The weather starts to get colder. Animals that hibernate, prepare their nest ready for winter.  Animals hibernate during winter. They go to sleep in a safe place to keep away from the cold. Some animals store food so that they have them in their winter den. That way they do not go hungry.  Weather includes how hot or cold it is outside, how strong the wind is as well as rain, cloud and sun.  The difference between fruit and vegetables; fruit contains seeds while vegetables have roots, stems, leaves. | **Misconceptions**  Everyone grows at the same rate  All leaves drop their leaves in Autumn  All leaves change colour  The leaves fall to the ground and never disappear  **Link to prior and future learning**  **Future**  Seasons – Autumn 1, Spring 2, Summer 2  Oral health – Autumn 2  **Links to KS1 National curriculum**  Class 2 – The human body Naming body parts, senses, keeping healthy  Class 2 – Weather  Different types of cloud, wind speed and direction  Class 3 – The human body  Teeth | Body parts (See opposite)  Senses  Sight  Smell  Tough  Taste  Hearing  Teeth  Hibernate  Vegetables  Fruit  Seeds  Roots  Leaves |
| F1 | * Body parts – naming at least three body parts * Naming features on our face * Moving with different body parts | | | Our body has lots of different parts   * Head, arms, legs, feet, hands   Our face has   * Eyes, ears, mouth, nose   Our bodies can make lots of different movements. We can jump, crawl, hop and skip. | Head  Arms  Hands  Legs  Feet  Eyes  Ears  Mouth  Nose | |
| Autumn 2  RECEPTION  Traditional Tales and Celebrations | * Everyday materials - describing and sorting * Healthy eating/keeping self healthy * Oral health * Floating and sinking * Winter seasonal changes – animals; hibernation * Nocturnal and diurnal animals | Observing and measuring  Practical Enquiry  Concluding  Evaluation | **Animals including humans**  What does our body need to stay healthy?  Why might an animal sleep during the day?  **Everyday materials**  Describe the material e.g. tough, soft, hard, bumpy  What are they made of?  What will happen if…  What is this made out of?  How can we sort these materials?  Which material might you choose for…?  **Forces**  Do you think this object will float or sink? Why?  What do you think is happening?  How can we test this?  **Seasonal changes**  What do you notice about the weather?  How is it changing? Why do you think this is?  How is it the same/different as the season before?  How is it the same/different as the season before? | Exercise is important for us. It helps to keep us fit and keeps different parts of our body healthy. When we exercise, our heart beats faster to pump more blood around your body.  Eating healthy food is important for our bodies. Too much unhealthy food can be bad for our body.Eating a variety of food is important.   * Healthy food – Fruit, vegetables * Unhealthy food – Food with lots of sugar in such as chocolate and sweets   Everything is made up of a material. Some materials we might know are; Wood, plastic, glass, paper, metal, bricks  Materials can be described using different words such as soft, hard, bumpy, rough, smooth, shiny  Some materials float and some materials sink.  Float – It lies on the top of the water.  Sink – It goes to the bottom of the container.  Winter is the coldest season of the year.  A nocturnal animal is an animal that is awake at night. It hunts for food at night time. A diurnal animal is an animal that is awake during the day..  Nocturnal – Fox, Badger, Hedgehog  Diurnal – Cow, Sheep, Person | **Misconceptions**  Eating lots of fruit is good for you (sugars)  About what a material actually is  That larger objects always sink and smaller objects always float  All heavy things sink and all light things float  **Link to prior and future learning**  **Prior**  Oral health – Autumn 1  **Future**  Materials – Spring 1  **Links to KS1 National curriculum**  Class 2 – Materials and their properties  Different materials have different purposes.  Class 2 – Forces; pushes and pulls  Class 2 – The human body – What we need to survive, different food groups, healthy eating  Class 2 – Weather  Different types of cloud, wind speed and direction  Class 3 – The human body  Teeth | Exercise  Healthy  Unhealthy  Variety  Material  Wood  Plastic  Glass  Paper  Soft  Hard  Bumpy  Rough  Smooth  Shiny  Weather  Metal  Bricks  Winter  Weather  Hibernate  Sink  Float  Nocturnal  Diurnal |
| F1 | * Materials – hard and soft * Floating and Sinking * Oral health * Winter – clothing in Winter due to weather * Winter – Animals that hibernate | | | I know that I should brush my teeth two times a day. (Once in the morning and once at night)  I know that some food is good for you and some food is not very good for you e.g. fruit and chocolate.  Some materials are hard and some are soft.  I can watch an object floating on the water and talk about what is happening e.g. sailing a boat  In winter, wrapping up and keeping warm is important. Some people wear   * A scarf, a hat, some gloves and a thick warm coat   Some animals go to sleep during winter. They hibernate. | Hard  Soft  Bendy  Stretchy  Press  Float  Brush  Teeth | |
