Year 1 Unit Progression in disciplinary knowledge, followed by unit summaries

Year 1	Alive (Structure and Function) Identify common animals and body parts.	Alive (Structure and Function) Identify common deciduous trees/ plants and plants their basic parts. Energy - Sun Notice the impact of energy from the sun in Autumn	Alive (Structure and Function) Identify common evergreen trees / plants and their basic parts. Energy - Sun Notice the impact of energy from the sun in Winter	Alive (Structure and Function) Identify common flowering plants / trees and their basic parts. Energy - Sun Notice the impact of energy from the sun in Spring	Properties of materials Identify materials and their properties	Alive (Structure and Function) Identify common wild and garden plants and their basic parts Energy - Sun Notice the impact of energy from the sun in Summer
Disciplinary progression	**Children can make observations and measurements of the given dependent variables and use these to sort and classify.**	Children can make observations and measurements **at controlled times** of the given dependent variable and use these to sort and classify **or record in labelled pictures or diagrams.**	Children can make observations and measurements **to answer a question**, at controlled times of the given dependent variable and use these to sort and classify **or record in given simple tables.**	Children can make observations and measurements at controlled times of the given dependent variable and use these to sort and classify or record in given simple tables, **bar charts or Venn diagrams, identifying possible answers to their questions**	Children can make observations and measurements at controlled times of the given dependent variable and use these to sort and classify or record in given simple tables, bar charts or Venn diagrams, **identifying possible answers to their questions**	Children can make observations and measurements **using scientific equipment** at controlled times of the given dependent variable and use these to sort and classify or record in given simple tables, bar charts or Venn diagrams, **identifying possible answers to their questions**
Observing and measuring	• **I know that to observe means to look closely and notice similarities and differences related to my enquiry question**	• I know that to observe means to look closely and notice similarities and differences related to my enquiry question • **I know that measuring tells the size of something.** • **I know how to use same sized objects to make measure comparison** • **I know observation can be instant or take place over time.**	• I know that to observe means to look closely and notice similarities and differences related to my enquiry question • I know that measuring tells the size of something. • I know how to use same sized objects to make measure comparison • I know observation can be instant or take place over time.	• I know that to observe means to look closely and notice similarities and differences related to my enquiry question	•	• **I know how to use a hand lens** • **I know that a hand lens makes small objects appear bigger**
Recording Data	• **I can group things based on given criteria**	• **I can add labels to pictures to highlight features** • I can group things based on given criteria	• I can add labels to pictures to highlight features • **I know where to place my data on a given simple table**	• I can add labels to pictures to highlight features • **I know where to place my data on a given bar chart / pictogram/ Venn diagram** • I can group things based on given criteria	• I know where to place my data on a given bar chart / pictogram/ Venn diagram • I can group things based on given criteria	• I know where to place my data on a given bar chart / pictogram/ Venn diagram • I can group things based on given criteria
Asking and exploring questions			• **I know that variables change over time.** • **I know that scientific questions should be based on something I can observe or measure**.	• **I can sort and classify using given criteria** • **I know that groups and sorting helps us observe similarities and differences**.	• I can sort and classify using given criteria • I know that groups and sorting helps us observe similarities and differences.	• I can sort and classify using given criteria • I know that groups and sorting helps us observe similarities and differences.
Performing Tests	• **I can follow a modelled investigation in small parts**	• I can follow a modelled investigation in small parts	• I can follow a modelled investigation in small parts			
Concluding, prediction, evaluating		•	• **I know that my observations and recordings enable me to answer my question** •	• I know that my observations and recordings enable me to answer my question • **I can use my observations and recordings to suggest an answer to my question.**	• I know that my observations and recordings enable me to answer my question • I can use my observations and recordings to suggest an answer to my question. •	• I can use my observations and recordings to suggest an answer to my question.

Applications & Communication					• **I can recognise an application of science.** • **I know that science has been used and is used to provide solutions**	• I can recognise an application of science.

