Year 1 Science – Biology – Seasonal Changes (Autumn/Winter) Autumn/Spring Term

Working Scientifically:

- Children to keep records of the weather and discuss patterns **(pattern seeking)**
  - *Is it always windy when it is raining?*
  - *Does the wind always blow the same way?*

Enrichment:

Continuous provision, Forest Schools

Prior Learning:

- EYFS: Seasonal changes (Autumn walks, looking at colours of leaves and seeds, animals, and hibernation); weather; exploring ice; floating and sinking; habitats of animals in cold climates.
- Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. (Early Learning Goal)

Key Essential Skills and Sticky Knowledge:

- There are four seasons each year: autumn, winter, spring and summer.
- In autumn the weather begins to get cooler. Leaves fall from trees. The amount of daylight becomes less.
- In winter the weather is much colder. Sometimes it is cold enough to freeze. The daytimes are the shortest and the night times are the longest.
- The weather includes the temperature outside, the wind direction and strength, as well as rain, cloud, sun and snow.
- Daylight is the amount of light outside. The amount of daylight changes within each season.

Topic Vocabulary:

Seasons, autumn, winter, weather (and associated vocab), temperature, thermometer, weather symbol, deciduous, coniferous, sunrise, sunset, afternoon, evening, morning, night, day

Sequence:

- What is weather?
- What is the weather like today?
- What Are Seasons?
- Can you name and describe the seasons?
- What do you expect to see if it is autumn?
- What changes do we expect as autumn changes to winter?
- What do you expect to see if it is winter?
- How can we measure the weather?

Thinking Deeper:

Watch your shadows

- Work in pairs in the playground early on a sunny day. Each child should use chalk to draw a cross on the ground and then stand on the cross while their partner draws around their shadow, labelling it with the time and their name. Repeat several times during the day.
- Get the children to describe how their shadows have changed. They can use digital cameras to record their evidence. Repeat this throughout each of the 4 seasons, then get the children to discuss what is the same, what is different?

Possible books/resources:

- The Rabbit Problem- Emily Gravett
- Kate, Who Tamed the Wind - Liz Garton Scanlon and Lee White
- Ollie's Magic Bunny - Nicola Killen
- Tree: Seasons Come and Go - Britta Tekentrap
- Moon - Britta Tekentrap
- Winnie-the-pooh A.A Milne
- Poetry: Autumn Fires and the Gardener - Robert Louis Stephenson

Links:

Subject Specific links –

- English: new vocabulary, explaining their work, describing images and processes,
- Maths: sorting activities, tally charts, graphs and comparing lengths of days
- Computing: learning from activities and videos on IWB
- Geography: weather, and how it impacts people and animals in other countries
- Art & DT: seasons wheel

Personal development – Children will take more responsibility for presenting and discussing evidence of their learning, for example using digital cameras, videos, drawings and charts and diagrams as well as the more formal requirement to write.

SMSC –

- How to stay safe - Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses.
- Learning how to stay warm / cool.

Cultural Capital – Discuss the differences between certain seasons in England and in other countries.

Careers – Scientist, meteorologist, astronomist, physicist, weather reader, journalism, radio broadcaster,

British Values – working in pairs and small groups with others coherently.

Equality – to respect one another's opinions in discussions of findings.

Independence – to discuss changes with peers.

Community – to recognise seasonal changes in the village/school.

Outdoor learning – to describe changes in the seasons.

Working Scientifically:

- Children to keep records of the weather and discuss patterns **(pattern seeking)**
- *Is it always sunny when it is warm?*
- *Do shadows in the same position?*

Enrichment:

Continuous provision, Forest Schools

Prior Learning:

- EYFS: Seasonal changes in the spring and summer, types of weather and staying safe in the sun, planting and growing seeds and what they need to grow and a typical life cycle, different types of animals and creatures we may see more of at this time of year e.g. butterflies, flies, bees; walks around school to look for seasonal changes e.g. plants beginning to grow, trees having buds and leaves on.
- Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. (Early Learning Goal)

Key Essential Skills and Sticky Knowledge:

- There are four seasons each year: Autumn, Winter, Spring and Summer.
- In Spring the weather begins to get warmer. Blosson and leaves appear on trees. The amount of daylight becomes more.
- In Summer the weather is much hotter. The daytimes are the longer and the night times are the shorter.
- The weather includes the temperature outside, the wind direction and strength, as well as rain, cloud, sun and snow.
- Daylight is the amount of light outside. The amount of daylight changes within each season.

Topic Vocabulary:

Seasons, spring, summer, weather (and associated vocab), temperature, thermometer, weather symbol, deciduous, coniferous, sunrise, sunset, afternoon, evening, morning, night, day.