| Spring 1  RECEPTION Superheroes and people who help us | * Basic properties of materials * Change in materials over time e.g. decay (worms/compost), * Changes to material – freeze and melt * Forces - Magnets | Observing and measuring  Practical Enquiry  Concluding  Evaluation | **Everyday materials - changes to the properties of materials over time**  What can you see happening? Describe to me what you can see.  Why might this be happening?  Why do you think that?  What do you notice?  What is the same/different?  What will happen if this gets really cold? Really hot?  Do you think this will melt or not? How can we test this?  Forces – Magnets  What do you notice? What happens to the material and magnet? | Recap - Everything is made up of a material. Some materials we might know are; Wood, plastic, glass, paper, metal, bricks  Some materials change over time e.g. leaves to compost, water changing.  Some materials melt when they get hot. Some materials freeze when they get cold.  A magnet is a piece of metal that can pull certain types of metal toward itself. | **Misconceptions**  That a material just relates to cloth or fabric  That materials just exist in one state  That ice is a different material from liquid water, not water in different states  That everything freezes/melts at the same temperature  That all metals are attracted to magnets  **Link to prior and future learning**  **Prior**  Materials – Autumn 2  **Future**  Forces- Push and pull – Summer 1  **Links to KS1 National curriculum**  Class 2 – Materials and their properties – different materials have different properties  Class 2 – Forces; pushes and pulls  Class 2 – Weather  Different types of cloud, wind speed and direction  Class 3 – Magnets  Class 3 – Materials- changing state  Water cycle | Materials  Waterproof  Melt  Freeze  Float  Sink  Compost  Freeze  Melt  Magnets  Magnetic |
| F1 | * Materials – Changing materials by twisting, pushing, pressing, pulling etc (exploring different materials) * Forces – Magnets – explore | | | Some materials can change shape by twisting, bending, pushing and pulling.  Materials can be used in different ways e.g. rolling and stretching playdough, bending straws for milktime etc, pressing.  Magnets pull things towards them or push them away. | Twist  Push  Press  Pull | |
| Spring 2  RECEPTION  Into the Woods | * Living and non living * Habitats –   woodland habitat (micro habitats within a woodland)   * Mini-beasts * Growing plants – cress/grass seeds- what does a plant need? Where does our food come from? (bushes, under the ground, trees) * Parts of a plant * Simple animal classification – woodland animals * Introduction to simple lifecycles * Foodchains * Spring seasonal changes – weather/climate * Bee keeping – plants | Observing and measuring  Practical Enquiry  Concluding  Evaluation | **All living things and their habitats**  What do you think might live here? Why do you think that?  What have you found?  **Seasonal changes**  What do you notice is happening outside? Leaves; trees, growth  How is it changing? Why do you think this is?  How is it the same/different as the season before?  **Plants**  What is happening to this plant?  Why do you think this is happening?  What do you think a plant needs to grow well?  What can you see happening to the plant as it grows?  Where does it grow? Why?  Why do banana trees not grow in this country?  **Animals**  What do you notice about this animal? How is it the same/different to this animal? | A habitat is place where an animal lives. Within a habitat, it provides it with food, water and shelter. A woodland has lots of small habitats in it such as under a log, in a tree, under the ground.  A woodland is an area of land that has lots of trees.  Plants need water, sunlight and food to grow well.  Some food we eat grows on trees or bushes. Some grows underground in the soil and some grow on top of the soil.  Some plants can only grow in other countries e.g. a banana tree grows in hot countries.  Things that grow on trees; apples, pear and plums  Things that grow on bushes; blackberries  Things that grow under ground; potatoes, carrots, onions  Fruits have seeds in, vegetables do not.  Bees are important for our plants. They help them to spread pollen which they flower needs to grow.  A mini-beast is a small animal. Mini-beasts include; worms, snails and spiders.  A lifecycle is the stages an animals or plant goes through during its life. All plants and animals go through life cycles.  In spring, the weather usually starts to turn warmer. Trees begin to grow their leaves, plants start to grow their buds and young animals such as chick and lambs are born. | **Misconceptions**  That all living things breath in the same way that we do  Everything that moves is living  That plants do not need ‘food’  All plants grow in the same way  All animals east the same food/consume it in the same way as humans  Humans are not mammals  Eggs and sees are non-living things  You can tell a ladybirds age by counting the spots on it  Insects only live on land  A lifecycle always starts with an egg/live baby  **Link to prior and future learning**  **Future**  Lifecycles of an animal (summer 1)  Animal classification(summer 1 and 2 – Mammal, birds, fish)  **Links to KS1 National curriculum**  Class 2 – Living things and their habitats; animals around the world and food chains  Class 2 – Growing plants  Class 2 – Mini-beasts  Class 2 – Weather  Different types of cloud, wind speed and direction  Class 2 – The seaside and caring for our environment | Female/male  Sunlight  Habitat  Food  Water  Shelter  Woodland  Miin-beast  Worms  Snail  Spider  Temperature  Seed |
