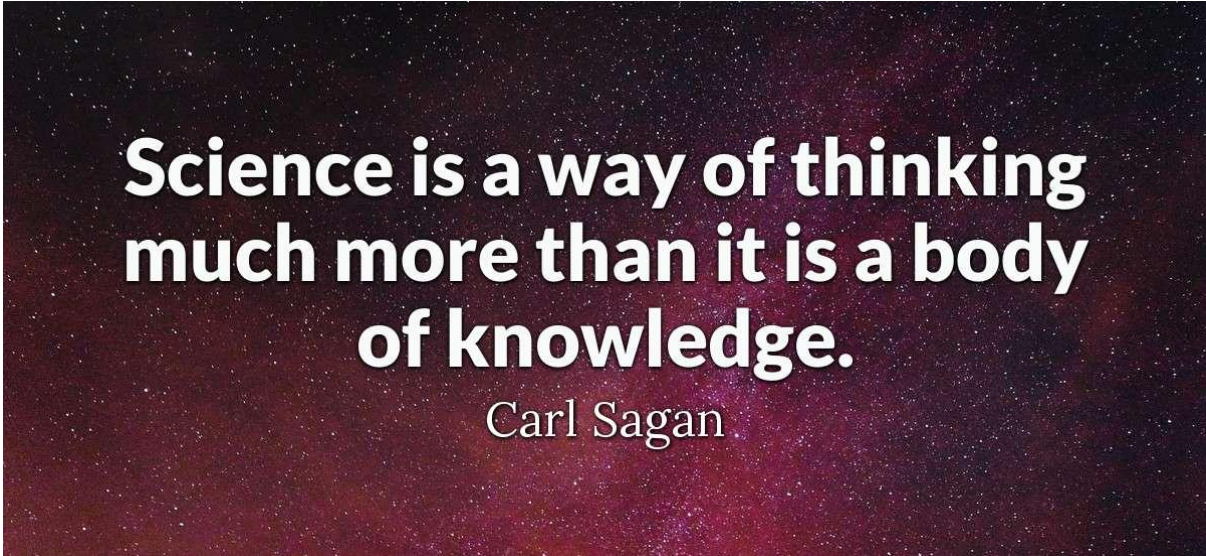


## **MELLING APPROACH TO 'SPICY SCIENCE'**



**Science is a way of thinking  
much more than it is a body  
of knowledge.**

Carl Sagan

*'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.'*

***National Curriculum 2014***

### **INTENTION - Aims and Principles**

To promote in children an attitude of curiosity in the world around them and an eagerness to learn more about it

- To develop and promote an interest in and enjoyment of Science

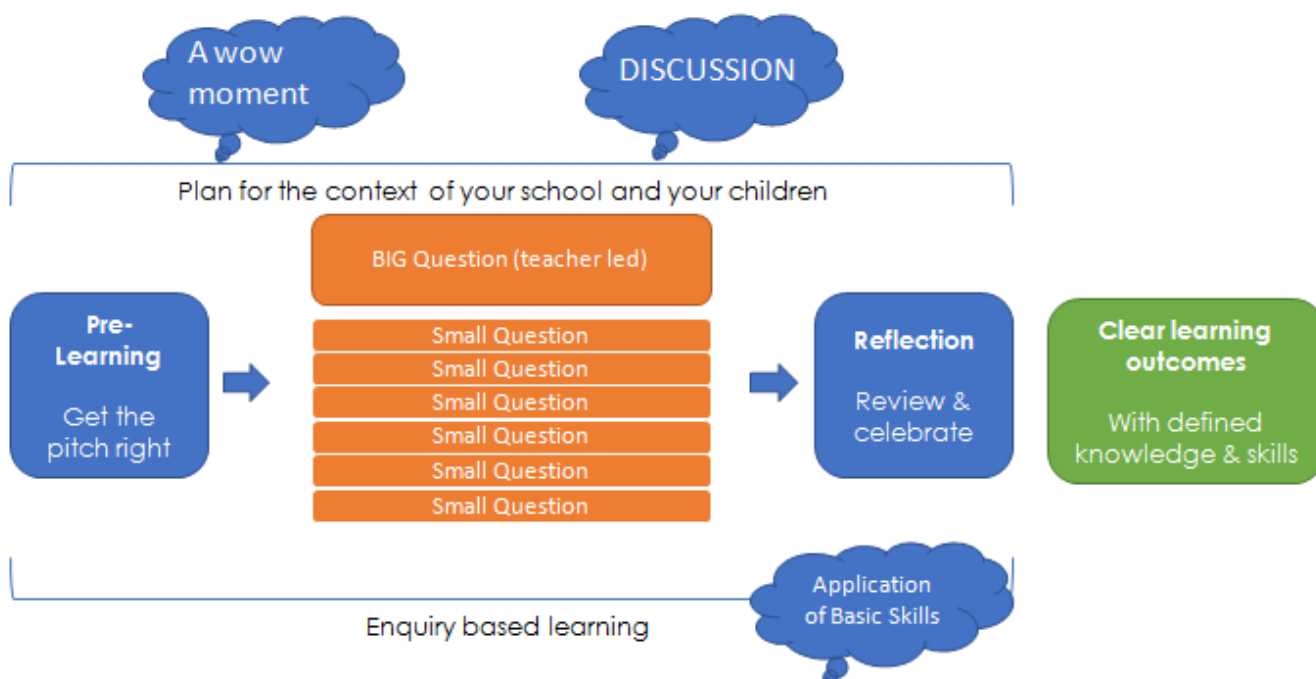
- To provide an atmosphere, in which pupils can explore, discover and interact with the world in which they live, at a level that is appropriate to them (often via contextual learning with links to other subjects)
- To develop skills of practical investigation and analysis
- To provide a wide range of experiences to develop in pupils an enquiring mind about themselves, the environment and the technological world in which they live.
- To develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- To 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
- To promote an awareness of safety in everyday life and in school, and an awareness of good health and personal hygiene
- To build and promote an atmosphere in which Science lessons provide answers to satisfy pupils' curiosities and questions about their world
- To address pupils' misconceptions about the world
- To provide pupils with the skills and opportunities to question why things happen (scientifically) in the world around them and how to test this in a fair manner
- To give pupils the opportunity to prove theories with evidence collected through investigations and experiments
- To provide pupils with the skills to work scientifically: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources.
- To apply skills from other subjects (especially Maths and English).

