Welcome to A-level Physics at OLCC

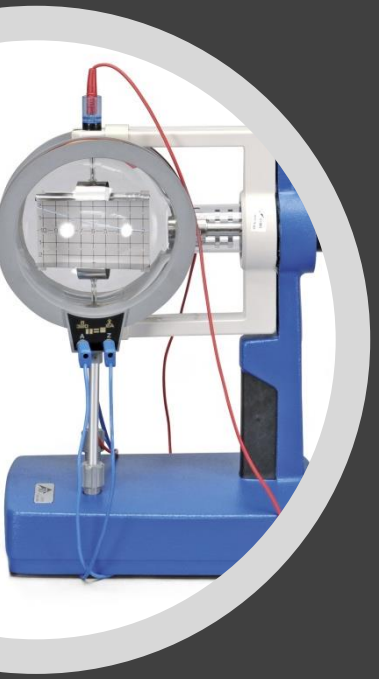
Next year……

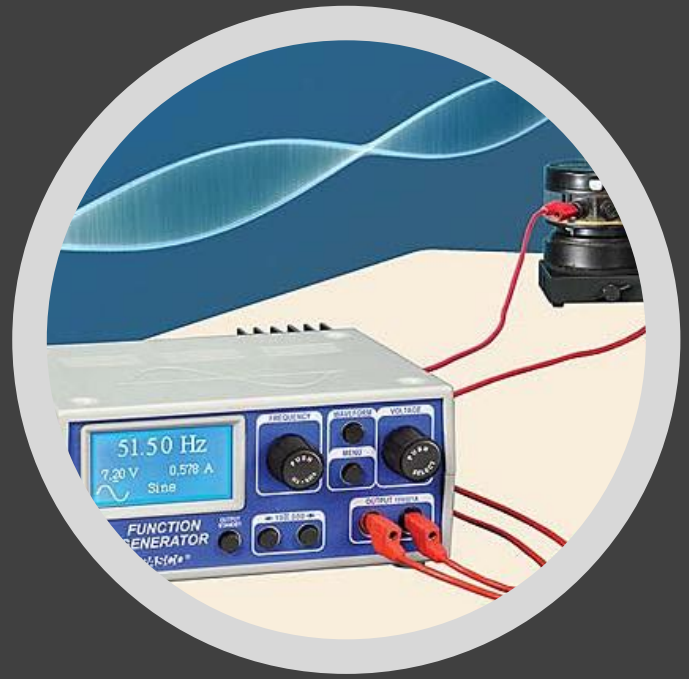
What can you expect?

Hi, I'm Mr Cloke. I've been teaching Science for 25 years, including A-level physics for most of them.
I'm a 6th Form tutor and science teacher at OLCC.

You will have 9x1hr lessons of physics lessons a fortnight in a mix of singles and doubles

Most lessons will be in the science lab 3S1, where all practicals will take place. Some lessons maybe in the 6th Form block, these will be theory lessons.



