Year 2

All Year

Seasonal Change					
Lesson Sequence					
Observe a tree (school garden) through photos and drawings, to watch closely over a period of time how it changes Through observation, photograph and draw the tree in Autumn, looking closely at the trunk, branch and leaves In Autumn, measure the temperature outside with a thermometer and compare this to how it feels when the weather is this temperature.	*Look at animals, trees, clothes we wear.* Observe how day length varies over the course of a year depending on the season	*Look at animals, trees, clothes we wear.* Observe how day length varies over the course of a year depending on the season. In Winter, measure the temperature outside with a thermometer and compare this to how it feels when the weather is this temperature	*Look at animals, trees, clothes we wear.* Observe how day length varies over the course of a year depending on the season.	*Look at animals, trees, clothes we wear.* Observe how day length varies over the course of a year depending on the season. In Spring, measure the temperature outside with a thermometer and compare this to how it feels when the weather is this temperature	Describe how the length of the day varies depending on the season. In Summer, measure the temperature outside with a thermometer and compare this to how it feels when the weather is this temperature
Substantive Knowledge					
There are 4 seasons in the UK. **Autumn** – September, October, November **Winter** – December, January, February **Spring** – March, April, May **Summer** – June, July, August	**Autumn** - Harvest time is in this season. - Temperatures drop and it gets dark earlier because there is less sunlight. Skies can be overcast. Birds migrate to warmer climates. - Leaves change colour and start	**Winter** - The coldest time of the year. - There are less and less hours of daylight. - We sometimes see snow, frost in the morning, sleet blizzards and hail. Water freezes to ice. - Many plants stop growing. - Some trees lose all their leaves.	**Spring** - In this season temperatures rise and the ground starts to warm up. - Flowers begin to grow. - This season is associated with rebirth and growth. Some baby animals are born (e.g. lambs, chicks)	**Summer** - The hottest time of the year. - There is usually sunshine, generally dry weather but there may be thunderstorms too. - Flowers and trees are in bloom.	In the winter the sun rises later and sets earlier and our days are short. In the summer the sun rises earlier and sets later and our days are long

	to fall from some trees. - Animals begin storing up food for the winter	- Some animals including hedgehogs and tortoises hibernate.			
Disciplinary Knowledge					
Methods: Observation over time Observing over time is when you watch or measure something over a period of time to see how it changes. Pattern Seeking Pattern seeking is when you carry out simple tests or observe closely to look for patterns in results. You can ask questions to help you look for patterns. **Apparatus & techniques:** A thermometer is an instrument that measures temperature.	**Methods:** Observation over time Observing over time is when you watch or measure something over a period of time to see how it changes. Pattern Seeking Pattern seeking is when you carry out simple tests or observe closely to look for patterns in results. You can ask questions to help you look for patterns. **Apparatus & techniques:** A thermometer is an instrument that measures temperature. **Data Analysis:** When you collect data it needs to be presented in a way that is clear and easy to understand. **Using evidence to develop explanations:** Know that you can answer questions using	**Methods:** Observation over time Observing over time is when you watch or measure something over a period of time to see how it changes. Pattern Seeking Pattern seeking is when you carry out simple tests or observe closely to look for patterns in results. You can ask questions to help you look for patterns. **Apparatus & techniques:** A thermometer is an instrument that measures temperature	**Methods:** Observation over time Observing over time is when you watch or measure something over a period of time to see how it changes. Pattern Seeking Pattern seeking is when you carry out simple tests or observe closely to look for patterns in results. You can ask questions to help you look for patterns. **Apparatus & techniques:** A thermometer is an instrument that measures temperature. **Data Analysis:** When you collect data it needs to be presented in a way that is clear and easy to understand. **Using Evidence to develop explanations**: Know that you can answer questions using	**Methods:** Observation over time Observing over time is when you watch or measure something over a period of time to see how it changes Pattern Seeking Pattern seeking is when you carry out simple tests or observe closely to look for patterns in results. You can ask questions to help you look for patterns. **Apparatus & techniques:** A thermometer is an instrument that measures temperature. **Data Analysis:** When you collect data it needs to be presented in a way that is clear and easy to understand.	Methods: Observation over time Observing over time is when you watch or measure something over a period of time to see how it changes. Pattern Seeking Pattern seeking is when you carry out simple tests or observe closely to look for patterns in results. You can ask questions to help you look for patterns. **Data analysis:** When you collect data it needs to be presented in a way that is clear and easy to understand. A table is a simple way to present data. A tally chart is a simple way of recording data. Each item is represented by a line and the fifth line is drawn diagonally. Each gate represents five.

	knowledge from what you have observed. Know that you can use data you have collected to help answer questions. Know that a conclusion is when you answer a question using what you have found out in your scientific enquiry.		knowledge from what you have observed. Know that you can use data you have collected to help answer questions. Know that a conclusion is when you answer a question using what you have found out in your scientific enquiry.		

