**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: | 8 | 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 | **Circuits****Link:** [**https://classroom.thenational.academy/lessons/circuits-65hk6d**](https://classroom.thenational.academy/lessons/circuits-65hk6d)This lesson looks at how circuit symbols can be used to describe a circuit and we practise drawing and interpreting some simple circuit diagrams. We will also start using some models to describe electricity. |
| 2 | **Current in series circuits****Link:**[**https://classroom.thenational.academy/lessons/current-and-series-circuits-68r6ad**](https://classroom.thenational.academy/lessons/current-and-series-circuits-68r6ad)This lesson describes what electrical current is, how current can be measured and what we find when we measure the current at different points in a series circuit. |
| 3 | **Current in parallel circuits****Link:** [**https://classroom.thenational.academy/lessons/current-and-parallel-circuits-74rk8d**](https://classroom.thenational.academy/lessons/current-and-parallel-circuits-74rk8d)In this lesson we will learn how to recognise and draw parallel circuits and describe how to make and record measurements of current in parallel. We will then describe how current behaves in parallel compared to series. |
| 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 | **Potential difference in parallel circuits****Link:**[**https://classroom.thenational.academy/lessons/potential-difference-in-parallel-circuits-68tp2d**](https://classroom.thenational.academy/lessons/potential-difference-in-parallel-circuits-68tp2d)This lesson describes a model to help us understand potential difference, as well as looks at how we can measure potential difference in a parallel circuit. |
| 6  | **Resistance****Link:** [**https://classroom.thenational.academy/lessons/resistance-c8u3ed**](https://classroom.thenational.academy/lessons/resistance-c8u3ed)This lesson explores the relationship between current, potential difference and resistance, and we practise using an equation to calculate current, potential difference and resistance. |
| 7  | **Measuring resistance****Link:**[**https://classroom.thenational.academy/lessons/measuring-resistance-65j3gehttps://classroom.thenational.academy/lessons/measuring-resistance-65j3ge**](https://classroom.thenational.academy/lessons/measuring-resistance-65j3gehttps%3A//classroom.thenational.academy/lessons/measuring-resistance-65j3ge)This lesson focuses on identifying variables in the measuring resistance practical and how we can appropriately display our results. We will then describe and explain the effect of a length of wire on resistance. |
| 8  | **Static electricity****Link:** [**https://classroom.thenational.academy/lessons/static-electricity-6rvkjr**](https://classroom.thenational.academy/lessons/static-electricity-6rvkjr)This lesson explores static electricity, how objects can become electrically charged and how the charge can produce a force between charged objects. |
| 9  | **Electricity review****Link:** [**https://classroom.thenational.academy/lessons/electricity-review-crw66d**](https://classroom.thenational.academy/lessons/electricity-review-crw66d)This lesson will review the Electricity section of this topic. |
| 10  | **Magnetic fields****Link:** [**https://classroom.thenational.academy/lessons/magnetic-fields-64up2t**](https://classroom.thenational.academy/lessons/magnetic-fields-64up2t)This lesson explores the shape of magnetic fields that can be found around magnets and also the Earth, how field lines can be used to represent a magnetic field. |
| 11 | **Magnetic forces****Link:** [**https://classroom.thenational.academy/lessons/magnetic-forces-70tp6d**](https://classroom.thenational.academy/lessons/magnetic-forces-70tp6d)This lesson explores the forces of attraction and repulsion between magnets and how those forces can be explained using magnetic field lines; and how magnetic field lines can be plotted in a simple experiment. |
| 12 | **Electromagnets****Link:** [**https://classroom.thenational.academy/lessons/electromagnets-6mupct**](https://classroom.thenational.academy/lessons/electromagnets-6mupct)This lesson describes what an electromagnet is and how an electromagnet can be made. We look at the key variables for an investigation into electromagnets. |
| 13 | **Uses of electromagnets****Link:**[**https://classroom.thenational.academy/lessons/uses-of-electromagnets-69jkge**](https://classroom.thenational.academy/lessons/uses-of-electromagnets-69jkge)This lesson explores the shape of the magnetic field around an electromagnet and some of the uses of electromagnets. |
| 14 | **Electric motors****Link:** [**https://classroom.thenational.academy/lessons/electric-motors-6njk2t**](https://classroom.thenational.academy/lessons/electric-motors-6njk2t)This lesson explores how a simple electric motor can be made, and the factors affecting the speed of a direct current motor. |
| 15 | **Magnetism review****Link:** [**https://classroom.thenational.academy/lessons/magnetism-review-cnj3jd**](https://classroom.thenational.academy/lessons/magnetism-review-cnj3jd)In this lesson we will review what we have learned about magnetism. |
| 16 | **Cells review.****Link:** [**https://classroom.thenational.academy/lessons/review-part-2-chk3gr**](https://classroom.thenational.academy/lessons/review-part-2-chk3gr)This lesson will review animal and plant cells, specialised cells and levels of organisation |
| 17 | **Unicellular organisms.****Link:** [**https://classroom.thenational.academy/lessons/unicellular-organisms-6cuk0r**](https://classroom.thenational.academy/lessons/unicellular-organisms-6cuk0r)This lesson looks at the definition of unicellular organisms, exploring their structure and outlining the dangers and uses of different types of unicellular organisms. |
| 18 | **Diffusion 1****Link:** [**https://classroom.thenational.academy/lessons/diffusion-part-1-6hh3ac**](https://classroom.thenational.academy/lessons/diffusion-part-1-6hh3ac)This lesson defines diffusion, explores factors that affect the rate of diffusion and where diffusion happens in the body. |
| 19 | **Diffusion 2****Link:** [**https://classroom.thenational.academy/lessons/diffusion-part-2-70w62d**](https://classroom.thenational.academy/lessons/diffusion-part-2-70w62d)This lesson looks at identifying variables, investigating diffusion and applying working scientifically skills. |
| 20 | **Plant roots****Link:** [**https://classroom.thenational.academy/lessons/plant-roots-70u38t**](https://classroom.thenational.academy/lessons/plant-roots-70u38t)This lesson recaps prior learning of plant cells and then describes the function of the root and root hair cells. We will then compare root hair cells to ‘typical’ plant cells and explain how the adaptations of the root are related to its function. |

Equipment required:

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

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

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