SCIENCE

Investigative Skills – plan, do, record, evaluate

Progression in Skills at Fawkham CEP School

PLAN - 'plan' investigative skills are woven across all science topics

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Year 1 cycle **+** **Year 2 cycle** *See grid below for detailed overview of science opportunities in EYFS**	**Seasonal Changes** (taught each term across Year 1 and Year 2)		Term 1: Make a Splash! - **Sound** Term 2: Rainforest - **Plants** Term 3: Pre-historic World – **Rocks including fossils** Term 4: Classics -**Light** Term 5: Dragons -**Animals including skeletons** Term 6: **Science Week**	Term 1: Trash or treasure - **Electricity** Term 2: Frozen Kingdom -**Living things and their habitats** Term 3: Scrumdiddlyumptious! – **Animals including humans** Term 4: Classics -**Forces and magnets** Term 5: Extreme Earth -**States of matter** Term 6: **Science Week**	Term 1: Space – **Earth and Space** Term 2: Fawkham Child – **Properties of Materials** Term 3: Raging Rivers – **Living things and their habitats** Term 4: Classics -**Animals including humans** Term 5: Ancient Greece -**Forces 1** Term 6: What a performance! - **Evolution and Inheritance** **+** **Science Week**	Term 1: All about me – **Electricity** Term 2: Shakespeare -**Changes of Materials** Term 3: WW2 - **Light** Term 4: Classics -**Living things and their habitats** Term 5: Egyptians -**Forces 2** Term 6: What a performance! – **Animals including humans** **+** **Science Week**
	Term 1: Where I live - **Light** Term 2: Once upon a time -**Everyday Materials** Term 3: Frozen Kingdom-**Animals including humans** Term 4: Super heroes-**Forces** Term 5: African Safari -**Plants** Term 6: **Science Week**	Term 1: Space - **Uses of everyday materials** Term 2: Space - **Sound** Term 3: Looking after our world-**Plants** Term 4: Looking after our world- -**Animals including humans** Term 5: Big city - **Living things and their habitats** Term 6: **Science Week**				

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EYFS – Understanding the World ELG 40-60 months None for 'plan' investigative skills.	-asking simple questions and recognising that they can be answered in different ways	-asking simple questions and recognising that they can be answered in different ways	-ask relevant questions and using different types of scientific enquiries to answer them -set up simple practical enquiries, comparative and fair tests	-ask relevant questions and using different types of scientific enquiries to answer them -set up simple practical enquiries, comparative and fair tests	-plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary -use test results to make predictions to set up further comparative and fair tests	-plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary -use test results to make predictions to set up further comparative and fair tests
	Greater Depth -ask relevant questions and using different types of scientific enquiries to answer them -set up simple practical enquiries, comparative and fair tests	Greater Depth -ask relevant questions and using different types of scientific enquiries to answer them -set up simple practical enquiries, comparative and fair tests	Greater Depth -plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary -use test results to make predictions to set up further comparative and fair tests	Greater Depth -plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary -use test results to make predictions to set up further comparative and fair tests	Greater Depth -ask questions and develop a line of enquiry based on observations of the real world alongside prior knowledge and experience -make predictions using scientific knowledge and understanding	Greater Depth -ask questions and develop a line of enquiry based on observations of the real world alongside prior knowledge and experience -make predictions using scientific knowledge and understanding

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EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Year 1 cycle **+** **Year 2 cycle** *See grid below for detailed overview of science opportunities in EYFS**	**Seasonal Changes** (taught each term across Year 1 and Year 2) Term 1: Where I live - **Light** Term 2: Once upon a time -**Everyday Materials** Term 3: Frozen Kingdom-**Animals including humans** Term 4: Super heroes-**Forces** Term 5: African Safari -**Plants** Term 6: **Science Week**	Term 1: Space - **Uses of everyday materials** Term 2: Space - **Sound** Term 3: Looking after our world-**Plants** Term 4: Looking after our world--**Animals including humans** Term 5: Big city - **Living things and their habitats** Term 6: **Science Week**	Term 1: Make a Splash! - **Sound** Term 2: Rainforest - **Plants** Term 3: Pre-historic World – **Rocks including fossils** Term 4: Classics -**Light** Term 5: Dragons -**Animals including skeletons** Term 6: **Science Week**	Term 1: Trash or treasure - **Electricity** Term 2: Frozen Kingdom -**Living things and their habitats** Term 3: Scrumdiddlyumptious! – **Animals including humans** Term 4: Classics -**Forces and magnets** Term 5: Extreme Earth -**States of matter** Term 6: **Science Week**	Term 1: Space – **Earth and Space** Term 2: Fawkham Child – **Properties of Materials** Term 3: Raging Rivers – **Living things and their habitats** Term 4: Classics -**Animals including humans** Term 5: Ancient Greece -**Forces 1** Term 6: What a performance! - **Evolution and Inheritance** **+** **Science Week**	Term 1: All about me – **Electricity** Term 2: Shakespeare -**Changes of Materials** Term 3: WW2 - **Light** Term 4: Classics -**Living things and their habitats** Term 5: Egyptians -**Forces 2** Term 6: What a performance! – **Animals including humans** **+** **Science Week**

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DO - 'do' investigative skills are woven across all science topics

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<u>EYFS – Understanding the World</u> <u>ELG 40-60 months</u> -They look closely at and knows about similarities and differences in relation to places, objects, materials and living things. - They make observations of animals and plants	-observe closely, using simple equipment -perform simple tests -identify and classify	-observe closely, using simple equipment -perform simple tests -identify and classify	-make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	-make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	-take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate *-group and classify things and recognize patterns.* ***(*non-statutory)*** *-find out using a wide range of secondary sources of information.* ***(*non-statutory)***	-take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate *-group and classify things and recognize patterns.* ***(*non-statutory)*** *-find out using a wide range of secondary sources of information.* ***(*non-statutory)***
<u>EYFS – Understanding the World</u> <u>Exc ELG 40-60 + months</u> - They demonstrate familiarity with basic scientific concepts such as floating, sinking when experimenting -They know the properties of some materials when experimenting -They describe some actions which people in his/her own community do that help to maintain the area he/she lives in	<u>Greater Depth</u> -make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	<u>Greater Depth</u> -make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	<u>Greater Depth</u> -take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	<u>Greater Depth</u> -take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	<u>Greater Depth</u> --select, plan and carry out the most appropriate types of scientific enquiries to test predictions.	<u>Greater Depth</u> -select, plan and carry out the most appropriate types of scientific enquiries to test predictions.

