## SCIENCE

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

The national curriculum for science aims to ensure that all pupils:

• develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics

• develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them

• are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should build up an extended specialist vocabulary. They should also apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data. The social and economic implications of science are important but, generally, they are taught most appropriately within the wider school curriculum: teachers will wish to use different contexts to maximise their pupils' engagement with and motivation to study science.

KS1 Pupils should be taught: The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos. 'Working scientifically' is described separately in the programme of study, but must always be taught through and clearly related to the teaching of substantive science content in the programme of study. Throughout the notes and guidance,

# Lower KS2 Pupils should be taught:

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out. 'Working scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Upper KS2 Pupils should be taught: The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings 'Working and thinking scientifically' is described separately at the beginning of the programme of study, but must

examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read and spell scientific vocabulary at a level consistent with their increasing word-reading and spelling knowledge at key stage 1.		always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read, spell and pronounce scientific vocabulary correctly.
	Intent	vocabulary correctly.

#### Intent

Science at Anderton follows our Principles:

Science is good at Anderton...

- When children are discovering, exploring and making choices
  - When children ask and answer their own questions
- When children are working like scientists to plan and record in a variety of ways, for different types of investigations
  - When children explain their thoughts using scientific vocabulary to show their understanding
    - When children work collaboratively and share ideas
    - When it has links to real-life and includes real-life experiences
      - When it is fun

## Implementation

To ensure high standards of teaching and learning in science we implement a curriculum that is progressive throughout the whole school. Science is taught weekly through sequential and coherent patterns which build upon previous learning. Science focuses on the knowledge and skills stated in the National Curriculum. Pupils are encouraged to apply their Scientific skills in all areas of the curriculum, questioning their understanding of the world they experience, and developing ways to explore and answer their questions and to provide possible solutions which can be tested. Teachers plan lessons for their class using our progression of knowledge and skills documents. This progression document ensures the curriculum is covered and the skills/knowledge taught are progressive from year group to year group.

### Impact

Our Science Curriculum is high quality, well thought out and is planned to demonstrate progression. At Anderton Primary School we measure the impact through regular assessment opportunities, discussions with the children and through evidencing the skills and knowledge within the children's written and practical learning. The children will be able to select appropriately from a variety of techniques to investigate and provide answers to questions, making links to the local and wider world.

	Key Concepts (Curriculum Overview)										
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6				
Animals including humans	Explore the natural world around them, flora and fauna.	Identify, name and compare common animals. Name the human body parts and the senses.	Explore the basic needs of animals for survival.	Explore that animals require nutrition and this is provided through food. Explore skeletons and muscles of animals.	Learn the basic functions of the digestive system in humans. Identify the different types and function of teeth in	The developing human body from birth to old age.	Learn the main parts and functions of the human circularity system. Explore the impact of lifestyle choices on human bodies.				

					humans. Explore food		
					chains.		
	Explore and making	Identify and name a		Identify the basic functions	chants.		
	observations of the	variety of common	Identify the basic	of each part of a plant.			
Plants	natural world around	plants and describe	needs of plants.	Explore the life cycle of			
	them.	the basic structure.	needs of plants.	flowering plants.			
	them.		Compare the	nowering plants.			
Everyday		Identify, name and	suitability of				
materials		group a variety of	materials and				
materials		everyday materials.	their properties.				
		Observe changes	then properties.				
	Understand changes in	across the four					
Seasonal Changes	the natural world.	seasons including					
	the natural world.	weather.					
			Compare the		Explore the use of	Life cycles of different	Classifying groups of
			differences		classification keys to	groups of animals and	animals and plants
Living Things and			between living,		group living things.	plants.	based on specific
their Habitats			dead and never		8	P	characteristics.
			been alive and				
			habitats.				
				Compare and group			
Rocks and Soils				different types of rocks			
				based on properties.			
				Recognise that dark is the			Recognise that light
Light				absence of light. Explore			appears to travel in
				reflection and shadows.			straight lines.
						Identify the effect of	
Forces and				Explore how objects move		air resistance, water	
				on different surfaces and		resistance and friction	
Magnets				the forces of magnets.		when learning about	
						gravity.	
					Explore solids, liquids		
	Understand importance				and gases and the		
States of Matter	changes and processes				effects of these in		
	in the natural world.				evaporation and		
					condensation in the		
					water cycle.		
					Identify how sounds		
Sound					are made and how		
					these travel through		
					vibrations.		
					Construct a simple		Compare and give
Electricity					series electrical circuit,		reasons for variations
					identifying the basic		in how components
					parts.		function

