Assessment & tests End of unit tests

Exam practice for each unit

Required practical activities in

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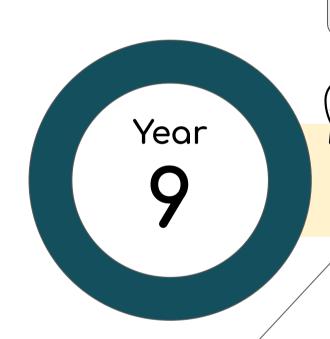
→

lesson

What is your learning journey for Year 9 Science?

exercise and metabolism.

would not be here.



This unit covers some of the key skills that you will use in Science:

- The maths skills that are used in science ٠
- How to draw and analyse graphs
- Identifying variables
- How to carry out an investigation .
- How to evaluate your work .

Useful websites

- → **BBC Bitesize**
- → mrrscience.com
- GCSEPod →
- → Oak Academy
- → Educake

Content - Electrical charges & fields, current, voltage, resistance, power, circuits, National grid.

Enquiry skills

Content - Cells, specialised cells, microscopy, cell

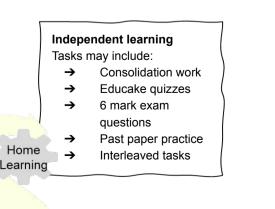
Bigger Picture Focus – To understand how knowledge

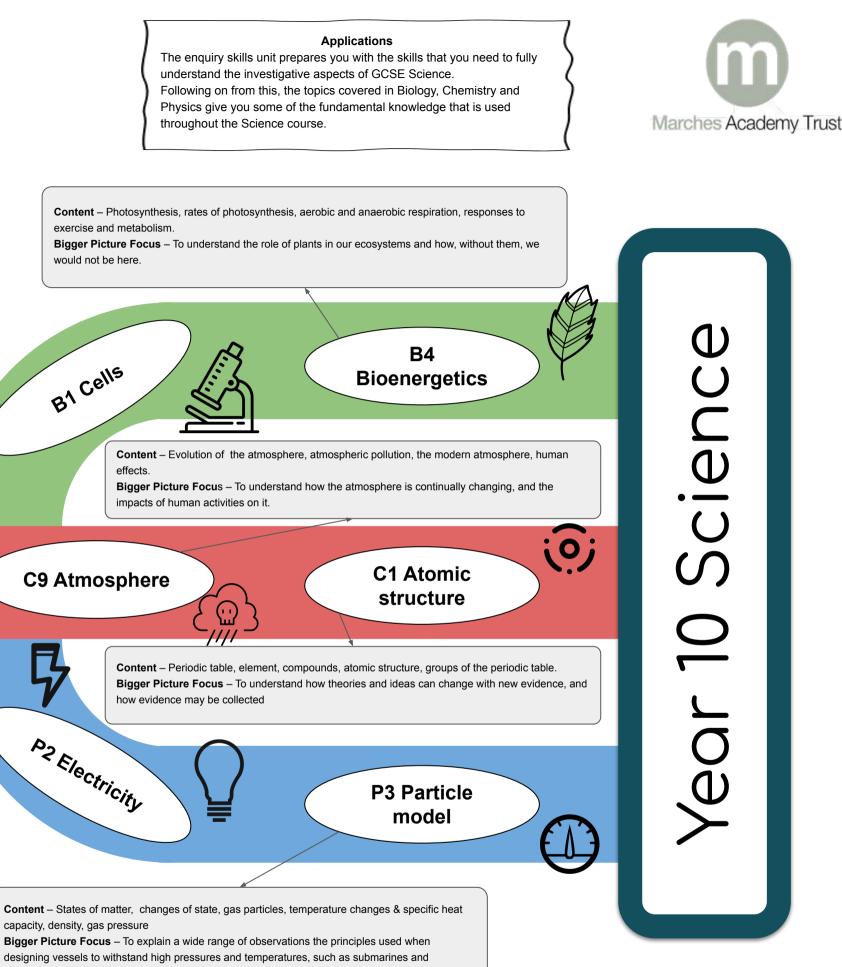
of the fundamental building blocks that make up living organisms and can lead to the development of therapies

division, stem cells and transport in cells.

to cure diseases.

