# Science whole school planning overview

| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
|---|---|---|---|---|---|---|
| YR | **Seasons** – Longitudinal study - Autumn Exploring school grounds/Stanley Park Seasonal changes – Same/different, looking at environment, plants and animals<br><br>**Animals** – exploring the habitats of the animals that live within the school grounds | **Plants** - Beginning to identify some of the trees and  plants and within the school grounds Focus – Acorn<br><br><br>**Materials** – exploring the properties of materials within the environment eg, mud kitchen, water tray, wet/dry sand, gloop, shaving foam | **Seasons** – Longitudinal study - Winter Exploring school grounds/Stanley Park Seasonal changes – Same/different, looking at environment, plants and animals<br><br>**Materials** – Investigation of changing state of a material like water – related to temperature – ice,water<br><br>**Animal study** – hedgehogs – food they eat, hibernation, survival techniques, habitats **Animal survival** – explore animal survival through study of dinosaurs – **Language** – herbivore, carnivore, omnivore, predator, prey, extinct | **Seasons** – Longitudinal study - _Spring Exploring school grounds/Stanley Park Seasonal changes – Same/different, looking at environment, plants and animals<br><br>**Animals –** know a simple life cycle eg, egg, chicken, hen link to human<br><br>**Plants –** Plant, observe and gain a simple understanding of what a plant needs for it to grow**.** Begin to label the different parts of a plant **Language** -, stem, petal, leaf, root<br><br>**Materials –** Investigating materials suitable for construction – small, large projects link to traditional stories **–** houses, boats **Language –** durable, waterproof | **Animals –** begin to identify the insects and other animals that are in the school ground and beyond Looking at similarities and differences within the same species Explore the way they move, how they use their senses and how to adapt to survive **Language –** camouflage<br><br><br>**Animal study –** snail Exploring what they eat, how they survive, differences in shells | **Seasons** – Longitudinal study - _Summer Exploring school grounds/Stanley Park Seasonal changes – Same/different, looking at environment, plants and animals<br><br>**Animals –** Investigate the plants and animals that live on our shore line and compare to the different oceans around the world. Begin to gain an understanding of the reasoning behind the differences.<br><br>**Plants –** look at similarities and differences between the same species **G**ain an understanding of why flowers are important and how they make new plants |

# KS1 Science long term plan

| Year | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
|---|---|---|---|---|---|---|
| 1 | Describing materials | Animal survival | Animal survival | Plants | Plants | Plants |
| | | | Longitudinal - Seasons | Longitudinal – Seasons | | |
| 2 | Animal life cycles | Animals and habitats | Changing materials | Animals | Pushes and pulls | Making New Plants |
| | | | Longitudinal - Seasons | | Longitudinal - Seasons | |

| BIOLOGY | CHEMISTRY | PHYSICS |
|---|---|---|

| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
|---|---|---|---|---|---|---|
| Y1 | **Describing materials**<br>Distinguish between an object and its material<br>Name and describe a range of materials<br>Know that materials have different properties<br>Sort materials according to their properties | **Animal Survival**<br>Know how to group creatures;<br>**fish, amphibians, reptiles, birds and mammals**.<br>**Bar chart**<br>Know that animals need food to survive - **omnivores, herbivores, carnivores.**<br>**Describe and compare the structure of a variety of common animals variation** | **Animal Survival**<br>Knowing that animals can be **predators and prey**.<br>Know a simple food chain (predator and prey)<br>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense<br>Know that animals can use their senses to avoid being eaten.<br><br>**Seasons**<br>Longitudinal study -Winter Weather, length of day, trees<br>**Word mat introduced, cdn label photos** | **Plants**<br>Identify and describe the basic structure of a variety of flowering plants, including trees. (bulbs, seeds)<br><br><br>**Seasons**<br>Longitudinal study – Spring weather, length of day. New growth, noticing changes<br>**Word mat introduced, cdn label photos.**<br>**Drastic changes** | **Plants**<br>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees | **Plants**<br>Observe and describe how seeds and bulbs grow into mature plants.<br><br>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. |

