Science at Sir Charles Parsons School

Science delivered at Sir Charles Parsons School follows the units of study outlined in the National Curriculum. Building on and revisiting the learning of previous Key Stages and developing knowledge and understanding from units of work within the relevant Key Stage through highly adapted and differentiated lesson designed to meet the needs of all our learners.

Within science at Sir Charles Parsons School, we aim to enable all learners to develop a greater understand of themselves and how their body works, the world in which we live and how things work within the universe around them.

We use scientific investigation activities and practical experiments to develop individual students' practical behaviours for life and learning, as well as enhancing their understanding and scientific knowledge and how to apply it to everyday life.

Within the science curriculum we offer opportunities to learn outside of the classroom and make use of learning experiences in the community around us, such as connecting with the local ranger services, the Centre for life, Discovery museum and exploration of local habitats.

It is our aim to provide opportunities for students to develop their experiences within the engagement profile and to enjoy increasing their understanding of science. We create as many links as possible with other areas of the curriculum and revisit ideas and concepts to promote retention of knowledge and application.

Students working beyond the engagement profile will develop their knowledge and investigation skills in the following areas. Human and plant biology, materials, their uses and methods of change, physical principles and working scientifically. Within KS4 learners in science are able to receive external accreditation to complement their learning via OCR entry level or AQA unit award systems.

The science curriculum is highly differentiated to meet the needs of learners within the seven aspirational pathways. Outcomes, therefore, for students will differ according to the pathway they follow. The intent/implementation and impact in the science curriculum is designed and developed with each pathway in mind.

Red/Orange pathways:

Intent:

- To develop greater understanding of themselves and how their body works.
- To develop greater knowledge of where humans sit in the wider natural world and how we relate to other animals, plants and our environment.
- To develop greater knowledge of how we use natural resources to change and create materials used in everyday life.
- To develop greater knowledge of how physical laws and phenomena can be applied and used in our lives.

- Students will make progress in developing thinking skills and practical experimentation skills such as questioning, predicting, planning, recording, analysing and reviewing.
- Students will develop a broader scientific vocabulary.
- Students will develop functional skills which they can apply to everyday life.
- Students will develop a great understanding of careers that involve science.
- Students will make gains in complementary accreditation routes.
- Students will be curious and independent learners.
- Develop communication, literacy and numeracy skills.

Implementation:

- Led and overseen by the curriculum lead for science
- Subject specific learning
- Delivery of a progressive curriculum
- Science is taught as a termly topic focussing upon knowledge and skills stated in the national curriculum
- All learning is enhanced by revisiting prior knowledge
- The school guidance template for lesson planning structure ensures students are supported to review, consolidate and build upon prior knowledge.
- Key Stage 3 units revisit previous learning from earlier key stages before extending learning in each topic.
- Key Stage 4 is taught via the OCR entry level certificate in science
- At Key Stage 3 & 4 the investigation cycle is used to develop skills of working scientifically.
- Learning is supported by knowledge organisers to support students' retention of new facts and vocabulary.
- Various learning experience outside of the classroom are employed.
- Learning is supported by visual aids; Makaton, PECS, board maker symbols, photographs, written word.
- Collaborative learning, to develop individuals use of the behaviours for life and learning.
- Explicit careers related information is shared with students throughout their learning.

Impact:

- Students will demonstrate greater understanding of themselves and how their body works.
- Students will demonstrate greater knowledge of where humans sit in the wider natural world and how we relate to other animals, plants and our environment.
- Students will demonstrate greater knowledge of how we use natural resources to change and create materials used in everyday life.

- Students will demonstrate greater knowledge of how physical laws and phenomena can be applied and used in our lives.
- Students will make progress in developing thinking skills and practical experimentation skills such as questioning, predicting, planning, recording, analysing and reviewing.
- Students will demonstrate a broader scientific vocabulary.
- Students will demonstrate functional skills which they can apply to everyday life.
- Students will know more about careers that involve science.
- Students will achieve bronze or silver awards in OCR entry level.
- Students will show a love of learning and greater independence towards within their learning.
- Students will demonstrate gains in communication, literacy and numeracy skills.

