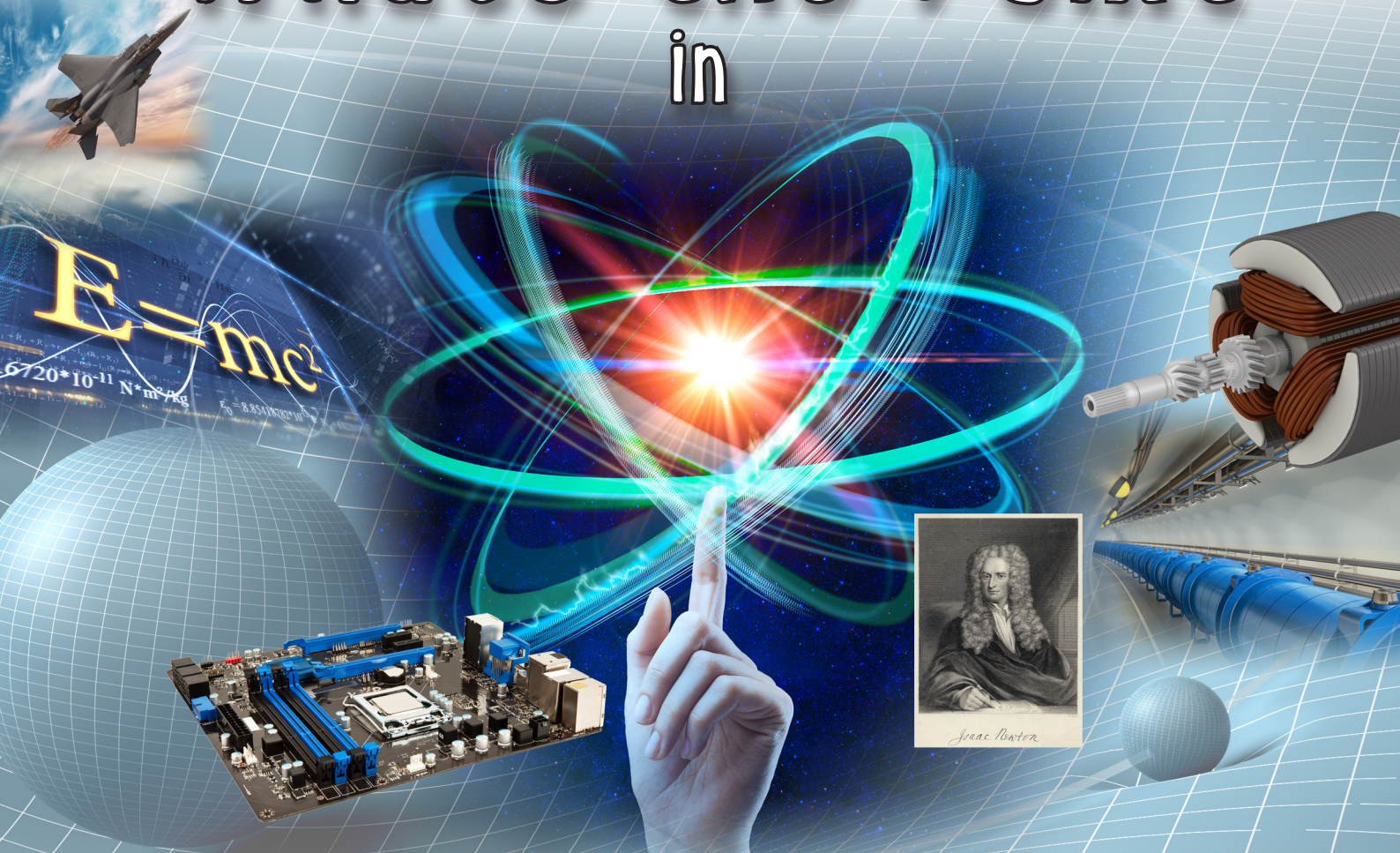


What's the Point in



Physics?

To help you understand the value of physics, we've spoken to a number of professionals who still use the skills, qualities and knowledge they gained from the subject at school in the work they do today. Turn over to find out who they are, what they do and what they had to say.....

What's the point in physics?

The Pilot

Physics is a very important science because it tells us what is going on around us, in all aspects of life. There are aviation specific areas in physics but if you have a general understanding at GCSE level then you will have no problems with the pilot licence exams. It is a vital subject.