Bigger Picture Focus - To understand how demands on electricity production are increasing and leading to the need to build more power stations - is there a sustainable answer?





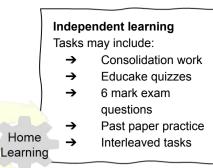
capacity, density, gas pressure

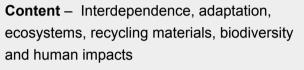
designing vessels to withstand high pressures and temperatures, such as submarines and spacecraft

> Keep reviewing the work from these topics as you go through the year - it will help you to understand the work in Year 10 & Year 11.

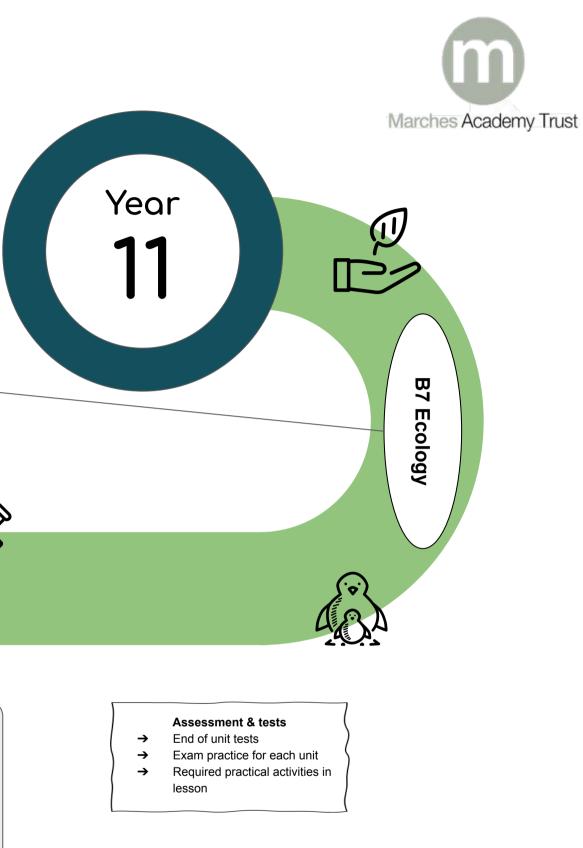
What is your learning journey for Year 10 **Triple Biology?**

Content - Pathogens and the diseases they cause, human defences and the immune response, vaccination, antibiotics, drug discovery and development. Bigger Picture Focus – To examine the different types of diseases and ways we can prevent their spread and treat them to save lives around the world





Bigger Picture Focus – To consider the impacts our actions have on other organisms and ways we can make positive changes.



B3 Disease

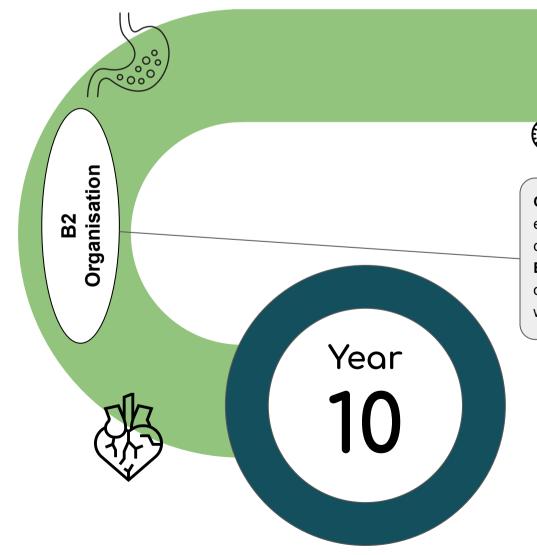
Content - Levels of organisation, food, digestion, enzymes, heart and blood, cardiovascular disease, cancer, plant organs and plant transport Bigger Picture Focus - To link how understanding how our bodies work enable scientists to develop a variety of ways of treating diseases.

Useful websites

- BBC Bitesize →
- mrrscience.com →
- GCSEPod →
- → Oak Academy
- → Educake

In year 10, you will learn about how different body systems work to keep you healthy and how the food you eat fuels your body. You will learn about the transmission of disease, how your immune system protects you, how vaccinations work and why they are important. In the ecology unit, you will see how organisms adapt to the environment that they live in and the way that humans are affecting the planet.