						Demonstrate that	
						dissolving, mixing and	
Properties and						changes of state are	
changes of						reversible changes	
-						explain that some	
materials						changes result in the	
						formation of new	
						materials.	
						Describe the	
						movement of The	
						Earth, and other	
Earth and Space						planets relative to the	
						Sun in the solar	
						system.	Deservise that living
							Recognise that living
							things have changed
Evolution and							over time and that
Evolution and							fossils provide
Inheritance							information about
							living things that
							inhabited the Earth
							millions of years ago.
		Skills ar	nd Knowledge Progre	ssion – Working Scien	ntifically		
		Veer 1	Year 2	Year 3	Year 4	Veer F	Maran C
1	EYFS	Year 1	fear Z	ieal 5		Year 5	Year 6
	LTFS look closely at/notice	Begin to use simple	Use simple scientific	Observe and record	Suggest their own ideas	Use their developing	Year b Use correct scientific
EXPLORING /	look closely at/notice features in the natural	Begin to use simple scientific language (from	Use simple scientific language from the Y2 PoS	Observe and record relationships between	Suggest their own ideas on a concept and	Use their developing scientific knowledge and	Use correct scientific knowledge and
EXPLORING / OBSERVING	look closely at/notice features in the natural world including animals	Begin to use simple scientific language (from Y1 PoS) to talk about or	Use simple scientific language from the Y2 PoS to talk about / record	Observe and record relationships between structure and function	Suggest their own ideas on a concept and compare these with what	Use their developing scientific knowledge and understanding and	Use correct scientific knowledge and understanding and
-	look closely at/notice features in the natural world including animals and plants, weather and	Begin to use simple scientific language (from Y1 PoS) to talk about or record what they have	Use simple scientific language from the Y2 PoS to talk about / record what they have noticed.	Observe and record relationships between structure and function (linked to Y3 PoS).	Suggest their own ideas on a concept and compare these with what they observe / find out.	Use their developing scientific knowledge and understanding and relevant scientific	Use correct scientific knowledge and understanding and relevant scientific
-	look closely at/notice features in the natural world including animals and plants, weather and seasons, and natural	Begin to use simple scientific language (from Y1 PoS) to talk about or record what they have noticed. Use observations	Use simple scientific language from the Y2 PoS to talk about / record what they have noticed. Use observations to make	Observe and record relationships between structure and function (linked to Y3 PoS). Observe and record	Suggest their own ideas on a concept and compare these with what they observe / find out. Use observations to	Use their developing scientific knowledge and understanding and relevant scientific language and terminology	Use correct scientific knowledge and understanding and relevant scientific language to discuss their
-	look closely at/notice features in the natural world including animals and plants, weather and seasons, and natural materials e.g. water, ice,	Begin to use simple scientific language (from Y1 PoS) to talk about or record what they have noticed. Use observations to make suggestions and /	Use simple scientific language from the Y2 PoS to talk about / record what they have noticed. Use observations to make suggestions and / or ask	Observe and record relationships between structure and function (linked to Y3 PoS). Observe and record changes /stages over time	Suggest their own ideas on a concept and compare these with what they observe / find out. Use observations to suggest what to do next.	Use their developing scientific knowledge and understanding and relevant scientific language and terminology to discuss, communicate	Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and
-	look closely at/notice features in the natural world including animals and plants, weather and seasons, and natural	Begin to use simple scientific language (from Y1 PoS) to talk about or record what they have noticed. Use observations to make suggestions and / or ask questions. Look /	Use simple scientific language from the Y2 PoS to talk about / record what they have noticed. Use observations to make suggestions and / or ask questions. Observe and	Observe and record relationships between structure and function (linked to Y3 PoS). Observe and record changes /stages over time (linked to Y3 PoS). Explore	Suggest their own ideas on a concept and compare these with what they observe / find out. Use observations to suggest what to do next. Discuss ideas and develop	Use their developing scientific knowledge and understanding and relevant scientific language and terminology to discuss, communicate and explain their	Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6
-	look closely at/notice features in the natural world including animals and plants, weather and seasons, and natural materials e.g. water, ice,	Begin to use simple scientific language (from Y1 PoS) to talk about or record what they have noticed. Use observations to make suggestions and / or ask questions. Look / observe closely and	Use simple scientific language from the Y2 PoS to talk about / record what they have noticed. Use observations to make suggestions and / or ask questions. Observe and describe simple processes	Observe and record relationships between structure and function (linked to Y3 PoS). Observe and record changes /stages over time (linked to Y3 PoS). Explore / observe things in the	Suggest their own ideas on a concept and compare these with what they observe / find out. Use observations to suggest what to do next. Discuss ideas and develop descriptions from their	Use their developing scientific knowledge and understanding and relevant scientific language and terminology to discuss, communicate and explain their observations (incl. more	Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS). Identify changes
-	look closely at/notice features in the natural world including animals and plants, weather and seasons, and natural materials e.g. water, ice,	Begin to use simple scientific language (from Y1 PoS) to talk about or record what they have noticed. Use observations to make suggestions and / or ask questions. Look / observe closely and communicate changes	Use simple scientific language from the Y2 PoS to talk about / record what they have noticed. Use observations to make suggestions and / or ask questions. Observe and describe simple processes / cycles / changes with	Observe and record relationships between structure and function (linked to Y3 PoS). Observe and record changes /stages over time (linked to Y3 PoS). Explore / observe things in the local environment / real	Suggest their own ideas on a concept and compare these with what they observe / find out. Use observations to suggest what to do next. Discuss ideas and develop descriptions from their observations using	Use their developing scientific knowledge and understanding and relevant scientific language and terminology to discuss, communicate and explain their observations (incl. more abstract ideas from Y5	Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS). Identify changes that have occurred over a
-	look closely at/notice features in the natural world including animals and plants, weather and seasons, and natural materials e.g. water, ice,	Begin to use simple scientific language (from Y1 PoS) to talk about or record what they have noticed. Use observations to make suggestions and / or ask questions. Look / observe closely and communicate changes over time. Look / observe	Use simple scientific language from the Y2 PoS to talk about / record what they have noticed. Use observations to make suggestions and / or ask questions. Observe and describe simple processes / cycles / changes with several steps (e.g. growth	Observe and record relationships between structure and function (linked to Y3 PoS). Observe and record changes /stages over time (linked to Y3 PoS). Explore / observe things in the local environment / real contexts and record	Suggest their own ideas on a concept and compare these with what they observe / find out. Use observations to suggest what to do next. Discuss ideas and develop descriptions from their observations using relevant scientific	Use their developing scientific knowledge and understanding and relevant scientific language and terminology to discuss, communicate and explain their observations (incl. more abstract ideas from Y5 PoS (e.g. friction, air	Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS). Identify changes that have occurred over a very long period of time
-	look closely at/notice features in the natural world including animals and plants, weather and seasons, and natural materials e.g. water, ice,	Begin to use simple scientific language (from Y1 PoS) to talk about or record what they have noticed. Use observations to make suggestions and / or ask questions. Look / observe closely and communicate changes over time. Look / observe closely and communicate	Use simple scientific language from the Y2 PoS to talk about / record what they have noticed. Use observations to make suggestions and / or ask questions. Observe and describe simple processes / cycles / changes with several steps (e.g. growth cycle, simple food chain,	Observe and record relationships between structure and function (linked to Y3 PoS). Observe and record changes /stages over time (linked to Y3 PoS). Explore / observe things in the local environment / real contexts and record observations (linked to Y3	Suggest their own ideas on a concept and compare these with what they observe / find out. Use observations to suggest what to do next. Discuss ideas and develop descriptions from their observations using relevant scientific language and vocabulary	Use their developing scientific knowledge and understanding and relevant scientific language and terminology to discuss, communicate and explain their observations (incl. more abstractideas from Y5 PoS (e.g. friction, air resistance, forces, Earth	Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS). Identify changes that have occurred over a very long period of time (evolution) and discuss
-	look closely at/notice features in the natural world including animals and plants, weather and seasons, and natural materials e.g. water, ice,	Begin to use simple scientific language (from Y1 PoS) to talk about or record what they have noticed. Use observations to make suggestions and / or ask questions. Look / observe closely and communicate changes over time. Look / observe	Use simple scientific language from the Y2 PoS to talk about / record what they have noticed. Use observations to make suggestions and / or ask questions. Observe and describe simple processes / cycles / changes with several steps (e.g. growth	Observe and record relationships between structure and function (linked to Y3 PoS). Observe and record changes /stages over time (linked to Y3 PoS). Explore / observe things in the local environment / real contexts and record	Suggest their own ideas on a concept and compare these with what they observe / find out. Use observations to suggest what to do next. Discuss ideas and develop descriptions from their observations using relevant scientific	Use their developing scientific knowledge and understanding and relevant scientific language and terminology to discuss, communicate and explain their observations (incl. more abstract ideas from Y5 PoS (e.g. friction, air	Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS). Identify changes that have occurred over a very long period of time
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-	look closely at/notice features in the natural world including animals and plants, weather and seasons, and natural materials e.g. water, ice,	Begin to use simple scientific language (from Y1 PoS) to talk about or record what they have noticed. Use observations to make suggestions and / or ask questions. Look / observe closely and communicate changes over time. Look / observe closely and communicate the features or properties of things in the real world. Observe closely	Use simple scientific language from the Y2 PoS to talk about / record what they have noticed. Use observations to make suggestions and / or ask questions. Observe and describe simple processes / cycles / changes with several steps (e.g. growth cycle, simple food chain, saying how living things depend on one another). Observe closely and	Observe and record relationships between structure and function (linked to Y3 PoS). Observe and record changes /stages over time (linked to Y3 PoS). Explore / observe things in the local environment / real contexts and record observations (linked to Y3 PoS) – see 'Communicating' section also relinks to	Suggest their own ideas on a concept and compare these with what they observe / find out. Use observations to suggest what to do next. Discuss ideas and develop descriptions from their observations using relevant scientific language and vocabulary (from Y4 PoS). Observe and record relationships between structure and	Use their developing scientific knowledge and understanding and relevant scientific language and terminology to discuss, communicate and explain their observations (incl. more abstract ideas from Y5 PoS (e.g. friction, air resistance, forces, Earth and space, reversible and irreversible changes). Evaluate their	Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS). Identify changes that have occurred over a very long period of time (evolution) and discuss how changes have impacted the world. Explore more abstract
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-	look closely at/notice features in the natural world including animals and plants, weather and seasons, and natural materials e.g. water, ice,	Begin to use simple scientific language (from Y1 PoS) to talk about or record what they have noticed. Use observations to make suggestions and / or ask questions. Look / observe closely and communicate changes over time. Look / observe closely and communicate the features or properties of things in the real world. Observe closely	Use simple scientific language from the Y2 PoS to talk about / record what they have noticed. Use observations to make suggestions and / or ask questions. Observe and describe simple processes / cycles / changes with several steps (e.g. growth cycle, simple food chain, saying how living things depend on one another). Observe closely and communicate with increasing accuracy the	Observe and record relationships between structure and function (linked to Y3 PoS). Observe and record changes /stages over time (linked to Y3 PoS). Explore / observe things in the local environment / real contexts and record observations (linked to Y3 PoS) – see 'Communicating' section also relinks to	Suggest their own ideas on a concept and compare these with what they observe / find out. Use observations to suggest what to do next. Discuss ideas and develop descriptions from their observations using relevant scientific language and vocabulary (from Y4 PoS). Observe and record relationships between structure and function or between different parts of a processes (linked to Y4 PoS). Observe and record	Use their developing scientific knowledge and understanding and relevant scientific language and terminology to discuss, communicate and explain their observations (incl. more abstract ideas from Y5 PoS (e.g. friction, air resistance, forces, Earth and space, reversible and irreversible changes). Evaluate their observations and suggest a further test, offer another question or make a prediction. Observe	Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS). Identify changes that have occurred over a very long period of time (evolution) and discuss how changes have impacted the world. Explore more abstract systems / functions / changes / behaviours and record their understanding of these
-	look closely at/notice features in the natural world including animals and plants, weather and seasons, and natural materials e.g. water, ice,	Begin to use simple scientific language (from Y1 PoS) to talk about or record what they have noticed. Use observations to make suggestions and / or ask questions. Look / observe closely and communicate changes over time. Look / observe closely and communicate the features or properties of things in the real world. Observe closely	Use simple scientific language from the Y2 PoS to talk about / record what they have noticed. Use observations to make suggestions and / or ask questions. Observe and describe simple processes / cycles / changes with several steps (e.g. growth cycle, simple food chain, saying how living things depend on one another). Observe closely and communicate with increasing accuracy the features or properties of	Observe and record relationships between structure and function (linked to Y3 PoS). Observe and record changes /stages over time (linked to Y3 PoS). Explore / observe things in the local environment / real contexts and record observations (linked to Y3 PoS) – see 'Communicating' section also relinks to	Suggest their own ideas on a concept and compare these with what they observe / find out. Use observations to suggest what to do next. Discuss ideas and develop descriptions from their observations using relevant scientific language and vocabulary (from Y4 PoS). Observe and record relationships between structure and function or between different parts of a processes (linked to Y4 PoS). Observe and record changes / stages over	Use their developing scientific knowledge and understanding and relevant scientific language and terminology to discuss, communicate and explain their observations (incl. more abstractideas from Y5 PoS (e.g. friction, air resistance, forces, Earth and space, reversible and irreversible changes). Evaluate their observations and suggest a further test, offer another question or make a prediction. Observe (including changes over	Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS). Identify changes that have occurred over a very long period of time (evolution) and discuss how changes have impacted the world. Explore more abstract systems / functions / changes / behaviours and record their understanding of these (e.g. the relationship
-	look closely at/notice features in the natural world including animals and plants, weather and seasons, and natural materials e.g. water, ice,	Begin to use simple scientific language (from Y1 PoS) to talk about or record what they have noticed. Use observations to make suggestions and / or ask questions. Look / observe closely and communicate changes over time. Look / observe closely and communicate the features or properties of things in the real world. Observe closely	Use simple scientific language from the Y2 PoS to talk about / record what they have noticed. Use observations to make suggestions and / or ask questions. Observe and describe simple processes / cycles / changes with several steps (e.g. growth cycle, simple food chain, saying how living things depend on one another). Observe closely and communicate with increasing accuracy the features or properties of	Observe and record relationships between structure and function (linked to Y3 PoS). Observe and record changes /stages over time (linked to Y3 PoS). Explore / observe things in the local environment / real contexts and record observations (linked to Y3 PoS) – see 'Communicating' section also relinks to	Suggest their own ideas on a concept and compare these with what they observe / find out. Use observations to suggest what to do next. Discuss ideas and develop descriptions from their observations using relevant scientific language and vocabulary (from Y4 PoS). Observe and record relationships between structure and function or between different parts of a processes (linked to Y4 PoS). Observe and record	Use their developing scientific knowledge and understanding and relevant scientific language and terminology to discuss, communicate and explain their observations (incl. more abstractideas from Y5 PoS (e.g. friction, air resistance, forces, Earth and space, reversible and irreversible changes). Evaluate their observations and suggest a further test, offer another question or make a prediction. Observe (including changes over time) and suggest a	Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS). Identify changes that have occurred over a very long period of time (evolution) and discuss how changes have impacted the world. Explore more abstract systems / functions / changes / behaviours and record their understanding of these (e.g. the relationship between diet, exercise,
-	look closely at/notice features in the natural world including animals and plants, weather and seasons, and natural materials e.g. water, ice,	Begin to use simple scientific language (from Y1 PoS) to talk about or record what they have noticed. Use observations to make suggestions and / or ask questions. Look / observe closely and communicate changes over time. Look / observe closely and communicate the features or properties of things in the real world. Observe closely	Use simple scientific language from the Y2 PoS to talk about / record what they have noticed. Use observations to make suggestions and / or ask questions. Observe and describe simple processes / cycles / changes with several steps (e.g. growth cycle, simple food chain, saying how living things depend on one another). Observe closely and communicate with increasing accuracy the features or properties of	Observe and record relationships between structure and function (linked to Y3 PoS). Observe and record changes /stages over time (linked to Y3 PoS). Explore / observe things in the local environment / real contexts and record observations (linked to Y3 PoS) – see 'Communicating' section also relinks to	Suggest their own ideas on a concept and compare these with what they observe / find out. Use observations to suggest what to do next. Discuss ideas and develop descriptions from their observations using relevant scientific language and vocabulary (from Y4 PoS). Observe and record relationships between structure and function or between different parts of a processes (linked to Y4 PoS). Observe and record changes / stages over	Use their developing scientific knowledge and understanding and relevant scientific language and terminology to discuss, communicate and explain their observations (incl. more abstractideas from Y5 PoS (e.g. friction, air resistance, forces, Earth and space, reversible and irreversible changes). Evaluate their observations and suggest a further test, offer another question or make a prediction. Observe (including changes over time) and suggest a reason for what they	Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS). Identify changes that have occurred over a very long period of time (evolution) and discuss how changes have impacted the world. Explore more abstract systems / functions / changes / behaviours and record their understanding of these (e.g. the relationship between diet, exercise, drugs, lifestyle and
-	look closely at/notice features in the natural world including animals and plants, weather and seasons, and natural materials e.g. water, ice,	Begin to use simple scientific language (from Y1 PoS) to talk about or record what they have noticed. Use observations to make suggestions and / or ask questions. Look / observe closely and communicate changes over time. Look / observe closely and communicate the features or properties of things in the real world. Observe closely	Use simple scientific language from the Y2 PoS to talk about / record what they have noticed. Use observations to make suggestions and / or ask questions. Observe and describe simple processes / cycles / changes with several steps (e.g. growth cycle, simple food chain, saying how living things depend on one another). Observe closely and communicate with increasing accuracy the features or properties of	Observe and record relationships between structure and function (linked to Y3 PoS). Observe and record changes /stages over time (linked to Y3 PoS). Explore / observe things in the local environment / real contexts and record observations (linked to Y3 PoS) – see 'Communicating' section also relinks to	Suggest their own ideas on a concept and compare these with what they observe / find out. Use observations to suggest what to do next. Discuss ideas and develop descriptions from their observations using relevant scientific language and vocabulary (from Y4 PoS). Observe and record relationships between structure and function or between different parts of a processes (linked to Y4 PoS). Observe and record changes / stages over	Use their developing scientific knowledge and understanding and relevant scientific language and terminology to discuss, communicate and explain their observations (incl. more abstractideas from Y5 PoS (e.g. friction, air resistance, forces, Earth and space, reversible and irreversible changes). Evaluate their observations and suggest a further test, offer another question or make a prediction. Observe (including changes over time) and suggest a	Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS). Identify changes that have occurred over a very long period of time (evolution) and discuss how changes have impacted the world. Explore more abstract systems / functions / changes / behaviours and record their understanding of these (e.g. the relationship between diet, exercise, drugs, lifestyle and health; evolutionary
-	look closely at/notice features in the natural world including animals and plants, weather and seasons, and natural materials e.g. water, ice,	Begin to use simple scientific language (from Y1 PoS) to talk about or record what they have noticed. Use observations to make suggestions and / or ask questions. Look / observe closely and communicate changes over time. Look / observe closely and communicate the features or properties of things in the real world. Observe closely	Use simple scientific language from the Y2 PoS to talk about / record what they have noticed. Use observations to make suggestions and / or ask questions. Observe and describe simple processes / cycles / changes with several steps (e.g. growth cycle, simple food chain, saying how living things depend on one another). Observe closely and communicate with increasing accuracy the features or properties of	Observe and record relationships between structure and function (linked to Y3 PoS). Observe and record changes /stages over time (linked to Y3 PoS). Explore / observe things in the local environment / real contexts and record observations (linked to Y3 PoS) – see 'Communicating' section also relinks to	Suggest their own ideas on a concept and compare these with what they observe / find out. Use observations to suggest what to do next. Discuss ideas and develop descriptions from their observations using relevant scientific language and vocabulary (from Y4 PoS). Observe and record relationships between structure and function or between different parts of a processes (linked to Y4 PoS). Observe and record changes / stages over	Use their developing scientific knowledge and understanding and relevant scientific language and terminology to discuss, communicate and explain their observations (incl. more abstractideas from Y5 PoS (e.g. friction, air resistance, forces, Earth and space, reversible and irreversible changes). Evaluate their observations and suggest a further test, offer another question or make a prediction. Observe (including changes over time) and suggest a reason for what they	Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS). Identify changes that have occurred over a very long period of time (evolution) and discuss how changes have impacted the world. Explore more abstract systems / functions / changes / behaviours and record their understanding of these (e.g. the relationship between diet, exercise, drugs, lifestyle and

