IsaacPhysics

Optics

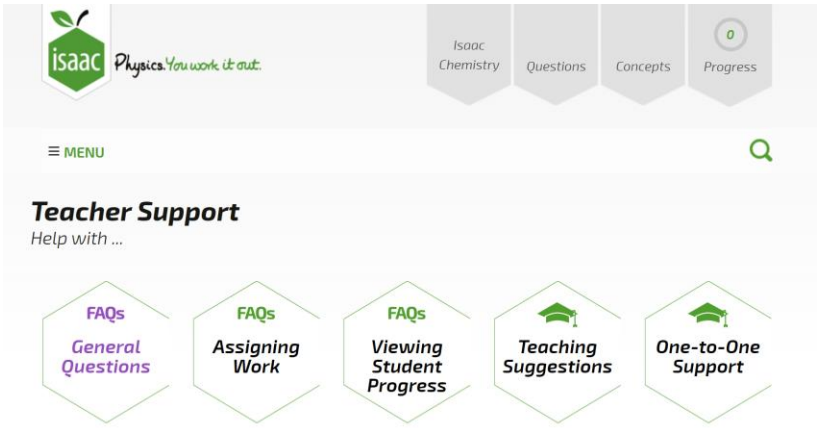
This document contains links to a number of Isaac Physics exercises that cover the area of leaving cert optics, including

- Curved mirrors
- Refractive index
- Critical Angle
- Curved lenses

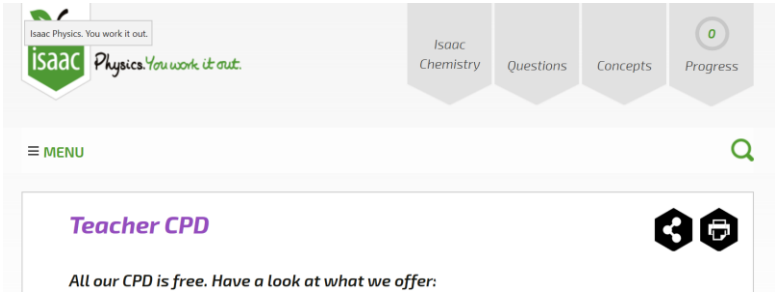
Click on the link to see the exercise. To assign these to a class, you should follow the website to menu/set assignment/add a board.

Help Available…

Remember that there are a number of aids embedded in the Isaacphysics.org website that help those unfamiliar (or partially familiar) with the website.



And also, an online CPD structure – that I think many school managers would be happy to accept as counting towards Croke Park hours.