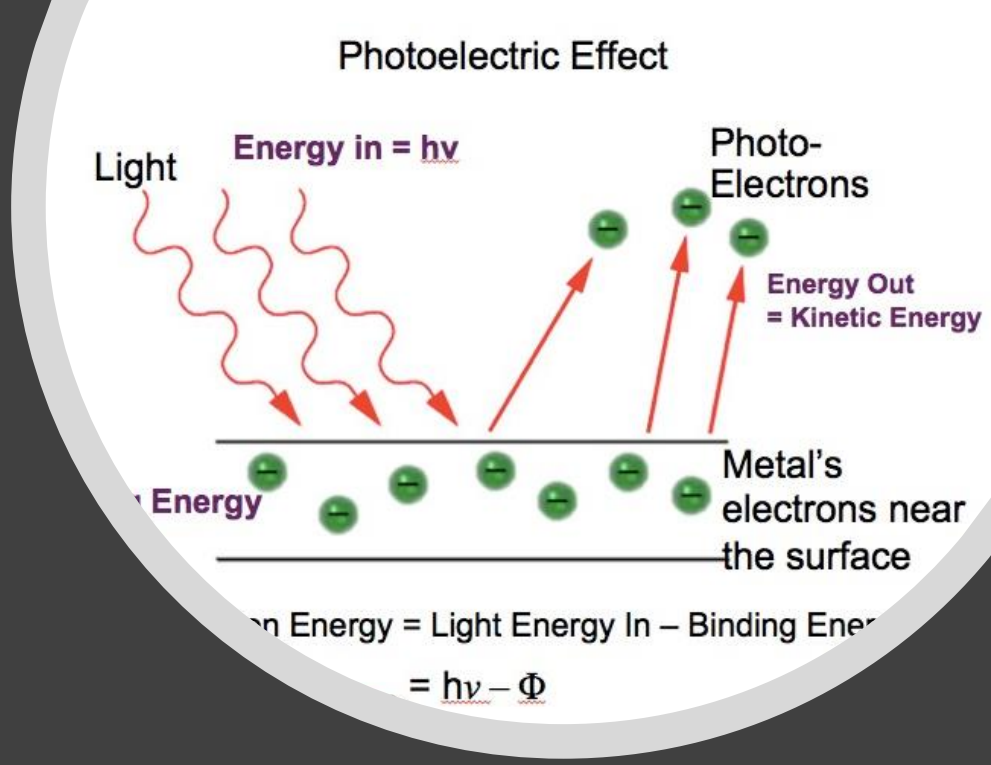


What can you expect?

- AQA syllabus
- A strong emphasis on practical skills.
  12 core practicals and many more besides

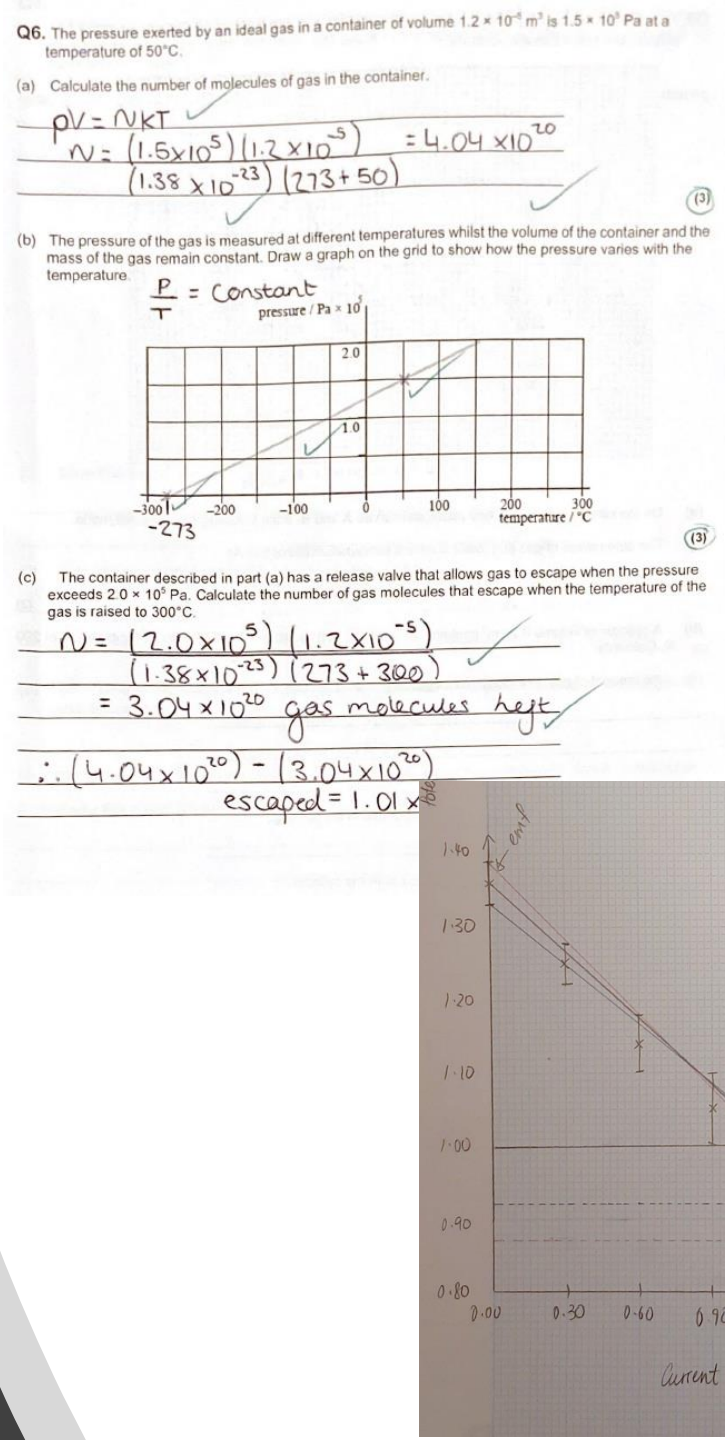
What can you expect?