Sequence:

- What is weather?
- What is the weather like today?
- What Are Seasons?
- Can you name and describe the seasons?
- What do you expect to see if it is spring?
- What changes do we expect as spring changes to summer?
- What do you expect to see if it is summer?
- How can we measure the weather?

Thinking Deeper:

Watch your shadows

- Work in pairs in the playground early on a sunny day. Each child should use chalk to draw a cross on the ground and then stand on the cross while their partner draws around their shadow, labelling it with the time and their name. Repeat several times during the day.
- Get the children to describe how their shadows have changed. They can use digital cameras/ipads to record their evidence. Repeat this throughout each of the 4 seasons, then get the children to discuss what is the same, what is different?

Possible books/resources:

- The Rabbit Problem- Emily Gravett
- Kate, Who Tamed the Wind - Liz Garton Scanlon and Lee White
- Ollie's Magic Bunny - Nicola Killen
- Tree: Seasons Come and Go - Britta Tekentrap
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- Poetry: Autumn Fires and the Gardener - Robert Louis Stephenson

Links:

Subject Specific links –

- English: new vocabulary, explaining their work, describing images and processes,
- Maths: sorting activities, tally charts, graphs and comparing lengths of days
- Computing: learning from activities and videos on IWB
- Geography: weather, and how it impacts people and animals in other countries
- Art & DT: seasons wheel

Personal development – Children will take more responsibility for presenting and discussing evidence of their learning, for example using digital cameras, videos, drawings and charts and diagrams as well as the more formal requirement to write.

SMSC –

How to stay safe - Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses.

- Learning how to stay warm / cool.

Cultural Capital – to understand that some countries have different weather during spring and summer.

Careers – Scientist, meteorologist, astronomist, physicist, weather reader, journalism, radio broadcaster,

British Values – freedom of speech and allowing everyone to have their say communicating observations.

Equality – promotion of both men and women as scientists

Independence – to discuss changes with peers.

Community – to recognise seasonal changes in the village/school.

Outdoor learning – to describe changes in the seasons.

Year 1 Science – Biology – Animals, including Humans Autumn Term

Working Scientifically:

- Using classification trees to classify animals using soft toys as representations (**classifying and grouping**).
- Asking questions about animals and using books and the internet to research them (**research using secondary sources**)

Enrichment:

Supermarket trip, Doctor visit, Farm visit, Zoo trip (Year B), butterfly growing, Beach trip

Prior Learning:

- EYFS: Healthy eating; staying healthy e.g., hygiene, exercise, cleaning teeth; human life cycles; mini beast hunts; animal life cycles e.g., butterflies, chickens, frogs.
- Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. (Early Learning Goal)

Key Essential Skills and Sticky Knowledge:

- Amphibians are cold blooded. They live in water and land.
- Birds are warm blooded. They lay eggs Most birds have feathers and beaks.
- Fish are cold blooded. They live in water. Fish breathe through gills.
- Mammals are warm blooded. They give birth to live young and make milk to feed them.
- Humans are mammals.
- Reptiles are cold blooded. They lay eggs. They have scales.
- Some animals, like lions, dogs and adult frogs, are carnivores. Some, like rabbit, hippopotamus and giraffes are herbivores. Some, like pigs, bears and humans are omnivores.
- Nocturnal animals are active at night time.
- Diurnal animals are active in the daytime.
- Humans have 5 senses: sight, hearing, smell, touch and taste
- The human body is made up of many parts (eg. arms, legs, head, neck, feet, hands, stomach, chest)

Topic Vocabulary:

fish, amphibians, reptiles, birds, mammals, carnivore, herbivore, omnivore, nocturnal, diurnal, animal, fish, bird, gills, fins, claws, fur, hooves, horns, wings, webbed feet, smell, hearing, taste, sight, touch, arms, legs, head, neck, hands, feet, stomach, chest

Sequence:

- What are the basic parts of a human body?
- Which part of the body is associated with each sense?
- How can animals be grouped?
- How are animals similar and different?
- Can I sort animals into carnivores, herbivores, and omnivores?

Thinking Deeper:

Use reasoning cards to support year 1 in developing their reasoning skills in science. They will help children to think deeply and apply their learning, enabling teacher to assess and check their understanding.

(https://www.twinkl.cl/resource/science-animals-including-humans-year-1-reasoning-cards-t-sc-2549775)

Possible books/resources:

- Bog Baby- Jeanne Willis
- The Enormous Crocodile- Roald Dahl
- Argh Spider- Lydia Monks
- The Owl and the Pussycat- Edward Lear

Links:

Subject Specific links –

- Literacy non-chronological report on polar bears, new vocabulary, adjectives and comparing animals.
- Maths: sorting activities and comparative language.
- Computing learning from activities and videos on IWB.
- Geography: different animals living in different places.
- Art & DT: drawing and labelling.