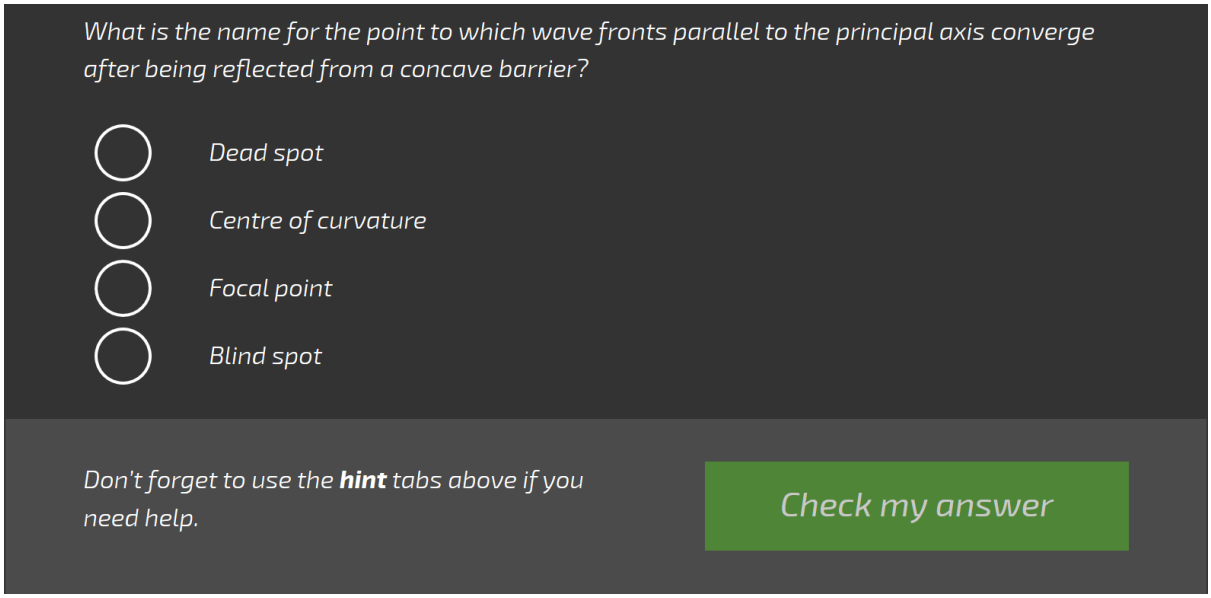


Curved Mirrors

https://isaacphysics.org/assignment/655f8321-c9f8-4070-b28a-b445133cf44f

This deals with image formation in concave and convex mirrors

Sample question



LC Lenses

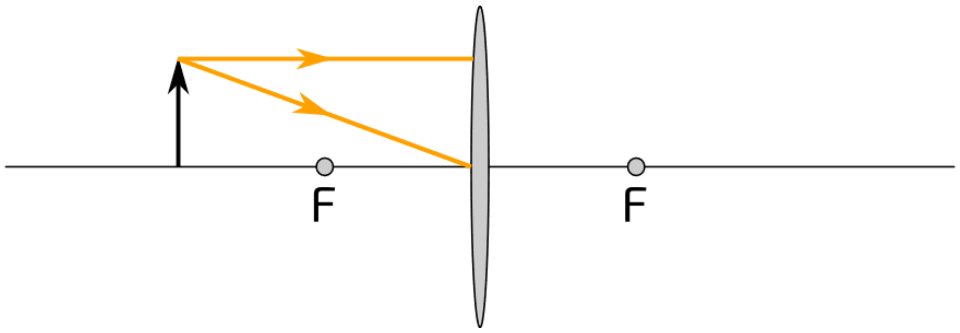
https://isaacphysics.org/assignment/26dc0c2a-9576-4ae4-9b59-090705f64a9f

This deals with image formation in lenses

Sample question

Part A $u = 2F$

Figure 1



Answer Now | Hint 1 | Hint 2

Where is the image?

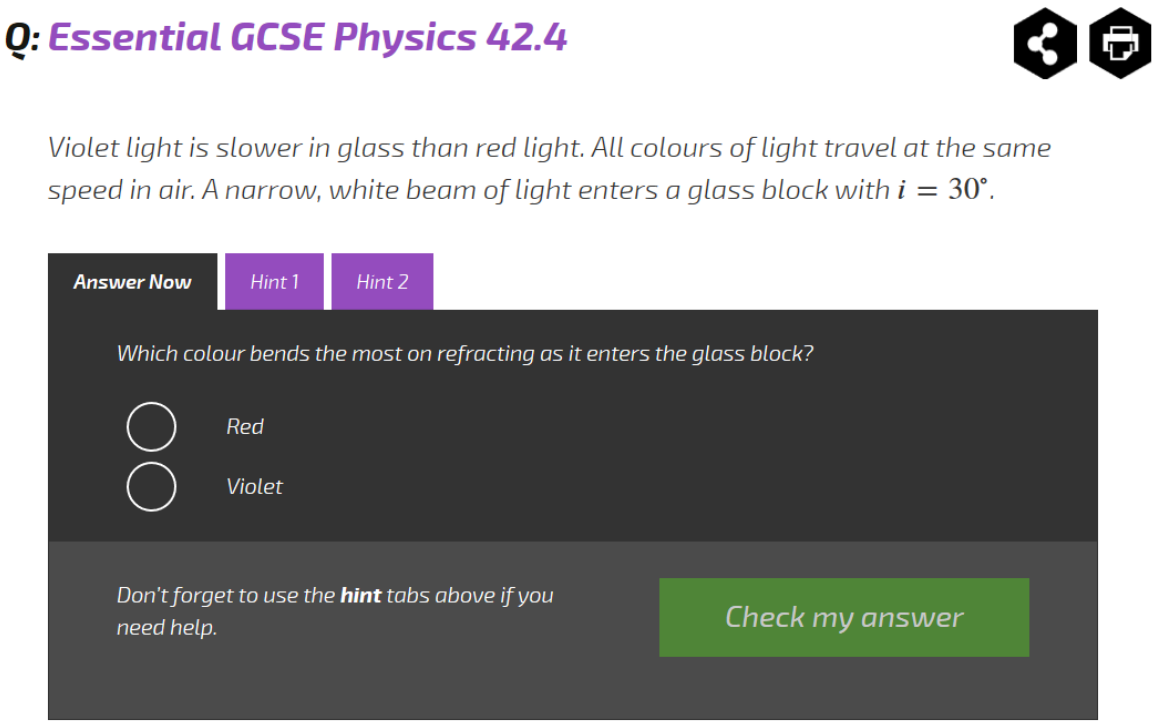
- ○ *At 2F on the right of the lens*
- ○ *At F on the right of the lens*
- ○ *Between F and 2F on the right of the lens*
- ○ *Beyond 2F on the right of the lens*