GROUPING AND	Notice similarities, notice differences in the natural	Name / identify common examples and some	Name / identify common examples, some common	Decide ways and give reasons for sorting,	Make a simple guide to local living things. Use	Suggest reasons for similarities and	Recognise the importance of classification to the
CLASSIFYING	world, including plants and animals; talk about what they know and understand about similarities and/or differences, e.g. in relation to the natural world around them and other environments they have learnt about through real experiences or books read at home or school	common features. With help, decide how to sort and group objects, materials or living things. Name basic features of objects, materials and living things. Say how things are similar or different. Compare and contrast simple observable features / characteristics of objects, materials and living things.	features or different uses. Sort and group objects, materials or living things by observable and/or behavioural features. Compare and contrast a variety of things [objects, materials or living things] - focusing on the similarities as well as the differences.	grouping, classifying, identifying things / objects, living things, processes or events based on specific characteristics. Compare and contrast and begin to consider the relationships between different things (e.g. structures of plants, functions of plant parts, diets, skeletons of humans and other animals, changes over time, etc.). Record similarities as well as differences (e.g. what do all skeletons have? as well as the differences between skeletons.	guides or simple keys to classify / identify [animals, flowering plants and non-flowering plants]. Use their observations to identify and classify. Begin to give reasons for these similarities and differences. Record similarities as well as differences and / or changes related to simple scientific ideas or processes or more complex groups of objects / living things / events (e.g. evaporation and condensation, different electrical circuits).	differences. Compare and contrast things beyond their locality and use these similarities and differences to help to classify (e.g. features of animals, life cycles of different living things, melting compared with dissolving, etc). Use secondary sources of information to identify and classify. Decide which sources of information (and / or equipment and / or test) to help identify and classify.	scientific world and form a conclusion from their sorting and classifying. Compare and contrast more complex processes, systems, functions (e.g. sexual and asexual reproduction). Construct a classification key / branching database using more than two items. Compare and contrast things beyond their locality and discuss advantages / disadvantages, pros / cons of the similarities and differences. Use research* to identify and classify things. Use classification systems, keys and other information records [databases] to help classify or identify things.
QUESTIONING	show an interest in and be curious about the natural world; ask questions about what they notice/observe or changes that occur, e.g. changes in plants throughout the seasons	Ask simple questions about what they notice about the world around them. Demonstrate curiosity by the questions they ask.	Raise their own logical questions based on or linked to things they have observed. With help / scaffolds, begin to ask questions such as 'What will happen if?"	Explore their own ideas about 'what if?' scenarios e.g. humans did not have skeletons. Ask questions such as 'What if we tried? or 'What if we changed?' Begin to understand that some questions can be tested in the classroom and some cannot. Within a group suggest questions that can be explored, observed, tested or investigated further. Within a group suggest relevant questions about what they observe and about the world around them.	Ask / raise their own relevant questions with increasing confidence and independence that can be explored, observed, tested or investigated further. Ask questions such as 'What will happen if?" or 'What if we changed? (linked with Y4 PoS). Choose / select a relevant question that can be answered [by research or experiment / test].	Recognise scientific questions that do not yet have definitive answers (linked to Y5 PoS). Refine a scientific question so that it can be tested e.g. 'What would happen to if we changed?' Decide whether their questions can be answered by researching or by testing. Independently ask their own scientific questions taking some ownership for finding out the answers.	Recognise scientific questions that do not yet have definitive answers (linked to Y6 PoS). Refine a scientific question to make it testable i.e. ask a testable question which includes the change and measure variables, e.g. what would happen toif we changed? e.g. What effect would we have on if we? e.g. How would exercise affect the pulse rate? Use observations to suggest a further (testable or research) question. Independently ask a variety of scientific questions and decide the type of enquiry needed to answer them.
RESEARCH	talk to people (visits/visitors/family), think of questions to ask	Ask people questions (e.g. an expert or hot-seating). Use simple primary and	Talk about how useful the information source was and express opinion	Find things out using a range of secondary sources of information	Make decisions about which information to use from a wide range of	Find out how scientific ideas have changed / developed over time	Research how scientific ideas have developed over time and had an