Keep reviewing the work as you go through the year - it will help you to understand the content covered in later topics.

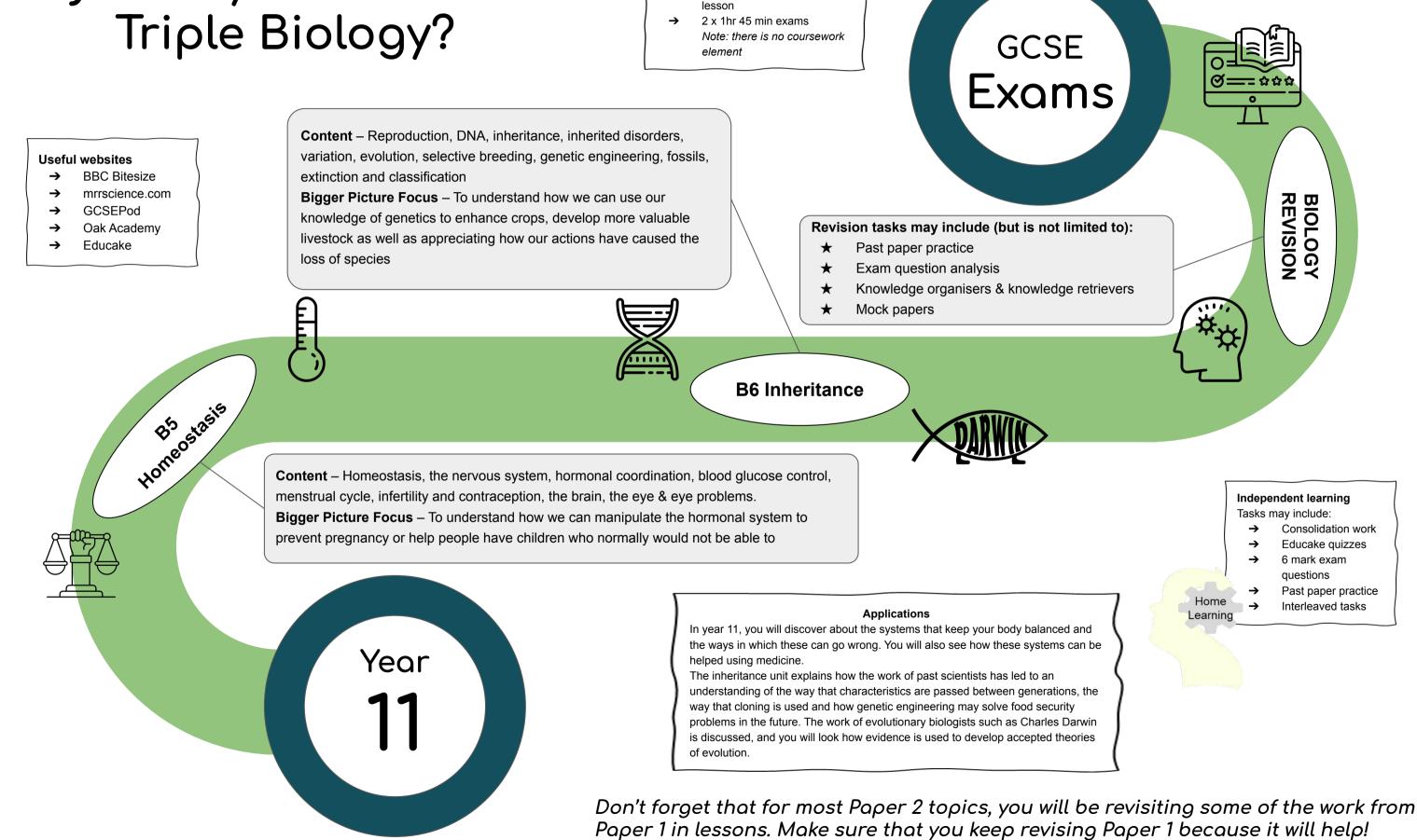


Applications

What is your learning journey for Year 11 Triple Biology?

