YOUR SCHOOL JOURNEY

YEAR 7

Science

AUTUMN TERM

- Students begin with transition lessons on scientific skills and how to use key equipment, Students also learn about key scientific discoveries which have informed the science they learn about today such as Robert Hooke discovering the cell and Dalton and the atom.
- In the **Energy** unit, a range of practical activities are used to model energy stores and students will investigate some simple machines that help in our everyday lives.
- In the **Particles** unit, students learn about solids, liquids and gases, their properties and how pressure is caused.
- In the unit on **Cells**, students learn how to use a microscope and build a model cell.
- In the **Elements** unit, students improve their research skills by researching elements and learn how to write up experiments through a range of chemistry investigations.
- Switch off fortnight takes place to highlight the problem of global warming and to explore solutions we can take individually, as a school and as a nation.
- Medical Mavericks have previously visited school to host a "Careers in Health" workshop where students can try keyhole surgery, see inside the body with ultrasound etc.

SPRING TERM

- British Science Week will take place with a series of lessons linking to the yearly theme. Previous examples have included a focus on current topics such as plastic pollution in the oceans.
- **Body Systems** including the reproductive system and digestive systems will be studied with an emphasis on building healthy habits and nutrition.
- Students will apply their understanding of **Forces** to a wide range of practical and real-life contexts, such as friction in sport.

SUMMER TERM

- In the **Acids and Alkalis** unit, chemicals in the real world and their applications will be studied including origins of indicators and how indigestion tablets work.
- In the **Ecosystems unit,** students will investigate how we, collect data on, and classify organisms.
- In the **Space** unit, students learn about the Solar System and the planets within it, including our Earth. They will also find out about the moon.
- Students will also collect data for 'Under Your Feet Week' to link in with the ecosystems unit.
- The enrichment projects at the end of the year are about bees and plants. Where students will look at the importance of bees in our lives and have the opportunity to grow plants.

Regular mini tests, skills activities and summative assessments are used to assess progress throughout Year 7.

YOUR SCHOOL JOURNEY

YEAR 8

Science

AUTUMN TERM

- Transition lessons to develop scientific literacy including debate on fact or opinion and learning to read and write scientific articles.
- **Energy** resources used in the wider world will be studied and evaluated culminating in an extended project designing and building an energy efficient house.
- A series of practical lessons around **Separating Techniques** and their real life applications will be carried out to develop practical techniques.
- In **Cells and Adaptations**, students will learn how organisms adapt to their environment and how this links to natural selection and Charles Darwin's theory.
- In the **Body Systems unit** the effects of drugs upon the body will be introduced with studies on smoking and alcohol, also considering the societal effects of these substances.

SPRING TERM

- British Science Week will take place with a series of lessons linking to the yearly theme. Previous examples have included a focus on current topics such as plastic pollution in the oceans.
- Team work and problem solving skills will be developed in Shipwreck challenge to produce drinkable water.
- In **Electrical Circuits**, students will learn how to design and make a wide range of electrical circuits and develop their knowledge of everyday electrical components.
- In **Forces**, planning skills will be developed with a mini helicopter project and real-life applications of magnets will be investigated.
- In the **Earth** unit, students will look at the different types of rock and how they can change over time as part of the rock cycle.
- In **Metals and Reactivities** series of practical lessons investigating the reactivity of metals will be carried out and pupils will look at case studies on historical metal discoveries and uses.
- The **Earth and Materials** unit will challenge pupils to evaluate the sustainability of the materials they use.

SUMMER TERM

- In **Ecosystems 2** students carry out extended field work as well as completing an individual project on extinction.
- Students will collect their second set of data for "What's under your feet week".
- In the **Light and Sound** units, students will look at different types of wave. They will investigate how we see colour and the important uses of ultrasound.
- A Bird of prey workshop will be held in school to look at features and adaptations of these birds, linking in with the Ecosystems unit.

Regular mini tests, skills activities and summative assessments are used to assess progress throughout Year 8.

YOUR SCHOOL JOURNEY

CARPE DIEM

YEAR 9

Science

AUTUMN TERM

- Students begin with Transition lessons looking at the fundamental skills and knowledge encountered in Biology, Chemistry and Physics during year 7 and 8.
- The structure and function of **Cells** will be revisited and key experiments investigating movement of substances will be carried out as well as microscopy. The use of different types of microscopes in the real world will be considered.
- Students will develop their practical skills in the **Reactions Role play** unit through investigating key reactions in Chemistry.
- The first Explore and Discover Project is a CSI investigation which will introduce pupils to forensic techniques and improving problem-solving skills and experimental accuracy
- The behaviour and arrangement of **Particles** will be revisited with a focus on developing calculation and extended writing skills. Key experiments on pressure and density will be carried out.

SPRING TERM

- British Science Week will take place with a series of lessons linking to the yearly theme. Previous examples have included a focus on current topics such as plastic pollution in the oceans.
- Diseases and **Healthy lifestyles** will be covered along with a series of lessons on key scientific discoveries such as vaccinations.
- Students will carry out a study of **Waves** in the context of light, sound and space.
- In **Chemistry in our Lives**, key elements and their properties will be investigated through a series of practical lessons. Other areas covered include **Atomic Structure** and the **Periodic Table** with a focus on uses and reactions of elements, with a case study on graphene. This will continue into the summer term.
- Medical Mavericks have previously visited our Year 9 students to host a “Challenge the Champions” workshop where students can test their speed, strength, stamina and co-ordination.

SUMMER TERM

- Students carry out their second Explore and Discover Project on Diagnosis of Disease which will enhance research and practical skills set in the context of a hospital department.
- In the **Electricity** unit, students will further investigate key electrical components and write conclusion based on their findings. They will study the mathematics in volved with different types of circuit.
- In the **Biological Discoveries** unit, students will evaluate and debate the ethics of some newer topics such as genetic engineering, infertility treatments, the uses of stem cells and organ transplants.

Mini tests, skills activities and larger summative assessments are used to assess progress throughout Year 9

BUILDING EXCEPTIONAL YOUNG MEN