	to find out about plants, animals, seasons, processes; use first hand experiences/use secondary sources, (e.g. books, photographs, internet).	secondary sources (such as objects, books and photographs) to find things out.	about findings. Make suggestions about who to ask or where to look for information. Ask people questions to help them answer their questions. Use simple and appropriate secondary sources (such as books, photographs, videos and other technology) to find things out / find answers.	(e.g. books, photographs, videos and other technology).	sources and make decisions about how to present their research. Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.	(linked to Y5 PoS). Articulate and explain findings from their research using scientific knowledge and understanding. Make decisions about which information to use from a wide range of sources.	impact on our lives. Use evidence from a variety of sources to justify their ideas Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact. Interview people to find out information
MODELLING	With support, copy simple movements (dance / drama) to act out their science.	With help, follow movements (dance / drama) to act out their science.	Act out something to represent something else about the world around us (e.g a life cycle).	Act out or make a model of something to represent something in the real world using appropriate scientific vocabulary verbally.	Make a visual representation or a model of something to represent something they have seen or a process that is difficult to see. Suggest their own ideas on a concept and compare these with models or images.	Perform / create simple models to exemplify scientific ideas using scientific terminology where appropriate (e.g. spheres to represent movements of the Sun and Earth, solar system models, shadow clocks, a simple lever or mechanism).	Make / perform and use their own versions of simple models to describe and explain scientific ideas (e.g. circulatory system drama, periscopes to explain how light travels, burglar alarm to explain components in a circuit).
COLLABORATING	With support discuss ideas in a group and listen to the ideas of others. Work with others on a science task.	Share ideas in a group and listen to the ideas of others. Work with others on a science task.	Share ideas in a group and listen to the ideas of others. Work cooperatively with others on a science task making some choices.	Begin to make some decisions about an idea within a group from a list of choices (e.g. let's put them all in a pile first OR I think we should try). With help; support, listen to and acknowledge others in the group (e.g. Yes. I prefer that one too). Build on / add to someone else's idea. (e.g. we could use x as well as y). Begin to understand that it is okay to disagree with their peers and offer a reason for their opinion.	Make some decisions about an idea within a group (e.g. I think we should find out by testing) Increasingly support, listen to and acknowledge others in the group. Build on / add to someone else's idea to improve a plan. Understand that it is okay to disagree with their peers and offer reasons for their opinion.	Propose their own ideas and make decisions with agreement in a group. Support, listen to and acknowledge others in the group e.g. Yes. I prefer that one too. Check the clarity of each other's suggestions e.g. are you saying you think this one is a herbivore? Build on / add to someone else's idea to improve a plan or suggestion. Understand that it is okay to disagree with their peers and offer a reasons for their opinion.	Propose their own ideas and make decisions with agreement in a group. Support, listen to and acknowledge others in the group. Check the clarity of each other's suggestions. Build on / add to someone else's idea to improve a plan or suggestion. Understand that it is okay to disagree with their peers and offer reasons for their opinion.
PLANNING AND TESTING	make suggestions, show resilience, work with others.	With help, carry out a simple test / comparative test. With help, make a simple prediction or suggestion about what might happen. Begin to suggest some ideas e.g. choose which equipment to use, choose which materials to test from a	Carry out simple comparative tests as part of a group, following a method with some independence. Make a simple prediction about what might happen and try to give a vague reason (even though it might not be correct). With support, make suggestions on a	Help to decide about how to set up a simple fair test and begin to recognise when a test is not fair. Make a prediction based on everyday experience. With support / as a group, set up simple practical enquiries including comparative and fair tests e.g. make a	Carry out simple fair tests with increasing confidence investigating the effect of something on something else (linked to Y4 PoS). Start to make their own decisions about the most appropriate type of science enquiry they might use to answer scientific questions (is a	Carry our fair tests and other investigations with increasing independence. Suggest more than one possible prediction and begin to suggest which is the most likely. Justify their reason with some knowledge and understanding of the scientific concept. Make	Predict what a graph might look like before collecting results. Make a hypothesis where they say how one thing will affect another and give a reason for their suggestion with a developing understanding of the scientific concept. Identify variables to

