

## Year 8 Curriculum Area - Activate Science

What concepts will we be covering this half term?

### Curriculum mapping for students

#### Key concepts:

#### Chemistry: Topic 3 – Metals and Acids

Acids and Metals  
Metals and Oxygen  
Metals and Water  
Metal Displacement Reactions  
Extracting Metals  
Ceramics  
Polymers  
Composites

#### Chemistry: Topic 4 – The Earth

The Earth and its Atmosphere  
Sedimentary Rocks  
Igneous and Metamorphic Rocks  
The Rock Cycle  
The Carbon Cycle  
Climate Change  
Recycling

#### Physics: Topic 3 – Motion and Pressure

Speed  
Motion Graphs  
Pressure in Gases  
Pressure on Liquids  
Pressure on Solids  
Turning Forces

What resources can you use to support your learning?

**BBC website: Any resources not on Oak Academy links will be found here.**

**Y7 & 8:** <https://www.bbc.co.uk/bitesize/subjects/zng4d2p>

#### Oak National Academy:

#### Chemistry: Topic 3 – Metals and Acids

Acids and Metals

<https://classroom.thenational.academy/lessons/metals-and-acids-6hnp8r>

This lesson explores the reaction between metals and acids, how to represent these reactions and word equations, and how to test for the presence of hydrogen as a product of the reaction.

Metals and Oxygen

<https://classroom.thenational.academy/lessons/oxidation-6tj68d>

This lesson explores what happens when a substance reacts with oxygen and how to represent these reactions using word equations and diagrams.

Metals and Water

See BBC Bitesize

## Metal Displacement Reactions

<https://classroom.thenational.academy/lessons/displacement-71j36r>

This lesson recaps the reactivity series, looks at what a displacement reaction is and explains how to write word and symbol equations for displacement reactions.

## Extracting Metals

<https://classroom.thenational.academy/lessons/mining-and-quarrying-crup6d>

In this lesson we will describe the processes of mining and quarrying and evaluate their use

## Ceramics

## Polymers

## Composites

## **Chemistry: Topic 4 – The Earth**

### The Earth and its Atmospheres

<https://classroom.thenational.academy/lessons/structure-of-the-earth-cgt3gd>

In this lesson we will be looking at describing the structure of the Earth and explaining the cause of volcanoes and earthquakes

<https://classroom.thenational.academy/lessons/the-earths-atmosphere-6nk34t>

In this lesson you will learn what the atmosphere of the Earth was like 4.5 billion years ago, what it is like today and why these changes happened

### Sedimentary Rock

<https://classroom.thenational.academy/lessons/sedimentary-rocks-64tp4d>

In this lesson we will be looking at the properties of sedimentary rocks, how sedimentary rocks are formed and comparing different types of weathering

### Igneous and Metamorphic Rock

<https://classroom.thenational.academy/lessons/igneous-rocks-61k30e>

In this lesson we will be looking at properties of igneous rocks, how they are formed and different classifications of these rocks

<https://classroom.thenational.academy/lessons/metamorphic-rocks-6dj6cc>

In this lesson we will be looking at the properties and formation of metamorphic rock and will see how all of the rock types are interconnected in the rock cycle

## The Rock Cycle

### Carbon Cycle

<https://classroom.thenational.academy/lessons/the-carbon-cycle-6gtkac>

In this lesson we will learn why carbon is such an important element to life on Earth and look at how carbon is cycled throughout the atmosphere and our environment

### Climate Change

<https://classroom.thenational.academy/lessons/evidence-for-climate-change-6rw6ad>

In this lesson we will be analysing data related to climate change and describing and explaining the potential consequences of climate change

Recycling

<https://classroom.thenational.academy/lessons/recycling-resources-6hhpad>

In this lesson we will compare and contrast different methods of preserving the Earth's natural resources and explain the importance of these methods

### Physics: Topic 3 – Motion and Pressure

Speed

<https://classroom.thenational.academy/lessons/investigating-speed-cmtpad>

In this lesson we will investigate how the area of a parachute affects the speed it will drop at. We will formulate a hypothesis, carry out the investigation and describe the pattern.

<https://classroom.thenational.academy/lessons/factors-that-affect-speed-c4u66d>

In this lesson we will discuss the effect of frictional forces on speed and how design features can reduce these forces.

<https://classroom.thenational.academy/lessons/calculating-speed-using-an-equation-6dk3jr>

In this lesson we will use an equation to calculate the speed and learn about relative speed.

Motion Graphs

<https://classroom.thenational.academy/lessons/distance-time-graphs-68vk2c>

In this lesson we will use a distance-time graph to describe a journey, and draw a distance-time graph for a given journey.

<https://classroom.thenational.academy/lessons/calculating-speed-using-distance-time-graphs-6xk62c>

In this lesson we will use the gradient of the distance time graph to calculate speed.

Pressure in Gases

Pressure in Liquids

Pressure on Solids

<https://classroom.thenational.academy/lessons/pressure-crw3cd>

In this lesson we will learn what pressure is, calculate pressure from an equation and apply this to everyday situations.

Turning Forces

BBC Bitesize

Tasks to complete so we can assess your understanding/ Key Performance Indicator tasks

- Complete any of the revision tasks, 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](mailto:sfox2@netherthorpe.derbyshire.sch.uk)  
[gwatkins@netherthorpe.derbyshire.sch.uk](mailto:gwatkins@netherthorpe.derbyshire.sch.uk)  
[mraybold@netherthorpe.derbyshire.sch.uk](mailto:mraybold@netherthorpe.derbyshire.sch.uk)  
[sparry@netherthorpe.derbyshire.sch.uk](mailto:sparry@netherthorpe.derbyshire.sch.uk)  
[jmccammon@netherthorpe.derbyshire.sch.uk](mailto:jmccammon@netherthorpe.derbyshire.sch.uk)  
[shutton@netherthorpe.derbyshire.sch.uk](mailto:shutton@netherthorpe.derbyshire.sch.uk)  
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[bchristmas@netherthorpe.derbyshire.sch.uk](mailto:bchristmas@netherthorpe.derbyshire.sch.uk)  
[nconnolly@netherthorpe.derbyshire.sch.uk](mailto:nconnolly@netherthorpe.derbyshire.sch.uk)  
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