

Gifted, Talented and the More Able in Physics

Opportunities available within the department.

- Science Ambassadors Y9-11 (applications to Mrs Potts, head of science)
- KS3 Science club run by Miss Potts
- Higher and Foundation GCSE Physics support - Mr Davenport and Mr Hulme

Opportunities within lessons

- There are many leadership roles available within lessons. Hot seating, group leaders, research leaders, Challenge partners, peer teaching. GCSE articles and resources for some Key stage 3 tasks, and A-Level articles for some GCSE topics.
- Masters at Moorlands representatives- additional support in lesson time
- Challenge groups in lessons- collaborative learning helping other students to learn

Exemplar Stretch and Challenge tasks

	Stretch and Challenge Task	Links and resources
Year 9	<p>Powers of ten (maths skills, scale and standard form use)</p> <p>Introductory trigonometry in force diagrams - non- parallel forces</p> <p>GCSE Physics extended writing tasks</p> <p>Literacy for science toolkit</p>	<p>PowerPoint, video clip and worksheet in the shared area</p> <p>On H tier Triple test Autumn 1</p> <p>Extended writing tasks on the shared area.</p> <p>Literacy for science toolkit on the shared area</p>
Year 10	<p>Building science words (Latin and Greek prefixes, root words and suffixes)</p> <p>The Hydro-electric power plant challenge - team task to site and budget a new HEP station</p> <p>GCSE Physics extended writing tasks</p>	<p>Worksheet on the shared area</p> <p>Powerpoint, maps, budget sheets and worksheets on the shared area</p> <p>Extended writing tasks on the shared area</p>
Year 11	<p>Frames of reference and relative velocities (special relativity)</p>	<p>Frames of reference and relative velocity worksheet on the shared area.</p>

	<p>GCSE Physics extended writing tasks</p> <p>Walter Lewin (MIT) lectures online</p> <p>GCSE Science Live event (trip)</p>	<p>Youtube - Frames of reference (1960) video.</p> <p>Extended writing tasks on the shared area.</p> <p>Youtube - Walter Lewin "For the love of physics"</p>
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Wider reading Opportunities

- For the love of Physics - Walter Lewin (2012)
- The edge of science - Alan Baker (2013)
- Physics of the Impossible - Michio Kaku (2009)
- Wonders of the Universe - Brian Cox (2011)

Useful Web links

<http://physicsnet.co.uk/gcse-physics/>

<http://physicsnet.co.uk/a-level-physics-as-a2/>

<http://www.gcscience.com/gcse-physics-revision.htm>

<http://www.bbc.co.uk/education/subjects/zpm6fq8>

<https://phet.colorado.edu/en/simulations/category/physics>

Physics, Astrophysics and other physics courses at University:

Manchester University <http://www.physics.manchester.ac.uk/>

Imperial College London <https://www.imperial.ac.uk/natural-sciences/departments/physics/>

Cambridge University <http://www.phy.cam.ac.uk/>

Oxford University <http://www2.physics.ox.ac.uk/>

Durham University <https://www.dur.ac.uk/physics/>

Birmingham University <http://www.birmingham.ac.uk/schools/physics/index.aspx>

Warwick University <http://www2.warwick.ac.uk/fac/sci/physics/>

Lancaster University <http://www.physics.lancs.ac.uk/>

Sheffield University <https://www.sheffield.ac.uk/physics>

Loughborough University <http://www.lboro.ac.uk/departments/physics/>