Year 1

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Knowledge Curriculum Outline

Year 1



EMAT Science Knowledge Based Curriculum

**Introduction**

Current events and technology are constantly changing, but there remains a significant body of enduring knowledge and skills that form the foundation of a strong curriculum. The EMAT Knowledge Based Curriculum is based on these foundations and has its values of ***Empower***, ***Motivate***, ***Aspire*** and ***Transform*** running throughout its spine.

As Leesa Wheelahan states within her book, Why Knowledge Matters in Curriculum: A Social Realist Argument. New Studies in Critical Realism and Education, “…providing students with access to knowledge should be the *raison d'etre* of education. Its premise is that access to knowledge is an issue of social justice because society uses it to conduct its debates and controversies.”

The Core Knowledge Partnership further adds, “All children should be able to unlock the library of the world's literature; to comprehend the world around them; to understand where they stand (literally) on the globe, and to realise the heritage that the history of their country has bestowed on them. In order to achieve this, it is important for every child to learn the fundamentals of mathematics; basic principles of science; theories and structures of government; significant events and themes from history; masterpieces of art, music and literature from around the world; and stories and poems that have been passed down through the generations.”

The core material within the EMAT curriculum is based upon the materials available from the Core Knowledge Partnership.

By explicitly identifying what children should learn in each academic year, it is possible to ensure a coherent approach to developing cumulative knowledge across all school years, making the most efficient and effective use of teaching time.”

The EMAT curriculum is deliberately focused on the development of language and vocabulary. Vocabulary is essential to understanding the content taught in our academies and being able to articulate the knowledge that lies within. As Iman (2009) states, “An abundance of research supports the connections between vocabulary, particularly academic vocabulary and reading comprehension”.

Iman’s statement should come as no surprise to those working within an EMAT academy and as such an overarching aim of the Knowledge curriculum is to be able to empower and motivate children to become lifelong learners and aspire to be the very best that they can be and transform their life chances through an enriched experience every day at school.

**Information on this document**

Within the following pages you will find the knowledge overview for the Year 1 Curriculum. This document outlines the knowledge that should be taught in Science across the year. Academies are free to design their topic and themes as long as these have the EMAT knowledge embedded within it.

The document provides some core vocabulary that must be taught alongside the knowledge but academies are free to add their own to this. This is not an exhaustive list but the minimum required.

**Knowledge Organisers**

What are Knowledge Organisers? Knowledge Organisers are sets of key facts or information that pupils must know and be able to recall in order to master any given unit of work. Typically, a Knowledge Organiser will fit on a single sheet of A4 or A3 and will be provided to the pupils to support their learning but can also support home learning.

Knowledge Organisers should contain the core vocabulary and knowledge that the children are expected to learn as part of their topic or unit. Across the academy it is important that each Knowledge Organiser is laid out in the same fashion to support the visualising of the information and memory retention.

There are a multitude of Knowledge Organisers available online, as well as templates for academies to formulate their own.

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| **YEAR 1** |
| **Science** | **Vocabulary** | **Cultural Capital** |
| **Plants and Plant Growth**Reading aloud, observation and activities such as growing plants from seed in varying conditions are useful ways to explore the following topics with children.* Understand what plants need to grow: sufficient warmth, light and water.
* Recognise basic parts of plants: seeds, roots, stems, branches and leaves.
* Understand that plants make their own food.
* Recognise the importance of flowers and seeds. For example, seeds such as rice, nuts, wheat and corn are food for plants and animals.
* Know that there are two kinds of plants: deciduous and evergreen.
* Become aware of key aspects of farming.
* How some food comes from farms as crops
* How famers must take special care to protect their crops from weeds and pests
* How crops are harvested, kept fresh, packaged and transported for people to buy and consume
 | **Plant****Grow****Seed**RootStemLeafBranchTrunkFlowerWarmthLightWaterFoodCropsFarmWeedsHarvestSoil |  |
| **Animals and their needs**Through reading aloud, observation and activities, explore with children the common characteristics and needs of animals.* Make the connection that animals, like plants, need food, water and space to live and grow.
* Recognise that plants make their own food, but animals obtain food from eating plants or other living things.
* Understand that offspring are very much (but not exactly) like their parents.
* Understand that most animal babies need to be fed and cared for by their parents; human babies are especially in need of care when young.
* Recognise that pets have special needs and must be cared for by their owners.