Personal development – climate change awareness

SMSC – good citizen, not to be wasteful and the impact humans can have on the environment.

Cultural Capital – Discuss animals that may be more likely found in Britain and those found in other parts of the world.

Careers – vet, doctor, nurse, zoologist, scientist

British Values – to appreciate that animals should be cared for in the context of pets.

Equality – to appreciate that animals are different to one another as are humans.

Independence – to look after our bodies e.g. brush teeth, comb hair

Community – recognise how people in our school/village community can be the same/different from each other.

Outdoor learning – what is in our village. Where does our community meet?

Year 1 Science – Chemistry – Everyday Materials Spring Term

Working Scientifically:

- Which is the best material to make a model house, an umbrella etc. **(fair testing)**
- *Is there a pattern in the types of materials that are used to make objects in a school?* **(pattern seeking)**

Enrichment:

Continuous provision, Messy play, Forest Schools

Prior Learning:

- EYFS: Naming materials in the model making areas e.g., cardboard, paper, plastic; taking about waterproof materials we wear when we play in the rain, looking at magnets and what kinds of materials are magnetic and non-magnetic.
- Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. (Early Learning Goal).

Key Essential Skills and Sticky Knowledge:

- Objects are made from materials. E.g. metal, wood, rock.
- Objects can be grouped based on the materials they are made from.
- Every material has different properties. For example, paper is soft and smooth.
- Materials can be natural or man made
- Different objects are suitable for different purposes
- Some objects can be changed. For example by squashing, bending, twisting and stretching.

Topic Vocabulary:

hard, soft, stretchy, stiff shiny, dull, rough, smooth, waterproof, not waterproof, natural, man-made. absorb, absorbent, fabric, wood, plastic, glass, metal, liquid, rock, hard.

Sequence:

- What is an object? What is a material?
- What are the properties of materials?
- What are the properties of objects, materials and why they are chosen?
- What is the best material to use for Teddy's roof?
- What is the best material to use for Teddy's curtains?
- What is the best material for Teddy to use as a towel?

Thinking Deeper:

Why are certain materials used for certain objects?

To understand why certain materials are suitable and unsuitable for different objects. Children must understand that some materials are more suitable than others for making different objects.

Possible books/resources:

- Beegu (*What does Beegu think of life on Earth?)* Alexis Deacon
- Dogger (*Why is Dogger a good toy? What if he was made of something else?)*
- Golidlocks and the Three Bears (*What makes something right?)*
- The Three Little Pigs (Their houses are made of different materials. What happens differently?)

Links:
Subject Specific links –
- English: new vocabulary, explaining their work and their ideas, describing images and layout for non-fiction (science investigation format).
- Maths: sorting activities, comparing materials and amounts.
- Computing: learning from online activities.
- Art & DT: why we use different materials for different things.

Personal development – working in pairs, small and larger groups.
SMSC – talk of recycling and the overuse of plastic.
Cultural Capital – looking at objects made from different materials from different cultures
Careers – builder, architect, interior designer linked to teddy's houses project.
British Values – deciding which experiences they want to carry out as a class.
Equality – to understand that each child has the right to live in a home and be clothed appropriately.
Independence – to use materials appropriate to a task.
Community – what materials have been used to build with in our community/village?
Outdoor learning – to notice understand what materials work best for outdoor situations.

Working Scientifically:

- Children to explore how the conditions of a habitat affect the number of woodlice (**Pattern Seeking**)
- *Where do we find the most woodlice?*

Enrichment:

Forest schools, Farm Visit, Beach trip, Zoo trip (Year B), butterfly growing

Prior Learning:

- EYFS: Knows about similarities and differences in relation to places, objects, materials and living things.
- Talks about the features of their own immediate environment.
- Knows about similarities and differences in relation to places, objects, materials and living things.
- They make observations of animals and plants and explain why some things occur and talk about changes. (Early Learning Goal)
- Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Y1 - Plants)
- Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1 - Plants)
- Identify and name a variety of common animals including fish, amphibians, reptiles, birds, and mammals. (Y1 - Animals including humans)
- Identify and name a variety of common animals that are carnivores, herbivores, and omnivores. (Y1 - Animals including humans)
- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds, and mammals, including pets). (Y1 – Animals, including humans)
- Observe changes across the four seasons. (Y1 - Seasonal changes)

Key Essential Skills and Sticky Knowledge:

- Begin to know that living things can be split into three groups: things that are alive, things that were once alive but are now dead, and things that have never been alive.
- Begin to know that most living things live in an environment they are suited to. This is their habitat.
- Begin to know that habitats can be different, for example hot or cold, wet or dry, on the ground or up high
- Begin to know that habitats are suited to the basic needs of animals and plants.