- AQA syllabus
- Theory of just about everything!
- Y12 builds a lot on familiar GCSE topics such as forces, electricity and energy and introduces new modern physics such as particle physics and wave-particle duality



What skills will you learn?

- Using a wide range of equipment accurately
- Data and error analysis
- Application of theory to unfamiliar scenarios
- Mathematical & problem-solving skills to a high level



Q6. The pressure exerted by an ideal gas in a container of volume 1.2×10^{-5} m^3 is 1.5×10^5 Pa at a temperature of 50°C.

(a) Calculate the number of molecules of gas in the container.

$pV = NkT$

$N = \frac{(1.5 \times 10^5)(1.2 \times 10^{-5})}{(1.38 \times 10^{-23})(273 + 50)} = 4.04 \times 10^{20}$

(3)

(b) The pressure of the gas is measured at different temperatures whilst the volume of the container and the mass of the gas remain constant. Draw a graph on the grid to show how the pressure varies with the temperature.

$\frac{P}{T}$ = Constant

pressure / Pa × 10^5

2.0

1.0

−300 −200 −100 0 100 200 300

−273

temperature / °C

(3)

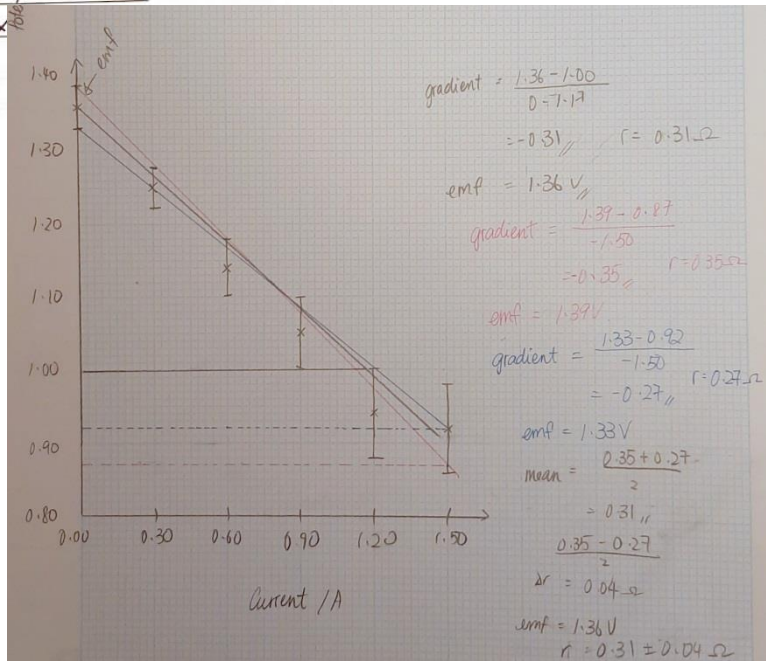
(c) The container described in part (a) has a release valve that allows gas to escape when the pressure exceeds 2.0×10^5 Pa. Calculate the number of gas molecules that escape when the temperature of the gas is raised to 300°C.