| F1 | * Woodland animals – name at least 3 woodland animals * Habitats – What would you see in the woods? Name at least three things * Growing plants – watch and observe what happens e.g. Sunflower seed * Spring – weather | | | Lots of animals live in woodland areas;   * Fox, owl, bat, squirrel   Animasl in the woodland live in different places. A fox lices in a burrow.  Some things you might see in a woodland are;   * Trees, leaves, soil, pond   A sunflower grows from a seed. A sunflower has petals and leaves.  During spring time, the weather starts to get hotter. | Fox  Owl  Bat  Squirrel  Burrow  Trees  Leaves  Soil  Ponds  Sunflower  Petals  Leaves  Spring  Hotter | |
| Summer 1  RECEPTION  Transport and Farming | * Farm animals and their young * Simple animal classification – mammal recap and bird * Our Earth – sun, moon, solar system * Light and dark * Forces – pushes and pulls/magnets * Lifecycles; animals (chicken) | Observing and measuring  Practical Enquiry  Concluding  Evaluation | **Animals**  What does an animal need in order to survive?  describe how it works?  Can you name four farm animals?  What do the farm animals need to have to survive?  Can you explain what happens to the chick as it gets older?  **Light/dark**  What do you notice? What happens at day/night – can you describe?  What do you notice about this shadow?  What will happen to our shadow if we move?  Why do we have a shadow?  **Earth and space**  Can you name some things we might in the sky during night time?  **Forces**  What is push and what is pull? What is different about these?  What will happen to this if I push it? Pull it? Press it? Twist it? Why do you think this? | Lots of different animals/birds can be found on farms.   * Cows * Sheep * Chickens * Horses * Pigs * Goat   Female farm animals have babies. Here are the names of their babies;  Cows – Calf  Sheep – Lambs  Chickens – Chicks  Hoses – Foals  Pigs – Piglet  A chicken is a bird. It lays eggs and has feathers.  Our planet is called Earth and it is made of land and water. The moon is made of rock. The sun is a giant star. There are lots of different planets.  The sun gives off light. This is the day. When the sun is not in the sky, it it night-time.  A shadow is a dark shape.  We can move objects by pushing or pulling them.  Push – moves something away from you  Pull -Moves something closer to you.  Pollution is when something is added to the environment that is harmful or poisonous to living things e.g people and animals.  Smoke or dust in the air is a type of pollution. Fumes coming from transport is a type of pollution. E.g. cars. | **Misconceptions**  That babies are all born live from their Mother  That the main source of light comes from blubs/electricity  The Earth stays still  The moon only comes up at night  The sun turns around at night and becomes the sun  The sun and the moon is the same size and that Earth is larger than the sun.  That all food comes from ‘the shop!’  **Link to prior and future learning**  **Prior**  Animal classification – Spring 2 (Mammal and bird)  Lifecycles – Spring 2  **Future**  Animal classification – Summer 2  **Links to KS1 National curriculum**  Class 2 – Living things and their habitats; animals – food chains  Class 2 – Mini-beasts (animal groups)  Class 2 – Weather  Different types of cloud, wind speed and direction | Farm animal names  Push  Pull  Earth  Water  Rock  Star  Sun  Moon  Pollution  Shadows  Day  Night time  Trees  Bushes  Underground  Soil  Apples  Pears  Plums  Blackberries  Potatoes  Carrots  Onions  Lifecycle |
| F1 | * Farm animal – naming at least three animals that can be found on the farm * Our Earth – where do we live? * Where does our food come from> - Linked to the farm | | | A farm can have animals on it;   * Cow, pig, sheep   The farmer must look after the animals on their farm and give them food and water.  Some of our food comes from the farm e.g. milk from the cows and goats. Potatoes grow in the ground. Potatoes can be made into lots of different things.  We live on planet Earth. We live on land. Some of our Earth is water. | Food  Water  Cow  Pig  Sheep  Earth  Water  Land | |