Yellow/Green/Blue pathways:

Intent:

- To experience activities that develop understanding of themselves and how their body works.
- To experience activities that expand knowledge of animals, plants and our environment.
- To experience activities that explore different materials and their everyday uses.
- To experience activities that expand knowledge of electricity, forces, magnets, Space, sound and light.
- Students will make progress in developing early thinking skills and take part in practical experiments and investigation activities.
- Students will develop some scientific vocabulary.
- Students will develop functional skills which they can apply to everyday life.
- Students will experience some aspects of careers that involve science.
- Students will make gains in complementary accreditation routes.
- Students will be curious and independent learners.
- Develop early communication, literacy and numeracy skills.

Implementation:

- Led and overseen by the curriculum lead for science
- Subject specific learning
- Delivery of a progressive curriculum
- Science is taught as a termly topic focussing upon knowledge and skills stated in the national curriculum
- All learning is enhanced by revisiting prior knowledge

- The school guidance template for lesson planning structure ensures students are supported to review, consolidate and build upon prior knowledge.
- Key Stage 3 units revisit previous learning from earlier key stages before extending learning in each topic.
- Key Stage 4 is taught via the AQA unit award scheme in science
- At Key Stage 3 & 4 the investigation cycle is used to develop skills of working scientifically.
- Learning is supported by knowledge organisers to support students' retention of new facts and vocabulary.
- Various learning experience outside of the classroom are employed.
- Learning is supported by visual aids; Makaton, PECS, board maker symbols, photographs, written word.
- Collaborative learning, to develop individuals use of the behaviours for life and learning.
- Explicit careers related information is shared with students throughout their learning.

Impact:

- Students will demonstrate progress in their awareness and understanding of science concepts in the world around them.
- Students will develop simple problem-solving skills using thinking and sorting skills.
- Students will demonstrate progress in using basic scientific language.
- Students will develop basic functional skills which they can apply to everyday life
- Students will show a love of learning and greater curiousity towards within their learning.
- Students will demonstrate progress in their communication, literacy and numeracy skills
- Students will demonstrate gains in accreditation (AQA Unit Award Scheme)

Indigo/Violet pathways:

Intent:

- Develop sense of self awareness
- Develop awareness of key people and places around them
- Develop an interest in the people and world around them
- Develop an ability to gain attention of others
- Develop a recognised means of expressing wants/needs

- Develop patience and resilience to persevere with waiting for requests to be responded to/understood
- Development of engagement; develop engagement areas of; exploration, realisation, anticipation, persistence and initiation.

Implementation:

- Led and overseen by the curriculum lead for science
- Highly differentiated curriculum focussed upon developing individual skills within a medium of a topic.
- Explore science topics and experiences with opportunities to develop skills of exploration, realisation, anticipation, persistence and initiation.
- Experience multi - sensory activities.
- Encounter a range of sounds/textures/tastes/smells.
- Experience a range of creative activities, role play and sensory stories.
- Working collaborative with peers to develop social skills and increase awareness of social interactions.
- Repetition of activities to consolidate individual students' achievements.
- The school guidance template for lesson planning structure ensures students are supported to review, consolidate and build upon prior achievements.
- Key Stage 3 is taught in termly units, to provide topics to guide learning.
- Key Stage 4 is taught via accredited units (AQA Unit Award Scheme)
- SMSC is threaded through the curriculum

Impact:

- Developed sense of self awareness
- Developed awareness of key people and places around them
- Developed an interest in the people and world around them
- Developed means of communication (to gain attention/express wants/dislikes).
- Developed patience and resilience to persevere with waiting for requests to be responded to/understood
- Made gains in their development within areas of engagement; exploration, realisation, anticipation, persistence and initiation.
- Made progress towards outcomes identified with their education and health care plans.