Year 2

Autumn

<table>
<tr><th colspan="6">Animals Including Humans</th></tr>
<tr><th colspan="6">Lesson Sequence</th></tr>
<tr><td>Explore how animals have offspring that turn into adults.</td><td>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</td><td>Understand that humans are animals and that we too have offspring that turn into adults.
Explore how babies change to toddlers, to teenagers, adults, then elderly.</td><td>Understand that we need to eat the right amount of different types of food.</td><td>Investigate the importance of human exercise.</td><td>Investigate the importance of good hygiene to keep the body healthy.</td></tr>
<tr><th colspan="6">Substantive Knowledge</th></tr>
<tr><td colspan="2">All living things reproduce and have offspring.
Some animals give birth to live young and they look like them when they are born e.g. cats, dog, and humans.
- Some animals have offspring that doesn't look like them e.g. fish, frogs.
- Some animals lay eggs which hatch into live young e.g. birds, snakes.</td><td colspan="2">To survive, animals (including humans) need water, food, shelter, warmth and oxygen.</td><td colspan="2">Offspring must receive the basic needs of an animal to grow into an adult. When they are fully grown, they can also reproduce.
- Egg > chick > chicken
- Spawn > tadpole > frog
- Eggs > larva > pupa > ladybird</td></tr>
<tr><th colspan="6">Disciplinary Knowledge</th></tr>
<tr><td>Methods:
<u>Identifying and classifying</u>
Classifying is when you sort items into groups based on similarities and differences.

To help classify objects, it is good to observe them.</td><td><u>Research using secondary sources</u>
Research is an investigation or study to find out facts in order to reach a conclusion.

You can carry out research to answer simple questions.</td><td colspan="2"><u>Research using secondary sources</u>
Research is an investigation or study to find out facts in order to reach a conclusion.

You can carry out research to answer simple questions.

Secondary sources of information can be used to research what animals need to survive and what will happen if any of these are missing.</td><td colspan="2"><u>Research using secondary sources</u>
Research is an investigation or study to find out facts in order to reach a conclusion.

You can carry out research to answer simple questions.

Children use secondary sources and information to research what animals needs to survive and what

Using evidence to develop explanations:</td></tr>
</table>

Observing means to look closely. Identify that humans, dogs and cats' offspring look like their parents. Frog offspring doesn't look like its parent.	You can use secondary sources of information to investigate which animals lay eggs and which give birth to live young.	Secondary sources of information can be used to identify the basic needs of an animal. **Data Analysis:** A pictogram is a chart that has images that represent the value of data. Know how to read the data on a pictogram to answer questions.	A conclusion is when you answer a question using what you have found out from scientific enquiry.

Year 2

Spring

Materials					
Lesson Sequence					
Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.	Distinguish between an object and the material from which it is made by naming objects and identifying the materials they are made from.	Describe the simple physical properties of a variety of everyday materials.	To describe the simple physical properties of a variety of everyday materials by testing different objects.	Investigate which material would be best to make different objects e.g. an umbrella.	Compare and group together a variety of everyday materials on the basis of their simple physical properties.
Substantive Knowledge					
Children know, name and recognise materials made from; wood, plastic, glass and metal.	Children can explain what these everyday materials are used for and give examples: Wood – pencils, benches Plastic – school trays, lunchbox Glass – windows, drinking glasses Metal – scissors, knife and fork	Waterproof – something that repels liquid and does not absorb liquid Absorbent – something that soaks in a liquid Transparent – something that you can see through Opaque – something that you cannot see through Hard – something that is solid and does not easily break Soft – something that can bend and move without breaking Shiny – something that reflects light Dull – something that does not reflect light		Investigate which material would be best to make different objects e.g. an umbrella.	Compare and group together a variety of everyday materials on the basis of their simple physical properties.
Disciplinary Knowledge					
Methods: Identifying, classifying and grouping. Classifying is when you sort items into groups based on similarities and differences Know that we can sort objects into the different materials they are made	**Methods: Identifying, classifying and grouping.** To observe by looking closely at the materials a car is made of. Classify what materials a car is made out of by identifying the different	**Methods: Pattern seeking** Know that pattern seeking is when observe the features of the different materials and their uses. Carry out simple tests on materials to look for patterns in properties e.g. if they are waterproof, absorbent, transparent, opaque, hard, soft, shiny or dull. Evidence to develop explanations: Know that you can answer questions using knowledge from what they have observed about materials. Explain	**Methods: Pattern seeking** Know that pattern seeking is when you carry out simple tests or observe closely when checking the suitability of materials to make a fairground ride model (playdough, LEGO, wooden blocks).	**Methods: Pattern seeking** Know that pattern seeking is when you carry out simple tests or observe closely. Test fairground rides to look for patterns in properties of materials to check and evaluate the

