This bit is front and centre for the Website.

Audience is external visitors, parents, prospective parents…Ofsted.

This will link to work completed on the 3I's already….what is your subject about, why does it matter so much and how do you go about delivering it.

What is Science?

Science is a systematic, evidence-based way of studying and understanding the physical universe. Developed over centuries and across diverse cultures, it is taught at Hasmonean as a rigorous academic discipline through biology, chemistry and physics — mastering the essential knowledge, methodology, processes and practical applications that describe the natural laws governing the physical world.

Why do we teach Science at Hasmonean?

We develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics, promoting a rational, evidence-based approach to enquiry in which pupils recognise the power of empirical explanation.

While our lessons focus on secular, academic content, the study of the physical world beautifully complements our school motto, *Torah Im Derech Eretz* (the synthesis of Torah values with worldly knowledge). Contemplating the wonders of the universe can be a profound source of inspiration. As Maimonides (the Rambam) wrote:

> *"What is the path to love and awe of Him? When a person contemplates His wondrous and great deeds and creations, and appreciates His infinite wisdom from them, he will immediately love, praise, and glorify Him…"*

In line with the teaching *"Al tikrei baneicha ela bonayich"* (do not read 'your children', but 'your builders'), we see our pupils as the future builders of their families, communities and the wider world. A robust foundation in STEM equips our young women to navigate the modern world with confidence, intellectual curiosity and the academic excellence needed to make meaningful professional contributions.

How do we teach Science at Key Stage 3?

At Key Stage 3 (Years 7–8), pupils engage in dedicated lessons across biology, chemistry and physics, with the common skills of working scientifically seamlessly incorporated across all three disciplines and developed through a comprehensive series of required practicals in our specialist laboratories.

Taught content is structured around the core 'big ideas' of science — Forces, Electromagnetism, Energy, Waves, Matter, Reactions, Earth, Organisms, Ecosystems and Genes — scaffolded across the key stage to build a progressive, deep understanding of physical laws. To ensure age-appropriate delivery, the topic of Human Reproduction is taught in Year 8.

How do we teach Science at Key Stage 4?

Science is a compulsory core subject at Key Stage 4, and all pupils continue to GCSE, building critical scientific literacy. Their study builds on and deepens the knowledge and skills developed at Key Stage 3, weaving experimental design, data analysis and scientific enquiry throughout. Pupils follow one of two pathways:

- **Combined Science (Trilogy):** a dual-award pathway covering all three disciplines, resulting in two GCSE qualifications.
- **Separate (Triple) Sciences:** separate Biology, Chemistry and Physics GCSEs, taught in dedicated, smaller groups covering the additional extended content required for three qualifications.

To match the maturity of our pupils, the topic of Contraception is taught in Year 10. Before teaching the GCSE evolution content, we coordinate with the Jewish Studies department, who arrange sessions with rabbinic experts to provide theological context — gently addressing common misconceptions, such as the mistaken belief that Torah and evolutionary science are inherently incompatible, so pupils enter their lessons comfortable and ready to learn the models required for their examinations.

Exam board: Pupils follow the **AQA** specifications — GCSE Biology (8461), Chemistry (8462), Physics (8463) and Combined Science: Trilogy (8464).

How do we teach Science at Key Stage 5?

We offer A Level Biology, Chemistry and Physics, delivered by specialist teachers who integrate theory with practical application. Each course develops critical thinking, mathematical fluency and experimental skill — accurate measurement, data analysis and experimental design — and prepares pupils for competitive university courses and careers in fields such as medicine, dentistry, engineering, pharmacy and research. Pupils complete twelve required practicals in each subject towards a practical endorsement; where the endorsement does not contribute directly to the final grade, examination papers still assess experimental technique, variables and data analysis closely.

Exam boards: Biology and Physics follow the **AQA** specifications. Chemistry is transitioning to AQA: the current Year 12 cohort completes its A-level studies under the **Edexcel** specification, while all incoming Year 12 cohorts follow the **AQA** Chemistry specification.