$N = \frac{(2.0 \times 10^5)(1.2 \times 10^{-5})}{(1.38 \times 10^{-23})(273 + 300)}$

$= 3.04 \times 10^{20}$ gas molecules left

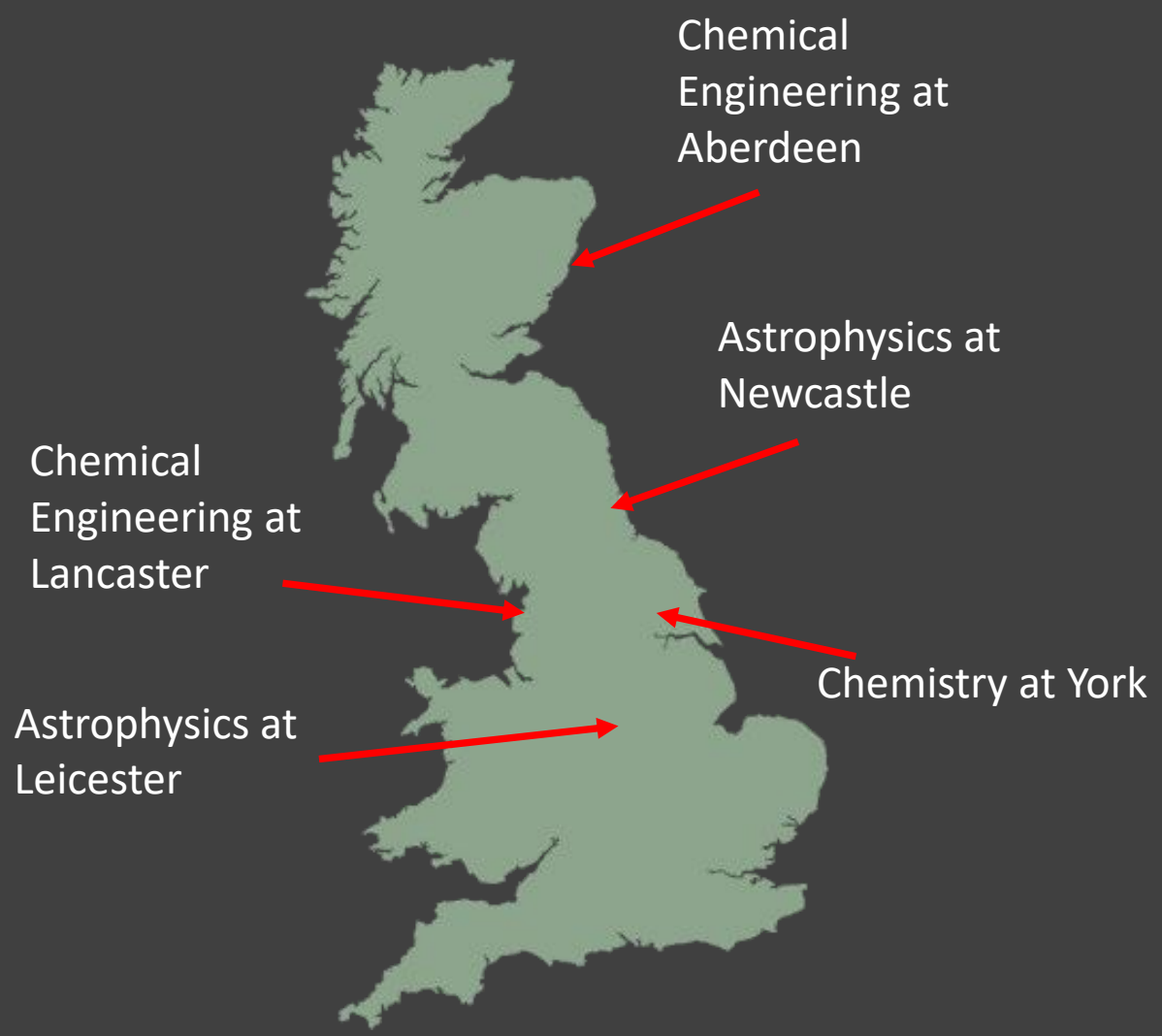
$\therefore (4.04 \times 10^{20}) - (3.04 \times 10^{20})$

escaped = $1.01 \times$



What have previous students achieved?