		selection. Talk about ways of setting up a test.	method for setting up a simple comparative test. Talk about a practical way to find answers to their questions.	choice from a list of a things (variables) to change when conducting a fair test. (e.g. choose which magnets to compare and which method to use to test their strength). As a group, begin to make some decisions about the best way of answering their questions. Find / suggest a practical way to compare things e.g. rocks, magnets.	fair test the best way to investigate their question?) Make a prediction based on the knowledge acquired from previous explorations / observations and apply it to a new situation. Explain their planning decisions and choices. Make some of the planning decisions about what to change and measure / observe. Begin to recognise when a fair test is necessary.	decisions about which variables to change, measure and keep the same (linked to the appropriate units in the Y5 PoS). Make most of the planning decisions for an investigation. Recognise when it is appropriate to carry out a fair test.	change, measure and keep the same in order for a test to be fair. Independently plan investigations and explain planning decisions. Decide when it is appropriate to carry out a fair test investigation, comparative test or alternative.
USING EQUIPMENT AND MEASURES	use senses/use simple equipment to make observations, (e.g. magnifiers, pipettes, egg timers, digital microscopes, etc).	Measure using non- standard units e.g. how many lolly sticks / cubes / handfuls, etc. Observe closely, using simple equipment (e.g. hand lenses, egg timers). Use senses to compare different textures, sounds and smells.	Measure using non- standard and simple standard measures (e.g. cm, time) with increasing accuracy. Begin to make decisions about which equipment to use. Correctly and safely use equipment provided to make observations and/or take simple measurements.	Collect data from their own observations and measurements using notes / simple tables / standard units. Help to make some decisions about what observations to make, how long to make them for, the type of simple equipment that might be used and how to work safely. Make simple accurate measurements using whole number standard units, using a range of equipment. Gather data in a variety of ways to help in answering questions. Use equipment accurately to improve the detail of their measurements / observations (e.g. microscopes, measuring syringes, measuring cylinders, hand lenses).	Begin to identify where patterns might be found and use this to begin to identify what data to collect. Make more of the decisions about what observations to make, how long to make them for and the type of equipment that might be used. Recognise obvious risks and how to keep themselves and others safe. Learn how to use new equipment, such as data loggers and measure temperature in degrees Celsius (°C) using a thermometer. Collect data from their own observations and measurements, using notes / simple tables / standard units. Make accurate measurements using standard units [and more complex units and parts of units] using a range of equipment and scales.	Make their own decisions about what observations to make or measurements to use and how long to take them for (recognising the need for repeat readings on some occasions). Take measurements using a range of scientific equipment with increasing accuracy and using more complex scales / units. Identify possible risks to themselves and others and suggest ways of reducing these. Choose the most appropriate equipment and make accurate measurements.	Decide whether to repeat any readings and justify the reason for doing so. Make their own decisions about what measurements to take (and begin to identify the ranges used). Make, and act on, suggestions to control / reduce risks to themselves and others. Use equipment fit for purpose to take measurements which are increasingly accurate and precise. Decide the most appropriate equipment to use to collect data.
COMMUNICATING	Use simple vocabulary to name and describe objects, materials, living things and environments.	Communicate their ideas to a range of audiences in a variety of ways. Complete a pre- constructed table/chart using picture records or simple words. Contribute	Record and communicate their findings in a range of ways to a variety of audiences. Use simple scientific language with increasing accuracy (from Y2 PoS). Record simple	Record and present findings using simple scientific language and vocabulary from the Y3 PoS, including discussions, oral and written explanations,	Record findings using relevant scientific language and vocabulary (from Y4 PoS), including discussions, oral and written explanations, notes, drawings	Use their developing scientific knowledge and understanding and relevant scientific language and terminology to communicate more abstract concepts (linked	Articulate understanding of the concept using scientific language and terminology when describing abstract ideas, observations and findings (linked to the Y6 PoS).

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detailed rank         detailed rank         audiences.         audiences.           DESCRIBING RESULTS / DOKING FOR PATTERNS         Talk about changes they not can describe and changes over school.         Lise recordings to talk about and describe what happened. Sequence photographs of an event / observation.         With scatfold / support. describe and compare the date e, order their indigs, sequence beet school.         Notice / find patterns in the about and describe what happened. Sequence photographs of an event / observation.         Notice / find patterns in the about and describe what happened. Sequence photographs of an event / observation.         Notice / find patterns in results linking can something desl, (e.g., we namets are not always for changes are not always in dependence, analyse results to consider with hey, lock         Notice / find patterns in results on something desl, (e.g., we namets are not always for changes and patterns in results to describe what happened.         Notice / find patterns in they conservations (e.g., we namets are not always for changes and patterns in results to describe what happened.         Notice / find patterns in the spinner to the vacan magets are not always for changes and patterns in they conservations (e.g., mells) the patterns in results to describe what happened.         Notice / find patterns in results something desl, (e.g., we independence, analyse results to consider withsome they support         Describe wat and measure variables the spinner to the support to inder wat here independence, analyse results to conservet in tait alwest (e.g., the index index in the support the initial arget (cin, the spinner she bub increased the spinner she bub increased the spinner she bub increased the spinner she bub increased the spinner she udence (e.g. 1 think								
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DESCRIBING RESULTS / LOOKING FOR PATTERNS     Talk about charges they matched read charges cover time, based on real experiences or books read to them at home or school.     Use recordings to talk about and describe what happened. Sequence whot parterns in baservation.     With guidance, begin to date g. order their indices patterns in baservation.     Notice / find patterns in discrepation of a covert indices patterns in baservation.     Spont unexpected results on something (g. we ontice patterns in baservation.     Spont unexpected results on something (g. we ontice patterns in baservation.     Spont unexpected results on something (g. we ontices patterns in baservation.     Spont unexpected results on something (g. we ontices patterns in happened.     Describe trans in their observations in something (g. we matched predictions (g. wi integ a settern of law, singes).     Notice / find patterns in matched predictions (g. wi matched predictions (g. wi integ a settern of law, singes).     Notice / find patterns in matched predictions.     Describe trans in their observations in something (g. we matched predictions.     Describe trans in their observations in something (g. we matched predictions.     Describe trans in discrepation (g. we with experiment of law, with a settern of law, with a settern of law, with a settern of law, with a settern whet inter a settern of law, with a settern we with something a settern with matched prediction.     Describe trans in data. (Describe thes. Connect of law, with a settern of law, with				-		audiences.		
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RESULTS 7       time, based on real exponences or books read to them a home or school.       time, based on real exponences or books read to them a home or school.       time, based on real exponences or books read to them a home or school.       time, based on real exponences or books read to them a home or school.       time, based on real exponences or books read to them a home or school.       time, based on real exponences or books read to them a home or school.       time, based on real exponence to the observation.       data g, order their findings, scenaries thappend out the observation.       effect of different factors works, say what happend out the results is about and describe what they expected). Use their recordings to like about and whether they meth their predictions.       Use their experimence and summaring in a conclusion (e.g. metals tend to be good conductors of electricity).       Use their scientific anguage and vocabulary expected is about and whether they support the initial predictions.       Identify evidence that refutes of supports the scientific language(from Y1 PoS) to like about what they have found out, sample-coles or results observations (e.g. relations between they something and appropriatescientific anguage and vocabulary from Y1 PoS) to like about what they have found out, sample-coles or results observations (e.g. Ithings and explain them. sample-coles or results y2 PoS) to explain to some vidence or results y3 PoS.       Begin to use simple scientific language and vocabulary from Y1 PoS) to like about what they have found out, sample-coles or record in scrapbooks.       Begin to use simple scinthig calculas they	DESCRIBING	• /	•				•	
LOOKING FOR PATTERNS       ender subscriptions or books red to them athome or school.       indigs subscriptions photographs of an event / observation.       and appende using photographs of an event / observation.       and append photographs of append photographs of append photographs of append.       and append photographs of append photographs make photographs.       and append using photo photogra	RESILLES /							
PATTERNS       read to them at home or school.       observation.       worst say what happened work time, etc., Recognise if results matched predictions (say expected). Use their results to consider whether they matched predictions.       noticed that larger matched predictions (say stronger). With help, look for changes and simple observations, data, char or graph. Use their results / observations by with some matched predictions.       something else), (e.g. ast lengther the ruler indice, lengther with some results / observations by with some that the pitch gets lower.       Ionice' (e.g. the longer, thom sing the change and measure variables (causal relationship) (e.g. as we increased the number of batteries the wings, the longer it taks the pinner to fall). Look for / notice relationship increased the number of batteries the bulb increased.         * Talk about what they matcrish; season; wether, etc. predictions.       * Talk about what they happened.       Begin to use simple scientific language(from V1 PoS) to talk about why something happened.       Use their experience and scientific language(from V1 PoS) to tak labout why something happened.       Use their experience and simple, logical reason why something happened.       Use their experience and scientific language(from V1 PoS) to tak about why something happened.       Use their scientific language and vecabulary (linked to Y PoS) to with some which explain dwy something happened.       Use their scientific language and vecabulary (linked to Y PoS) to with some which explain dwy with y competing happened.       Identify evidence that with the pinched conductors of electricity.       Use their scientific language and terminology (linked to Y PoS) to with something happened, wy something happened.       Identify evidence that with the pinched conducto	=			-			-	
FATTERNS       school.       school.       school.       magnets are not always them using the change and mescribe wate has happened over time; etc. Recognise (irsults matched predictions (say if results were what their recordings to alk about and describe wate has happened.       imagnets are not always torogen/ With help, look for changes and simple patterns in their or graph. Use their recordings to alk about and describe wate has happened.       imagnets are not always torogen/ With help, look for changes and simple patterns in their or graph. Use their recordings to alk about and describe wate has happened.       imagnets are not always torogen/ With help, look for changes and simple patterns in their or graph. Use their results to consider whether they met their predictions.       imagnets are not always torogen/ With help, look for changes and simple patterns in their or graph. Use their results to consider whether they met their predictions.       imagnets are not always torogen/ With help, look for changes and simple patterns in their or graph. Use their results to consider whether they met their predictions.       imagnets are not always torogen/ With help, look torogen/ With help, look with graphened (sing help and mescale.       imagnets are not always torogen/ With help, look torogen/ With help, look with some things and torogen/ torogen/ With help, look torogen/ With help, look torogen/ With help, look with graphened.       imagnets are not always with some they patterns in their or source always torogen/ With help, look with graphened.       imagnets are not always with dependent they for source always torogen/ With help, look torogen/ With help, look tor	LOOKING FOR	experiences or books	photographs of an event /	findings, sequence best to	on something (e.g. we	of something on	using er or the word	patterns in results
EXPLAINING     * Talk about what they naterials, seasons, wesher, etc.     Begin to use simple opticary bit waster more scrapbodys.     base begin to use simple scientific language from scrapbodys.     begin to discussifithetest vas unfair.     beg	PATTERNS	read to them at home or	observation.	worst, say what	noticed that larger	something else). (e.g. as I		collected and describe
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Image: conductors of electricity).Image: conductors of electricity.Image: conduct						conclusion (e.g. metals	the initial prediction.	
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EXPLAINING RESULTSfeatures of animals, plants, natural materials, seasons, weather, etc; draw pictures e.g. observational drawings of plants, mini-beasts, take photographs, make models or record in scrapbooks.what they have found out or why something happened.they have found out. Give a simple, logical reason why something happened (e.g. 1 think because).conclusion to answer their original question. Write a simple explanation of why things happened (using the word 'because') and using simple scientific language and vocabulary from the Y3 PoS.things and explain them. Use relevant scientific language and vocabulary (finw 4 PoS) to begin to say / explain why something happened.of orm a conclusion which draws on the evidence from the test (linked to Y6 PoS). Use scientific language and terminology (linked to Y6 PoS) to explain their findings and data and answer their initial question. Draw a valid conclusion (explain why i thappened) based on their data and observations (from Y5 PoS).TRUSTING DESLUTEBegin to discussif the test was unfair.Say whether what happened was what theyUse results to suggest improvements, new improvements, newBegin to recognise how repeated readingsBe able to suggest reasons for unexpected		notice/observe in the	scientific language (from	scientific language (from	some evidence or results	ideas about relationships	knowledge and	refutes or supports their
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RESULTSdraw pictures e.g. observational drawings of plants, mini-beasts, take photographs, make models or record in scrapbooks.draw pictures e.g. observational drawings of plants, mini-beasts, take photographs, make models or record in scrapbooks.draw pictures e.g. observational drawings of plants, mini-beasts, take photographs, make models or record in scrapbooks.draw pictures e.g. observational drawings of plants, mini-beasts, take photographs, make models or record in scrapbooks.draw pictures e.g. observational drawings of plants, mini-beasts, take photographs, make models or record in scrapbooks.draw pictures e.g. observations (from Y5 PoS).data and answer their initial question. Draw a valid conclusion (explain why it happened) based on their data and observations (from Y5 PoS).language and terminology (linked to Y6 PoS) to explain why something happened.TRUSTING DESLUTEBegin to discussif the test was unfair.Say whether what happened was what theyUse results to suggest improvements, newBegin to recognise how repeated readingsBe able to suggest reasons for unexpected		materials, seasons,	happened.	why something happened	Write a simple	language and vocabulary	(linked to Y5 PoS) to	from the test (linked to Y6
observational drawings of plants, mini-beasts, take photographs, make models or record in scrapbooks.observational drawings of plants, mini-beasts, take photographs, make models or record in scrapbooks.word 'because') and using simple scientific language and vocabulary from the Y3 PoS.something happened.initial question. Drawa valid conclusion (explain why it happened) based on their data and observations (from Y5 PoS).(linked to Y6 PoS) to explain why something happened.TRUSTING DECLUTEBegin to discussif the test was unfair.Say whether what happened was what theyUse results to suggest improvements, newBegin to recognise how repeated readingsBe able to suggest reasons for unexpected	EXPLAINING				explanation of why things	(from Y4 PoS) to begin to	explain their findings and	-
observational drawings of plants, mini-beasts, take photographs, make models or record in scrapbooks.observational drawings of plants, mini-beasts, take photographs, make models or record in scrapbooks.word 'because') and using simple scientific language and vocabulary from the Y3 PoS.something happened.initial question. Drawa valid conclusion (explain why it happened) based on their data and observations (from Y5 PoS).(linked to Y6 PoS) to explain why something happened.TRUSTING DECLUTEBegin to discussif the test was unfair.Say whether what happened was what theyUse results to suggest improvements, newBegin to recognise how repeated readingsBe able to suggest reasons for unexpected	RESULTS	draw pictures e.g.			happened (using the	say/explain why	data and answer their	language and terminology
photographs, make models or record in scrapbooks.       photographs, make models or record in scrapbooks.       why it happened) based on their data and observations (from Y5 PoS).       happened.         TRUSTING DECLUTE       Begin to discussifthetest was unfair.       Say whether what happened was what they       Use results to suggest improvements, new       Begin to recognise how repeated readings       Be able to suggest reasons for unexpected		observational drawings of			word 'because') and using	something happened.	initial question. Draw a	(linked to Y6 PoS) to
photographs, make models or record in scrapbooks.       photographs, make models or record in scrapbooks.       why it happened) based on their data and observations (from Y5 PoS).       happened.         TRUSTING DECLUTE       Begin to discussifthetest was unfair.       Say whether what happened was what they       Use results to suggest improvements, new       Begin to recognise how repeated readings       Be able to suggest reasons for unexpected		0			simplescientificlanguage		•	explain why something
models or record in scrapbooks.       models or record in scrapbooks.       models or record in scrapbooks.       on their data and observations (from Y5 PoS).         TRUSTING DECLUTE       Begin to discussif the test was unfair.       Say whether what happened was what they improvements, new       Use results to suggest repeated readings       Be able to suggest reasons for unexpected		-					why it happened) based	
scrapbooks.       scrapbooks.       observations (from Y5 PoS).       observations (from Y5 PoS).         TRUSTING DESLUTE       Begin to discussifthetest was unfair.       Say whether what happened was what they improvements, new       Use results to suggest improvements, new       Begin to recognise how repeated readings       Be able to suggest reasons for unexpected		models or record in			Y3 PoS.		on their data and	
TRUSTING       Begin to discussifihe test was unfair.       Say whether what happened was what they       Use results to suggest improvements, new       Begin to recognise how repeated readings       Be able to suggest reasons for unexpected		scrapbooks.					observations (from Y5	
<b>DECLUTC</b> was unfair. happened was what they improvements, new repeated readings reasons for unexpected							PoS).	
<b>DECLUTC</b> was unfair. happened was what they improvements, new repeated readings reasons for unexpected	TRUSTING			Begin to discussif the test	Say whether what	Use results to suggest	Begin to recognise how	Be able to suggest
				was unfair.	happened was what they	improvements, new		reasons for unexpected
copected and notice any questions and you improve the reliability of results (anomatics).	RESULTS				expected and notice any	questions and / or	improve the reliability of	results (anomalies).

