Water Mill Primary School
Curriculum Planning – Key skills and knowledge covered in each Year group
Science

KS1

Teaching sequence in science	Big Picture: Start with what the children know, understand, are able to do and able to say. Daily Review: Revisit previous learning.	**Learning, working and talking like a scientist**	**Being introduced to the key terms and vocabulary that a scientist would use and encouraging use of correct vocabulary when writing and talking about science**
	Provide information and scientific concepts		
	Specify key vocabulary to be used and its meaning.		
	Provide opportunities for the children to investigate in a variety of contexts.		
	Obtain and present evidence through observations, comparisons and collected data		
	Consider and evaluate evidence making connections with scientific knowledge and understanding		

Concepts	Explanation
Structure	Anything composed of parts arranged together in some way
Function	A specific job or procedure
Variation	The presence of differences between living things of the same species
Adaptation	The process by which animals, plants and other living things have changed so that they better suit their habitat
Cause and effect	Cause is why something happens Effect is what event has happened as a result of this
Changes	Changing from one material/state to another
Evolution	The way that living things change over time
Growth	The process of increasing in size
Energy	Strength and power. There are many forms such as thermal (heat), radiant (light) or kinetic (movement)
Process	A series of actions or steps taken in order to achieve a particular end
Similarity and Difference	Similarity is sameness or a likeness between things and differences are a point or way in which people or things are dissimilar
Working scientifically	The processes of science**:** asking questions, designing experiments, reasoning and arguing with scientific evidence and analysing and interpreting data

	EYFS	Year 1	Year 2
Working Scientifically Progression	● Discuss similarities and differences in relation to places, objects, materials and living things. ● Make observations of animals and plants and explain why some things occur, and talk about changes. ● Talk about the features of their own immediate environment and how environments might vary from one another. ● Sort using observations of similarities and differences. ● Using their own criteria talk about a pattern they think they have noticed and how they are exploring it further. Observe closely using all senses. ● Choose to record in own way. Notice a change and want to find out what will happen next.	● Sorting and grouping things in different ways, asking how things are the same and different. ● Suggesting ways to sort. ● Raising simple questions. ● Carrying out scientific tests, suggested by an adult, that answers a question and talking about what they found out. ● Using simple measurements and equipment (e.g. hand lenses, egg timers) to gather data. ● Answering data related questions such as the most / least / more than / higher than. ● Recording simple data using pictures, labels, captions and, with support, a simple table. ● With help, using a source of information to answer a question.	● Observing using simple equipment identifying change over time. ● Identifying obvious differences/patterns within data. ● Beginning to suggest a way to test out their ideas and independently carrying out an investigation. ● Giving a simple reason for their answers using what they have observed. ● Using simple features to compare and talk about similarities and differences within sorted groups using Venn Diagrams to explain this further. ● Recording in a simple table / Venn /Carroll and beginning to use a bar chart to display their results ● Explaining what they have found out using scientific vocabulary. ● Asking people questions and using simple secondary sources to find answers. ● Using ICT to show their working. ● Making accurate measurements with simple equipment.