- 2019 results: 3 B's 1 C



Extra-curricular

- Hoping to set up a visit to Jodrell Bank radio-telescope
- Participating in Lancaster University ‘Physics Masterclasses’
- Opportunities of a Nuffield Summer (Y12 to 13) project at university

Careers & Physics A-Level

A- Level physics is a necessity to access degrees in:

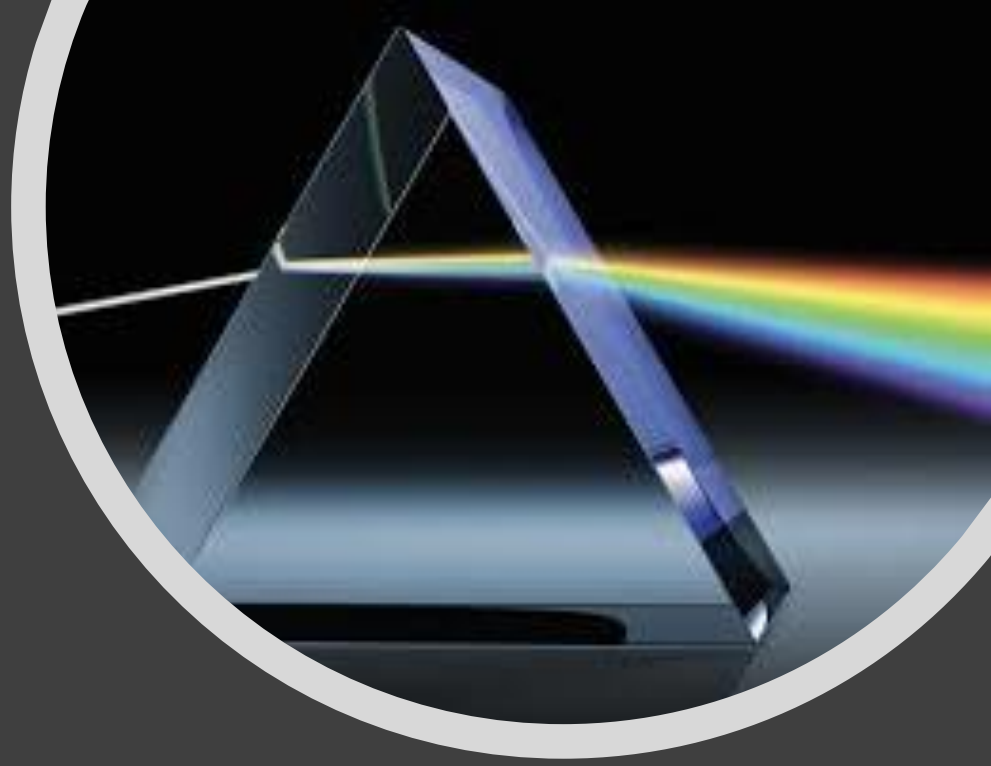
Physics or Geophysics and all forms of Engineering.

Very useful for:

all sciences, medicine, dentistry, nursing, optometry, architecture, computing, game design, geography, environmental sciences, maths, pharmacy, sports science, surveying & even finance!

It’s a facilitating subject for entry to the Russell group top 20 Universities

Some final words from a current Y12 student…



“I am enjoying A-level physics.

It’s a challenging subject, don’t get me wrong, but so far it has been a fun experience. The mix of practical work and theory is really engaging.

A-level courses are difficult in nature and usually the answer to most of the problems you face will be revision.”

If you have any questions or want any advice or help please contact me at
j.cloke@olcc.lancs.sch.uk

To help get ready for A-level try:
https://isaacphysics.org/gameboards#gcse_alevel_transition_skills