Norbury Manor Business & Enterprise College *for* Girls

Business & Enterprise

Curriculum Detail: Science

In Year 7, students study organs, tissues and growth in biology, become familiarised with the microscope and complete a project on cells. They look at inherited and environmental variation, selective breeding, the structure and function of the human reproductive system and the difference between identical and non-identical twins. Students learn about photosynthesis and why chlorophyll and light are so important for this process. The adaptation of leaves and the identification of plants by group are examined along with the modelling of feeding relationships and the interdependence of living things.

In chemistry, students examine acids, alkalis and bases. They look at strategies for neutralizing problem soil and investigate the effectiveness of antacids. Students learn about the properties of solids, liquids and gases along with the particle model, filtration, distillation, chromatography and diffusion.

In the Year 7 physics component, students look at friction, forces and gravity. They use Archimedes' story as a basis for considering the scientific method. The Describing Motion project gives them an opportunity to look at speed, acceleration, distance, deceleration and speed-time graphs; satellites and the solar system are examined in the Earth and Space unit.

In Year 8, the parts of the human body are considered in biology along with the functions of the organs. A digestion project offers students a chance to look at the way food is processed in the body, different food groups, enzymes and food tests. Students also learn about balanced diets, exercise, heart rate, microbes and disease.

In chemistry, students study the reactivity series, displacement reactions and chemical equations. They learn about the environment, pollution, global warming and climate change. Elements, compounds and mixtures, melting, freezing, condensing, boiling and evaporation are also examined.

Electricity and circuits are considered in the Year 8 physics component; students look at series and parallel circuits, voltage and current. Students examine conduction, convection, radiation and insulation. The Sound and Light project gives them an opportunity to look in detail at light and sound waves and their respective speeds of travel.

Students in Year 9 are taught how to stay healthy in biology and examine co-ordination and control, medicine and drugs. The process of evolution is studied in detail along with biomass energy.

In chemistry, students study rocks and building materials, metals and their uses, crude oil and other fuels and look at the way the planet is changing.

In physics, students are taught about energy and how it is transferred through heating. Electrical energy and its generation is studied along with electromagnetic waves.

Students in Year 10 look at cells, tissues and organs in greater depth as part of the biology component. They examine organisms in the environment, enzymes, energy from respiration, look at old and new species and learn more about inheritance in animals and plants.

In chemistry, students study chemical structure, bonding and properties, moles and equations, reaction rates, salts and electrolysis.

In physics, students study motion, forces, work, energy and momentum. Further topics include the nature and use of current electricity, nuclear energy and radioactivity.

In Year 11, all students complete a controlled assessment.

In biology, students look at the exchange and transportation of materials, homeostasis and the effect humans have had on the environment.

In chemistry, students study the periodic table, organic chemistry, energy calculations, water, analysis and synthesis.

In physics, students look at medical applications, moments, stability and circular motion, magnetic fields and electromagnets.