Assessment & tests

- End of unit tests →
- Exam practice for each unit -> Required practical activities in \rightarrow
 - 2 x 1hr 45 min exams element





What is your learning journey for Year 10 **Triple Chemistry?**

Content – Three states of matter, types of bonding, metals and alloys, structures of carbon, nanoscience.

Bigger Picture Focus – To link understanding of different types of binding with the way that molecules behave, the uses of different compounds and how this is related to the molecular structure

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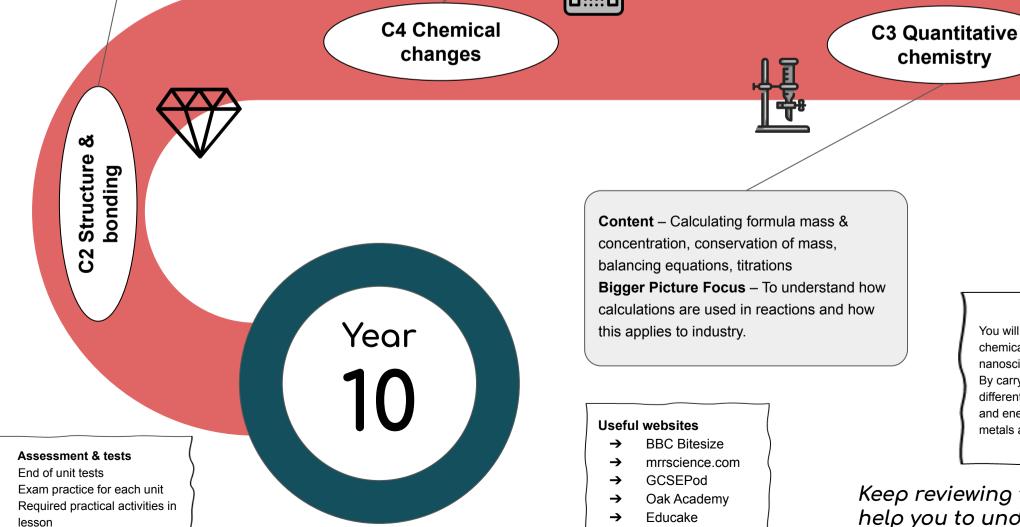
Content – Reactions of metals, acids, alkalis, salts, electrolysis

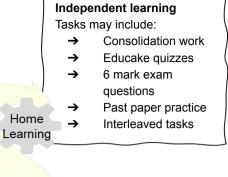
Bigger Picture Focus – To examine the different types of chemical reaction and the ways that humans have used these to extract different metals

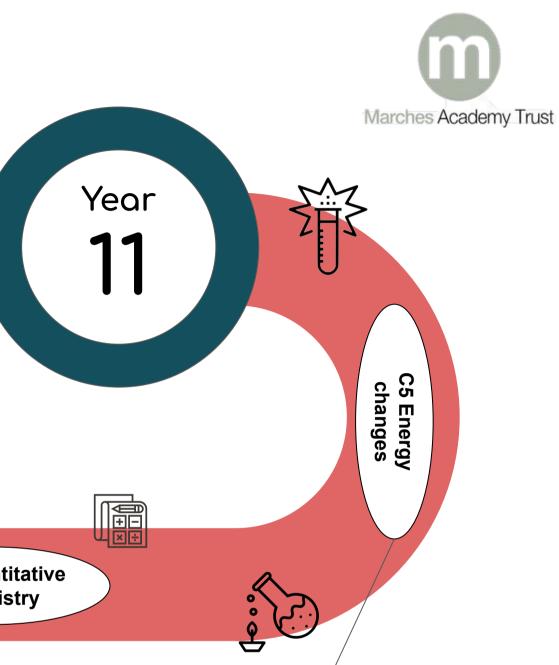
Educake

nanoscience and its possible applications.

Keep reviewing the work as you go through the year - it will help you to understand the content covered in later topics.







Content - Endothermic and exothermic reactions, reaction profiles, fuel cells and batteries.

Bigger Picture Focus – To understand the uses of different types of chemical reaction in everyday life and how chemistry can drive innovation.