**SPECIAL CLASSIFICATIONS OF ANIMALS** * Herbivores: plant-eaters (for example, elephants, cows, deer)
* Carnivores: flesh-eaters (for example, lions, tigers)
* Omnivores: plant and animal eaters (for example, bears)
* Extinct animals (for example: dinosaurs)
 | **Animals****Needs****Pet**Wild/TameNestHabitatCareCat/KittenDog/PuppySheep/lambCow/calfHorse/foalDuck/ducklingChicken/chickGoat/kidFoodWaterVetSpaceHomeOmnivoreHerbivoreCarnivore |  |
| **The Human Body: The 5 Senses**Identify the five senses and associated body parts: * Sight: eyes
* Hearing: ears
* Smell: nose
* Taste: tongue
* Touch: skin

Review the importance of taking care of your body: exercise, cleanliness, healthy foods and rest.  | **Sight****Hearing****Smell****Taste****Touch**Eyes, ears, nose, mouth, fingertips, skin, head, tongue, loud, quiet, sweet, sour, salty, bitter,Arms, legs, human body, exercise, sleep, healthy, washing, baths, teeth, brushing |  |
| **Seasons and the weather**The emphasis in Year 1 should be on observation and description; technical explanations of meteorological phenomena should be taken up in later years.* Identify the four seasons.
* Be able to describe characteristic local weather patterns during the different seasons.
* Recognise the importance of the sun as a source of light and warmth.
* Understand daily weather changes.
* Temperature: thermometers are used to measure temperature
* Clouds: rainfall comes from clouds
* Rainfall: how the condition of the ground varies with rainfall; rainbows
* Thunderstorms: lightning, thunder, hail, safety during thunderstorms
* Snow: snowflakes, blizzards
 | **Spring Summer****Autumn****Winter**HotColdCoolSnowCloudWeatherBloomDeciduousEvergreenRainHumidTemperatureThermometerStorm, Sky,WindThunderLighteninghail |  |
| **Taking care of the Earth*** Identify the importance of conservation: some natural resources are limited, so people must be careful not to use too much of them. For example: logging and subsequent reforestation.
* Recognise practical measures for conserving energy and resources. For example: turn off unnecessary lights, tightly turn off taps, etc.
* Understand that some materials can be recycled. For example: aluminium, glass and paper.
* Become aware that pollution be harmful but, if people are careful, they can help reduce pollution. For example, littering, smog, water pollution.
 | **Recycling****Conservation****Forests**Animals, trees, hiking, woods, wood, furniture, houses, chairs, tables, paper, air, fresh, planting, logging, water, tap, waste, recycling centre, cans, glass, plastic, pollution |  |
| **Materials**Children should use correct vocabulary to describe different materials and their properties. Sort materials into groups based on their properties. For example: soft, hard, bendy, ability to float, magnetic or non-magnetic.* Recognise and name a variety of widely used materials. For example: wood, plastic, rock, paper, metal.
* Explain why materials are chosen for specific tasks based on their properties. For example: wool for clothing, glass for windows, wood for tables, metal for bridges.
* Become aware that some materials are natural and some are man-made.
 | **Soft****Hard****Flexible****Float****Magnetic****Non-magnetic****Insulate** |  |
| **Science Biographies*** Joseph Banks (botanist)
* Jane Goodall (studied chimpanzees)
* Wilburn and Orville Wright (made first aeroplane)
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