

# A-LEVEL PHYSICS

## BRIDGING WORK

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The bridging work MUST be completed by the time you start your course.

Your work will be assessed in September.

The aims are for you to understand if you like the course and for you to be ready to start learning at post 16 level.

### Content

Task 1 - Isaac Physics Assessment (2hr)

Task 2 – Article review (3hrs)

Task 3 – Experimental Work (5 hrs)

### Useful links

[Specification](#) - Have a look through the specification. It contains all the information about the course incl assessment structure and topics studied.

[Practical Skills handbook](#) – Use this to help you with completing task 2. It tells you how to lay out practical work and explains important ideas about significant figures and uncertainties

## Task 1

The first section is based around a website called Isaac Physics. You will need to register by copying the link below into your browser.

<https://isaacphysics.org/account?authToken=MJ8HQ4>

You should then look for the tasks that I have assigned. There are 4 to complete covering basic skills from standard form to graphs. The aim is to ensure that you have some of the key mathematical skills required for year 12 physics.

## Task 2

The second part of the transition task gives you the freedom to explore an area of Physics that you find interesting. This could be engineering, astrophysics, quantum theory, electronics, dark matter, general relativity, particle physics or any other topic. All you need to do is to read a book (ideally, as you get more detail), watch a TV series/TED talk, read a magazine article etc and then **write a short (no longer than one side of A4) summary and explanation of what you found out and why you are interested in this topic.** This will need to be handed in at the start of the year. (see the Rushcliffe Super Curriculum app)

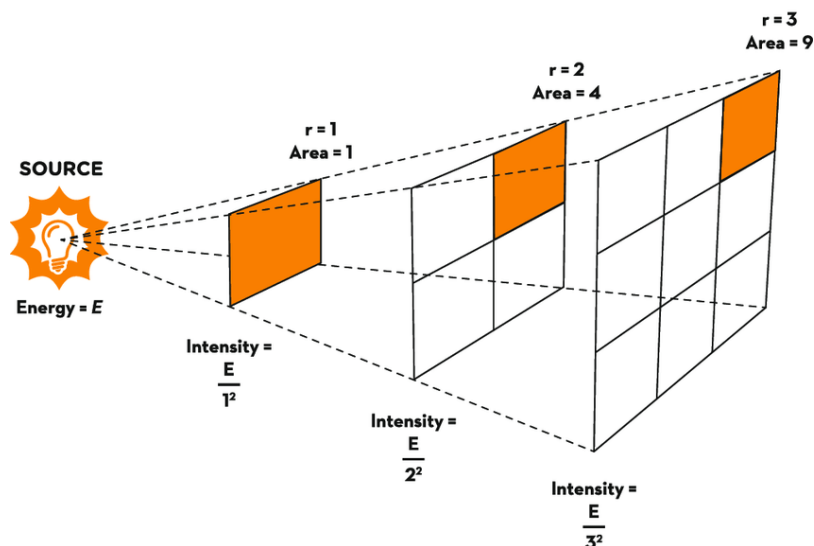
## Task 3 – Practical Skills

The aim of this task is to introduce you to practical work at A-Level and in particular to the practical physics handbook. One of the key elements of the course will be the development of your practical skills. Many of these you are familiar with (variables, recording and displaying data) but there will be some new ideas (quantifying errors). In the task detailed below you will be using equipment from your home to investigate some fundamental physics.

Please refer to the practical skills handbook (link on front page)

You must complete the tasks in the 'to do' section and then answer the analysis and evaluations questions.

## Light Intensity Practical



### Equipment:

Light source (table lamp or torch)

Ruler/tape measure

Smart phone (if you have android then you can use [sci journal app](#). If you use ios then it is better to download a free light intensity app. E.g

[https://play.google.com/store/apps/details?id=com.doggoapps.luxlight&hl=en\\_GB](https://play.google.com/store/apps/details?id=com.doggoapps.luxlight&hl=en_GB))

### To Do

Devise an experiment to investigate how intensity of light changes with distance from the source. You may research a method for this. Include a risk assessment. **The method does not need to be written up.**

Record your data in a table. You may use excel (refer to the practical skills handbook for conventions)

Display your data as a graph. You may use excel.

### Analysis and Evaluation

What were your independent, dependent and control variables?

How did you control your control variables?

How did you reduce the effect of random errors in your experiment?

What is the relationship between distance and light intensity? You may research this.

Did your data have the same relationship? How could you test this?

How could this relationship be used to find the distance to stars?