

SUPER-CURRICULAR ACTIVITIES

GCSE: Science – Physics Years 10 & 11

 Visit the <i>Owlcation</i> website and read through the top ten physics equations, trying to understand precisely what they mean. They have been presented in such a way that makes it easier to understand the complexities involved. Follow Link 1 (below)	 In Star Trek how does teleportation work? Is it possible?	 Your task is to design and build an eco-friendly house which reduces the amount of energy lost. You must include: drawings, labels and an explanation as to why it prevents/reduces energy transfer. Identify what equipment/resources your design would need?
 The theme is conduction and radiation . Your challenge is to research and make a multiple-choice questionnaire to give to your classmates at the end of the lesson.	 Science Magazine has ‘a super-quick, super-painless guide to the theory that conquered the universe.’ This is general relativity explained like you’ve never seen it before. Just wow! Follow Link 2 (below)	 Find and read the article: DOES E REALLY EQUAL MC SQUARED? $E=mc^2$ is arguably the most famous equation in the world, but is its description of the universe complete? Dr Matthew Redshaw, based at central Michigan university, is the principal investigator of a project that is determined to find out.
 Find and watch the Horizon programme: <i>The End of the Solar System</i> on BBC iPlayer.	 Institute of Physics: Do try this at home! A series of fun science experiments for kids, with short demonstration videos and simple, step-by-step instructions. Follow Link 3 (below)	 Read through these equations in <i>Cosmos</i> magazine and try to understand precisely what they mean. They have been presented in such a way that makes it easier to understand the complexities involved. Follow Link 4 (below)
 Recreate ‘Pepper’s Ghost’ at home and film it on Tik Tok.	 Make a ‘Pocket Solar System’ using the template from the British Interplanetary Society.	 Write a short poem according to the following rules: <ol style="list-style-type: none"> 1. The 1st line is one word and names the scientific idea. 2. The 2nd line has two words and describes what the first line means. 3. The 3rd line has three words and says what the first line does. 4. The 4th line has four words and tells how the writer feels about the first line. 5. The 5th line renames the first line in a single word.

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



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

Link 1: <https://owlcation.com/stem/Top-Ten-Beautiful-Physics-Equations>

Link 2: <https://vis.sciencemag.org/generalrelativity>

Link 3: <https://www.iop.org/explore-physics/at-home>

Link 4: <https://cosmosmagazine.com/physics/six-physics-equations-changed-course-history/>

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