

Science

Cells/Electricity

What will students study?

Students will be studying the AQA Biology and Physics Courses. As part of each unit, they will complete a required practical which they will be expected to be able to describe, draw conclusions from and evaluate in their assessments.

Cells - Biology Topic 1

Students will build upon their understanding of Cells from Year 7 by exploring the differences between eukaryotic and prokaryotic cells, describing cell division and specialisation and evaluating the ethical concerns surrounding stem cell research. They will carry out their first required practical by examining plant and animal cells using a microscope, focusing on describing the method and calculating magnification.

Electricity - Physics Topic 2

Students will begin their Physics GCSE course with a unit on Electricity (Unit 1 will be delayed until later in the year, when students have gained the mathematical skills to complete some of the more challenging mathematical requirements of the course). The students will learn about static electricity, how potential difference, current and resistance behave in series and parallel circuits, how to calculate resistance and electrical power and how electricity is transmitted to our homes. The two required practicals involve setting up circuits using circuit diagrams and investigating how temperature affects resistance. They will need to be able to apply their knowledge of circuit symbols and resistance calculations to these practical investigations.

What will homework be?

Homework will be set regularly by the class teacher. The homework is designed to consolidate the knowledge and skills learned in lessons. Students will be expected to complete worksheets on the cell structures, cell division, stem cells, circuit symbols, current, potential difference, resistance, power and transmitting electricity.

How you can help?

To support your child please use the knowledge organisers and the following websites to test your student on the key words and concepts:

Science

The Atomic Model and the Periodic Table

What will students study?

Students will be studying the AQA Chemistry Course.

The Atomic Model and the Periodic Table - Topic 1

Students will learn about the history of the atomic model and explain how Scientific ideas change over time. They will be expected to draw the electronic structure of different atoms and link this to their position in the periodic table. They will be learn the properties, trends and reactions of the elements of different groups in the periodic table. There will be a focus on writing word and balanced symbol equations for each reaction. There is no required practical for this unit however, students will be given the opportunity to carry out a range of experiments to reinforce their understanding of the content.

What will homework be?

Homework will be set regularly by the class teacher. The homework is designed to consolidate the knowledge and skills learned in lessons. Students will be expected complete worksheets on electronic structure, the trends of the periodic table and displacement reactions.

How you can help?

To support your child please use the knowledge organisers and the following websites to test your student on the key words and concepts:

Science

Energy

What will students study?

Students will be studying the AQA Physics. As part of each unit, they will complete a required practical which they will be expected to be able to describe, draw conclusions from and evaluate in their assessments.

Energy - Physics Topic 1

As an introduction to this unit, students will recap their understanding of energy from Year 8. They will then learn how to calculate and explain the interaction between kinetic, gravitational potential and elastic potential energy. They will then learn about energy transfers, efficiency, dissipation of energy and work done. They will spend a week investigating specific heat capacity; this required practical is particularly challenging as students will be expected to carry out complex calculations and apply their understanding from other topics in order to complete the experiment. Students will then learn about different energy resources and evaluate the use and sustainability of renewable and nonrenewable energy.

What will homework be?

Homework will be set regularly by the class teacher. The homework is designed to consolidate the knowledge and skills learned in lessons. Students will be expected complete worksheets on each topic within the unit. A major portion of this unit is the introduction of several equations which students will need to memorise for their GCSEs. It is expected therefore that students dedicate time to learning and practicing these equations as they will be regularly tested.

How you can help?

To support your child please use the knowledge organisers and the following websites to test your student on the keywords, equations and concepts:

Science

Photosynthesis

What will students study?

Students will be studying the AQA Biology. As part of each unit, they will complete a required practical which they will be expected to be able to describe, draw conclusions from and evaluate in their assessments.

Photosynthesis - Biology Topic 1

Students will build upon their understanding of photosynthesis from Y8; they will be expected to describe photosynthesis as a word and balanced symbol equations, describe and identify the limiting factors and explain how leaves are adapted to carry out photosynthesis. The required practical involved students investigating how different factors affect the photosynthesis of pondweed; the emphasis will be on describing the method and identifying the variables. The students will apply their understanding of photosynthesis to describe the challenges of increasing food production with an ever increasing population and limited land space. They will also learn to describe and explain how water, gases and sugars are transported through a plant.

What will homework be?

Homework will be set regularly by the class teacher. The homework is designed to consolidate the knowledge and skills learned in lessons. Students will be expected complete worksheets on each topic within the unit. A major portion of this unit is the introduction of new terminology which students will need to memorise for their GCSEs. It is expected therefore that students dedicate time to learning this terminology as they will be regularly tested.

How you can help?

To support your child please use the knowledge organisers and the following websites to test your student on the keywords, equations and concepts:

Science

Bonding

What will students study?

Students will be studying the AQA Chemistry course. As part of each unit, they will complete a required practical which they will be expected to be able to describe, draw conclusions from and evaluate in their assessments.

Bonding - Chemistry Topic 2

This is an important Chemistry unit, as a sound understanding of bonding is necessary to access the content of the rest of the Chemistry GCSE course. Students will be introduced to ionic, covalent and metallic bonding; they will learn how to draw dot and cross diagrams, how to calculate ionic charges and how to determine molecular formulae. They will be expected to describe and explain the properties of each type of bonding. They will also learn about giant covalent structures and be expected to compare their properties to those of simple covalent molecules. At the end of the unit, students will learn about the emerging technology of nanoparticles and their potential applications.

What will homework be?

Homework will be set regularly by the class teacher. The homework is designed to consolidate the knowledge and skills learned in lessons. Students will be expected to complete worksheets on each topic within the unit. A major portion of this unit is being able to draw the diagrams for ionic and covalent bonding. It is expected therefore that students dedicate time to learning and practicing these diagrams as they will be regularly tested.

How you can help?

To support your child please use the knowledge organisers and the following websites to test your student on the keywords, equations and concepts: