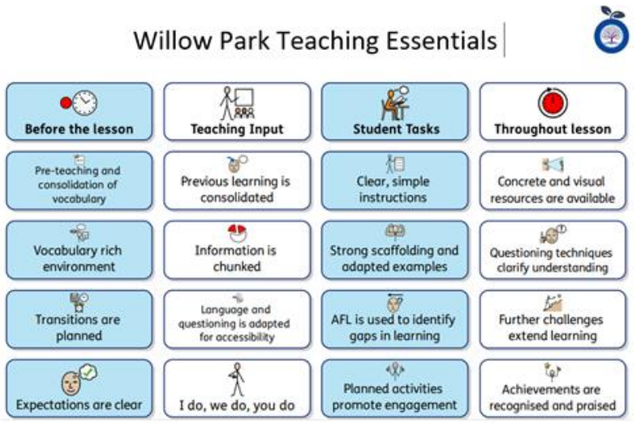
Subject on page- Science

Intent *We aim to:*

Provide the foundations for understanding the world through the specific disciplines of biology, chemistry and physics.	Teach progressive skills and knowledge from EYFS to Year 11 that are well sequenced.	Teach the essential summative and disciplinary knowledge required for any future scientist.	All pupils to leave with Heritage Park with an appropriate Science accreditation.	Develop science specific language so children can communicate their ideas effectively.



Implementation *How do we achieve our aims:*

Planning: Over the course of the year, science is taught weekly (one lesson at KS2, two lessons at KS3 & 4) so that children can achieve a greater depth in their learning.
Units have been carefully planned so that they are progressive, build on previous learning and support wider curriculum themes to reduce cognitive overload for pupils and build schema. At key stage 3 mixed aged classes are taught a 3- yearly cycle to ensure progression, opportunities for revisiting core content and to avoid gaps in learning.

Recording: Each unit of work is supported by a Knowledge Organisers which outlines key learning, vocabulary and information children can reference to support their understanding. Learning is recorded in books in addition to class discussions, and both classrooms based, outdoor and laboratory practical activities.

Professional Development: – In order to secure good or better science teaching and learning across all key stages all staff regularly participate in science specific training. Key stage 3 teachers are currently being upskilled to teach Science through mentorship from the Science Lead. All science teaching staff attend Internal moderation work scrutiny groups to share of good practice and identify exemplar approaches.
Hands on Practical session with a focus on disciplinary knowledge are offered as a key stage or on a 1:1 basis to encourage confidence and compliance with health and safety when conducting scientific practical's.

Monitoring: Learning walks take place during each unit of learning with follow up pupil conversations and book looks. These are completed by the subject leader who feeds back to SLT and individual feedback is shared with staff. The school operates a coaching model to support CPLD and the Science Champion from the Trust organises moderation activities which also allows best practice to be shared.

Qualifications: All pupils are offered the opportunity to sit an appropriate science qualification. Once a pupil enters Y9 teacher assessment will determine if a pupil will sit an Entry Level Science qualification or a GCSE in Biology.

Assessment: Each unit begins with a knowledge quiz to check what the children already know and to make connections between prior learning.

Each lesson begins with a recap task linked to previous learning or previous material – either through:

1) An AO1 recall-focused do now activity **(memory platform)** focusing on curriculum links (interleaving), including use of knowledge organizers **(powerful knowledge)** to build literacy.
2) A fluency test focusing on repeated iterations of the same mathematical or working scientifically skill.
3) Individualized targeted questions and Feedback.

All lessons contain clear shared objectives, targeted questions checking for understanding, and independent practice, using an I do, We do, You do (guided practice) approach.

Lessons end with plenary task to ensure key knowledge is embedded or a literacy focus on new scientific terminology. Afl is used throughout the lesson sequence and at the end of each unit a consolidation task supports teacher judgement assessing attainment.

End of unit summative and/or formative assessment are completed which are fed back to the subject leader for future planning alongside the skills and knowledge progression documents.

For GCSE Year 11 pupil: supported by additional exam years intervention sessions and designated study sessions with exam question focus.

SEND: All lessons are inclusive and take account of children's SEND, reasonable adjustments are made as need. Pupils are supported through a high staff to pupil ratio, providing emotional reassurance and support with their work as needed. Lessons are planned and resourced to enable all students to access their learning, supporting them to engage and be challenged.

Vocabulary: Developing oracy is a key priority for the school. Within science, subject specific vocabulary is explicitly taught and implicitly rehearsed as we recognise the crucial need for children to be able to communicate their ideas and thoughts clearly and effectively.

What are the Drivers for the curriculum?

Narrow Gaps
Develop Vocabulary
Promote Reading
Improve Attendance
Improve Emotional Regulation
Encourage Independence & Safety

Impact *How do we know if we achieve our aims:*

Children can distinguish between the scientific areas.	Children know more, remember more and can do more as a result of a balanced Science curriculum.	Children can use different scientifical methods to solve problems and think scientifically.	Children can use their prior knowledge to predict how things may change.	Children can articulate their understanding using subject vocabulary.