

# SCIENCE

If you find yourself asking questions such as 'how does that work?' or 'why does my body do that?', then you will love science, particularly here at Thomas Mills High School. Our aim is to develop your interest and enthusiasm in Biology, Chemistry and Physics. By the time you finish Science at Thomas Mills you will be able to apply new skills, knowledge and understanding of how science works and its essential role in society.

The Thomas Mills Science Department has an outstanding reputation for excellence and this reflects the commitment and professionalism of the teachers who make up the Department.

## Key Stage 3

In Years 7 & 8 a comprehensive science course is taught to groups banded by ability (3 periods per week). Our aim at KS3 is to build knowledge and provide excellent learning opportunities in order to prepare our students for KS4 and beyond. Students are regularly assessed by their work in class and end of topic tests. End of year exams provide students, parents and us with essential information on progress.

## Key Stage 4

Our intention at Key Stage 4 is to identify the activities and experiences that you will find useful in everyday life, and link these to scientific ideas and their implications for society. This course provides you with the opportunity to acquire the scientific skills, knowledge and understanding necessary for life as an informed citizen

All students will study a common GCSE Science programme in Year 9 comprising of 2 periods of Biology, Chemistry and Physics each week. Formative internal assessments at the end of Year 9 will determine future GCSE routes in Years 10 & 11; these will be either science or separate subject award GCSEs.

## Examinations

These GCSEs are both linear with assessment at the end of the three-year course in year 11. The courses are 100% exam based with the complete removal of controlled assessments.

- **Combined Science:** 6 exams in total (2 exams per subject), each with a weighting of 16.7%
- **Separate Sciences:** 2 exams per subject, each with a weighting of 50%

The scheme of assessment will consist of two tiers: foundation tier and higher tier. Foundation tier assesses grades 5 to 1 and higher tier assesses grades 9 to 4.

## Practical requirements:

The new GCSEs will require pupils to carry out a minimum of eight practical activities for each single Science and sixteen practical activities for Combined Science. Practical activities are embedded throughout the teaching topics. The development of practical skills is a fundamental and integral aspect of the study of any scientific subject which will help pupils throughout their course in preparation for the written examinations.

## Content

	Y9		Y10		Y11	
	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6
Biology	B1: Cell level systems	B2: Scaling up	B3: Organism level systems	B4: Community level systems	B5: Interaction between systems	B6: Global challenges
Chemistry	C1: Particles C2: Elements, compounds and mixtures	C4: Predicting and identifying reactions and products	C3: Chemical reactions	C5: Monitoring and controlling chemical reactions	C6: Global challenges	
Physics	P1: Matter	P2: Forces	P3: Electricity P4: Magnetism and magnetic field	P5: Waves in matter P6: Radioactive decay – waves and particles	P7: Energy	P8: Global challenges

**Sixth Form** - See separate Department notes

### Beyond the classroom....

As part of the national science and engineering week the science department offers pupils a range of activities. Some of the activities included: lunchtime 'brainiac' style explosions and other interesting activities. In addition, during lesson time pupils had the opportunity to compete science challenges and a school science competition.

During the summer term, the science department offer an after school science club. Pupils are given the opportunity to take part in amazing science experiments and understand the theory behind them.

The Science Department is keen to allow pupils to experience the wider aspects of science. Throughout the course of the year we provide opportunities for students to experience real-life science, such as visits to the Big Bang Fair in Chelmsford and the Salters Festival of Chemistry at the UEA.