



SUPER-CURRICULAR ACTIVITIES

Pre-GCSE: Science - Physics Year 9

Research the work of Isaac Newton, which area(s) of physics did he make discoveries in? How were his discoveries received?	Write a list of all the physical quantities you have ever measured and the unit you used. This might have been in a Science lesson or somewhere else, like the kitchen. There may be more than one unit for each measurement or vice versa: eg length is measured in Centimetres.	Design and make a gravity racer. Make a car which fits in the palm of your hand and is designed to travel as fast as possible down a slope. You should only use scrap material to do this.
Write a guide to completing a Physics experiment. Starting with a question, how can you go about finding the answers.	Research the conflicting ideas around electricity. Who were Ampere, Volta and Galvani? Whose ideas were proved to be correct?	Read the skills pages of Isaac Physics GCSE. This will give you a good idea of the basics you need to be able to do next year. Follow Link 1 (below)
Watch an episode of the Sky at Night – you can find this on iPlayer.	Research the way in which Physics and Physicists influenced the industrial revolution. This will include the work of James Watt and James Joule, amongst others.	Sound waves are all compressions in a medium, so why do musical instruments sound different to each other? Find out.
Follow the instructions to make your own spectrascope, then use it to examine the spectra of different luminous objects. DO NOT USE IT TO LOOK DIRECTLY AT THE SUN Follow Link 2 (below)	Make a lunar analemma by photographing the moon from the same spot at the same time for 1 month. Use whichever image editing software you are familiar with to merge these images and show the pattern formed.	Write a report on what you believe to be the greatest Physics discovery ever. This might be the identification of a planet or the discovery of the electron.
Read an article from the Young Scientist's Journal and write a paragraph describing what you found out. Follow Link 3 (below)	Write a description of what you believe Physics is. This should be based on all of the science work you have done so far.	

Links to websites used in this Super-Curricular Pre-GCSE Activities sheet:

Link 1: https://isaacphysics.org/books/phys_book_gcse

Link 2: <https://edu.rsc.org/download?ac=13826>

Link 3: <https://ysjournal.com>

	Reading task		Creative task		Watching task		Student-led task
	Research task		Writing task		Listening task		Trip or visit