Year 12 Transition

Welcome to The Island VI Form

KS5 Subject:	**Physics A Level**

Objectives for Transition Tasks:

- Review some essential maths and science skills before starting the course.
- Further develop an interest in Physics and how lots of key concepts have been developed as well as how they still are being developed and improved.

Watch:

'Atom' – by Jim Al-Khalili. The history of our relationship with the atom and atomic energy. All 3 episodes are linked below

E1 – 'Clash of the Titans'
https://www.youtube.com/watch?v=GOJFznzSZhM

E2 – 'Key to the Cosmos'
https://www.youtube.com/watch?v=CYQwrAhT7HA

E3 – 'The Illusion of Reality'
https://www.youtube.com/watch?v=KFS4oiVDeBI

'Secrets of Size: Atoms to Supergalaxies' -
https://www.bbc.co.uk/iplayer/episode/m0017frm/secrets-of-size-atoms-to-supergalaxies-series-1-1-going-small

'Neutrino – Hunting the Ghost Particle' -
https://www.bbc.co.uk/iplayer/episode/m000zwqr/neutrino-hunting-the-ghost-particle

How to find your place in the universe - by Brian Cox
Professor Brian Cox: How To Find Your Place …

Wonders of the universe - by Brian Cox
https://www.youtube.com/playlist?list=PLDE65D78966FEC465

The story of Time - by Jim Al-Khalilli
https://www.youtube.com/watch?v=rC6Pa8cuBfI

How long is a piece of string - BBC Horizon
How long is a piece of string

Minute Physics – Variety of Physics questions explained simply (in felt tip) in a couple of minutes. Addictive viewing that will have you watching clip after clip – a particular

Independent Task (to be submitted):

- Work through the tasks in the booklet. Each section covers important core mathematical and scientific skills that will be essential from the beginning of the course.
- Ensure you have a working Scientific calculator.
- Get a ring binder and / or a workbook to keep your Physics notes & work in.

favourite of mine is "Why is the Sky Dark at Night?" **https://www.youtube.com/user/minutephysics**

Shock and Awe, The Story of Electricity – A 3 part BBC documentary that is essential viewing if you want to see how our lives have been transformed by the ideas of a few great scientists a little over 100 years ago. The link below takes you to a stream of all three parts joined together but it is best watched in hourly instalments. Don't forget to boo when you see Edison. (alternatively watch any Horizon documentary – loads of choice on Netflix and the I-Player) **https://www.youtube.com/watch?v=Gtp51eZkwoI**

NASA TV – Online coverage of launches, missions, testing and the ISS. Plenty of clips and links to explore to find out more about applications of Physics in Space technology. **http://www.nasa.gov/multimedia/nasatv/**

The Fantastic Mr. Feynman – I recommended the book earlier, I also cannot recommend this 1 hour documentary highly enough. See the life's work of the "great explainer", a fantastic mind that created mischief in all areas of modern Physics. **https://www.youtube.com/watch?v=LyqleIxXTpw**

Link to the website for the **AQA Physics Page** with the specification & details of what is in the course as well as how it is assessed.
https://www.aqa.org.uk/subjects/science/as-and-a-level/physics-7407-7408

Read:

Book recommendations:

- Six Easy Pieces – Richard Feynman
- Why does $E=mc^2$ – Brian Cox and Jeff Forshaw
- A-Level Physics: Essential Maths Skills from CGP books - a useful study guide for the maths content in A level Physics if you are not studying A level Maths. There are usually lots of cheap second hand copies for sale online as well.
- Head Start to A-Level Physics from CGP books - a useful resource if you know you need to review your GCSE Physics knowledge before starting A level.

Other:

The infinite monkey cage -
https://www.bbc.co.uk/programmes/b00snr0w

Staff Contact

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science/comedy panel show on Radio 4 which invites leading experts to discuss the major ideas of their field in a fun and accessible way. **The Feynman lectures - by Richard Feynman** https://www.feynmanlectures.caltech.edu/	

Aim Higher Task:

Choose **one** of the following Physics topics;

1. Standard model of particle Physics
2. Quantum mechanics
3. Gravitational waves
4. Special Relativity

Do a little bit of research & reading. Then design a poster that explain the big ideas you have found out about to a non-scientist.

DEADLINE FOR TRANSITION TASK: Please bring to your first lesson in September.