

Deyes High School

Remote Learning

Engage, Enable and Empower



DEYES
HIGH
SCHOOL
LYDIATE
LEARNING TRUST

Year 11 Physics (combined science)

Work for individual students not attending school

Half Term 2: October to December

Pupils who are absent should select the lesson activity that they are up to

- Click the link and watch the video.
- Complete the tasks as you watch. Write your answers on paper.
- Complete the exit quiz by clicking the green circles at the bottom of the screen. ●●●●●
- Submit your work to your teacher when you return to school.

Date (week commencing)	Lesson	Focus/Topic/Theme	Hyper link to Activity
2/11/20	1	Nuclear equations	https://classroom.thenational.academy/lessons/decay-equations-crup6d?activity=video&step=1
9/11/20	2	Half life	https://classroom.thenational.academy/lessons/activity-and-half-life-ht-c9jk6d?activity=video&step=1
	3	Radioactive contamination	https://classroom.thenational.academy/lessons/uses-and-hazards-of-radiation-combined-science-only-74uk6d?activity=video&step=1
16/11/20	4	End of topic review	https://classroom.thenational.academy/lessons/p4-atomic-structure-review-part-1-6rv38d?activity=video&step=1
23/11/20	5	Revision for PPE	https://www.youtube.com/watch?v=Y6H6830HGQ Watch the video
	6	Revision for PPE	https://www.physicsandmathstutor.com/physics-revision/gcse-aqa/ Go through the notes and try the past exams
30/11/20	7	Magnetic forces	https://classroom.thenational.academy/lessons/magnetism-75jpad?activity=video&step=1
7/12/20	8	Magnetic fields	https://classroom.thenational.academy/lessons/magnetic-fields-61jkcc?activity=video&step=1
	9	Electromagnetism	https://classroom.thenational.academy/lessons/electromagnetism-cgv64r?activity=video&step=1
14/12/20	10	The motor effect and left hand rule	https://classroom.thenational.academy/lessons/the-motor-effect-and-left-hand-rule-cctp8c?activity=video&step=1

Who to contact

You can email **your class teacher** if you have any questions regarding the activities set.

