

Year 11 Curriculum Area – Combined Science

What concepts will we be covering this half term?	Curriculum mapping for students Key concepts: Biology: Topic B17 – Biodiversity and Ecosystems Human population explosion Land and water pollution Air pollution Deforestation and peat destruction Global Warming Biodiversity Chemistry: Topic C12 – The Earth’s Resources Finite resources Water Safe to drink Treating Waste Water Extracting metals from ores Life Cycle Assessments Reduce, Reuse, Recycle Physics: Topic P13 - Electromagnetism Magnetic fields Magnetic fields of electric currents The motor effect Key Questions to consider: Biology - What is sustainability and why is it important? Chemistry – How are we seeking to make sustainable use of the Earth's limited resources? Physics - How do power stations generate alternating currents for our home? How do motors work?
What resources can you use to support your learning?	BBC website: https://www.bbc.co.uk/bitesize/examspecs/z8r997h Biology Human population explosion Land and water pollution Air pollution Deforestation and peat destruction https://www.bbc.co.uk/bitesize/guides/z93mk2p/revision/1 Oak National Academy: Biology Global Warming https://classroom.thenational.academy/lessons/global-warming-6ww64c This lesson looks at the effect that humans have on ecosystems with a focus on global warming.

Biodiversity

<https://classroom.thenational.academy/lessons/biodiversity-cmrk8r>

This lesson introduces biodiversity and the effect that humans can have on it.

Review

<https://classroom.thenational.academy/lessons/review-part-2-75k36d>

This lesson revises cycles, global warming and biodiversity and applies your knowledge to exam questions.

Chemistry:

Finite resources

<https://classroom.thenational.academy/lessons/finite-resources-6xh6ac>

This lesson will look at the Earth's natural resources and products. We will also look at the difference between finite and renewable resources.

Water Safe to drink

<https://classroom.thenational.academy/lessons/water-safe-to-drink-60r3gc>

This lesson will look at the difference between pure and potable water. We will look at how water is treated so that it is safe to drink and also we will also look at two methods of desalination.

Treating Waste Water

<https://classroom.thenational.academy/lessons/wastewater-treatment-cmup4e>

This lesson will look at why waste water needs to be treated before being returned to the environment. We will look at the stages of sewage treatment. We will compare which method is easiest for obtaining potable water.

<https://classroom.thenational.academy/lessons/required-practical-on-potable-water-6ngkjd>

In this lesson we will look at the required practical on potable water. We will recap how to test for pH and calculate the mass of dissolved substances in water from different sources. We will also look at distillation as a method for purifying water.

Extracting metals from ores

<https://classroom.thenational.academy/lessons/phytomining-and-bioleaching-70tp4c>

This lesson will look at alternative methods of extracting copper and why alternative methods are important. We will compare the methods of phytomining and bioleaching.

Life Cycle Assessments

<https://classroom.thenational.academy/lessons/life-cycle-assessments-6dhkae>

This lesson will look at what life cycle assessments (LCAs) are, how they are carried out and how to analyse their data.

Reduce, Reuse, Recycle

<https://classroom.thenational.academy/lessons/the-importance-of-recycling-75gk2t>

This lesson will look at the importance of reducing waste, reusing products and recycling both in terms of environmental impact and ensuring materials for the future.

Assessment

<https://classroom.thenational.academy/lessons/review-lesson-68v3je>

This lesson will review the key concepts for this unit. We will recap finite and renewable resources, the importance of LCAs, how potable water can be obtained and the process of wastewater treatment.

<https://classroom.thenational.academy/lessons/exam-skills-compare-and-evaluate-c9k6at>

	This lesson will look at answering exam questions which have the command words 'compare' and 'evaluate'. We will look at specific examples of these questions with life cycle assessments and the treatment of potable water. Physics: Magnetic fields https://classroom.thenational.academy/lessons/magnetic-fields-61jkcc This lesson shows how to plot the shape of a magnetic field, what the shape of the magnetic field between magnets looks like and explores the Earth's magnetic field. Magnetic fields of electric currents https://classroom.thenational.academy/lessons/electromagnetism-cgv64r The lesson explores electromagnetism and how electrical currents can produce magnetic fields, how those fields can be made stronger and how they can be put to good use. The motor effect https://classroom.thenational.academy/lessons/the-motor-effect-and-left-hand-rule-cctp8c This lesson explores the interaction between electrical currents and magnetic fields, predicting the direction of the force produced and understanding the factors that affect the size of the force.
Tasks to complete so we can assess your understanding/ Key Performance Indicator tasks	• Complete any of the revise, watch the videos and do the tests on the BBC bitesize page. • Complete the lessons on the oak national academy website – follow the lesson to watch the video and complete the activities and the quiz.
What can you do if you need help/ support?	If you need help please email your teacher – sfox2@netherthorpe.derbyshire.sch.uk gwatkins@netherthorpe.derbyshire.sch.uk mraybold@netherthorpe.derbyshire.sch.uk sparry@netherthorpe.derbyshire.sch.uk jmccammon@netherthorpe.derbyshire.sch.uk shutton@netherthorpe.derbyshire.sch.uk icarr@netherthorpe.derbyshire.sch.uk pgreenwood@netherthorpe.derbyshire.sch.uk bchristmas@netherthorpe.derbyshire.sch.uk nconnolly@netherthorpe.derbyshire.sch.uk jroberts@netherthorpe.derbyshire.sch.uk