**Independent Home Learning**

Whilst you are unable to be learning in school, please complete the following online lessons provided by the Oak National Academy to all you to continue learning and making progress, provided you are well enough to do so. Completed work can be emailed to your class teacher for feedback.

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| Year Group: | 7 | Subject | Science |

**Week beginning 19th April 2021:** Lessons 1-4.

**Week beginning 26th April 2021:** Lessons 5-7.

**Week beginning 3rd May:** Lessons 8-10.

**Week beginning 10th May:** Lessons 11-13.

**Week beginning 17th May**: Lessons 14-17.

**Week beginning 24th May:** Lessons 18-20.

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| Lesson | Description and link |
| 1 | **Sound waves**  **Link:** <https://classroom.thenational.academy/lessons/sound-waves-cdhkgc>  This lesson looks at the causes of sound, how sound travels and what a sound wave from an oscilloscope trace looks like. |
| 2 | **Echoes and superposition.**  **Link:** <https://classroom.thenational.academy/lessons/echoes-and-superposition-74ukjt>  This lesson looks at how different surfaces can have an effect on sound, what echoes are and how they can be useful and what can happen when waves interact with each other. |
| 3 | **Pitch and frequency.**  **Link:** <https://classroom.thenational.academy/lessons/pitch-and-frequency-cgvk6c>  This lesson looks at how pitch is determined by frequency and how this has an effect on wavelength. You will also learn how to interpret oscilloscope traces. |
| 4 | **Potential difference**  **Link:** [**https://classroom.thenational.academy/lessons/potential-difference-cmvka**](https://classroom.thenational.academy/lessons/potential-difference-cmvka)  This lesson describes a model to help us understand potential difference, as well as looks at how we can measure potential difference in a series circuit. |
| 5 | **Amplitude and volume**  **Link:** <https://classroom.thenational.academy/lessons/amplitude-and-volume-60vkec>  This lesson looks at how volume is determined by amplitude and how amplitude is based on the displacement of particles. You will learn how to interpret oscilloscope traces |
| 6 | **Speed of sound**  **Link:** <https://classroom.thenational.academy/lessons/speed-of-sound-6wr3gt>  This lesson explores the speed of sound in the different states of matter and how to fully utilise the speed/distance/time equation. |
| 7 | **The Ear.**  **Link:** <https://classroom.thenational.academy/lessons/the-ear-cmv3gt>  This lesson explores how we hear highlighting the role of the various structures within the ear. |
| 8 | **Hearing ranges and ultrasound.**  **Link:** <https://classroom.thenational.academy/lessons/hearing-ranges-and-ultrasound-crrkcr>  This lesson explores the hearing range of a variety of organisms, what ultrasound is and its uses. |
| 9 | **Sound devices**  **Link:** <https://classroom.thenational.academy/lessons/sound-devices-61h36t>  This lesson looks at how microphones are used to convert sound waves into electrical current and how the opposite is true for loudspeakers. |
| 10 | **Indicators of a chemical reaction.**  **Link:**<https://classroom.thenational.academy/lessons/indicators-of-a-chemical-reaction-cct3ad>  This lesson explores what happens in a chemical reaction, ways in which we can identify that a chemical reaction has taken place and how the law of the conservation of mass applies to chemical reactions. |
| 11 | **Compounds**  **Link:** <https://classroom.thenational.academy/lessons/compounds-6nj32c>  In this lesson you will learn what we mean by compounds, how compounds behave as new substances and we will be looking at how to write chemical equations |
| 12 | **Making compounds**  **Link:** <https://classroom.thenational.academy/lessons/making-compounds-74rkcc>  In this lesson you will learn how you would make a simple metal compound in a laboratory as well as learning how to write good scientific methods |
| 13 | **Oxidation**  **Link:** <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. |
| 14 | **Conservation of mass.**  **Link:** <https://classroom.thenational.academy/lessons/conservation-of-mass-68vk8t>  In this lesson you will learn about different ways to describe groups of data and learn what we mean by 'conservation of mass. |
| 15 | **Combustion**  **Link:** <https://classroom.thenational.academy/lessons/combustion-chgk4e>  This lesson introduces the 2 types of combustion and their products. We will also describe the test for carbon dioxide and its positive result. |
| 16 | **Thermal decomposition**  **Link:** <https://classroom.thenational.academy/lessons/thermal-decomposition-64uk4d>  This lesson introduces thermal decomposition and its products, written as word and symbol equations, reinforcing conservation of mass. |
| 17 | **Exothermic and endothermic reactions.**  **Link:**<https://classroom.thenational.academy/lessons/exothermic-and-endothermic-reactions-cgr38e>  This lesson introduces exo- and endothermic reactions and how to identify them from temperature changes. |
| 18 | **Investigating exothermic and endothermic reactions.**  **Link:** <https://classroom.thenational.academy/lessons/investigation-exo-vs-endo-74rkgc>  This lesson explains how to plan an investigation looking into exothermic vs endothermic reactions. |
| 19 | **Sound review.**  **Link:** <https://classroom.thenational.academy/lessons/review-part-1-64t64d>  This lesson involves a series of recap questions, key word practise and exam-style questions to consolidate learning and improve confidence in application questions. |
| 20 | **Secondary data**  **Link:** <https://classroom.thenational.academy/lessons/secondary-data-crw6ac>  This lesson explains what it means to work scientifically including means, anomalies, decimals and how to plot data. |

Equipment required:

* Laptop;
* Pen, pencil and paper;
* Calculator;
* Dictionary;
* Highlighter.

If you have any questions, please email your class teacher.

Head of Subject email: [stedmank@mayfield.portsmouth.sch.uk](mailto:stedmank@mayfield.portsmouth.sch.uk)