## **IMPLEMENTATION - Quality First Approach**

In Melling Science learning will be enhanced by including the following in our approach:

- use of a variety of teaching of teaching styles in Science lessons
- contextual learning; to make sense and draw links to real life as well as cross-curricular links although Science should still remain as the core of the lesson's objectives
- a wow moment in each Science lesson which can be summarised by pupils through what they've learned (not always a written explanation/conclusion), and the relevance/usefulness of these ideas
- quality provocations
- offering challenge to all pupils
- outdoors and practical as much as possible
- use of fair testing to help explain why pupils' patterns and results may differ
- pupils have the opportunities to display/record their results in various ways (at times different than core subjects)
- minimise teacher planned/lead investigation and talk time
- to make learning in Science engaging and exciting
- pupils should have the opportunity to demonstrate their curiosities: hypothesise and predict
- opportunities to plan and carry out their own investigation
- provide pupils the opportunity to research and collect data in a variety of ways - secondary data, which may be collected from various sources, may also be used as additional evidence
- additional stand alone lessons can be used to cover the working scientifically

## Lesson plan model for Melling's Spicy Science



### Inclusion

At Melling Primary, Science forms part of a broad and balanced inclusive curriculum which provides all children with relevant and challenging learning. Through each topic taught, suitable learning challenges are set in response to children's diverse learning needs.

### Enhancement

In each year group, learning is enhanced through trips and visitors to the school to give children first hand learning experiences in order to bring Science to life. Whole school theme days and quizzes take place to raise the profile of Science across the school and to motivate and engage children to love learning about the past and how it relates to the present day.

Science Week will take place annually and will provide an opportunity to enhance the teaching of Science, allowing for a whole school focus on an intriguing aspect of Science.

## **Home learning 'own work'**

Children are encouraged to take responsibility for their own learning by choosing their own lines of scientific enquiry to pursue to create a project linked to topics that they learn about. Great emphasis is placed on children completing 'own work' to show what they have learned independently or with support from adults at home. 'Own work' is displayed in class and children receive rewards in line with school policy for effort with furthering their own learning.

## **Champions**

Children who are particularly enthusiastic about Science are encouraged to become champions of the subject; ambassadors for history across the school. They are recognised for putting exceptional effort into their learning about history. Champions assist in ways to promote Science across the school as well as have a say in how to improve teaching and learning of the subject.

## **IMPACT**

### **Pre and post topic knowledge**

Children will complete a mind map at the beginning of each topic to record their existing knowledge. At the end of a topic, they will revisit the mind map and add to it in a different colour to show what they have learned.

### **Assessment in Science**

Teachers will assess children's work in Science by making informal judgements during lessons. On completion of a piece of work, the teacher will assess it against age-related learning objectives, and then use this assessment to plan for future learning. Written or verbal feedback is given to the child to help guide his/her progress. Older children are encouraged to make judgements about how they can improve their own work.

A record of how children are achieving the learning objectives is kept in the front of their exercise books. This data is used to report achievements to parents at the end of the academic year. Exercise books are taken into the

next year group to show progress and development of chronological understanding, knowledge and interpretation and historical enquiry.

### **Monitoring**

The monitoring and evaluating of practice in Science enables the progress of children to be seen within the class and whole-school contexts of school and staff development. Monitoring of teaching and learning takes place through book scrutiny, lesson observations and pupil interviews to ensure coverage, continuity and progression in Science.

The use of case study children is being developed to enable the subject leader to evaluate achievement for a cross section of children in each year group (Including any children identified as Science Champions). These children will meet with the subject leader on a termly basis and will provide an insight into the Science approach through the eyes of a child (and group) in a particular class.

Findings are used to inform future planning to enhance teaching and learning.