

Careers linked with Particle Physics

Supporting Information for Teachers

With the implementation of the new Gatsby Careers Benchmarks¹, teachers are expected to embed careers information in the classroom (Benchmark 4). The KS3 careers linked with Particle Physics postcards are an easy gateway to introduce your students to different careers in particle physics available across projects and facilities supported by the Science and Technology Facilities Council. The cards are available in both physical and digital formats, making them easy to incorporate into your own lessons, display in the classroom, or give out to students.

Anatomy of the postcard

Each postcard contains:



Careers linked with particle physics
Beamline technician

A short overview of the job which includes 3 STEM attributes

Links with KS3 science curriculum

Example of workplace and QR code for further information

Beamline technicians need to be **logical** to ensure that the equipment linked with beams of particles created by particle accelerators is correctly installed. They are **resilient** while they assist other teams at STFC to use the beamline to carry out experiments. Beamline technicians need to be **hard-working** to ensure that work is carried out in a safe manner using the correct processes.

Science to know
Electromagnets | Wave Properties | Magnetism

Level
A-Levels

Where beamline technicians work
ISIS Neutron and Muon Source

Level of education needed

For more information about this facility scan the QR code

 Science and Technology Facilities Council





Why careers in Particle Physics?

Particle Physics is often seen as a 'difficult' branch of physics to relate to jobs. These postcards not only enable teachers to showcase the importance of Particle Physics during their science lessons, but also to engage students earlier in conversations regarding their future subject options in school.

Why STEM attributes?

Students typically have limited knowledge of careers in STEM, and may find it difficult to picture themselves doing STEM jobs. Showcasing attributes helps a wide range of students identify with a job and the characteristics needed for it. Often students will already possess these attributes and characteristics.

¹ <https://www.gatsby.org.uk/education/focus-areas/good-career-guidance>

The 15 STEM attributes

We selected these based on earlier work by the WISE Campaign and the Royal Academy of Engineering:

Observant

If you are observant you are quick to see things, you are able to spot fine details, and you are good at paying attention.

Open-minded

Open-minded people are willing to listen to new ideas and respect other people's views and opinions.

Logical

Logical people can solve problems by thinking through them in a sensible order. They understand how one action can lead to another.

Creative

Creative people make new things and have original ideas.

Imaginative

If you are imaginative, you can think of new and interesting ideas.

Organised

Organised people are good at planning to make sure they finish things.

Patient

If you are patient, you are able to stay calm when faced with problems.

Resilient

Resilient people can quickly recover from difficult or challenging situations.

Communicator

Communicators are good at sharing information and ideas with other people.

Passionate

Passionate people have strong feelings about things that interest them.

Curious

If you are curious, you want to learn new things.

Self-motivated

Self-motivated people like to do things for themselves without being told how to do them.

Hard-working

Hard-working people put all of their effort into finishing things.

Tenacious

If you are tenacious, you are able to stick with something difficult until it is finished.

Collaborative

Collaborative people work together to do things.

Curriculum-mapped careers

We've mapped how the Careers linked with Particle Physics relate to the KS3 science curriculum:

Forces

Speed
Cloud architect
Project manager

Contact Forces

Mechanical engineer
Quality assurance engineer
Embedded systems engineer

Pressure

Mechanical engineer
Quality assurance engineer
Vacuum processing technician apprentice

Matter

Particle Model

Theoretical particle physicist
Data scientist
Accelerator physicist
Radiation protection supervisor
Science communication officer
Experimental particle physicist

Periodic table

Radiation protection supervisor

Matter

Elements

Diagnostic radiologist
Science communication officer

Electromagnets

Voltage and Resistance
Electronic engineer apprentice
Diagnostic radiologist
Embedded systems engineer

Current

Electronic engineer apprentices

Electromagnets

Accelerator physicist
Beamline technician
Quality assurance engineer
Science communication officer

Magnetism

Cryogenics technician
Beamline technician

Energy

Energy Costs

Data scientist
Cloud architect
Project manager
Energy manager

Energy Transfer

Theoretical particle physicist
Electronic engineer apprentice
Data scientist
Accelerator physicist
Cryogenics technician
Vacuum processing technician apprentice
Embedded systems engineer
Experimental particle physicist

Heating and cooling

Mechanical engineer
Cryogenics technician
Vacuum processing technician apprentice

Contact us!

You'll find this and other Particle Physics career resources at:

<https://www.ppd.stfc.ac.uk/Pages/PPD-Staff-In-Depth.aspx>