Science subject intent:

- To develop children's scientific knowledge and conceptual understanding in biology, physics and chemistry.
- To equip children with technical vocabulary so they can explain scientific concepts.
- To develop children's innate curiosity about natural phenomena and teach them ways they can systematically and thoroughly answer questions they may ask.

How we support the needs of our children through teaching Science:

- **Experiential learning** Our science curriculum invites children to learn concepts through practical experiences. Children at Nova can see scientific concepts played out first hand and are encouraged to notice their own trends and ask questions.
- **Self-esteem –** We aim for children to explore questions that they generate themselves after exposure to scientific provocation. This gives children confidence and freedom to experiment and draw conclusions.
- **Resilience–** In each year group, children will have opportunities to embark on longer scientific investigations. They are encouraged to plan, carry out, present and reflect on investigations they design.
- **Cultural understanding–** Purposeful opportunities linked to lines of enquiry have been designed across the school to enable children to learn about a diverse range of impactful scientists who have changed the world.
- **Social skills–** Children will have opportunities work as part of a team to explore their own scientific predictions.
- **General knowledge–** Children are taught key scientific concepts and vocabulary through the coverage of national curriculum programmes of study, linked to lines of enquiry topics where possible and taught discretely when needed.
- **Oracy skills –** children are taught how to use specific scientific vocabulary in their programmes of study as well as phrases to explain their scientific thinking such as 'I notice' and 'I wonder'. Sentence stems are used to help children explain their thinking such as using "er….er" statements *e.g. I notice the longer the string the lower the pitch.*

How do we teach science at Nova Primary?

Science at Nova is linked to lines of enquiry where possible so children understand the context of their scientific learning, however many science lessons are also taught discretely.

In EY, teachers plan opportunities for children to learn and understand the world around them through guided teaching and high quality continuous provision. We teach the national curriculum programs of study in Y1-Y6 and have created a Nova 'working scientifically' progression document to teach specific scientific enquiry skills. These are grouped into the following experiment types: observing over time; fair testing; using secondary sources of information; grouping and classifying and pattern seeking.

When planning, teachers will assess children's prior learning through and plan a careful sequence of learning opportunities for children to embed and apply key scientific knowledge, vocabulary and enquiry skills. Teachers use elicitation lessons at the start of science units to assess children's initial understanding. At the end of each programme of study, children complete a knowledge quiz for teachers to assess children's knowledge against key objectives. These scores are recorded for each programme of study to achievement and progress over time can be tracked.

Children's individual scientific learning is evidenced in children's Line of Enquiry books and experiential opportunities such as photos of science investigations are also evidenced. High expectations of presentation are expected to be seen in all books, with opportunities for children to embed their writing and maths skills.

How do we assess science at Nova Primary?

Assessment of knowledge:

Science is assessed consistently at Nova. Children will receive a knowledge assessment at the end of each national curriculum programme of study.

The questions are grouped into the following types: multiple choice, true or false, labelling, matching words and explanations, short answers and longer and detailed answers.

When assessing, teachers will identify the strengths of each child's understanding of the current programme of study. It will enable teachers to see how they can further support learning, amend future planning and provide more chances for experiential learning opportunities to solidify understanding.

Each assessment will provide a % score out of 100. These scores are recorded for each programme of study to monitor achievement and progress. This can then be tracked over time.

Assessment of Working Scientifically:

Children are assessed on their working scientifically skills through experiential, written and oral work. Children are aware of the skills that they are being asked to evidence in their learning as they have an understanding of the different types of enquiry. Children will be assessed using Line of Enquiry books, Teacher observations, annotations and next steps.

Teacher assessments of children's working scientifically skills will be tracked termly. Overtime, a portfolio of exemplar work will be created to model and clarify working scientifically expectations for each year group.