| Summer 2  RECEPTION  Around the World | * Habitats around the world – Rainforest, Polar, Desert * Habitats under the sea * Animal classification – fish * Simple animal adaptation – meerkat * Food chains * Summer seasonal changes | Observing and measuring  Practical Enquiry  Concluding  Evaluation | **Seasonal changes**  What has happened to the weather?  How is it changing? Why do you think this is?  How is it the same/different as the season before?  **All living things and their habitats**  What is a habitat? Can you describe the habitat?  How is this habitat the same/different to another habitat?  What might live here?  What is a predator? What is a food chain?  **Animals**  What is a mammal? What is a fish? What is the difference between the two?  Where might this animal/bird live? | Recap – A habitat is place where an animal lives. It provides it with food, water and shelter.  Some animals have changed to help them live in different places.  Meerkat – camouflage, sharp claws to dig in the sand, black eyes to act as sunglasses, flat paws to walk on the sand  Polar bear – Blubber, camouflage, black skin under their fur  Some animals are endangered. This means they are in danger of not being around on Earth anymore.  Summer is the hottest season of the year. The days become long,  Lots of trees and plants produce fruit during summer. | **Misconceptions**  Deserts do not have many living things in them  A desert is always hot  It is cold in the rainforest because it rains  All animals eat the same food/consume it in the same way as humans  Fish do not breath  It doesn’t rain in the Summer  Penguins live on both the Arctic and Antarctic  **Link to prior and future learning**  **Prior learning –** Habitats – Spring 2  Animal classification – Spring 2, Summer 1  **Links to KS1 National curriculum**  Class 2 – Living things and their habitats; animals – food chains  Class 2 – Mini-beasts (animal groups)  Class 2 – Weather  Different types of cloud, wind speed and direction  Class 3 – Living things and their habitats; Human impact on the environment | Habitat  Food  Water  Shelter  Camouflage  Blubber  Skin  Endangered |
| F1 | * Habitats around the world – Rainforest, Desert, Poles (Naming animals that live in each) * Under the sea - Name some animals from under the sea * Summer – clothes for Summer | | | Animals that live in the poles;   * Polar bear, penguin   Animals that live in the desert   * Snake, meerkat   Animals that live in the rainforest;   * Parrot, jaguar   Animals that live under the sea;   * Fish, sharks, whales   During summer the weather gets hotter. These are some of the clothes you could wear;   * Sun hat, t-shirt, flip flops | Polar bear  Penguin  Snake  Meerkat  Parrot  Jaguar  Fish  Sharks  Whales | |

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| **These are examples of provision and does not cover everything that is provided in our Early Years classrooms as a number of areas are driven by children’s interests and how children develop their learning through exploration and enquiry with the support of the adults around them.** Provision in both F1 and Reception will be similar. However, through more direct teaching in reception and role of adult support provides opportunities for the children to further develop skills and knowledge. | | |
| **Continuous Provision** | **Opportunities for exploration and enquiry** | **Links to science curriculum** |
| **Sand/water** | Collect information through senses  how liquids and solids behave under different conditions ( eg adding other things to the water or sand to cause a change)  sieving( filtration)  dissolving  floating and sinking  movement  How water pushes up when try to push boat underneath water | To understand animals and humans  Forces  Materials |
| **Construction/ creative/ fine motor table** | Properties of materials ( rigid, flexible, stable, fragile)  Mixing paint, viscosity in liquids  Exploring how things work | Materials  Forces |
| **Cooking/baking** | Heating, cooling, melting, dissolving, mixing, changing, healthy eating | To investigate living things  To understand animals and humans |
| **Outdoor large play** | Climbing frame  Pushing and pulling  Friction of different surfaces  Weight  Use of wheels | To understand animals and humans  Force  materials |
| **Outdoor garden** | Planting, growing, seasonal change, changing materials ( mud kitchen), mini beast hunts, looking at decay eg change in an apple core when left  Exploring environment, comparing to other environments  Observing and naming plants and animals  Sound walks- distinguishing environmental sounds | Understanding plants  Investigating living things  Sound  Earth, space and Seasonal change |
| **Small world play** | Animals  Buildings  Settings ( pond, beach, swamp, forest,space, field, sea etc)  Vehicles ( magnetic attraction and repulsion with trains)  Natural and man-made materials ( pebbles, cones,shells, bark etc)  Using magnifying glasses, torches( can the light shine through the material?)  Exploring how things work | Investigating living things  Earth, space and Seasonal change  Materials  Force |
| **Mid morning snack, lunchtime** | Different types of food, healthy eating | To understand animals and humans |