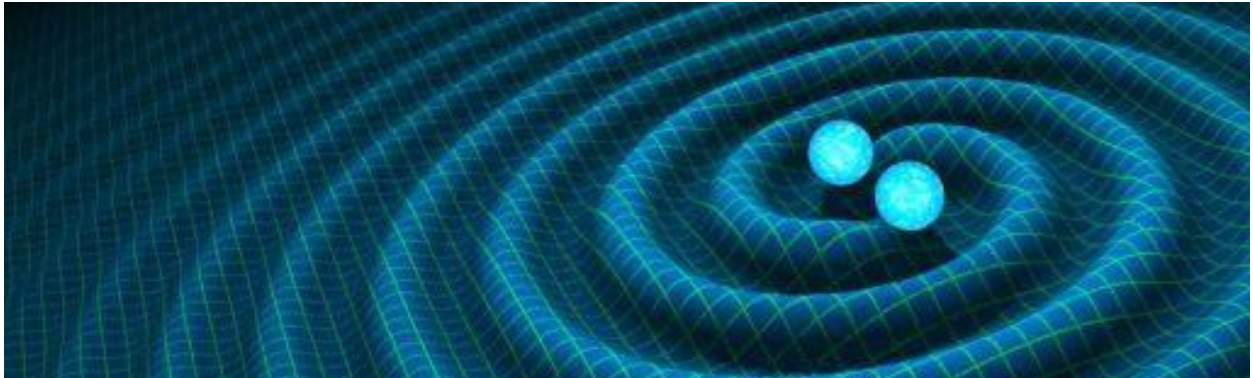


Physics

Introductory Summer Work



Introduction

Physics is the study of matter, movement, and importantly energy.

There are many different forms of energy. The following tasks will probably be revision of things you already know, and will be a starting point for some of the assignments you will do in Physics.

Please use any resources you can find, books, websites, friends, family to complete the tasks below. I look forward to seeing you and your answers in the new term.

Tasks

Energy

1. State the law of conservation of energy
2. Make a list of the different types of energy
3. Describe the energy transfers in the following situations, you should think carefully about what forms the energy transfers from/to and make it clear where energy is wasted:
 - a. A hydroelectric power plant, such as Dinorwig Power Station in Wales, or Cruachan Power Station in Scotland.
 - b. Transporting a shipment using a drone, such as Amazon's proposed drone deliveries.

Energy Transfers

Describe the three heat transfer mechanisms; conduction, convection and radiation. And give practical examples of each type.

Optical Fibres

Two uses of optical fibres are:

1. Medical Endoscopes
2. Internet

Researching fibre optic cables and produce one side of A4 which:

- Describes the construction of a step-index optical fibre
- Describes the construction of endoscopes
- Explain how the endoscope transmits light and receives an image
- Outlines where optical fibres are used in transmitting data across the globe (there are some good maps showing the cables joining countries)
- Explains how digital data is sent through the fibres