Year 1					
Theme 1		**Theme 2**		**Theme 3**	
Working scientifically	**Knowledge**	**Working scientifically**	**Knowledge**	**Working scientifically**	**Knowledge**
Taps- Body Parts PLAN- Ask simple questions RECORD- Suggest ways to sort EVALUATE-**Use their observations and ideas to suggest answers to questions.**	**Animals including humans** Can you name, draw and label the basic parts of a human body? What are the 5 senses and how do we use these to find out about the world?	Taps- Seasonal change Do- Observe over time use simple measurements and equipment RECORD- **record data to help in answering questions**	**Seasonal changes** What are the 4 seasons? What is the weather like in different seasons? What changes do we expect to see in each season? How do plants and animals, including humans, survive in hot/cold conditions? What do you notice about the length of the days over the year?	Taps- Bridge testers Do- carry out scientific tests suggested by an adult RECORD- **Collect data to compare** Interpret + Report-Use their observations and ideas to suggest answers to questions.	**Everyday materials** Can you name what material an object is made from? Can you identify and name a variety of everyday materials including wood, plastic, glass, metal, water and rock? What are the physical properties of these everyday materials? Can you compare and group materials based on their simple properties?
Vocabulary: See vocabulary list		Vocabulary: See vocabulary list		Vocabulary: See vocabulary list	
Theme 4		**Theme 5**			
Working scientifically	**Knowledge**	**Working scientifically**	**Knowledge**		
No Taps- Identify leaves hunt Identifying and classifying- **Children use their observations to compare and describe** Observe and measure- Observing closely, using simple equipment RECORD- with help, using a source of information to answer a question	**Plants** Can you name the parts of flowering plants and trees? What do plants need to grow well? What plants can you find by our school? Can you identify and name some common wild and garden plants? What is the difference between deciduous and evergreen trees? What is an annual plant?	Taps- Animal classification PLAN- Ask simple questions RECORD- **Suggest ways to sort and group** EVALUATE-Use their observations and ideas to suggest answers to questions.	**Animals including humans** Can you name some common fish, amphibians, reptiles, birds and mammals? How are they similar, how are they different? What is the difference between a carnivore, an herbivore and an omnivore? Can you name some animals that are one of these?		
Vocabulary- See vocabulary list		Vocabulary: See vocabulary list			
Year 2					
Theme 1		**Theme 2**		**Theme 3**	
Working scientifically	**Knowledge**	**Working scientifically**	**Knowledge**	**Working scientifically**	**Knowledge**

TAPs: Nature spotters Observes and measure- use hand lenses and minibeast lookers Identify and classify **Use appropriate scientific language to identify and classify** Vocabulary: See vocabulary list	**Living things and their habitats** What is a habitat? Can you identify the plants and animals that live in these habitats? Can you compare, group and classify animals and plants found in different areas? What is a microhabitat? Can you identify and name plants and animals found in two local microhabitats? How are these suited to their habitat? Do you know the differences between things that are living, dead and things that have never been alive? What does hibernate mean?	TAPs: Comparing hand spans Ask Qs + plan enquiry Ask simple Qs and recognise that they can be answered in different ways Evaluate **Use their observations and ideas to suggest answers to questions.** Vocabulary: See vocabulary list	**Animals including humans** How do humans keep healthy? What is a healthy diet? How much exercise do you do? What happens to our body when we do exercise? What is good hygiene practice? Why are correct exercise, food and hygiene important? What are the basic needs for survival?	TAPs: Waterproof materials **Ask questions and plan an inquiry** **Ask simple questions and recognising that they can be answered in different ways** Set up an enquiry Set up simple practical enquiries, comparative and fair tests Vocabulary: See vocabulary list	**Uses of everyday materials** How are different materials suitable for particular uses? Why would they not be suitable for a particular purpose? Can you sort materials and compare them to see how they are used? Do you know that the shape of some solid objects made from some materials can be changed by squashing, bending, twisting and stretching? Does this make them more/less suitable for different purposes?
Theme 4		**Theme 5**			
Working scientifically	**Knowledge**	**Working scientifically**	**Knowledge**		
TAPs: Compare growth **Observe and measure Observe closely, using simple equipment** Interpret and report Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Vocabulary: See vocabulary list	**Plants** How do seeds and bulbs grow into mature plants? How can you find out what plants need so that they can grow and stay healthy? Can you describe the best conditions for growing a healthy plant? Can you record the changes as the plant grows? What do they need to grow and stay healthy?	TAPs: Woodlice Habitat **Record** **Gather and record data to help in answering questions.** Evaluate Use straightforward scientific evidence to answer questions or to support their findings. Vocabulary: See vocabulary list	**Living things and their habitats** Do you know that animals obtain their food from plants and other animals? Can you construct a simple food chains including humans? **Animals including humans** Do you know that animals have babies? What is the life cycle of a frog? What is the life cycle of a butterfly? Observe and record the growth of caterpillars. Can you match and name the offspring of animals?		