



Maharishi School

CONSCIOUSNESS-BASED EDUCATION

Primary Phase Science Policy 2024 – 2025

Start Date: September 2024

Review Date: September 2025

Signed by:

Headteacher

Lisa Edwards

Date Sept 24

Chair of Governors

Ian Birnbaum

Date Sept 24

Intent

"Our teaching should aim at enlivening in the children the understanding that there is something deep within the surface of everything. This will make them grow in inquisitiveness and awareness of the most basic values of life, eventually leading them to the laws of nature in all the different fields of knowledge. They grow in awareness that the deeper the level from which they function, the greater the field of influence they command through their action. We help them grow into catching the more fundamental values of life from where their whole life can be organised and made fulfilled."

MAHARISHI'S KEY PRINCIPLES OF TEACHING AND THEIR RELEVANCE TO SCIENCE

➤ **Intelligence**

Intelligence can be enlivened and applied through these principles:-

- link inner values with outer values in the pursuit of knowledge for a purpose
- develop each student's ability to discern finer and finer parts in the context of bigger and bigger wholes
- help pupils to look for and recognise universal patterns
- adapt teaching to take account of the individual character of each pupil's own intelligence.

➤ **Knowledge**

Knowledge can be enlivened, structured and organised through these principles:-

- teach knowledge in the context of human purpose
- develop knowledge holistically by connecting everything that is taught to the Self of each pupil

➤ **Experience**

Experience can be enlivened, extended and deepened through these principles:-

- integrate knowledge with experience in the development of Complete Knowledge
- extend each pupil's own experience in relation to knowledge taught and in conformity with their own nature through appropriate applications and practical work
- involve all the senses and organs of action in constructing learning experiences – where safe and practical.

● **Expression**

Expression can be enlivened and enhanced through these principles:-

- encourage pupil expression at the start of each learning cycle to stimulate the desire for growth

- consolidate learning through the expression of knowledge and skill encourage the expression of fullness of life, through a wide range of expressive modes.

Aims

Science teaching at Maharishi School aspires to give all children a strong understanding of the world around them whilst acquiring specific skills and knowledge to help them to think scientifically, to gain an understanding of scientific processes and also an understanding of the uses of science, today and for the future. We aim:

- To encourage and develop children's curiosity and fascination with their world.
- To deliver lessons that engage and motivate children to encourage children to enjoy and show an interest in the subject.
- To teach children to embrace challenges by using scientific enquiry to find answers to their own and others' questions.
- To give children a wide variety of science vocabulary so that they are able to articulate their learning using this bank of words.
- To enable children to develop positive attitudes which encourage collaborative learning and perseverance.
- To encourage children to develop an understanding of how science influences and affects our everyday lives.

The content of the science curriculum is not the only value to be learnt. The process of undertaking these investigations also develops intrinsic skills necessary for scientific modes of thinking. 'Working scientifically' specifies the understanding of the nature, processes and methods of science for each year group and this is embedded within lessons and focuses on the key features of scientific inquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing; and researching using secondary sources. Pupils are given the opportunity to seek answers to questions through collecting, analysing and presenting data.

Both science coordinators at Maharishi School (primary and secondary) collaboratively created 4 key ideas that they thought were most important when teaching science and demonstrated 'when science looks good'. These key ideas are at the forefront when planning and delivering the science curriculum.

1. Investigating science questions.
CbE - Life is found in layers.
2. To use scientific vocabulary.
CbE - Order (is present everywhere)

3. Children are inspired to do and know more, they are able to transfer knowledge and make real life links.
CbE - The whole is more than the sum of the parts.
4. Children are engaged, excited and involved.
CbE - We're here to enjoy.

Implementation

As part of the planning process, teachers need to plan for and use the following:

1. A Science Curriculum Map is used in order to sequence topics in accordance with the National Curriculum across EYFS, KS1 and KS2.
2. A series of 2 hour weekly lessons, which carefully plans for progression and depth.
3. The 'Grammarsaurus' scheme of work is used to explicitly teach the knowledge and skills to work scientifically, which aligns with the National Curriculum objectives and informs the planning of our Science curriculum.
4. The 'TDTS' approach (Thinking, Doing, Talking Science) is used alongside our 'Grammarsaurus' scheme, which facilitates practical opportunities for pupils to apply their knowledge and working scientific skills in practice; and provides opportunities for reflection and discussion. *This approach is not only underpinned by extensive research that demonstrates a positive impact on the children's attitudes and progress in Science, but it is enriched with strategies that are included on the 2023 Improving Primary Science report.*
5. ASC exemplar materials are used for moderation purposes.
6. 'Working scientifically' posters are displayed in the EYFS classroom and in KS1 and KS2 children's books and should be referred to weekly. See Appendix 1
7. The 5 enquiry types are displayed in all classrooms. See Appendix 2
8. Opportunities are created for pupils to ask their own questions and reflect about scientific phenomena by using the 'Explorify' resource in every science lesson.
9. Children are to experience memorable, engaging and exciting lessons.
10. Vocabulary is built upon as children move to their next year group. This is to provide children with a rich array of vocabulary that they understand in relation to primary science.
11. Progression of vocabulary, knowledge and skills documents are used to support teachers' planning and to ensure they are built upon throughout each year group so that learning develops and skills and knowledge become embedded.
12. Children's scientific discoveries are celebrated in class and around the school using displays and are also regularly shared with families on class social pages.

