

Medical Physics

(More BTEC Applied Science (Medical) Transition Work)



Well done on completing the first set of transition work! Here is some more to help prepare you for your course next term. Please bring the completed work with you on the first day of college.

This work is all about the Physics used in devices that investigate medical conditions.

An understanding of this will enable you to focus on a number of medical applications of physics and its importance in the diagnosis and treatment of patients.

Surgery today is faster, less invasive and more effective than ever, thanks in part to improvements in medical imaging technology as a result of developments in medical physics. Imaging gives the doctor a clearer understanding of the patient's condition so treatment can be planned more effectively and therapy delivered more precisely.

You will be investigating and gaining an understanding of a number of technological advances that have resulted in the use of faster, less-invasive and more effective medical physics ionising and non-ionising radiation diagnosis and treatment technologies. You will also learn about health and safety, risks and the side effects of using ionising and non-ionising radiation.

Below are your tasks on Medical Physics. Do some research and reading then answer the questions in your own words, don't just cut and paste from the Internet. Pictures would be useful too.

1. Find out all you can about Magnetic Resonance Imaging

You could include:

- How MRI machines work

- What they can and can't diagnose
- Their safety and cost

2. Research X-rays and X-ray machines

You could include:

- What is an X-ray?
- How are X-rays produced?
- What type of diagnoses are X-rays used for?
- Are they used for any type of treatment?
- Are they safe? What precautions need to be taken?

3. Research proton beam therapy

You could include:

- How does proton beam therapy differ from traditional gamma ray radiotherapy?
- Who is it suitable for?
- How much does it cost and is it readily available?
- Why did Aysha King's parents 'kidnap' him?

4. The role of the Medical Physicist

What do they do?