Topic Vocabulary:

living, alive, non-living, dead, never been alive, life process, habitat, environment

Sequence:

- How do we know if something is living, dead & non-living?
- What is a habitat?
- What types of habitats are there?
- How does a habitat provide the basic needs for the life of the creature living in it?

Thinking Deeper:

Why Do We Need Bees?

- Bees are great pollinators, carrying pollen from one flower to another. Once pollinated, a flower develops into fruit, which we can eat. Bees are vital for pollinating many commercial crops, such as tomatoes, peas, apples, and strawberries.

Possible books/resources:

- A Tadpole's Promise - Jeanne Willis
- The Tales of Jemima Puddleduck, Jeremy Fisher and Squirrel Nutkin
- The Ladybird Big Book of Dead Things - Ned Hartley
- Run Wild - David Covell (online)
- There's a Rang-Tan in my Bedroom - James Sellick
- An Otter Called Pebble - Helen Peters
- The Big Book of the Blue - Yuval Zommer
- When the Bees Buzzed Off - Lula Bell
- The Coral Kingdom - Laura Knowles
- Tad- Benji Davies (online)

Links:

Subject Specific links –

- English: new vocabulary, explaining their work, describing images and processes.
- Maths: sorting activities, tally charts, pictograms.
- Computing: learning from activities and videos on IWB.
- Geography: features of habitats and mapping where they are in the school grounds and beyond.

Personal development – to be aware of harmful germs and how to keep themselves safe.
SMSC – learning how to look after the environment and learn how to respect nature.
Cultural Capital – investigating habitats from different places around the world
Careers – microbiologist, environmentalist, RSPCA RSPB, vet, zoologist
British Values – children respect the environment around them and the habitats within the school grounds.
Equality – Every animal deserves the same representation as another. Do animals have the same rights as humans?
Independence – to ask questions relating to animals and their habitats.
Community – investigating habitats locally (beach, farm, forest schools).
Outdoor learning – to use local environments to explore and investigate animals in their habitats.

Working Scientifically:

- Grouping different types of plants **(classifying and grouping)**
- Observing plants over the term/year and keeping record of how they have changed **(observation over time)**

Enrichment:

Forest schools, Sunflower planting, Farm visit

Prior Learning:

- EYFS: Observe and record how plants and flowers in the garden and vegetable box are growing; growing sunflowers for a 'sunflower' competition.
- Children know about similarities and differences in relation to places, objects, materials and living things.
- They talk about the features of their own immediate environment and how environments might vary from one another.
- They make observations of animals and plants and explain why some things occur and talk about changes. (Early Learning Goal)

Key Essential Skills and Sticky Knowledge:

- Deciduous trees lose their leaves in the autumn every year. Their leave are generally broad, flat and have veins running through them.
- Evergreen trees have green leaves all year round. Their leaves are generally thick, waxy and narrow like needles.
- Some flowers grown especially in a garden. Some common garden plants are roses, daffodils, sunflowers and tulips.
- A wild plant will grow by itself. It does not need to be cared for. Some common wild plants are daisies, dandelions and buttercups.
- Stem, roots, petals and leaves make a flower and roots, trunk, branches and leaves make a tree

Topic Vocabulary:

leaves, flowers, petals, fruit, roots, bulb, trunk, branches, deciduous, evergreen, plant, wild, blossom, flower, leaf, seed, shoot, stem, weed

Sequence:

- What do plants begin life as?
- What are the parts of a flower? What are the parts of a tree?
- What are some of our common plants and trees called?
- What are deciduous trees?
- What are evergreen trees?

Thinking Deeper:

Why are plants important to all life?

Possible books/resources

- The Tale of Peter Rabbit- Beatrix Potter
- Jim and the Beanstalk- Raymon Briggs
- Oliver's Vegetables- Vivian French
- The Little Gardener- Emily Hughes
- Lollipop and Grandma's Back Garden Safari- Penelope Harper

Links:

Subject Specific links –
- English: new vocabulary, explaining their work, describing images and processes.
- Maths: sorting activities and comparative language.
- Computing: learning from activities and videos on IWB

Personal development – learning how to look after plans and the link to environmental changes.
SMSC – learning how to look after plants and to respect nature.
Cultural Capital – look at plants from different countries.
Careers – farming, florist, tree surgeon, scientist, biologist,
British Values – following safety rules and instructions to keep everyone safe during experiments as some parts of plants are not to be eaten.
Equality – everyone can grow and look after plants no matter where they live.
Independence – looking after own plants.
Community – what plants are grown in our community/village?
Outdoor learning – identifying plants, trees, flowers.