

IsaacPhysics

Optics

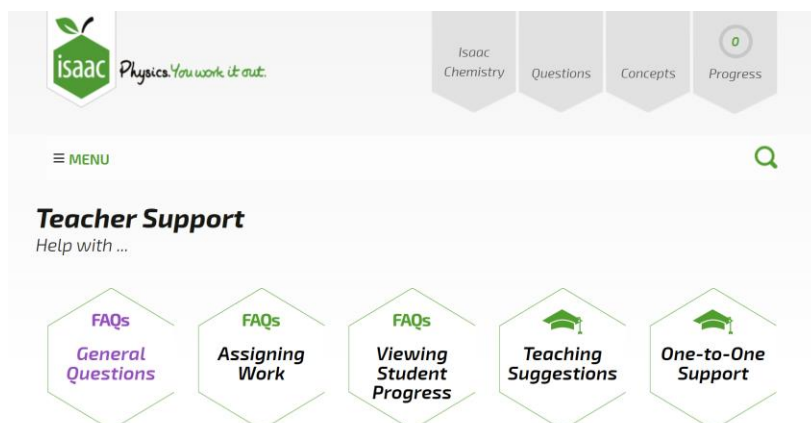
This document contains links to a number of Isaac Physics exercises that cover the area of leaving cert optics, including

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

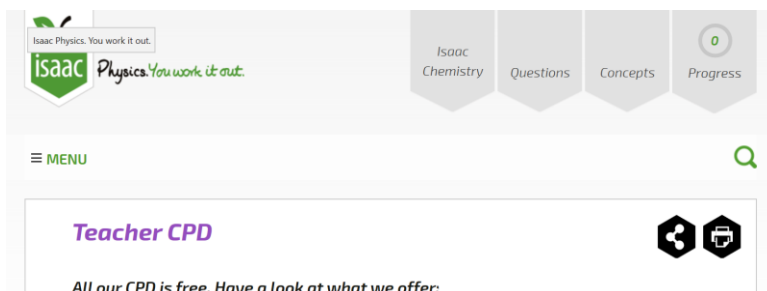
Click on the link to see the exercise. To assign these to a class, you should follow the website to menu/set assignment/add a board.

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

What is the name for the point to which wave fronts parallel to the principal axis converge after being reflected from a concave barrier?

- Dead spot
- Centre of curvature
- Focal point
- Blind spot

Don't forget to use the **hint** tabs above if you need help.

Check my answer

LC Lenses

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

This deals with image formation in lenses

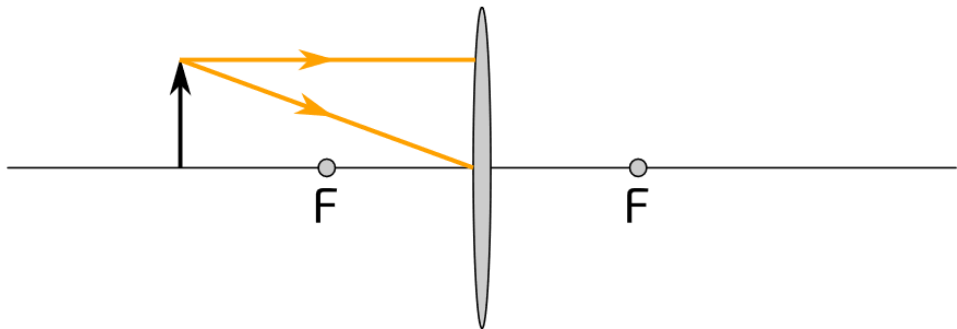
Sample question

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

Q: Essential GCSE Physics 42.4



Violet light is slower in glass than red light. All colours of light travel at the same speed in air. A narrow, white beam of light enters a glass block with $i = 30^\circ$.

Answer Now

Hint 1

Hint 2

Which colour bends the most on refracting as it enters the glass block?

Red

Violet

Don't forget to use the **hint** tabs above if you need help.

Check my answer

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:

refractive index of air = 1.00

speed of light in a vacuum = 3.00×10^8 m/s

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

Answer Now

Hint 1

Hint 2

Calculate the refractive index of hydrogen disulphide.

Value

Units

Please answer to an appropriate number of significant figures.

Please choose an appropriate unit of measurement.

Don't forget to use the **hint** tabs above if you need help.

Check my answer

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

Q: *Essential GCSE Physics 47.1*



Data:

refractive index of glass = 1.50

Answer Now **Hint 1** **Hint 2**

Calculate the critical angle for light leaving glass into air.

Value	Units
<input type="text"/>	<input type="text"/>
<small>Please answer to an appropriate number of significant figures.</small>	<small>Please choose an appropriate unit of measurement.</small>

Don't forget to use the **hint** tabs above if you need help.

Check my answer