Ken Carvosso, Retired Pilot

The Professor of Climate Physics

I use physics every day in my day job as an atmospheric physicist and as a volunteer science teacher in a primary school. Physics and maths are the essential subjects for a meteorologist. The physics of how light is scattered by particles in the atmosphere and the thermodynamics affecting hot air rising and cooling to cause cloud formation are key in my role.

Ellie Highwood, Professor of Climate Physics at the University of Reading

The Account Director

I use physics every day! It's the fundamental science topic for most engineers. Structure, motion, electricity, fluids, and energy - these are huge parts of our world. For every building, every vehicle, and every manufactured object, physics is at the heart of it. From the nanoscopic to the movement of the stars, this is physics at work. It has shaped my career and indeed my whole outlook on life!

Jason Mardell, Account Director at Emcor UK

The Radiotherapy Consultant

I provide scientific input to a multidisciplinary team of medical professionals in the department of radiotherapy in a large NHS teaching hospital. In radiotherapy, we use radiation to treat cancer either via external radiation beams or internal radioactive sources. I use my knowledge of radiation production and how it interacts with matter to assist the cancer specialist doctors in planning and delivering individual patients' treatment.

Ruth McLaughlan, Consultant Radiotherapy Physicist, Imperial College Healthcare NHS Trust

The Railway Engineer

Physics gave me the foundation for a degree in mechanical engineering and my subsequent work on design and testing of trains, engineering components, materials, and railway systems. This ranges from large steel structures to motors, temperature controls, radios, and public address systems on stations. I continue to use fundamental physics principles in railway operations, advising on train, signalling and railway performance, and implementing IT systems.

Charles Horsey, Scheduling Services Manager at Transport for London

The Patent Attorney

My job involves protecting other people's inventions. This means I have to understand what the invention is in the first place in order to define and describe it clearly and succinctly. This can be as simple as knowing what a snap-fit mechanism is or the functions of an Archimedean screw, to more complicated inventions that rely on an understanding of how an ultrasonic vibrator generates energy to cut tissue.

Chloe Grover, Patent Attorney at Carpmaels & Ransford LLP

The Design Engineer

I am a design engineer and given the stringent requirements each aircraft component must meet, I need to complete stress calculations almost daily. The basis of these is learned at A-level physics, with analysis of stress, strain, and Young's modulus. A-Level physics is essential for any applied mathematics career and, at the very least, will help you win a few pub quizzes down the line!

Rhys Durham, Design Engineer SAFRAN (aircraft interiors)

The Consultant Radiologist

I use physics every day when planning how to X-ray a small child or how to MRI a brain. I check my radiation dose when I'm ballooning an artery or taking a sample from someone's cancer. I also have to understand the physics of ultrasound when using the machine on patients of all different shapes and sizes.

Kunal Khanna, Consultant Radiologist and Interventional Radiologist at Frimley Health NHS Foundation Trust

The Clinical Engineer

As a clinical engineer, I can be involved in projects which require the application of physics. Let's look at an example. The intensive care unit in the Trust have requested a bed transfer table. The table will attach to the two foot ends of the bed. As part of specifying requirements, I need to take into account the mattress and equipment weight plus the maximum patient weight. This gives me an idea of the approximate weight of the table so that I can progress to the selection of material and modelling of forces, using software as part of the design.

Nana Odom, Clinical Engineer at the Royal United Hospitals NHS Foundation Trust

The Dental Consultant

When teeth break, the material used to repair them has to fulfil certain requirements. If not, it will fail. Knowledge of physics (tensile strength, fatigue, flexibility, and compression in particular) are essential to selecting the right materials and designing new materials. When cutting teeth, you need to consider the design based on what forces will be applied and how those forces will be dissipated. Knowledge of physics is also required when straightening teeth to improve a patient's bite or smile.

Soureya Seetal, Consultant in Periodontology at Kings College Hospital NHS Trust

Another Patent Attorney

As a patent attorney, my job is focused on looking at new technology and understanding how it differs from and improves existing technology. A science degree is an important entry requirement for this role. I focus on high-tech inventions so I often directly apply the knowledge I obtained from studying physics. In addition, the problem solving abilities taught in physics at both school and university help me to understand the new technology at the speed necessary to do my job.

Katherine Brown, Patent Attorney at Boulton Wade Tennant



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