SCIENCE

Investigative Skills – plan, do, record, evaluate

Progression in Skills at Fawkham CEP School

RECORD - **'record' investigative skills are woven across all science topics**

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Year 1 cycle + Year 2 cycle *See grid below for detailed overview of science opportunities in EYFS**	**Seasonal Changes** (taught each term across Year 1 and Year 2) Term 1: Where I live - **Light** Term 2: Once upon a time -**Everyday Materials** Term 3: Frozen Kingdom-**Animals including humans** Term 4: Super heroes-**Forces** Term 5: African Safari -**Plants** Term 6: **Science Week**	Term 1: Space - **Uses of everyday materials** Term 2: Space - **Sound** Term 3: Looking after our world- **Plants** Term 4: Looking after our world- -**Animals including humans** Term 5: Big city - **Living things and their habitats** Term 6: **Science Week**	Term 1: Make a Splash! - **Sound** Term 2: Rainforest - **Plants** Term 3: Pre-historic World – **Rocks including fossils** Term 4: Classics -**Light** Term 5: Dragons -**Animals including skeletons** Term 6: **Science Week**	Term 1: Trash or treasure - **Electricity** Term 2: Frozen Kingdom -**Living things and their habitats** Term 3: Scrumdiddlyumptious! – **Animals including humans** Term 4: Classics -**Forces and magnets** Term 5: Extreme Earth -**States of matter** Term 6: **Science Week**	Term 1: Space – **Earth and Space** Term 2: Fawkham Child – **Properties of Materials** Term 3: Raging Rivers – **Living things and their habitats** Term 4: Classics -**Animals including humans** Term 5: Ancient Greece -**Forces 1** Term 6: What a performance! - **Evolution and Inheritance** + **Science Week**	Term 1: All about me – **Electricity** Term 2: Shakespeare -**Changes of Materials** Term 3: WW2 - **Light** Term 4: Classics -**Living things and their habitats** Term 5: Egyptians -**Forces 2** Term 6: What a performance! – **Animals including humans** + **Science Week**
EYFS – Understanding the World ELG 40-60 months None for 'record' investigative skills.	-gather and record data to help in answering questions	-gather and record data to help in answering questions	-gather, record, classify and present data in a variety of ways to help in answering questions -record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	-gather, record, classify and present data in a variety of ways to help in answering questions -record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	-record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs,	-record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs,
	Greater Depth -gather, record, classify and present data in a variety of ways to help in answering questions -record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	Greater Depth -gather, record, classify and present data in a variety of ways to help in answering questions -record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	Greater Depth -record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs,	Greater Depth -record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs,	Greater Depth -make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements -present observations and data using appropriate methods, including tables and graphs	Greater Depth -make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements -present observations and data using appropriate methods, including tables and graphs

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EVALUATE - **'evaluate' investigative skills are woven across all science topics**

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Year 1 cycle + Year 2 cycle *See grid below for detailed overview of science opportunities in EYFS**	**Seasonal Changes** (taught each term across Year 1 and Year 2) Term 1: Where I live - **Light** Term 2: Once upon a time -**Everyday Materials** Term 3: Frozen Kingdom-**Animals including humans** Term 4: Super heroes-**Forces** Term 5: African Safari -**Plants** Term 6: **Science Week**	Term 1: Space - **Uses of everyday materials** Term 2: Space - **Sound** Term 3: Looking after our world- **Plants** Term 4: Looking after our world- - **Animals including humans** Term 5: Big city - **Living things and their habitats** Term 6: **Science Week**	Term 1: Make a Splash! - **Sound** Term 2: Rainforest - **Plants** Term 3: Pre-historic World – **Rocks including fossils** Term 4: Classics -**Light** Term 5: Dragons -**Animals including skeletons** Term 6: **Science Week**	Term 1: Trash or treasure - **Electricity** Term 2: Frozen Kingdom - **Living things and their habitats** Term 3: Scrumdiddlyumptious! – **Animals including humans** Term 4: Classics -**Forces and magnets** Term 5: Extreme Earth -**States of matter** Term 6: **Science Week**	Term 1: Space – **Earth and Space** Term 2: Fawkham Child – **Properties of Materials** Term 3: Raging Rivers – **Living things and their habitats** Term 4: Classics -**Animals including humans** Term 5: Ancient Greece -**Forces 1** Term 6: What a performance! **- Evolution and Inheritance** **+** **Science Week**	Term 1: All about me – **Electricity** Term 2: Shakespeare -**Changes of Materials** Term 3: WW2 - **Light** Term 4: Classics -**Living things and their habitats** Term 5: Egyptians -**Forces 2** Term 6: What a performance! **-Animals including humans** **+** **Science Week**
EYFS – Understanding the World ELG 40-60 months -They talk about the features of their own immediate environment and how environments might vary from one another. - They explain why some things occur, and talk about changes.	-use their observations and ideas to suggest answers to questions	-use their observations and ideas to suggest answers to questions	-report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions -identify differences, similarities or changes related to simple scientific ideas and processes -use straightforward scientific evidence to answer questions or to support their findings.	-report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions -use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions -identify differences, similarities or changes related to simple scientific ideas and processes -use straightforward scientific evidence to answer questions or to support their findings.	-report and present findings from enquiries, including conclusions, causal relationships and explanations results, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations -identify scientific evidence that has been used to support or refute ideas or arguments. *-describe and evaluate their own and other people's scientific ideas related to the topics in the national curriculum (including ideas that have changed over time) using evidence from a range of sources* ***(*non-statutory)*** *-use appropriate scientific language and ideas to explain, evaluate and communicate the methods and findings.* ***(*non-statutory)***	-report and present findings from enquiries, including conclusions, causal relationships and explanations results, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations -identify scientific evidence that has been used to support or refute ideas or arguments. *-describe and evaluate their own and other people's scientific ideas related to the topics in the national curriculum (including ideas that have changed over time) using evidence from a range of sources.* ***(*non-statutory)*** *-use appropriate scientific language and ideas to explain, evaluate and communicate the methods and findings.* ***(*non-statutory)***