Applications

You will investigate the properties of different materials and link this to the type of chemical bond that is found within the molecules, and look at cutting-edge

By carrying out a number of experiments and investigations, you will see how different chemical reactions take place and the way in which both chemical changes and energy changes take place. You will apply this knowledge to the extraction of metals and possible alternative power sources such as hydrogen fuel cells.

What is your learning journey for Year 11 **Triple Chemistry?**

Content - Crude oil, hydrocarbons, homologous series, polymers **Bigger Picture Focus** – To link the structure of different hydrocarbon molecules and their homologous series to their uses and how these apply to the real world.

Assessment & tests

- \rightarrow End of unit tests
- Exam practice for each unit Required practical activities in →
- lesson 2 x 1hr 45 min exams Note: there is no coursework element

Content - Chromatography, gas tests, pure substances and mixtures, ion tests, instrumental methods

Bigger Picture Focus – To show how chemistry is used in the real world to identify substances by their characteristics

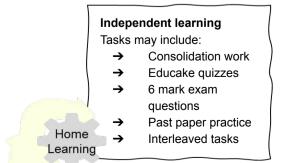
Revision tasks may include (but is not limited to):

- Past paper practice \star
- \star Exam question analysis
- * Knowledge organisers & knowledge retrievers
- Mock papers \star

C8 Chemical analysis

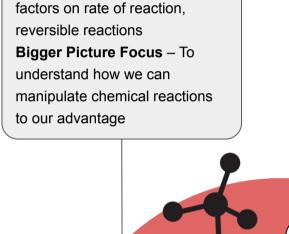
Content - Recycling, water, reducing use of resources, finite and renewable resources, materials, the Haber process, fertilisers

Bigger Picture Focus – To understand how we can use our knowledge of chemistry to determine our overall effect on the planet, and how chemistry can be used to overcome problems such as supplying food to an increasing population



reaction will give an insight into this. do you know which one? overall effect on the planet.

Don't forget that for most Paper 2 topics, you will be revisiting some of the work from Paper 1 in lessons. Make sure that you keep revising Paper 1 because it will help!



of

C6

reaction Rates

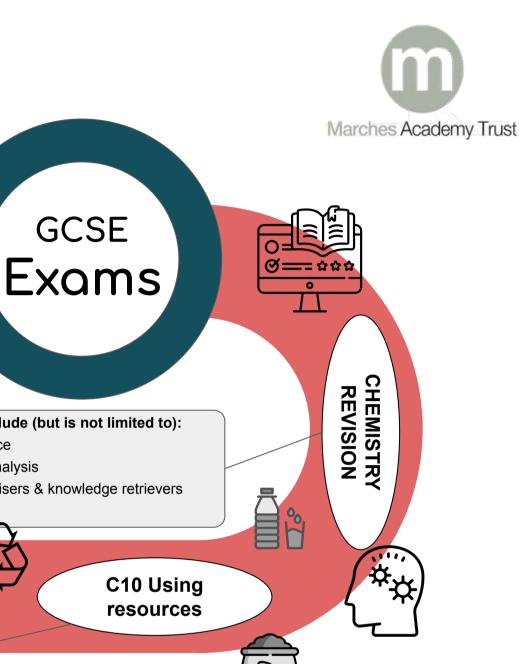
Content - Effect of different



Year

Useful websites

- **BBC Bitesize** \rightarrow
- → mrrscience.com
- GCSEPod →
- → Oak Academy
- → Educake



Applications

Industrial chemical reactions rely on a fast rate of reaction to maximise profits. Looking at the factors that affect the rate of simple reactions, as well as reversible

Crude oil is a finite resource with many applications as both a fuel and a source of other chemicals used in a number of reactions.

By analysing chemicals present at crime scenes, the police may be able to track a suspect's movements. Fireworks are different colours because of the metals used -

It's also important that you can use your knowledge of chemistry to determine our

Content – Energy stores, energy calculations, work,

power, renewable and non-renewable energy sources.

Bigger Picture Focus – Limits to the use of fossil fuels

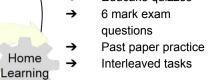
and global warming are critical problems for this century.