Year 1 Unit Plans

KS1 A1	**BIG Q: How are animals the same and different?** - Identify common animals and body parts.					
Lesson Qs	**Elicitation / Activate** Which human body parts do I know?	Why do humans have senses?	How is animal structure the same and different?	How can we use body parts to help us identify the group an animal belongs to?	How can we group animals based on what they eat?	**Application / Assess** How are animals the same and different?
Key Concepts Alive (Structure and Function)	EY knowledge: • Know that a body is made up of different parts. • Notice animals move, eat, sleep, drink, reproduce • Know that some animals have different body parts to humans • Notice and comment some of the similarities and differences between animals	• Know that humans have eyes so they can see. • Know that humans have ears to hear. • Know that humans have a tongue to taste. • Know that humans have skin to feel. • Know that humans have a nose to smell. • Know that humans use their sense to learn about the world.	• Know that a fish lives in the water, has scaly skin and fins and name some examples e.g.: • Know that a bird has feathers and lays eggs and name some examples e.g.: • Know that a reptile has scaly skin, lays eggs and name some examples • Know that amphibians can live in water and on land and name some examples e.g.: • Know that mammals give birth to live young that look like them and name some examples e.g.:		• Know that carnivores eat only meat and name some examples. • Know that omnivore eat meat and vegetations and name. some examples e.g.: • Know that herbivores only eat vegetation and name some examples e.g.:	**Generalisation**: Animals have different body parts (structure) which allow them to do different things (functions) e.g. see, move and eat. Animal parts vary and this helps us identify what type of animal they are.
Disciplinary Concepts	***Observing and Measuring*** • I can add labels to pictures to highlight features I have observed	**Observing and Measuring** • I know that to observe means to look closely and notice similarities and differences related to my enquiry question.	**Observing and Measuring** • I know that to observe means to look closely and notice similarities and differences related to my enquiry question.	**Observing and Measuring** • I know that to observe means to look closely and notice similarities and differences related to my enquiry question.	.	
			Performing Tests I can follow a modelled investigation in small parts	**Performing Tests** I can follow a modelled investigation in small parts	**Performing Tests** I can follow a modelled investigation in small parts	•
				Recording Data • I can group things based on given criteria.	**Recording Data** I can group things based on given criteria	•
Key learning tasks	• Experience using body to accomplish specific challenges – e.g. obstacle course • Experience grouping one collection (e.g. farm) animals in different ways according to differences.	**Sorting and classifying enquiry:** How can our senses support us in grouping objects? Focus on generating variables that can be observed to sort a group of objects – build on chn using sight to other senses, e.g. feel, smell, etc. Each time focus on establishing the variable we are observing	**Sorting and classifying enquiry:** How can we group animals based on their body parts? Focus on children identifying variables (differences they can see, drawing on features from senses knowledge, e.g.	**Sorting and classifying enquiry:** How does body parts help us identify the group an animal belongs to? Give named examples of animals from each group to children- children identify their body parts (dependent variable) and their	**Sorting and classifying enquiry:** How can we group animals based on what they eat? What would be the variable we would need to observe for this enquiry? How can we group this food – plants	Make up an animal that belongs to each of the 5 animal groups. What structure / features must it have and why? What additional imaginary feature have you given it and what is its function?

	• Revise the body main body parts that children know from EY and link to their key function, e.g. legs to help us move, hands to help us pick up things and move. Label parts of the human body that make up its overall structure.	and the sense needed to make the observation. Which senses have we not used? Why? What could these be good for grouping?	mouth/ beak / gills, skin, fur, scales etc.)	function. Use variable observations and key derived from yesterday to identify the animal group it belongs to.	and animals. Some animals eat both – now use this to sort animals.	
Generalisation	Humans have body parts which do different jobs, which keep them alive.	Humans have special body parts (senses) which help them do different jobs (functions) which help them learn about the world and keep them alive.	Animals (including humans) have different body parts (structure), which help us group them and keep them alive.	Animals have different body parts which perform different functions, which help us identify which group they belong to.	All animals need to eat to stay alive.	**Generalisation**: Animals have different body parts (structure) which allow them to do different things (functions) e.g see, move and eat. Animal parts vary and this helps us identify what type of animal they are.

KS1 A2	**BIG Q: What do you notice in our school environment in the Autumn?** Identify common deciduous trees/ plants and their basic parts/ Notice the impact of energy from the sun in Autumn					
Lesson Qs	**Elicitation / Activate**	How can we sort trees based on their structure?	How do we notice the sun in autumn?	How can we group trees?	How can we identify trees?	**Application / Assess** What do you notice in our school environment in the autumn?
Key Concepts Alive (Structure and Function) Energy - Sun	*EY knowledge:* • *Know that the sun can be seen in the day and the moon and stars at night.* • *Know it is colder in winter and warmer in the summer.* • *Know that the amount of daylight is less in the winter and more in the summer.* • *Know there are four seasons*	• Know difference between a plant and a tree. • Know and identify **leaf**, stem, **root**, flower, petal, **branch, trunk, blossom**	• To know that the sun is the main source of heat energy on earth. • To notice that in the autumn the temperature cools and the number of rainy days increases.	• Know the difference between evergreen and deciduous. .	• Know the names of **deciduous** trees specifically: …	**Generalisation**: Trees have different parts (structure) e.g. leaves, trunks, blossom. These parts vary and this helps us identify what type of tree it is. The sun is the main source of heat energy and light energy on earth. Energy enables things to happen The amount of heat and light varies through the seasons.
Disciplinary Concepts	**Observing and Measuring** • I know that to observe means to look closely and notice similarities and differences related to my enquiry question.	**Observing and Measuring** • I know that to observe means to look closely and notice similarities and differences related to my enquiry question.	**Observing and Measuring** • I know observation can be instant or take place over time. • I know that measuring tells the size of something. • I know how to use same sized objects to make measure comparison (rain levels) **Performing Tests** • I can follow a modelled investigation in small part	**Observing and Measuring** • I know that to observe means to look closely and notice similarities and differences related to my enquiry question.		

		Recording Data • I can add labels to pictures to highlight features I have observed		**Recording Data** • I can add labels to pictures to highlight features I have observed	**Recording Data** • I can group things based on given criteria	
Key learning tasks	• Matching 'out of the window' pictures (plants, trees, weather) to the clothes you would need to wear. • Show pictures of children watering plants. Why are they doing this? Plants are alive.	Teach the parts of a tree and label. Notice the difference between plants and trees – size and trunk. **Identifying enquiry: How can we sort trees based on their structure?**	• Feeling the sun – how do I feel it? How does rainfall change over a month? • Collation of rain data – Same sized containers to collect rainwater over a week. x3 weeks and compare	• Collecting leaves to create a physical leaf bar chart – What is the most common in our environment? • Grouping by leaf – these leaves come from one tree.	Using the local trees, use a classification chart.	Draw and label a view out the window in autumn and summer including a tree (link to elicitation task)
Generalisation	Trees are alive.	Trees have different parts (structure) Trees have different parts (structure) e.g. leaves, trunks, blossom.	The sun is the main source of heat energy on earth. Energy enables things to happen The amount of heat varies through the seasons.	Trees have different parts (structure) Trees have different parts (structure) e.g. leaves, this helps us group them.	The parts of a tree vary and this helps us identify what type of tree it is.	**Generalisation**: Trees have different parts (structure) e.g. leaves, trunks, blossom. These parts vary and this helps us identify what type of tree it is. The sun is the main source of heat energy and light energy on earth. Energy enables things to happen The amount of heat and light varies through the seasons.

KS1 Sp1	**BIG Q: What changes do you notice in the environment in Winter?**					
Lesson Qs	**Elicitation / Activate**	How can we sort **evergreen** trees based on their structure?	What do we notice about the sun in winter?	How does the sunlight change during winter.	How does light energy enable plants to grow?	**Application / Assess** What do you notice in our school environment in the winter?
Key Concepts Alive (Structure and Function) Energy - Sun	EY Knowledge: The sun can be seen in the day and the moon and stars at night. Know it is colder in winter and warmer in the summer. Know that the amount of daylight is less in the winter and more in the summer.	• Know difference between a plant and a tree • Know the difference between evergreen and deciduous • Know and identify **leaf**, stem, **root**, flower, petal, **branch, trunk, blossom**	• To know that the sun is the main source of light energy and heat energy on earth. • To know that there is more daylight in the summer, less in the winter.	To notice the impact of changes in light and heat energy on the weather.	• To know that the Earth experience least light and heat energy in winter and most in summer. • To notice the impact of changes in light and heat energy through the seasons.	Generalisation: Trees have different parts (structure). These parts vary and this helps us identify what type of tree it is. The sun is the main source of energy. This energy helps plants and trees to thrive and survive.