13. The TAPS Assessment tool for teachers and 'PLAN Matrices' for each topic of the science National Curriculum, which supports teachers to:
- Identify opportunities for pupils to discuss and reflect on their own learning.
 - Utilise methods of ongoing formative assessment; gathering evidence of learning; and to adapt the challenge and pace of pupils' learning.
 - Monitor pupil progress, through summative assessments, record keeping and moderation.
 - Monitor the key learning and vocabulary that the children need to have acquired.
 - Use examples of possible activities that enable pupils to learn or apply the knowledge.
 - Identify examples of possible evidence that would indicate that children are secure in the learning and vocabulary.

In ensuring high standards of teaching and learning in science, we implement a curriculum that is progressive throughout the whole school.

EYFS

Children in Reception are provided with many opportunities to explore science within their immediate environments through both adult-led and child-initiated activities. Our Early Years science curriculum is tailored to prepare children for KS1 by ensuring that they have the learning tools they need to achieve their Early Learning Goals. Children in the Early Years are provided with opportunities to explore the similarities and differences that they observe within their natural world. Children in the Early Years are provided with hands-on experiences with materials, plants, insects and animals to allow them to develop their knowledge and understanding of the world around them. Our 'EYFS Progression of Vocabulary, Knowledge and Skills in Science' document indicates the science topics that are explicitly taught in EYFS and details the opportunities that we provide for children to develop skills and vocabulary to 'work scientifically' and demonstrates continuity into Key Stage 1 Science.

Key Stage 1 and 2

Our science curriculum map indicates where and when science topics are taught across key stages. Our science curriculum includes all areas of the Science National Curriculum with ample opportunities for pupils to work scientifically. Learning builds upon prior knowledge to ensure sequenced learning that results in pupils being confident primary scientists at the end of key stage 2.

Our 2hr weekly science lessons have an emphasis on real life, practical learning. Our aim is to provide our learners with a vast array of opportunities to work as scientists

through a range of scientific enquiry. We ensure that our learners have opportunities to be curious scientists by asking and searching for answers to their own questions.

Equal opportunities

At Maharishi School we are committed to providing all children with an equal entitlement to scientific activities and opportunities regardless of race, gender, culture or class. See Equality Information & Objectives Statement <https://maharishischool.com/about-us/policies-and-procedures>

Science is for all abilities

At Maharishi School we recognise that in all classes, children have a wide range of scientific abilities. The study of science is planned to provide all pupils with a suitable range of activities and challenge and support appropriate to their abilities and needs. Curriculum planning ensures that all pupils have an equal opportunity to take part in every aspect of the science curriculum. In the planning and organisation of enrichment activities and assessments, specific needs of individuals are taken into consideration to ensure that all pupils benefit from science enrichment.

Health and Safety

It is the responsibility of the class teacher to ensure that risks are assessed prior to, and during, science lessons. Prior to a science lesson, the class teacher is to inform any additional support staff of any potential risks or hazards to be aware of. Pupils are also to be made aware of potential risks and hazards.

Impact

Our Science Curriculum is high quality, well-thought out and is planned to demonstrate progression and to elicit positive and motivated attitudes amongst all children towards the subject. If children are keeping up with the curriculum, they are deemed to be making good progress, otherwise they are working towards age-related expectations. In addition, we measure the impact of our curriculum through the following methods: A reflection on standards achieved against the planned outcomes KLIPs; using a range of assessment for learning tools throughout lessons and at the end of topics and listening to children's discussions about their learning. Teachers' best practice is shared at designated staff meetings and books are monitored annually.

Assessment

Pupil assessments at the beginning and end of each topic area, helps to identify children's progression in science and it also helps teachers to plan and adapt lessons to suit the children's individual learning needs and promote sufficient

challenge. Teachers make judgments based on whether the learning objectives for each science lesson have been met. These judgments are formulated through teacher observations, pupil responses to questioning and discussion; and the science work produced during each lesson. Teachers use the 'TAPS' assessment tool to facilitate opportunities throughout each unit to assess a child's ability to work scientifically. Teachers assess whether children are either working towards age-related expectation or working at age-related expectation. This assessment is determined using the 'Key Learning Indicators in Performance (KLIPs)' statements and whether children have met the year group objectives for a specific area of science. End of unit assessments are collated at the end of each term on our internal tracking sheets and at the end of the school year these are fed back to parents to inform them of their child's progress in science throughout the academic year.

Monitoring and review

The coordination and planning of the science curriculum are the responsibility of the subject leader, who also:

- provides leadership in science to secure high quality teaching and learning,
- undertakes monitoring of standards in science and uses this to inform the science action plan,
- plays a key role in motivation, supporting and modelling good practice for all staff, including the organisation and presentation of staff meetings and training,
- takes a lead in policy development and review,
- liaises with outside agencies and attends subject specific courses and,
- reports to the Senior Leadership team on science achievement and provision.