		Skills a	nd Knowledge Progre	results that seem odd. Begin to recognise when a test is not fair and suggest improvements. ession – National Curr	predictions for setting up further tests. Compare their results with others and give reasons why results might be different.	results. Compare results with others and comment on how reliable they are.	Describehow to improve planning to produce more reliable results. Say how confident they are that their results are reliable and give a reason.
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals including Humans	Explore the natural world around them, making observations and drawing pictures of animals. Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, and including pets). Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Notice that animals, including humans, have offspring which grow into adults. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions. Construct and interpret a variety of food chains, identifying producers, predators and prey.	Describe the changes as humans develop to old age.	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise; drugs and lifestyle on the way their bodies function describe the ways in which nutrients and water are transported with animals, including humans.
Plants	Explore the natural world around them, making observations and drawing pictures of plants. Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees.	Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy (and how changing these, affects the plant).	Identify, locate and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. Investigate the way in which water is transported within plants. Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.			

Everyday Materials Seasonal Changes	Understand some	Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, rock (and brick, paper and cardboard). Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties. Observe changes across	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, water, rock, paper and cardboard for particular uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching (applying a force).				
	important processes and changes in the natural world around them, including the seasons.	the four seasons. Observe and describe weather associated with the seasons and how day length varies.					
Living Things and their Habitats			Explore and compare the differences between things that are living, dead, and things that have never been alive .Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. 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 the idea of a simple food chain, and identify and name different sources of food.	Compare and group	Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Construct and interpret a variety of food chains, identifying producers, predators and prey. Recognise that environments can change and that this can sometimes pose dangers to living things.	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird describe the life process of reproduction in some plants and animals.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro organisms, plants and animals .Give reasons for classifying plants and animals based on specific characteristics.
				together different kinds of rocks on the basis of their appearance and simple physical			

<b></b>						
			properties. Describe in			
			simple terms how fossils			
			are formed when things			
			that have lived are			
			trapped within rock.			
			Recognise that soils are			
			made from rocks and			
			organic matter.			
Light			Recognise that they need			Recognise that light
5			light in order to see things			appears to travel in
			and that dark is the			straight lines. Use the
			absence of light. Notice			idea that light travels in
			that light is reflected from			straight lines to explain
			surfaces. Recognise that			that objects are seen
			light from the sun can be			because they give out or
			dangerous and that there			reflect light into the eye.
			are ways to protect their			Explain that we see things
			eyes. Recognise that			because light travels from
			shadows are formed			light sources to our eyes
			when the light from a			or from light sources to
			lightsource is blocked by			objects and then to our
			a solid object. Find			eyes. Use the idea that
			patterns in the way that			light travels in straight
			the size of shadows can			lines to explain why
			change.			shadows have the same
			0			shape as the objects that
						cast them.
Forces and			Compare how some		Explain that unsupported	
			things move on different		objects fall towards the	
Magnets			surfaces. Notice that		Earth because of the	
			some forces need contact		force of gravity acting	
			between two objects but		between the Earth and	
			magnetic forces can act at		the falling object.	
			a distance. Observe how		Identify the effects of air	
			magnets attractor repel		resistance, water	
			each other and attract		resistance and friction	
			some materials and not		that act between moving	
			others. Compare and		surfaces. Friction, air	
			group together a variety		resistance and water	
			of everyday materials on		resistance are forces	
			the basis of whether they		which slow down moving	
			are attracted to a		objects. Recognise that	
			magnet, and identify		some mechanisms,	
			some magnetic materials.		including levers, pulleys	
			Describe magnets as		and gears, allow a smaller	
			having two poles (like and		force to have a greater	
			unlike poles). Predict		effect.	
			whether two magnets will			
			attractor repel each			
			other, depending on			
			which poles are facing.			
States of Matter	Understand some		which poles are lateling.	Compare and group		
States of Matter						
	important processes and			materials together,		

	changes in the natural		according to whether they	
	world around them,		are solids, liquids or gases.	
	including changing states		Observe that some	
	of matter.		materials changestate	
			when they are heated or	
			cooled, and measure or	
			research the temperature	
			at which this happens in	
			degrees Celsius (°C).	
			Identify the part played by	
			evaporation and	
			condensation in the water	
			cycle and associate the	
			rate of evaporation with	
			temperature.	
Sound			Identify how sounds are	
			made, associating some of	
			them with something	
			vibrating. Recognise that	
			vibrations from sounds	
			travel through a medium	
			to the ear. Find patterns	
			between the volume of a	
			sound and the strength of	
			the vibrations that	
			produced it. Recognise	
			that sounds get fainter as	
			the distance from the	
			sound source increases.	
Electricity			Identify common	Associate the brightness
			appliances that run on	of a lamp or the volume
			electricity. Construct a	of a buzzer with the
			simple series electrical	number and voltage of
			circuit, identifying and	cells used in the circuit.
			naming its basic parts,	Compare and give
			including cells, wires,	reasons for variations in
			bulbs, switches and	how components
			buzzers. Identify whether	function, including the
			or not a lamp will light in a	brightness of bulbs, the
			simple series circuit,	loudness of buzzers and
			based on whether or not	the on/off position of
			the lamp is part of a	switches. Use recognised
			complete loop with a	symbols (at least: cells,
			battery. Recognise that a	wires, switches, bulbs,
			switch opens and closes a	buzzers and motors)
			circuit and associate this	when representing a
			with whether or not a	simple circuit in a
			lamp, lights in a simple	diagram.
			series circuit. Recognise	
			some common	
			conductors and insulators,	
			and associate metals with	
			being good conductors.	
L			20.116 6000 conductors.	

Properties and changes of materials       Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Know that some materials will dissolve in liquid to form a solution, liquid to form a solution, to the materials will dissolve in liquid to form a solution, to the materials will dissolve in liquid to form a solution, to the materials
materials       materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Know that some materials will dissolve in liquid to form a solution,
materials materials
including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Know that some materials will dissolve in liquid to form a solution,
solubility, transparency, conductivity (electrical and thermal), and response to magnets. Know that some materials will dissolve in liquid to form a solution,
Image: state of the state
and thermal), and response to magnets. Know that some materials will dissolve in liquid to form a solution,
response to magnets. Know that some materials will dissolve in liquid to form a solution,
Image: Second
materials will dissolve in liquid to form a solution,
liquid to form a solution,
and describe how to
recover a substance from
a solution. Use
knowledge of solids,
liquids and gases to
decide how mixtures
might be separated,
including through
filtering, sieving and
evaporating. Give
reasons, based on
evidence from
comparative and fair
tests, for the particular
uses of everyday
materials, including
metals, wood and plastic.
Demonstrate that
dissolving, mixing and
changes of state are
reversible changes
explain that some
changes result in the
formation of new
materials, and that this
kind of change is not
usually reversible,
including changes
associated with burning
and the action of acid on
bicarbonate of soda.
Earth and Space Describe the movement
of The Earth, and other
planets, Relative to the
Sun in the solar system
Describe the movement
of the Moon relative to
the Earth Describe the
Sun, Earth and Moon as
approximately spherical
bodies. Use the idea of