	The sun is the main source of energy on earth .	• Know the names of deciduous and **evergreen** trees specifically: …				
Disciplinary Concepts		**Observing and measuring** I know that to observe means to look closely and notice similarities and differences related to my enquiry question **Recording Data** I know where to place my data on a given bar chart / pictogram/ Venn diagram I can add labels to pictures to highlight features I have observed	**Asking and exploring Questions** I know that variables change over time. I know that scientific questions should be based on something I can observe or measure.	**Observing and measuring** I know observation can be instant or take place over time. **Recording Data** I can add labels to pictures to highlight features I have observed	**Observing and measuring** I know that measuring tells the size of something I know how to use same sized objects to make measure comparison I know observation can be instant or take place over time **Performing Tests** I can follow a modelled investigation in small parts	**Concluding, prediction, evaluating** I know that my observations and recordings enable me to answer my question
Key learning tasks	Go for a walk into the school grounds and take a photo of the class or individual chn with a deciduous tree. Ensure that they are wrapped up in coats etc and discuss as a class how the weather and light is different from when they did this in the Autumn.	Look at trees within the school's grounds (or photos of different trees) in the winter and sort into evergreen/deciduous based on the presence or absence of leaves. Then teach what an evergreen is and then have chn sort them into two groups based on the shape of the leaves.	Using photos from a vehicle such as: link here To compare and discuss the differences in daylight hours that the chn will have experienced.	Take photos from elicitation task and have chn circle/draw and or label the features that are identifiable as being winter. I.e. bare deciduous trees.	Model a comparative test which illustrates seeds (e.g. cress) being exposed to winter conditions (more hours in darkness) compared to summer conditions (more hours in light).	• Draw and label a view out the window in autumn and winter including a tree. (Draw chn's attention to final task from Autumn 2 where they drew Summer and Autumn views)
Generalisation		Trees have different parts (structure) e.g. leaves, trunks, blossom. These parts vary and this helps us identify what type of tree it is.	The sun is the main source of heat energy and light energy on earth.	The amount of heat and light varies through the seasons.	Energy enables things to happen.	Generalisation: Trees have different parts (structure). These parts vary and this helps us identify what type of tree it is. The sun is the main source of energy. This energy helps plants and trees to thrive and survive.

KS1 Sp2	**What changes do you notice in the environment in Spring?**					
Lesson Qs	**Elicitation / Activate**	What are the different parts of a plant?	How can we identify plants in the spring?	How do we notice the sun in spring?	How does the weather change in spring?	**Application / Assess** What do you notice in our school environment in the autumn?

