

## CURRICULUM – Science Spring Term 2

### Key stage 3

#### *What is being taught?*

Year 7 will be starting to look at how different substances interact in chemical reactions and how these reactions are useful for human society.

Year 8 will be investigating the importance of the structure of different chemicals and how this structure relates to the use of the substance. They will then be looking at the importance of carbon chemistry in the development of modern industry and how it has led to increased pollution of our planet.

Year 9 will be looking at how the chemical reactions are important to the development of materials that we use every day. They will then investigate how different chemical techniques are used in different industries to support the development of materials and the investigation of criminal activities.

#### *How is it being taught?*

Year 7 will be completing practical sessions to get to use different pieces of science equipment and apparatus.

They will be looking at how safety in the lab is important and the use of safety equipment means that all people are kept safe. They will be collecting experiments that show diverse types of chemical reactions and the role that energy plays in making sure these reactions happen. They will also start to look at how the products of a reaction can be separated and purified for further use.

Year 8 will be continuing to develop their modelling skills by using kits and models they have created themselves to show what is happening in processes that are too small to see with the eye. They will create models for the internal structures of varied materials so that they can compare their properties and the uses of varied materials

Year 9 will use their increasing practical skills to carry out chemical reactions that investigate the reactivity of different substances and how this is related to their uses. They will then complete reactions to see how manufacturers can optimise the yield from their chemical reactions to conserve energy, resources and reduce pollution. They will then investigate a crime scene to see how chemical techniques are important in upholding the rule of law.

### Key stage 4

#### *What is being taught?*

Vocational key stage 4 pathway students will be continuing to look at the Forensic BTEC science unit that looks at how crime scenes are investigated as they move towards using their skills to solve a crime.

Academic key stage 4 pathway students will be looking into the genetics of creatures including humans and how the genotype can feed into the phenotypes of distinctive characteristics.

#### *How is it being taught?*

Vocational Key stage 4 students will be investigating the different techniques that the forensic scientists may use to investigate a crime scene. They will look at how the media shows these techniques and how this often leads to misconceptions on the work of the forensic field. They will then use their new knowledge and understanding to investigate a model crime scene to discover who broke into the school.

Academic key stage 4 pathway students will be investigating variability within humanity by collecting data on those within the school and investigating ways to display the data, developing numeracy and statistical analysis skills. We will then use other statistical analysis skills to investigate how genetics can be used to predict the phenotype of varied species. This will include moral and ethical analysis of the development of genetic engineering techniques.