

Other Ideas for Pupil Activities

The following are some further ideas which could be used as the basis for pupil activities.

CERN Slide Show

Create a slide show about CERN. The slide show could focus on for example, the history of CERN, or on CERN experiments or the role of CERN Scientists and Engineers

Useful Links

- CERN Careers
- CERN Large Hadron Collider
- How Stuff Works (CERN)
- BBC History of CERN

Contact a CERN Scientist

Make contact with a CERN scientist and ask him/her to participate in a class discussion via webcam or VLE. This would be an opportunity for pupils to think about and pose key questions. This might include questions about why they became interested in Science/Engineering and what type of work they do and what skills are required for their career.

Useful Links

- CERN
- CERN Careers
- Institute of Physics

Discovering More About Elementary Particles

Find out when 'Quarks' were discovered, how they got their names, who discovered them and how they were found. Compile some interesting facts and figures about elementary particles. For example, pupils could gather information about the number of known elementary particles, their names and masses and examine how different elementary particles can be combined to produce other particles.

Useful Links

- CERNland
- Particle Adventure
- ThinkQuest

Particle Physics and the Big Bang

Examine how particle physics is connected to the 'Big Bang' Theory. Pupils might investigate how the information they gain from their experiments into particles will help to provide us with a better understanding of how the Universe works.

Useful Links

- BBC Horizon (The Six billion Dollar Experiment)
- BBC (Science – Big Bang)
- BBC Radio 4 (Big Bang)
- CERN Antimatter
- Black Holes

How Does the Large Hadron Collider Work?

Research how the Large Hadron Collider works and the engineering behind the LHC. For example, pupils could consider why particle collisions have to take place in a vacuum and how this vacuum is created or explore how and why magnets are used to guide particle beams.

Useful Links

- How Stuff Works (CERN)
- Wikipedia (LHC safety)
- LHC Design Report

Other Ideas for Pupil Activities

Create a Particle Physics Comic Strip

Use 'Comic Life' to produce a comic strip story board about elementary particles. For example, pupils could produce posters or models of different elementary particles. They could keep a digital photographic record of their work. They could use their photographs to create characters for their particles and produce a story to illustrate how they were formed or to highlight their properties.

Useful Links

- CERNland
- Particle Adventure
- Quark Dance
- Fermi Labyrinth (Games)

CERN Technology and Discovery

Analyse how advances in technology have contributed to scientific discoveries at CERN. For example, pupils might examine some of the 'spin off' technologies developed at CERN and discuss how they have benefited society and or the economy. For example, pupils might investigate how the Internet was developed and consider its impact on our lifestyles and business or they could consider how developments in technology at CERN are used in medical applications such as medical imaging.

Useful Links

- European Commission (CERN and 'Spin Off' Technologies)
- CERN
- Guardian (History of the Internet)
- Microsoft

Debate: Does CERN Provide Value for Money?

Arrange a class debate on CERN in relation to providing value for money. Pupils could research which countries fund CERN, how much per year they

each contribute and evaluate whether or not CERN provides value for money. As part of the discussion pupils could investigate why Austria decided to stop funding for CERN. Pupils could also consider if the money could be better spent for example, on reducing global poverty or improving healthcare provision.

Useful Links

- CERN
- CERN (Benefits of Basic Science)
- Swiss Info
- CERN (costs)
- CERN (costs)
- BBC (News Article)
- Wikipedia
- New Statesman (News Article)

Women in Science

One of the interviewees in the CCEA CERN video was Dr Alison Lister. Alison talks about her interest in Science and her work at CERN. This could be used as a focus for researching the role of women in Science. Pupils might document how the role of women in Science has changed over time, or pupils could produce a short biography of a female Scientist. They could provide reasons for their choice of female highlight why the person became interested in Science, her career path and the significance of her role. Alternatively, pupils might investigate the role and contribution of Women to Science in Northern Ireland.

Useful Links

- CERN Celebrating Women at CERN
- CERN Power and Prejudice: Women In Physics
- CERN The Large Hadron Collider Runs on Women Power
- Russia (News Article)

Other Ideas for Pupil Activities

- [Adult Learn \(Women in Science\)](#)
- [4000 Years of Women In Science](#)
- [About. Com \(Women History\)](#)
- [BBC Beautiful Minds \(Jocelyn Bell Brunell\)](#)
- [Star Child NASA \(Jocelyn Bell Brunell\)](#)
- [Women Scientists Who Changed the World](#)
- [BBC \(News Article\)](#)

Other Useful Links

- [American Institute of Physics](#)
- [Institute of Physics](#)
- [School Science](#)
- [Fermilab](#)
- [Big Bang Science](#)
- [Working with Beams](#)
- [Fermilab: Introduction to Particle Physics](#)
- [Science Hero's](#)
- [Timeline Index](#)