

Preparation for A-Level Physics RHS

Task 1

Work through the presentation and watch the video "Inside Einstein's Brain".

Once you have watched it, I want you to write what you took from the video: what you understood; where these ideas could lead us and, most importantly, what questions you have left that were unanswered.

Write your thoughts in a doc and upload it as your submission.

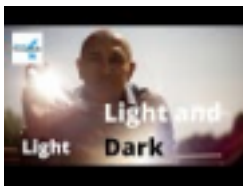
The questions you have will form the basis of future work for us.

1. Preparation for Physics A-level

Task 2a The Secrets of Light

Watch the documentary.

Which of the discoveries/scientists do you feel has made the largest contribution to our understanding of the way the universe works? You will need to discuss and upload your ideas.



[Light and Dark - 1 of 2 - Light - Jim Al Khalili](#)

Task 2b Atomic Energy Levels

Work through the presentation, which includes lots of calculation examples, and then complete the Exit Quiz



Energy Levels Exit Quiz 21

Google Forms



Energy Levels.pptx

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Task 3a The Illusion of Reality

Nothing to do for this one except watch!

Two of my favourite characters from physics have their ideas discussed - ideas that fundamentally changed our view of reality; ideas that we will be studying.



[BBC Documentary Atom 3 The Illusion of Reality](#)

YouTube video 53 minutes

Task 3b Matter & Antimatter

Work through the presentation and then try the exit quiz in which you will have to calculate masses, energies, frequencies and wavelengths. You'll also have to be able to convert Joules into electron-volts and vice-versa



[Antimatter Exit Quiz](#)

Google Forms



Antimatter.pptx

PowerPoint

Class comments

Task 4a Gravity

In the video, Jim al-Khalili appears to shrink due to the effect of gravity pulling him down and compressing his spine. When astronauts return from space they are always taller than when they left. Does this mean there is no gravity in space?

Discuss this question and upload your discussions.

(Of course, there are two more videos in this series if you're interested...)

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[How Gravity Shapes The Human Body With Jim Al-Khalili | Gravity And Me | Spark](#)
YouTube video 44 minutes

Task 4b Air Resistance and Projectiles

From the gravity video you've just watched, one major obstacle to our understanding gravity was air resistance. This task is all about air resistance and its effects.

There isn't a presentation this week - an instruction video, a link and then a quiz.

Watch the video, follow the link then answer the questions in the quiz (you'll need the link open to answer the quiz!)



PHET Projectiles Exit Quiz
Google Forms
Projectile Motion



[Projectile Motion Simulation](#)

Phet Projectiles.mov
Video

Task 5 The Beginning & End of the Universe

Sit back, relax and enjoy the ride!

[The Beginning and End of the Universe | BBC Documentary](#)

We will attempt to answer the questions posed in this video.