from. E.g. wood, glass, metal and plastic. To help classify what materials objects are made from, know that it is good to observe them closely. To help classify what materials the objects are made from, know that it is good to ask questions. **Data Analysis:** Know that when you collect results from an experiment, it can be recorded in a table that is clear and easy to understand. **Evidence to develop explanations:** Know that you can answer questions about materials using knowledge from what they have observed Know that you can use data you have collected to help answer questions about some objects and the materials they are made from. Know that a conclusion is when you answer questions about some objects and what they are made from.	materials: wood, plastic, glass and metal **Pattern Seeking** Ask simple questions about the make-up of a car to help look for patterns **Evidence to develop explanations:** Know that you can answer questions about the materials a car is made from, using knowledge from what they have observed Know that a conclusion is when you can explain why different materials are used for certain parts (e.g. windows are made of glass because they need to be transparent), following what you have found out in your scientific enquiry	they materials can come in different forms, which therefore means they have different features. E.g. some plastic is transparent and some is opaque Know that a conclusion is when you answer a question using what you have found out in your scientific enquiry. To conclude, explain they can come in different forms, which therefore means they have different features. E.g. some plastic is transparent and some is opaque. .	**Using evidence to develop explanations:** Know that results from a scientific enquiry can be used to answer which materials are most suitable to make a fairground ride with	suitability of their chosen materials **Using evidence to develop explanations:** Know that a conclusion is when you answer a question about what you have found out in your scientific enquiry, which is the suitability of the materials chosen for their fairground rides.

Conclude that some objects are made of more than one material.				

Year 2

Summer

<table>
<tr><th colspan="8">Plants</th></tr>
<tr><th colspan="8">Lesson Sequence</th></tr>
<tr>
<td>Identify and describe the basic structure of a variety of common flowering plants - children to plant sunflowers to observe growth throughout topic. Give children an incorrect example of the structure of a plant.</td>
<td>Identify and name a variety of common garden plants.</td>
<td>Identify and name a variety of common wild plants.</td>
<td>To observe and describe weather associated with the seasons by observing the weather in spring. Look at animals, trees, clothes we wear. Observe how day length varies over the course of a year depending on the season.</td>
<td>Identify and name common trees including deciduous and evergreen.</td>
<td>Identify and describe the basic structure of a variety of common flowering plants.</td>
<td>Observe changes that have happened to seeds/beans planted in week 1.</td>
<td>Children are to describe the changes as a plant grows from a seed.</td>
</tr>
<tr><th colspan="6">Substantive Knowledge</th><th></th><th></th></tr>
<tr>
<td>The main parts of a plant are:

Flowers – look pretty and come in different colours. They help attract animals and insects that help the plant to make seeds for new plants.

Stem – helps support the plant and keeps it upright. Water and food are</td>
<td><u>Common garden plants</u>
People grow plants in their garden. They may grow flowering plants which are beautiful to look at or grow beans/seeds for food.

Rose
Poppy
Heather
Lavender
Sunflower</td>
<td><u>Common wild plants</u>
A wild plant is one that grows by itself. A wild plant grows where a seed falls – it doesn't need to be planted. A wild plant doesn't need to be cared for.