LC Refraction

https://isaacphysics.org/assignment/c9764e6e-2cbb-42ca-8e0b-455cc81f3ef4

General questions on the basics of refraction. A number of questions deal with the fact that different colours/wavelengths refract to a different extent when passing into a dense material.

Sample Question



LC Refractive index

https://isaacphysics.org/assignment/e2002388-c8e4-476b-9901-6f0ec11ae0b8

Question that concentrate on the calculations involving the refractive index of a material, and Snell's Law

Sample Question

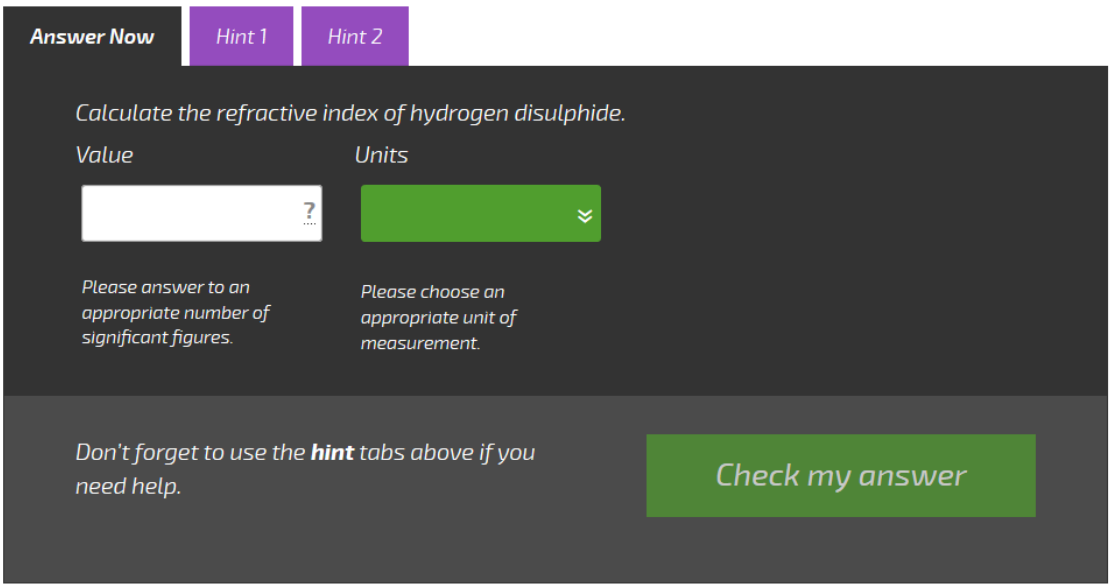
Q: Essential GCSE Physics 46.2

Data:

$$\text{refractive index of air} = 1.00$$

$$\text{speed of light in a vacuum} = 3.00 \times 10^8 \text{ m/s}$$

The speed of light in hydrogen disulphide is 1.59×10^8 m/s.



LC Critical Angle

https://isaacphysics.org/assignment/37296b07-089a-482b-97cd-9bf9796a806c

Material focusing on critical angle and its relationship with refractive index. A few questions deal with the key application of fibre-optic cables

Sample Question