Physicists and engineers are working hard to identify

ways to reduce our energy usage.

What is your learning journey for Year 10 Triple Physics?

Independent learning Tasks may include: → Consolidation work → Educake quizzes



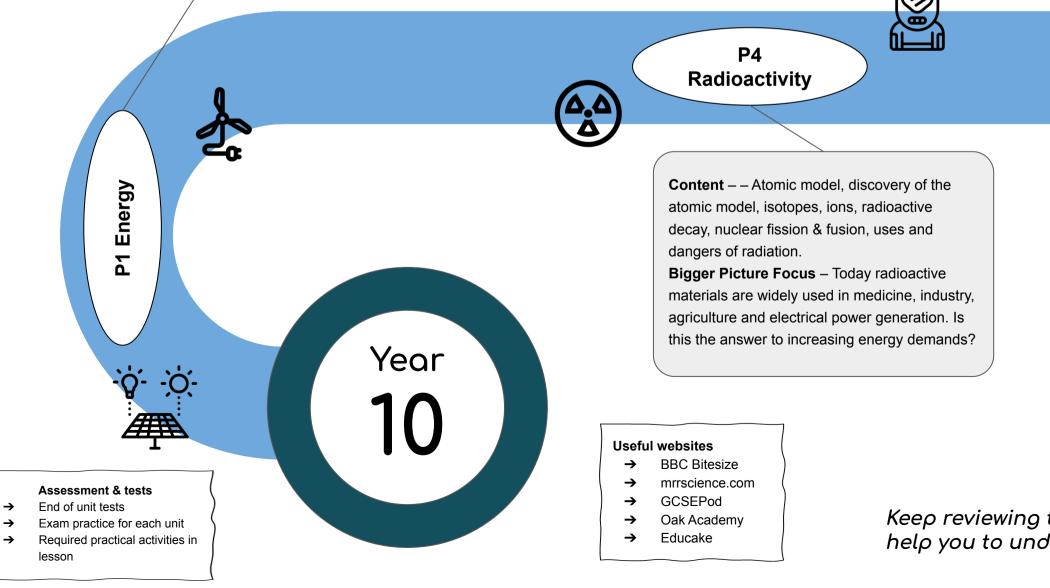
Applications

Human energy consumption is increasing, so it is important that you understand the different ways that these demands can be met, whether by the use of renewable energy resources or through nuclear power stations. There are developments in nuclear fusion reactors, with the aim of giving a 'clean' energy source.

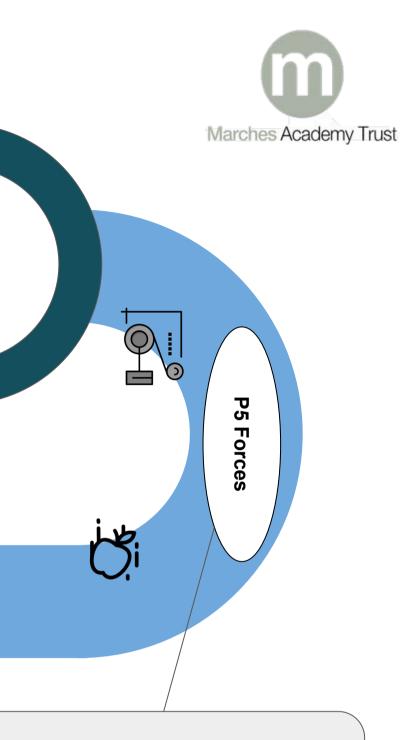
Analysis of forces is used to give vehicles that move efficiently, as well as the determination of momentum being used in crash investigations.



Year



Content – Speed, acceleration, distance-time graphs, velocity-time graphs, contact and non-contact forces, gravity, Hooke's Law, Newton's laws, scalar and vector **Bigger Picture Focus** – Engineers analyse forces when designing a great variety of machines and instruments, from road bridges and fairground rides to atomic force microscopes. Anything mechanical can be analysed in this way. Recent developments in artificial limbs use the analysis of forces to make movement possible.



Keep reviewing the work as you go through the year - it will help you to understand the content covered in later topics.