Key Concepts Alive (Structure and Function) Energy - Sun	*EY knowledge:* *Know that a plant is a living thing and can grow.* *Know that leaves from different plants and trees look different.* *Y1 knowledge:* • Know difference between a plant and a tree. • Know and identify **leaf**, stem, **root**, flower, petal, **branch, trunk, blossom** • To know that the sun is the main source of heat energy on earth. • To notice that in the autumn the temperature cools and the number of rainy days increases. • Know the difference between evergreen and deciduous. • Know the names of **deciduous** trees specifically: … •	• Know and **identify leaf, stem, root, flower, petal,** branch, trunk, blossom	• Identify flowering plants and trees based on their structure • Know the names of wild and garden plants, specifically: …. •	• To know that the sun is the main source of light energy and heat energy on earth. To know that there is more daylight in the spring	• To notice the impact of changes in light and heat energy on the weather.	Generalisation: Plants have different parts (structure) e.g. leaves, stems, flowers. These parts vary and this helps us identify what type of plant it is. The sun is the main source of heat energy and light energy on earth. The amount of heat and light varies through the seasons.
Disciplinary Concepts		**Observing and Measuring** I know that to observe means to look closely and notice similarities and differences related to my enquiry question. **Recording Data** I can add labels to pictures to highlight features I have observed	**Asking and exploring Questions** I can sort and classify using given criteria I know that groups and sorting help us observe similarities and differences. **Recording Data** I know where to place my data on a given bar chart / pictogram/ Venn diagram I can group things based on given criteria	**Observing and Measuring** I know that to observe means to look closely and notice similarities and differences related to my enquiry question. **Concluding, prediction, evaluating** I know that my observations and recordings enable me to answer my question. I can use my observations and recordings to suggest an answer to my question.	**Observing and Measuring** I know that to observe means to look closely and notice similarities and differences related to my enquiry question.	
Key learning tasks	Go for a walk into the school grounds and take a photo of the class or individual chn with signs of spring.	Look at a real plant and dissect into the different parts. Then have a photo of the plant and label it.	sorting photos of common garden and wild flowers and placing them on a wild picture or a garden picture. Label.	Draw a picture of yourself in the Spring. What would you be wearing? What would you be doing in the Spring time?	Take photos from elicitation task and have chn circle/draw and or label the features that are identifiable as being win. I.e. bare deciduous trees.	Investigation of different plants some with sunlight and some without. Which will grow the best?
Generalisation		Plants have different parts (structure) e.g. leaves, stems, flowers.	A plant's structure may vary and this helps us identify what type of plant it is.	The sun is the main source of heat energy and light energy on earth.	The amount of heat and light varies through the seasons.	Plants have different parts (structure) e.g. leaves, stems, flowers. These parts vary and this helps us identify what type of plant it is. The sun is the main source of heat energy and light energy on earth. The amount of heat and light varies through the seasons.

KS1 Su1	**How do we identify different materials?**

Lesson Qs	**Elicitation / Activate** Can I describe materials?	**What are the properties of materials?**	How can properties help us identify materials?	How do material's properties (structure) help them do a job (function)?	How can properties help us identify materials for a job(function)?	**Application / Assess** **How do we identify different materials?**
Key Concepts Properties of Materials	• *Know different words for materials (wood, glass, plastic etc)* • *Know that some materials float and some sink.* • *Know when to describe something as hard, soft smooth or rough.* • Know that some materials can change their shape. • Know that cooking something gives an outcome that cannot be reversed. • Knowledge of sense and their function • NEW YEAR 1 Knowledge • Know that an object is made from / of a material. •	• Know that properties are the words used to describe what a material is like and what it can do. • Know that a rough material has an uneven surface and a smooth material has an even surface. • Know that different materials have different properties. • Know that a soft material can be twisted and squashed and a hard material cannot. • Know that stiff materials are not easy to bend and flexible materials are. • Know that a stretchy material can be pulled	• Know that different materials have different properties. • Know that there are different materials which can be identified using observations (including fabric, wood, plastic, glass). •	• Know that different materials have different properties. • Know that a shiny material reflects light and a dull material does not. • Know that opaque materials do not let light pass through and transparent materials do. • Know that different materials have different properties. • Know waterproof materials do not let water through and absorbent materials do.	•	Objects are made from materials. Materials have properties (structure) which allow them to do different things (function). These vary and help us to identify what type of material it is.
Disciplinary Concepts	**Recording Data** I can group things based on given criteria	**Recording Data** I can group things based on given criteria I know where to place my data on a given bar chart / pictogram/ Venn diagram	**Recording Data** I know where to place my data on a given bar chart / pictogram/ Venn diagram	**Recording Data** I know where to place my data on a given bar chart / pictogram/ Venn diagram	**Applications** I can recognise an application of science.	**Applications** I can recognise an application of science.
	Asking and exploring Questions I know that groups and sorting helps us observe similarities and differences.	**Asking and exploring Questions** I can sort and classify using given criteria	**Asking and exploring Questions** I can sort and classify using given criteria		**Communicating** I know that science has been used and is used to provide solutions	**Communicating** I know that science has been used and is used to provide solutions
			Concluding, prediction, evaluating I can use my observations and recordings to suggest an answer to my question.	**Concluding, prediction, evaluating** I can use my observations and recordings to suggest an answer to my question.	**Concluding, prediction, evaluating** I can use my observations and recordings to suggest an answer to my question.	
Key learning tasks	In the children's books children sort the different materials into their category. Pictures of the children testing the materials stuck in their book.	In the children's books children sort the different materials into the Venn Diagram.	In the children's books children complete the table for squash, bend, twist and stretch.	In the children's books children complete the Ven Diagrams. Shiny materials and dull materials.	Complete the table (yes / no for whether the material is waterproof).	Complete the table for the materials and it's properties.