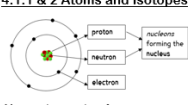


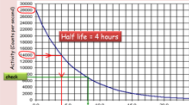



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Year 11	Atomic Structure	Unit 8																																										
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #2c3e50; color: white;">Keyword</th> <th style="background-color: #2c3e50; color: white;">Definition</th> </tr> </thead> <tbody> <tr><td>Nucleus</td><td>Positively charged concentration of mass at the centre of an atom</td></tr> <tr><td>Absorption</td><td>Take in or soak up</td></tr> <tr><td>Emission</td><td>Give out</td></tr> <tr><td>Isotopes</td><td>Atoms of the same element with different numbers of neutrons</td></tr> <tr><td>Radioactive</td><td>Atoms which are unstable and so emit nuclear radiation.</td></tr> <tr><td>Radioactive Decay</td><td>The emission of nuclear radiation by an unstable atom</td></tr> <tr><td>Activity</td><td>The rate at which a source of unstable nucleus decays.</td></tr> <tr><td>Half life</td><td>Time it takes for the number of radioactive nuclei to fall by half.</td></tr> <tr><td>Contamination</td><td>The unwanted presence of materials containing radioactive atoms on other materials.</td></tr> <tr><td>Irradiation</td><td>The process of exposing an object to nuclear radiation.</td></tr> </tbody> </table>	Keyword	Definition	Nucleus	Positively charged concentration of mass at the centre of an atom	Absorption	Take in or soak up	Emission	Give out	Isotopes	Atoms of the same element with different numbers of neutrons	Radioactive	Atoms which are unstable and so emit nuclear radiation.	Radioactive Decay	The emission of nuclear radiation by an unstable atom	Activity	The rate at which a source of unstable nucleus decays.	Half life	Time it takes for the number of radioactive nuclei to fall by half.	Contamination	The unwanted presence of materials containing radioactive atoms on other materials.	Irradiation	The process of exposing an object to nuclear radiation.	<p>4.1.1 & 2 Atoms and Isotopes</p>  <p>Mass number- number of protons +neutrons</p> <p>Atomic number- number of protons</p> <p>The Carbon-14 isotope is radioactive</p> <p>The electrons are arranged in energy levels. The further from the nucleus the more energy the electrons in that level have.</p> <p>4.1.3 Models of the Atom</p>  <p>JJ Thomson (1897) suggested the atoms was like a plum pudding- a ball of positive charge with negative electrons embedded in it. Most scientists agreed.</p> <p>The results of Ernest Rutherford's scattering experiment (1912) did not support this theory. A new model was needed to fit the new evidence.</p>  <p>Rutherford's model of the atom had a positive nucleus and orbiting electrons.</p> <p>About 20 years later James Chadwick discovered uncharged particles he called neutrons.</p> <p>The calculations of Neils Bohr (1919) said electrons were arranged in energy levels. This agreed with experiments.</p>	<p>4.2.1 – Atoms and Nuclear Radiation</p> <p>To become more stable radioactive nuclei randomly emit nuclear radiation—radioactive decay.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #2c3e50; color: white;">radiation</th> <th style="background-color: #2c3e50; color: white;">nature</th> <th style="background-color: #2c3e50; color: white;">charge</th> <th style="background-color: #2c3e50; color: white;">ionizing?</th> <th style="background-color: #2c3e50; color: white;">penetrating?</th> </tr> </thead> <tbody> <tr><td>Alpha</td><td>2p +2n (helium nucleus)</td><td>+2</td><td>Strong</td><td>Paper</td></tr> <tr><td>Beta</td><td>Electron made in nucleus</td><td>-1</td><td>Moderate</td><td>Thin aluminium</td></tr> <tr><td>Gamma</td><td>e-m radiation</td><td>0</td><td>Weak</td><td>Thick lead</td></tr> </tbody> </table> <p>4.2.2 – Nuclear equations</p> <p>Alpha decay ${}_{88}^{219}\text{radon} \rightarrow {}_{84}^{215}\text{polonium} + {}_2^4\text{He}$</p> <p>Beta decay ${}_{6}^{14}\text{carbon} \rightarrow {}_{7}^{14}\text{nitrogen} + {}_{-1}^0\text{e}$</p> <p>4.2.3 – Half life</p> <p>Activity is measured in Becquerels (Bq), measuring it over a period of time gives the graph below.</p>  <p>Half life can be found from an activity graph</p> <p>4.2.4 – Radioactive contamination</p> <p>Contamination and irradiation can both be harmful. Scientists studying this publish their results for other scientists to check – peer review. It also means that people who work with radioactive materials know how to protect themselves properly.</p> 	radiation	nature	charge	ionizing?	penetrating?	Alpha	2p +2n (helium nucleus)	+2	Strong	Paper	Beta	Electron made in nucleus	-1	Moderate	Thin aluminium	Gamma	e-m radiation	0	Weak	Thick lead
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<p>Further Reading</p> <p>CGP Revision guide: Atomic Structure School Network shared area – Science – Physics - GCSE summary sheets</p> <p>https://www.bbc.com/bitesize/topics/zshssrd</p>  																																												

Physics Revision Activities

Unit 8 Atomic Structure

Knowledge Organiser	<p>Create revision flashcards using the knowledge organisers</p> <p>Include key definitions in your flashcards.</p>
Recall Questions	<p>Use the knowledge organiser in the PowerPoint to answer the recall questions, by following the link below.</p> <p>https://deyes.sharepoint.com/:p:/r/sites/shadowcurriculum/_layouts/15/Doc.aspx?sourcedoc=%7B72670FC5-C01C-482D-A82E-C708A17D70DB%7D&file=Recall%20questions%20Atomic.pptx&action=edit&mobileredirect=true</p>
GCSE Bitesize Revision	<p>Using the web link read the revision notes and watch the videos.</p> <p>https://www.bbc.co.uk/bitesize/topics/zshssrd</p> <p>https://www.youtube.com/watch?v=KwOHJbE4Tro</p> <p>https://www.youtube.com/watch?v=Q8y4x5EEIm8</p> <p>https://www.youtube.com/watch?v=VeXpMijpazE</p> <p>https://www.youtube.com/watch?v=CaYoDxWxww8</p> <p>https://www.youtube.com/watch?v=zXw2cOSBB8E</p> <p>https://www.youtube.com/watch?v=Z4GV13xB0OU</p>
SENECA	<p>Use the web link to work through the revision notes and attempt questions at the end of the topic.</p> <p>https://app.senecalearning.com/classroom/course/f4627c20-1e1d-11e8-b99c-3168302284a4/section/f6e803a0-1e1f-11e8-820c-35b74d6c4779/session</p>