Ling Moor Primary Academy science Curriculum

Intent

The curriculum at Ling Moor Primary Academy is aligned to the vision of the Priory Federation of Academies and driven by our passion to empower potential, in order to improve the life chances of pupils so they become citizens of the world.

It is designed to encourage the development of the Priory values: wisdom, curiosity, generosity, courage and passion alongside meeting the specific needs of our community. Pupils study the full curriculum as exemplified by the National Curriculum. The curriculum at Ling Moor is designed to ensure that all children have the academic and social aspiration to be true citizens of the world. Key drivers of the curriculum are aspiration, academic opportunity, appreciation of diversity and understanding of their impact upon the world.

There are four clear strands to our curriculum:

- Children develop the skills to be a life-long learner enabling them to be successful in the next stages of their education and the confidence to become citizens of the world – A Ling Moor Learner. *They have curiosity, courage and passion.*
- Children understand what it means to contribute to the success of a community – The Ling Moor Family. Their participation in community empowers them with British values and is rooted in Spiritual, Moral, Social and Cultural responsibility. *They are generous.*
- Children develop a skills and knowledge base fitting of a broad and balanced curriculum. This empowers them with the knowledge and skills to be successful. *They have curiosity and wisdom.*
- Children develop a core English and Mathematical set of skills resulting in a depth and security of mathematical and linguistic concepts. *They have curiosity and wisdom.*

Our Science curriculum ensures that the children at Ling Moor have the knowledge and skills in order to be scientists. They will have:

• The ability to think independently and raise questions about working scientifically and the knowledge and skills that it brings.

• Confidence and competence in the full range of practical skills, taking the initiative in, for example, planning and carrying out scientific investigations.

• Excellent scientific knowledge and understanding which is demonstrated in written and verbal explanations, solving challenging problems and reporting scientific findings.

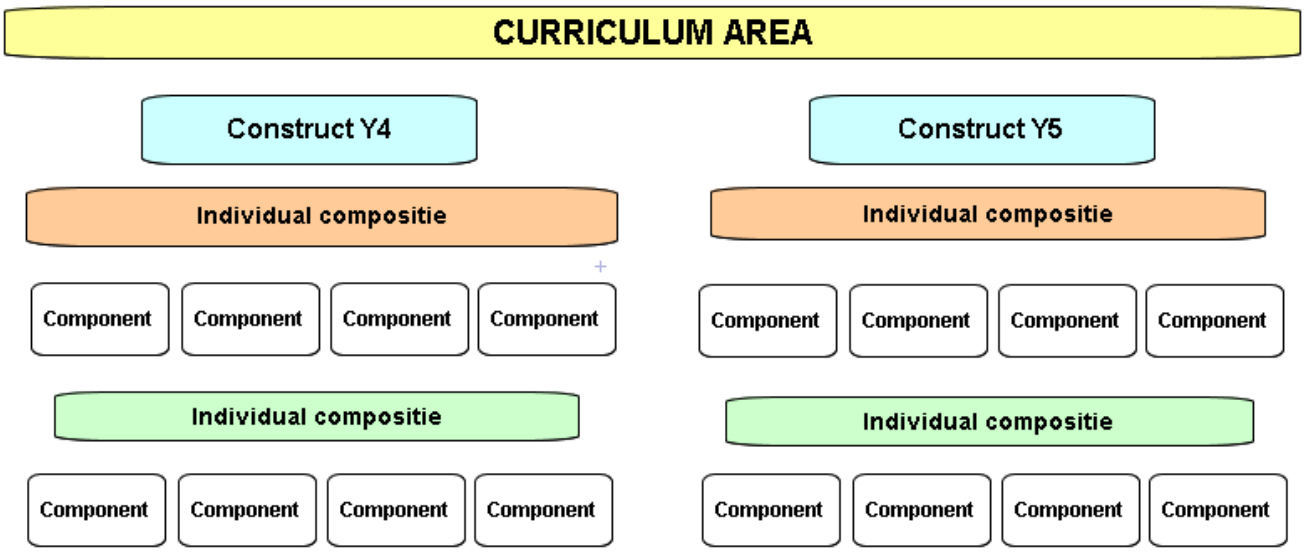
• High levels of originality, imagination or innovation in the application of skills.

• The ability to undertake practical work in a variety of contexts, including fieldwork.

• A passion for science and its application in past, present and future technologies.

Implementation

The curriculum is underpinned by clear constructs that are the pillars of the curriculum area. Each construct is made of multiple composites (the key areas of knowledge and the key areas of skills each child will need to learn in order to master that strand of the curriculum). The knowledge and key areas of skill are listed as the key curriculum components.



The curriculum is carefully planned and sequenced to ensure that children develop a secure knowledge base through opportunities to retrieve key knowledge. A simple sequence of retrieval practise: fluency (basic questions), reasoning/problem solving (advanced questions) and elaboration (deeper questions) should exist in all learning.

The constructs, composites and components that provide the Long Term Learning Structure for Science are included within this document.

Our Science curriculum design is based on evidence from cognitive science; three main principles underpin it:

1) learning is most effective with spaced repetition.

2) Interleaving helps pupils to discriminate between topics and aids long-term retention.

3) Retrieval of previously learned content is frequent and regular, which increases both storage and retrieval strength. In addition to the three principles we also understand that learning is invisible in the short-term and that sustained mastery takes time. Some of our content is subject specific, whilst other content is combined in a cross-curricular approach. Continuous provision, in the form of daily routines, replaces the teaching of some aspects of the curriculum and, in other cases, provides retrieval practise for previously learned content

Impact

As scientists, at the end of each Milestone, the vast majority of pupils have sustained mastery of the content, that is, they remember it all and are fluent in it; some pupils have a greater depth of understanding. At the end of Each Milestone, the children will have the necessary skills to investigate as scientists.