| | Disciplinary knowledge | | | | | |
|---|---|---|---|---|---|---|
| | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| Y1 | Explore material properties – vocabulary. Sorting and classifying e.g. fabric, metal, rock. | Sorting and classifying.<br><br>Recording data – scaffolded pre-printed table. E.g. Create a half fish/half mammal – what features would it have?<br><br>If your animal was found in the wild, how would a scientist find out what it is? (they would have to classify them)<br><br>Comparing<br><br>Why do some animals eat meat and others do not? | Observe closely minibeasts– look at videos of our site. Who is the predator and who is the prey? Owls nocturnal – good sight etc. | Sorting and classifying - seed or not seed?<br><br>Observational drawing – dissecting seeds/bulbs. What grows from a given seed/bulb? How are plants adapted? (thorns)<br><br>Sunflower race! | Sorting and classifying. Data collection. Observational drawing. What is growing in our school grounds? Does the habitat effect what can grow there? What has changed? What are we measuring/ observing?<br><br>Wild or garden? Identify on a school map<br><br>Why are flowers different colours? | Labelling a diagram of plant structure.<br><br>Investigating a scientific question. If a bulb is planted upside down will the roots pop out of the soil? Planning mind map scaffolded with choices (variables) – how does the amount of water effect how well it grows? |

| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
|---|---|---|---|---|---|---|
| Y2 | **Animals including humans** Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene<br><br>Some things are living, some were once living but now dead and some things have never lived. | **Animals** Notice that animals, including humans, have offspring which grow into adults<br><br>Find out about and describe the basic needs of animals, including humans, for survival (water, food, air)<br><br>Learn that most living things live in habitats to which they are suited… | **Changing materials** Different materials have different properties identify and compare the suitability of everyday materials… Find out how some material shapes can be changed by squashing, bending, twisting or stretching<br><br><br><br><br>**Seasons** Longitudinal study –Winter animals and plants (habitat changes) | **Animal life cycles** All animals eventually die. Animals reproduce new animals when they reach maturity. Animals grow until they reach maturity and then don't grow any larger.<br><br>**Animals including humans** Identify and name a variety of plants and animals in their habitats, including micro-habitats. Describe how animals obtain their food from plants and other animals, using simple food chains. | **Forces** Learn that pushing and pulling can change the shape of things. Bigger pushes and pulls have bigger effects.<br><br>**Forces** Know that things can move in different ways. Pushing and pulling can make things move or stop. Pushing and pulling can make things move faster or slower.<br><br>**Seasons** Longitudinal study –Spring animals and plants (habitat changes) | **Making new plants** Flowering plants make seeds to reproduce and make more plants.<br><br>Some plants die after producing seeds and others live for many generations |

| | Disciplinary knowledge | | | | | |
|---|---|---|---|---|---|---|
| | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| Y2 | Plan and test an enquiry – planning mindmap.<br><br>Classifying and sorting – venn diagram – living/dead/never alive<br><br>Why do some trees lose their leaves in Autumnumn and others do not? | Habitats – hot and cold places. Migration and hibernation.<br><br>Why do some animals have underground habitats?<br><br>Gathering and recording data – timeline | Materials for toys – Will the material used effect how well it floats? Which wrapping paper is best to wrap and send a present?<br>Record in a table – explicit teach scaffolded<br><br>Materials for clothing – Make a camouflage jacket for a bear. Best material for a belt? Denier of tights effect stretchiness. | Observation. Asking questions. What do animals eat?<br><br>Writing conclusions | Independent use of planning mind map.  How does the steepness effect the ball? Does the length I hold the toy down effect how far it jumps? Pattern e.g. the bigger the push it faster it goes. | Materials for building – Does the type of rock effect its absorbency?<br><br>Best material for a floor tile?<br><br>Independent use of planning mind map,<br><br>Identify what is changing and what is being measured.<br><br>How long are the roots of tall trees? |