What is your learning journey for Year 11 **Triple Physics?**

Content - Permanent and induced magnets, magnetic field, electromagnets, motor effect, generator effect, speakers, transformers

Bigger Picture Focus - . Engineers make use of the fact that a magnet moving in a coil can produce electric current and also that when current flows around a magnet it can produce movement. It means that systems that involve control or communications can take full advantage of this.

> |++++

Content – Big bang theory, red shift, life cycle of a star

Bigger Picture Focus – In the past century, there has been remarkable progress in understanding the scale & structure of the universe & its evolution. New questions have emerged recently. 'Dark matter', which bends light and holds galaxies together but does not emit electromagnetic radiation - what is it? And what is causing the universe to expand ever faster?

GCSE Exams



- End of unit tests
- \rightarrow Exam practice for each unit

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- Required practical activities in **→** lesson
- \rightarrow 2 x 1hr 45 min exams Note: there is no coursework element

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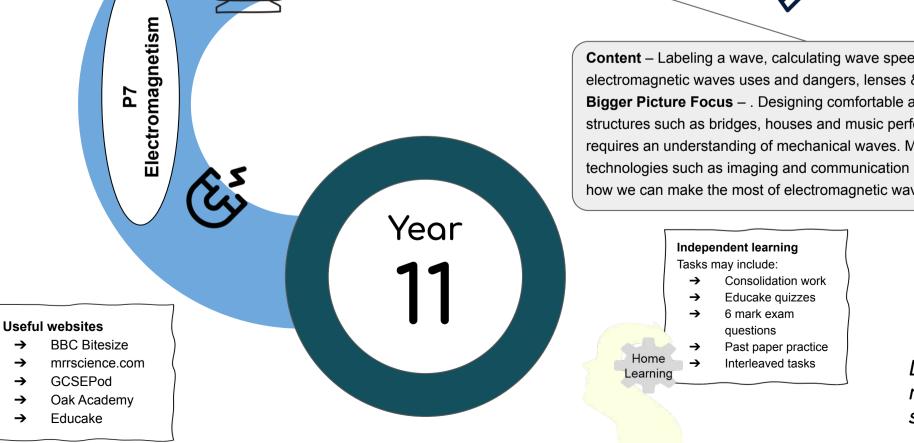
Revision tasks may include (but is not limited to):

- Past paper practice \star
- \star Exam question analysis
- * Knowledge organisers & knowledge retrievers
- \star Mock papers

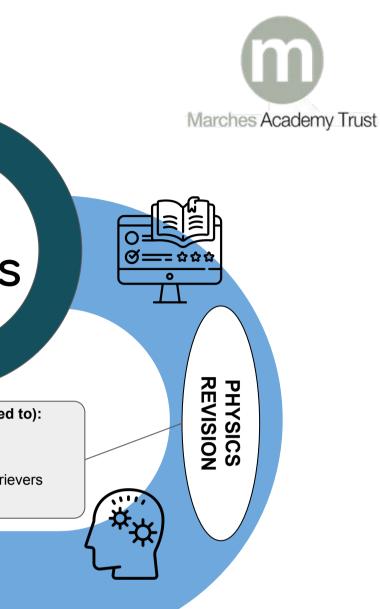
P8 Space (T)

Content - Labeling a wave, calculating wave speed, refraction, electromagnetic waves uses and dangers, lenses & visible light Bigger Picture Focus – . Designing comfortable and safe structures such as bridges, houses and music performance halls requires an understanding of mechanical waves. Modern technologies such as imaging and communication systems show how we can make the most of electromagnetic waves.

Don't forget that for most Paper 2 topics, you will be revisiting some of the work from Paper 1 in lessons. Make sure that you keep revising Paper 1 because it will help!



P6 Waves



Applications

Magnets and electromagnets have a number of surprising uses in everyday life, from loudspeakers to electric motors, bells to transformers. How do these items work? What other applications do magnets have?

Different parts of the electromagnetic spectrum have fundamental role in communication and medicine. The visible spectrum is key to our ability to see, but how do corrective lenses work for someone with an eye problem?

The universe itself is constantly expanding, but why? How can the phenomena of red-shift explain this? How old is the sun and what will happen when it dies? These questions are answered in the space unit.