Curriculum Mapping Document
Science: Physics

Our whole School curriculum intent believes:

At Ercall Wood Academy our students will experience a highly personalised, modern curriculum, rich in variety and diversity, yet underpinned by traditional values.
The structure of our curriculum design is presented within two different documents. Firstly, our curriculum map, which outlines subjects studied at Key Stage 3 and Key Stage 4. Secondly, our five year curriculum overviews which specify the intent, implementation and impact of each individual subject.

Our curriculum is challenging and designed to help to address social injustice by providing our students with the essential core knowledge and skills that are commonly possessed by successful citizens which will enable them to positively contribute to their community. No child will be disadvantaged by our curriculum. At both KS3 and KS4 our curriculum is underpinned by our whole school values:

- **Believe** - **Achieve** - **Succeed**

We ***believe*** in our students and through our challenging yet broad curriculum we will engender ***self-belief*** in our students. Through inspirational and innovative teaching of our curriculum, we will instil a drive in them to ***achieve*** and become the very best that they can be, preparing them for ***success*** in life. Our curriculum aims to develop the whole person and the talents of the individual and to allow all students to become active and economically self-sufficient citizens.

The key priorities within our challenging and broad curriculum are:

- To provide an ambitious curriculum for all students which contains the necessary range of knowledge, skills and experience that prospective employers demand from their candidates.
- To deliver high quality cross curricular project-based learning to further develop students 21st century employment skills such as critical thinking, problem solving, communication, collaboration and innovation.
- To create an inclusive environment based on the core principles of equality and respect.
- To explore and clarify student beliefs and values and help them to learn to think and speak for themselves.
- To ensure that our curriculum develops skills for learning, life and work by making learning relevant and helping students apply lessons to their life beyond the classroom.
- To ensure that our curriculum incorporates regular retrieval practice to strengthen memory and maximise cognitive development.

- To inspire our students to succeed through the challenge and enjoyment of learning and to respect themselves, their community and the environment in which they are an integral part.

Enrichment Opportunities

We believe that opportunities to bring the curriculum to life should be integral. We passionately believe that our students should sample a wealth of exciting new experiences to broaden their horizons, open doors of opportunity, hope and aspiration for all, regardless of their circumstances. Our enrichment activities aim to further equip students with the knowledge and cultural capital they need to succeed in life.

Our intention for our curriculum is:
"Science is simply the word we use to describe a method of organising our curiosity" - Quote by Tim Minchin

Some may find the idea of studying science daunting but it shouldn't be. Science is awe-inspiring and an essential part of human life. Our curiosity to understand and use the powers and gift of nature to our will is always supported by Science. Every new medicine or piece of technology needed the work of many scientists to make it happen. In the internet age we are bombarded with information, some of which may be inaccurate. Science teaches us to be critical of information and gives us the thinking tools to reach our own conclusions. Good scientists can make the undiscovered general knowledge and be a part of taking human understanding to the next level.

Our Key Stage 3 Scheme of Learning has been developed internally to provide a sound bridge between Key Stages 2 and 4. Using as many real-world contexts and practical applications as possible, in years 7 & 8 students study a range of content arranged in topical areas. They also learn about Working Scientifically through specific Ideas about Science learning, which involves developing explanations, arguments and making decisions as well as practical enquiry. We aim to develop pupils' curiosity by incorporating fascinating experiments into lessons.

We are a lead school for the Let's Think Secondary Science project (LTSS) for which pupils undertake a series of 'thinking lessons'. These lessons take key themes such as scientific relationships and ratios and challenge pupils to extend their thinking. Our aim, by delivering these lessons, is to increase pupils' resilience and independent thinking. We believe this enhances pupil's capacity to understand the subject and think beyond their immediate learning and so attain higher grades.

During the Year 9 pupil follow a KS3/4 transition programme; this is designed to ease their movement into the GCSE phase by ensuring they have a good grasp of the key science skills and can Work Scientifically. Initially pupils complete a range of STEM projects. These provide opportunities for pupils to explore science in context; researching and using the information they find to solve problems and undertake experiments. Example projects include planning

a way to solve the air quality crisis or tackling obesity. Pupils are required to develop the skills they need to make and justify evidence-based decisions. They will plan and carry out experiments to collect data and then analyse that data to draw conclusions.

Students at Key Stage 4 follow OCR 21st century science course completing either two GCSEs, as Combined Science or, for those more motivated or able, three GCSEs as Biology, Chemistry and Physics (Triple Science). During Key Stage 4, pupils will continue to apply the skills they learned at Key Stage 3 and use them to study Science in greater depth, revisiting many of the key concepts and meeting new ones. We aim to prepare pupils for a life of problem-solving and evidence-based reasoning, whether they choose to study the Sciences further or not.

Linking our curriculum intention to our local community and real-life links to content:

The curriculum, through enrichment and real-life experiences during the school day and within enrichment opportunities, will maximise the use of the local area. We will link our curriculum to the following:

- Real-world applications of science such as health, energy use and climate change
- Using information to make decisions, especially in when benefits must be compared to risks, such as when considering medical procedures
- Using information when making ethical decisions
- Practical uses of science by linking with businesses and taking part in competitions, especially for STEM
- Practical uses of science linked to programming, such as for the Lego robots competition
- Taking part in Science Week each year by introducing activities to KS3 lessons linked to the national theme.

Implementation

Year 7 Curriculum implementation							
1	2	END POINT TEST & THERAPY	3	4	5	6	END POINT TEST & THERAPY

Year 8 Curriculum implementation							
1	2	END POINT TEST & THERAPY	3	4	5	6	END POINT TEST & THERAPY

Year 9 Curriculum implementation							
1	2	END POINT TEST & THERAPY	3	4	5	6	END POINT TEST & THERAPY

Year 10 Curriculum implementation							
1	2	END POINT TEST & THERAPY	3	4	5	6	END POINT TEST & THERAPY

Year 11 Curriculum implementation							
1	2	END POINT TEST & THERAPY	3	4	5	6	END POINT TEST & THERAPY

Impact of our curriculum: