

## East Midlands Academy Trust Science Curriculum Overview















#### Why Teach Science?

We believe that Science will allow pupils to make informed decisions and choices throughout their lives. By fostering and maintaining a curiosity throughout their education, our pupils will be able to:

- · Understand how the world around them works
- · Adapt to a life in a modern world
- · Experience and share the cultural capital that Science provides
- Show resilience when solving problems
- · Decipher fact from fiction by learning how to look for reliable sources of information.

### Working Scientifically

Our curriculum details the scientific enquiry skills involved in the processes of science, including an understanding that questions are fundamental alongside the design

of experiments; reasoning and arquing with scientific evidence a analysing and interpreting data.

Asking

Questions

Observing and Measuring



Recording Data

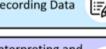


Making Predictions



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Interpreting and Communicating Results



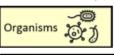
### Key Vocabulary

Rocket Words' are identified for each unit. These are displayed in a table so pupils and teachers can make connections and revisit vocabulary from previous years/units.

2	Science Rocket Words						
	Year 1 Animals including Humans (About Me)	Year 2 tiving things and their theirless	Year 3 Rods				
Autumn 1	sensor-sight, turn, bout, oner, hearing	hebitet	metamorphic rock	Т			
	conce	desert	Agreeous rock	т			
	eventive	Bring	sedmentaryrock	$\vdash$			
	healthy	producer	need				
	design	root vegetable	weathering	-			
	beby	Food shain	ackl rain				
	grav	escrete	food				
	bones	microhabitat	mineral				
	Everythey Materials (Exploring)	Animals trakeling Humans (Growth)	Animals Including Humans (What Makes on)				
				-			
	fige	birth	skeleton	-			
8	th/ch/ri	growth	tendon	-			
3	transperent	regroduction	Igament	-			
1	opeque	own	cartiage	-			
	trenslutent	Menyde	involuntary muscles	₩.			
	Ficeble	generation	voluntary muscles				
	rgel	child	contract and relax	_			
	al	Multi	vertebrae	_			
	Europiay Materials (Uses)	Plants	Forces and Magnets	Ľ			
	magnet	garminata	Indeduse				
	model	nutrient	honeshee nagnet	-			
-		1001010	Account respect	-			

### The 8 Big Ideas of the Science Curriculum

Curriculum maps detail the sequencing of substantive knowledge from the disciplines of biology, chemistry, and physics to enable pupils to build schemata of important concepts over time through eight big ideas.























Each unit focuses on one or two of these big ideas. Knowledge relating to each of the big ideas is mapped progressively so that connections can be made to previous learning.



#### Assessment

Pupils' learning of the curriculum is assessed on an ongoing basis to monitor progress and identify the next steps in learning. In lessons, teachers check pupils can understand and remember the key knowledge and working scientifically skills built into the curriculum. Multiple choice quizzes are built into each unit to assess recall and understanding, these act as a diagnostic tool to inform teaching and provide pupils with feedback on their learning.

Scientific Enquiry Approaches used to develop Disciplinary Knowledge

Pattern Seeking



Identify patterns and look for relationships in enquiries where variables are difficult to control.



Observing changes that occur over a period of time ranging from minutes to months.



Using secondary sources of information to answer scientific questions.

Identifying, Grouping and Classifying

> Making observations to name, sort and organise items.

Comparative/Fair Testing



Changing one variable to see its effect on another, whilst keeping all others the same

Problem Solving



Applying prior scientific nowledge to find answers to problems.



# East Midlands Academy Trust Science Curriculum Map - EYFS into Key Stage 1













Science Big Ideas Eart	h	Matter	Orgo	ganisms Ecosystems			Genes
EYFS					Year		Year 2
Early Learning Goal: The Natural World Children at the expected level of development will  - Explore the natural world around them, making observations and drawing pictures of animals and 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.  - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.  Reception Understanding the World Milestones Milestone    • Notices detailed features of objects in their environment.  • Can talk about some of the things they have observed such as plants, animals, natural and found objects.  • Enjoys playing with small world reconstructions, building on first-hand experiences, e.g., visiting farms, garages, train tracks, walking by river or lake.  Milestone 2  • Shows care and concern for living things and the environment  Milestone 3  • Explore the natural world around them,	Typical learn  Everyday ma  Exploring of Joining me Investigate sinking, me Investigate sinking, me Investigate sinking, me Investigate sinking, me Recycling explicit to  Plants Categorist Naming of leaves, road Exploring Growing pe Caring for Animals ine Taking can enough side Identifying to habitate  Seasonal C Observing record, pra	terials a variety of materials and their characteristics. aterials together ing properties - experimenting with floating and agnetic properties, strength, natural vs man mading effectiveness of materials e.g., making a pape from different materials like a paper towel, of and reusing materials. Junk modelling areas as aching.  In a different types. In a monor plants and different parts e.g. petals, steps to the control of t	em, Safety, Linking Varyny	Animals Including Humans (About Me)  Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.  Everyday Materials (Exploring and Uses)  Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.  Distinguish between an object and the material from which it is made.  Compare and group together a variety of everyday materials on the basis of their simple physical properties.  Describe the simple physical properties of a variety of everyday  materials.		Explore dead, an     Identify includin     Describe using the different     Find out humans,     Describe amounts  Plants     Observe     Find out temperat     Underste     Underste     Underste     underste     Underste     underste     Identify     material	ings and Their Habitats and compare the differences between things that are living, and things that have never been alive.  I and name a variety of plants and animals in their habitats, a grain animals obtain their food from plants and other animals, are idea of a simple food chain, and identify and name to sources of food.  Including Humans I (Health and Survival) to about and describe the basic needs of animals, including for survival (water, food, and air). The importance for humans of exercise, eating the right of different types of food, and hygiene.  and describe how seeds and bulbs grow into mature plants to grow and stay healthy, and the requirements of plants for germination, growth and as well as the processes of reproduction and growth in plants.  Everyday Materials is including wood, metal, plastic, glass, brick, rock, paper and ref for particular uses.
making observations and drawing pictures of animals and plants.  Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world.  Developing an understanding of growth, decay and changes over time.  Milestone 4.  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.  Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.  Begin to understand the effect their behaviour can have on the environment	weather e.g. fog.  • Discussions about why we wear types of clothing at different types of year.  Every child defend the content of the conte		Summer a Summer I Sp	Identify and garden plants. Understand h Observe the g of how plants Animals Includ Identify and including fish Identify and are carnivores Describe and common anim mammals, incl Seasonal Chang Observe chang Observe and a	es jes across the four seasons. describe weather associated with the seasons	Animals :  Notice t adults.  Living Th  Identify suited a of difference of difference of the control of the con	t how the shapes of solid objects made from some materials changed by squashing bending twisting and stretching.  Including Humans & (Life Cycles) that animals, including humans, have offspring which grow into the their habitats (Habitats Around the World) that most living things live in habitats to which they are und describe how different habitats provide for the basic needs rent kinds of animals and plants, and how they depend on her.  I and name a variety of plants and animals in their habitats, g microhabitats.