

Year 9 Physics Remote Learning Programme: Spring 1 2022

Lesson Number	Lesson Title	Lesson Detail
1	Radiation https://classroom.thenational.academy/lessons/radioactivity-6tgkjc	This lesson looks at the properties of four different forms of radiation and how we could experimentally determine which radiation an isotope is producing.
2	Hazards of radiation https://classroom.thenational.academy/lessons/hazards-of-radiation-physics-only-c5j6ad	This lesson will contrast radioactive contamination and irradiation, explores on the hazards associated with radiation and how the risk depends on the half-lives of the isotopes. We will also explore the origin of background radiation and how we can measure the radiation dose that we receive over time.
3	Decay equations https://classroom.thenational.academy/lessons/decay-equations-crup6d	This lesson explores the changes that take place within the nucleus of an atom during radioactive decay and we will learn how to write radioactive decay equations using atomic notation.
4	Half life https://classroom.thenational.academy/lessons/activity-and-half-life-ht-c9jk6d	This lesson explores the pattern behind the randomness of radioactive decay, how the half-life of an isotope can be determined and how the proportion of nuclei lost can be determined.
5	Uses of radiation https://classroom.thenational.academy/lessons/uses-of-radiation-physics-only-cdh3gt	This lesson will explore how we can use radioactive sources in a wide range of contexts, including within hospitals for imaging inside the body and treating disease.
6	Fission and fusion https://classroom.thenational.academy/lessons/fission-and-fusion-70tk6c	This lesson will explore the processes of nuclear fission and nuclear fusion and how these important processes can, or could, be used for energy generation.

Year 10 Physics Remote Learning Programme: Spring 1 2022

Lesson Number	Lesson Title	Lesson Detail
1	Speed https://classroom.thenational.academy/lessons/speed-c5jp4t	In this lesson we will learn the definition and equation of speed.
2	Distance time graphs https://classroom.thenational.academy/lessons/distance-time-graphs-68rp8c	In this lesson we will learn about distance-time graphs, and how to calculate speed using the gradient of a graph..
3	Velocity time graphs https://classroom.thenational.academy/lessons/velocity-time-graphs-6wr3gr	In this lesson we will look at the relationship between velocity and acceleration, and calculating acceleration from a velocity-time graph.
4	Terminal velocity https://classroom.thenational.academy/lessons/terminal-velocity-75hkec	In this lesson we will look at the definition and conditions needed for terminal velocity. We will look at terminal velocity in different contexts.
5	Stopping distance https://classroom.thenational.academy/lessons/stopping-distance-6wvk4c	In this lesson, we will learn about stopping distance. We will look into thinking distance, braking distance and how these are linked to stopping distance.
6	Momentum (HIGHER) https://classroom.thenational.academy/lessons/momentum-64r6ad	In this lesson we will learn about the definition of momentum and how to calculate momentum of different objects. We will also look into the principle of conservation of momentum.

Year 11 Physics Remote Learning Programme: Autumn 2 2021

Lesson Number	Lesson Title	Lesson Detail
1	Magnetism https://classroom.thenational.academy/lessons/magnetism-75jpad	This lesson explores the rules of magnetic attraction, how some materials are magnetic and others not and how to investigate the relationship between the strength of a magnetic field and the distance from a magnet.
2	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.

3	<p>Electromagnetism</p> <p>https://classroom.thenational.academy/lessons/electromagnetism-cgv64r</p>	<p>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.</p>
4	<p>The motor effect and left hand rule</p> <p>https://classroom.thenational.academy/lessons/the-motor-effect-and-left-hand-rule-cctp8c</p>	<p>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.</p>
5	<p>$F = B \times I \times l$</p> <p>https://classroom.thenational.academy/lessons/f-b-i-l-74uk4d</p>	<p>In this lesson we learn how to apply the equation to calculate the size of the force due to the motor effect and apply it to a range of situations.</p>
6	<p>Electromagnet induction and generators</p> <p>https://classroom.thenational.academy/lessons/electromagnetic-induction-and-generators-6dhkge</p>	<p>In this lesson we explore how a potential difference can be generated by moving a wire in a magnetic field and how this is used in ac generators to make electricity for the National Grid.</p>
7	<p>Electromagnetic devices</p> <p>https://classroom.thenational.academy/lessons/electromagnetic-devices-ctjk2d</p>	<p>In this lesson will explore how direct current (DC) is produced by dynamos, comparing the construction of a dynamo to that of a generator and also compare the construction and operation of a loudspeaker and microphone.</p>