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EVALUATE - **'evaluate' investigative skills are woven across all science topics**

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
EYFS – Understanding the World Exc ELG 40-60 + months They talk about the living environment and know that living things are influenced by human activity -They suggest some of the purposes materials are used for	**Greater Depth** -report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions -use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions -identify differences, similarities or changes related to simple scientific ideas and processes -use straightforward scientific evidence to answer questions or to support their findings.	**Greater Depth** -report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions -use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions -identify differences, similarities or changes related to simple scientific ideas and processes -use straightforward scientific evidence to answer questions or to support their findings.	**Greater Depth** -report and present findings from enquiries, including conclusions, causal relationships and explanations results, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations -identify scientific evidence that has been used to support or refute ideas or arguments.	**Greater Depth** -report and present findings from enquiries, including conclusions, causal relationships and explanations results, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations -identify scientific evidence that has been used to support or refute ideas or arguments.	**Greater Depth** -interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions -present reasoned explanations, including data in relation to predictions and hypotheses evaluate data, showing awareness of potential sources of error -identify further questions arising from results	**Greater Depth** -interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions -present reasoned explanations, including data in relation to predictions and hypotheses evaluate data, showing awareness of potential sources of error -identify further questions arising from results

***EYFS Science opportunities**

Year R (Yr1)	**Understanding the World**					
	Term 1: **About me** -Spiders- making water channels -Which materials will protect Humpty Dumpty -Which animals come out of eggs?	Term 2: **When I go to sleep** -Nocturnal animals- identifying Investigating light and dark -Learning about different light sources -What is in the sky at night?	Term 3: **Who can help me?** -Labelling body parts -Exploring senses -How do we keep healthy? - healthy practices including tooth brushing etc	Term 4: **In the land of make believe** -Making potions and observing reactions -Unicorn/ rainbow-colour experiments e.g. skittles experiment/ dying carnations	Term 5: **In the garden** -Growing plants- naming parts of a plant/ observing growth and talking about conditions for growth	Term 6: **Under the sea** -Floating and sinking Making boats- waterproof/ not waterproof -Whale blubber experiment
Year R (Yr2)	Term 1: **About me** -Sorting materials- hard/soft -Making porridge -Where do bears live? -Bear hunt- exploring textures	Term 2: **Into the woods** -Which animals live in our woodland? -Forest school focus- - identifying different trees -Seasonal changes	Term 3: **Once upon a time** -Growing Beanstalks - labelling a plant -Discussing conditions for growing plants -What would happen to the Gingerbread man if he swam across the river? -Building houses for the Three Little Pigs- choosing materials	Term 4: **Yum yum** -Comparing different countries (Africa/England) -Bread experiment- which condition causes the bread to go mouldy? -Observing decay on different foods	Term 5: **Down on the farm** -Identifying different farm animals -Matching animals to their home -Naming animals and their young -Learning about Bees- growing flowers to encourage the bees.	Term 6: **Where shall we go today?** -Making flying machines and testing them -Building bridges -Ramps science experiment -Which material makes the best boat?