

Academic Enrichment Sessions - Lucy Cavendish College

Physics - Session 4

Hi Year 12 Physics Students :-)

Welcome to our last Physics session.

The same as previous sessions, I will expect you to have your calculator, Equation/Formula booklet and pen and paper with you as you will be doing practice questions.

In our last session I will be focussing on the waves topic, but in particular the evidence for the wave like nature of light.

See you all on Monday 20th March.

Emma Austin

Topics covered:

- Diffraction
- Superposition
- Interference
- Double Slit interference
- Stationary Waves

Further Watching on Light:

The topics this session reflect one of the turning points in our understanding of the nature of light. I won't have time to discuss the particle-nature of light, but I will be explaining the Young Double Slit experiment which provides evidence for the wave-like behaviour of light.

For more information there are some great videos on the discoveries and the physicists that made the discoveries, e.g. Huygens, Newton, Einstein and Young to name just a few.

Nice summary of the changing understanding of light over the centuries

<https://www.youtube.com/watch?v=J1yIApZtLos>

Light as a wave

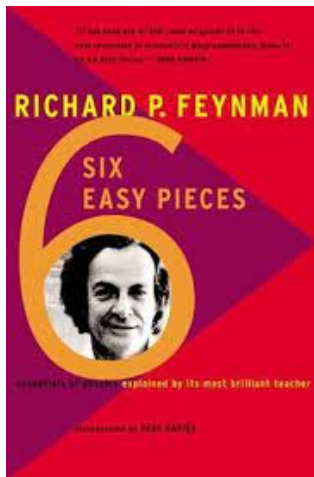
<https://www.youtube.com/watch?v=IRBfpBPELmE>

An introduction to Quantum mechanics

The dual nature of light (wave and particle)

<https://www.youtube.com/watch?v=7kb1VT0J3DE>

If you want to broaden your knowledge of Physics, you need to start listening to or reading the work of significant Physicists. There are hundreds to choose from, but if you're not sure where to start, then you could do a lot worse than Richard Feynman. Try his book, Six Easy Pieces - see if your school or college library has a copy?



Then try watching this short interview clip - to get an idea of what the man was like.
I love this answer to the question about what is magnetism. I hope it gets you interested in finding more about him.

https://www.youtube.com/watch?v=MO0r930Sn_8

My final recommendation for broadening your knowledge is to listen to episodes of Rutherford & Fry - Curious Cases on BBC Sounds.



My favourites are:

A weighty matter <https://www.bbc.co.uk/sounds/play/m000s195>

The end of the everything <https://www.bbc.co.uk/sounds/play/m000kgt6>

Enjoy your Physics journey!

All the best

Emma