<b>F</b>							
						the Earth's rotation to	
						explain day and night and	
						the apparent movement	
						of the sun across the sky.	
Evolution and							Recognise that living
Inheritance							things have changed over time and that fossils
							provide information about living things that
							inhabited the Earth
							millions of years ago.
							Recognise that living
							things produce offspring
							of the same kind, but
							normally offspring vary
							and are not identical to
							their parents. Identify
							how animals and plants
							are adapted to suit their
							environment in different
							ways and that adaptation
							may lead to evolution.
	T	1		abulary	1		T
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working	Name	Identify Notice Hear, see,	Describe Observe Sort	Data Measure Record	Systematic Conclusion	Precision Findings	Support Refute
Scientifically		taste, touch, smell Hard/	Label Test	Investigate Explain	Evidence Scientific Predict	Evaluate Causal	
o elemente ally		soft What, how, why		variables Data logger	Diagram Fair test	relationships control	
		Because Table compare		Chart graph	independent variables	Report	
					Dependent variables		
Diausta		Trees - deciduous,	Trees - ash, birch, beech,	Trees rowan, common	Line graph		
Plants		evergreen, oak, horse	common lime, Garden	lime, sweet chestnut,			
		chestnut, apple, willow,	plants – rose, grass,	horse chestnut, cherry			
		sycamore, fir, pine, holly,	vegetable plants such as	Wild flowering plants -			
		etc Wild flowering plants	potato, tomato,	cleavers, coltsfoot, garlic			
		- daisy, dandelion, clover,	strawberry Parts of plants	mustard, mallow,			
		Garden plants – crocus,	– bulbs, stalk, Need of	mugwort, plantain, red			
		daffodil, bluebells, etc	plants – water, light, heat,	clover, self heal,			
		Parts of plants – roots,	soil, temperature	shepherd's purse, sorrel,			
		branch, trunk, leaf,		spear thistle, white			
		flower, petal, seeds, twigs		campion, white			
				deadnettle and yarrow.			
				Garden plants – crocus,			
				Fushia Parts of a flower –			
				stamen (anther +			
				filament), carpel (stigma +			
				style+ ovary+ ovule)			
				style+ ovary+ ovule) Processes – pollination,			
Animals including		Birds, fish, amphibians	· Stages of growth of	style+ ovary+ ovule) Processes – pollination, fertilisation, germination	Digestive system –	Gestation Foetus	Circulatory system –
Animals including		Birds, fish, amphibians, reptiles, mammals ·	• Stages of growth of many insects – egg, larva,	style + ovary + ovule) Processes – pollination, fertilisation, germination Nutrition Diet Vitamins,	Digestive system –, oesophagus, stomach,	Gestation Foetus Fertilisation Species Baby	Circulatory system – heart, blood, veins,
Animals including humans		Birds, fish, amphibians, reptiles, mammals · Feathers, scales, gills, fins,		style+ ovary+ ovule) Processes – pollination, fertilisation, germination	Digestive system –, oesophagus, stomach, acid, small intestine	Gestation Foetus Fertilisation Species Baby Toddler Adolescent Adult	Circulatory system – heart, blood, veins, arteries, pulse, clotting

		hair, land, water, bones, skeleton Carnivores, herbivores, omnivores · Meat, plants · (Common parts/structures of animals) · (Names of animals that can be found in the school grounds) Badger fox, squirrel, woodpecker, pigeon, rat, newt, bee, pond skater,	<ul> <li>ladybirds, butterflies, dragonflies, etc</li> <li>amphibians - smooth</li> <li>newt, common frog, toad</li> <li>Stages of life-baby,</li> <li>toddler, child, teenager,</li> <li>adult growth, nutrition,</li> <li>respiration (breathing is part of this) - Hygiene -</li> <li>clean, wash, germs</li> <li>healthy, grow, strong,</li> <li>energy</li> </ul>	skeletons – protect, support and aid movement, joints, hinge, ball and socket ribs, spine, skull	Protein, vitamin, mineral, carbohydrate, fats, energy, growth, repair. Saliva Teeth – Incisors, canines, premolars, molars Function Foodchain – producer, consumer, predator, prey	Elderly person Puberty Hormones Pituitary gland	Diet – balanced, vitamins, minerals, proteins, carbohydrates, sugars, fats Drugs – caffeine, nicotine, alcohol, cannabis, cocaine, heroine Lifestyle healthy, unhealthy
Living things and their habitats			Habitat, micro habitat Pond, meadow, log pile, woodland, river, plant, Trees - ash, birch, beech, common lime, Garden plants – rose, grass, vegetable plants such as potato, tomato, strawberry, sunflower Parts of plants – bulbs, stalk, Need of plants – water, light, heat, soil, temperature Invertebrates – snail, slug, woodlouse, spider, beetle, fly, Pond animals – pond skater, snail, pond snail, leech, common frog, newt		Habitat, lake, beach, cliff Organism Trees – elder, laurel, silver birch, copper birch, holm oak, Wild flowering plants - cleavers, coltsfoot, daisy, dandelion, garlic mustard, mallow, mugwort, plantain, red clover, self heal, shepherd's purse, sorrel, spear thistle, white campion, white deadnettle and yarrow. Garden plants – clematis, chamelion, geranium, marigold, Invertebrates – Pond animals – water slater, ramshorn snail, smooth newt, nymph	development – egg, larva, pupa, nymph, adult, metamorphosis Parts of a flower – petal, stamen (anther + filament), carpel (stigma + style + ovary + ovule) Processes – pollination, fertilisation, germination	Vertebrate, invertebrate Kingdoms: 'micro- organism' Species Prokaryotes • Bacteria • Blue-green algae • Protoctists • Amoeba • Paramecium Kingdom Protoctista . Fungi • Moulds • Mushrooms • Yeast
Materials	Senses: touch, see, hear, smell and taste	Types of materials:wood, plastic, glass, metal, water, rock, brick, fabric, sand, paper, flour, butter, milk, soil hard/soft, stretchy/not stretchy bend, cut, stretch, twist	Types of materials: polystyrene, silver, gold, iron, natural sponge, cardboard, jelly, oil elastic, dull, transparent/not transparent, sticky/not sticky, crumble, squash, wring, squeeze	Names of rocks – Chalk, limestone, granite, basalt, sandstone, flint, slate, shale, marble Types of rock – Sedimentary, metamorphic, igneous Types of minerals – Calcite, feldspar, topaz, diamond, talc, corundum Properties of rocks – Hard/soft, permeable/impermeable Processes – Heat, pressure, erosion, transportation, deposition, melt, solidify Size of rocks – Grain, pebbles Rock Crystals, layers Early areas of land – Gondwana, Pangea Land formations – Plates,	States of matter - Solid, liquid and gas Examples of gases (at room temperature and pressure) – Oxygen, hydrogen, helium, carbon dioxide, methane Examples of liquids (at room temperature and pressure) – Water, milk, juice, petrol, oil Examples of solids (at room temperature and pressure) – Wood, rocks, metal, plastic, glass, wool, leather, etc Processes – Melting, condensation, evaporation, solidifying, freezing Water cycle Water vapour Steam Heating Cooling	Thermal conductivity – thermal conductor, thermal insulator Electrical conductivity – electrical conductor, electrical insulator Dissolving – Solvent, solution, solute, soluble, insoluble, solid, liquid, particles, suspensions Separating materials – Sieve, filter, evaporate, condense	

			volcanoes, mountains,			
			valleys			
Seasonal changes	Seasons; spring, summer, autumn, winter Year, months, days Hot, warm, mild, cold Sunny Cloudy Rain, sleet, snow, hail, thunder, lightning, rainbow Wet, damp, dry Windy, breezy, Temperature	Degrees Celsius Thermometer Weather vane Anemometer Gust Storm Heat wave Frost hail				
Light			Simple comparisons: dark, dull, bright, very bright Comparative vocabulary: brighter, duller, and darker Superlative vocabulary: brightest, dullest, and darkest Opaque, translucent, transparent Shadow – block, absence of light Reflect – bounce, mirror, reflection			Reflect – bounce, mirror, direction, travel, speed, reflection light source Sun – sunset, sunrise, position
Electricity				Electricity Volts, (V) Appliances: fridge, freezer, TV, computer, iron, kettle, etc Series circuit, current Components: battery, cell, bulb (lamp), bulb (lamp) holder, buzzer, crocodile clip, leads, wires, switch brighter, duller Conductor, insulator		Volts, (V) slow, fast, quiet, loud Resistance
Forces and magnets			Magnets – bar and horseshoe Attract, repel North and south poles Magnetic, Magnetic field force		gravity, friction, air resistance, upthrust, weight Measuring forces: Newton meter, Newtons (N) Particles Surface area	
Sound				bang, blow, shake, and pluck Loudness – quiet, quieter, quietest, loud, louder and loudest Pitch - low, lower, lowest, high, higher, and highest Vibrations, Source ear		
Earth and Space					Day and night - Earth, axis, rotate Solar system – Star = Sun, Planets = Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune (Pluto was classified as Dwarf	

			planet in 2006) Phases of the Moon - full moon, gibbous moon, half moon, crescent moon, new moon, waxing ,waning Moon's orbit: 29.5 days, lunar month Orbit, planets, revolve, sphere Universe Galaxy constellation	
Evolution and				Evolution, evolve • Natural selection •
Inheritance				Survival Kent Scheme of Work for Primary Science,
				2019.4 • Reproduction •
				Offspring, parents, siblings • Environment •
				Variation • Fossils;
				ammonites, belemnites,
				micrasters, etc