Daisy
Nettle
Buttercup
Dandelion
Clover
Ivy</td>
<td colspan="3"><u>Common trees</u>
Beech
Oak
Sycamore
Chestnut
Apple
Holly
Cedar
Spruce

Parts of a tree:
Leaves
Fruit
Blossom
Branches
Trunk</td>
<td colspan="2"><u>Trees</u>
Deciduous – a tree that sheds its leaves during autumn. During autumn they change colour before falling off. Evergreen – A tree that keeps its leaves all year round even in winter.</td>
</tr>
</table>

taken up from the roots and transported through the stem. **Leaves** – they absorb sunlight which is used to make food for the plant. **Roots** – anchor the plants in the ground. Without roots a plant would fall over. Roots also take water and nutrients from the soil.	Pansy		Roots			
Disciplinary Knowledge						
Methods: **Observation over time (every week)** Observing over time is when you watch or measure something over a period of time to see how it changes. A sunflower seed can be planted and observed closely to see how it grows/changes every week. **Identifying and classifying** You can identify the different parts of a	**Methods:** **Identifying and classifying** You can classify garden plants as ones that are for looking beautiful and ones that are for food. Know that when you classify plants, you look for similarities and differences. Parts may look different but have the same function.	**Methods:** **Identifying and classifying** Know that to identify and classify wild plants you need to observe them closely. These can be found on the school field. Using a tally chart, children will sort flowers found in the field into a tally chary. **Research using secondary sources** Know that Kiddle is a child friendly search engine that you can use to research the names of garden plants. **Pattern seeking** Know that pattern seeking can be used to spot patterns in where certain wild flowers grow A ruler is used to measure the height and length of something. It measures in cm.	**Methods:** **Identifying and classifying** You can identify the different parts of a tree: roots, a trunk, branches, leaves. Observation can be used to compare parts of a tree to parts of a plant. **Pattern seeking** Know that you can ask questions to identify what is the same and what is different about the parts of a tree. This	**Apparatus & Techniques:** A ruler is used to measure the height and length of something. It measures in cm. You can measure the height of a sunflower using a ruler. Data Analysis: Know that you can record the changes in a sunflower overtime in a sunflower diary.	Methods: **Identifying and classifying** Sorting trees into groups- those that are deciduous and those that are evergreen. **Apparatus & Techniques:** A ruler is used to measure the height and length of something. It measures in cm. You can measure the	**Apparatus & Techniques:** A ruler is used to measure the height and length of something. It measures in cm. You can measure the height of a sunflower using a ruler. **Data Analysis:** Know that you can record the changes in a

plant (sunflower, tulip) by observing closely (flower, stem, leaves and roots). **Pattern seeking** Know that pattern seeking is when you carry out simple tests or observe closely. You can test what a plant needs to grow through pattern seeking. **Data Analysis:** Know that the data and results presented will help answer questions using the knowledge from what has been observed. A sunflower diary is a way to collect data each week and present results clearly.	**Research using secondary sources** Know that you can use the internet to research the names of common garden plants, Know that Kiddle is a child friendly search engine. **Data Analysis:** Know that a VENN diagram can be used to present the classification of garden plants as ones that are beautiful and ones that are for food. **Using evidence to develop expalantions:** Conclude that garden plants may look different but have the same parts and functions.	**Apparatus & Techniques:** You can measure the height of a sunflower using a ruler. To measure correctly 0 needs to be at the start of the item you are measuring. **Data Analysis:** A sunflower diary as a way of recording the observation of changes of a sunflower over time. A table is a clear way to record the sorting of wild flowers. . A tally chart is a simple way of recording data. Each item is represented by a line and the fifth line is drawn diagonally. Each gate represents five. A tally chart can be used to record the number of wild flowers observed in the school garden or recreation ground. **Using evidence to develop explanations:** Know that from observing in the field, you can answer questions about where wild flowers grow, using what you have found out in scientific enquiry. Know that nettles and ivy can be found at the edge of a green space and daises, buttercups, dandelions and clovers are scattered around, with no particular pattern.	will help look for patterns. **Apparatus & Techniques:** A ruler is used to measure the height and length of something. It measures in cm. You can measure the height of a sunflower using a ruler. To measure correctly 0 needs to be at the start of the item you are measuring. **Data Analysis:** Know that you can record the changes in a sunflower overtime in a sunflower diary. A labeled diagram can be used to show the different parts of a tree. **Evidence to develop explanations:** Conclude that trees can look different but have the same features.		height of a sunflower using a ruler. Data Analysis: Know that you can record the changes in a sunflower overtime in a sunflower diary. When you collect data it needs to be presented in a way that is clear and easy to understand. A table is a simple way to present data.	sunflower overtime in a sunflower diary.