				Transparent materials and opaque materials.	Complete the sentence about waterproof materials.	
Generalisation	Objects are made from materials.	Materials have different properties (structure) e.g. rough, smooth, soft, stretchy, stiff, flexible. Rough, smooth etc.	Materials have properties (structure), These vary and help us to identify what type of material it is.	Materials have properties (structure) which allow them to do different things (function). e.g. Shiny, absorbent, waterproof, opaque, transparent	Materials have properties (structure) which allow them to do different things (function). These vary and help us to identify what type of material it is. Materials have different properties that you can see.	Objects are made from materials. Materials have properties (structure) which allow them to do different things (function). These vary and help us to identify what type of material it is.

KS1 Su2	**What changes do you notice in the garden in summer?**					
Lesson Qs	**Elicitation / Activate**	How can we sort plants based on their structure?	How can we group plants?	How do we notice the sun in summer?	How does the heat energy and light energy change through the seasons?	**Application / Assess** What do you notice in our school environment in the autumn?
Key Concepts Alive (Structure and Function) Energy - Sun	*EY knowledge:* • *Know that the sun can be seen in the day and the moon and stars at night.* • *Know it is colder in winter and warmer in the summer.* • *Know that the amount of daylight is less in the winter and more in the summer.* • *Know there are four seasons* *Y1 knowledge:* • *To know that the sun is the main source of light energy and heat energy on earth.*	• Know and **identify leaf, stem, root, flower, petal,** branch, trunk, blossom	• Know the difference between garden and wild plants • Know the names of common wild and garden plants, specifically: ….	• To know that there is more daylight in the summer. • To know that the Earth experiences least light and heat energy in winter and most in summer.	• To notice the impact of changes in light and heat energy through the seasons. • To notice the impact of changes in light and heat energy on the weather	Some plants and trees grow naturally in an area and some are designed and planted by humans. The sun is the main source of heat energy and light energy on Earth. The amount of heat and light varies through the seasons.

Disciplinary Concepts		**Observing and Measuring** I know how to use a hand lens I know that a hand lens makes small objects appear bigger **Asking and exploring Questions** I can sort and classify using given criteria I know that groups and sorting helps us observe similarities and differences.	**Observing and Measuring** I know how to use a hand lens I know that a hand lens makes small objects appear bigger **Recording Data** I know where to place my data on a given bar chart / pictogram/ Venn diagram I can group things based on given criteria **Asking and exploring Questions** I can sort and classify using given criteria I know that groups and sorting helps us observe similarities and differences.	**Recording Data** I know where to place my data on a given bar chart / pictogram/ Venn diagram I can group things based on given criteria	**Concluding, prediction, evaluating** I can use my observations and recordings to suggest an answer to my question **Applications** I can recognise an application of science.	
Key learning tasks	Sort pictures into summer and winter	Label a real flower and photograph for the book or Label a pre-drawn flower will all the parts listed above	Sort pictures of different plants and flowers into wild, garden or both	Simple charts to compare summer and winter day light hours Write a sentence to explain	Sort pictures into spring, summer, autumn and winter (weather, clothing, places e.g. beach, trees and plants)	Children to answer the key question by drawing and writing what they have learnt.
Generalisation		Plants have different parts (structure) e.g. leaves, flowers, petals	Some plants grow naturally in an area, and some are designed and planted by humans.	The sun is the main source of heat energy and light energy on Earth.	The amount of heat and light varies through the seasons.	Some plants and trees grow naturally in an area and some are designed and planted by humans. The sun is the main source of heat energy and light energy on earth. The amount of heat and light varies through the seasons.