

# Accelerate!

[www.physics.ox.ac.uk/accelerate](http://www.physics.ox.ac.uk/accelerate)  
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## Learn how to drive the world's biggest machine in live-action science show *Accelerate!*

Explosions, hair-raising experiences and objects which float in mid-air are just some of the things you'll see in the *Accelerate!* show. It's all in the name of science and, best of all, it's FREE!

*Accelerate!* lets you get up close and personal with the exciting world of particle and accelerator physics. You'll learn how particle accelerators can do everything from recreating conditions just after the Big Bang to finding new ways to treat cancer.

Join working scientists and PhD students from top universities in this 45-minute show taking you on a guided tour of the science behind atom smashers. Enjoy exciting demonstrations with oodles of audience involvement—all whilst learning about some of the most exciting science of our time!

Find out more about the show inside, or turn to the back cover and **BOOK NOW!**



## About

At the Large Hadron Collider at CERN, we have no idea what's around the corner: unexpected discoveries, new particles, and possibly even a revolution in the way we think about the Universe. Meanwhile, accelerators are becoming more common in everyday life, with around 20,000 worldwide in scientific facilities, hospitals and industry, where they're used for everything from making chocolate taste better, to curing cancer.

So what exactly does a particle physicist *do*? Why do we need such HUGE machines to investigate particles too tiny to see? How can scientists accelerate things to 99.9999% of the speed of light? And why does anyone care anyway?

*Accelerate!* is your chance to find out! Live demonstrations convey the principles behind particle accelerators in an interactive, engaging science show. *Accelerate!* will enthuse students and adults alike about particle physics, and science in general.

## The team

*Accelerate!* was developed at the University of Oxford with support from the STFC and SEPnet, and is now available at universities around the south-east.

If you want to put on *Accelerate!* at your institution, or are just interested in the physics behind the demonstrations, there's a comprehensive set of resources online. Check them out at:

[www.physics.ox.ac.uk/accelerate/resources](http://www.physics.ox.ac.uk/accelerate/resources)

## For teachers

The show contains science which will be useful (and fun!) for a wide range of different age groups. It can be tailored to fit areas of the curriculum from Year 7 right up to Year 13.

### Key Stage 3 (Years 7–9)

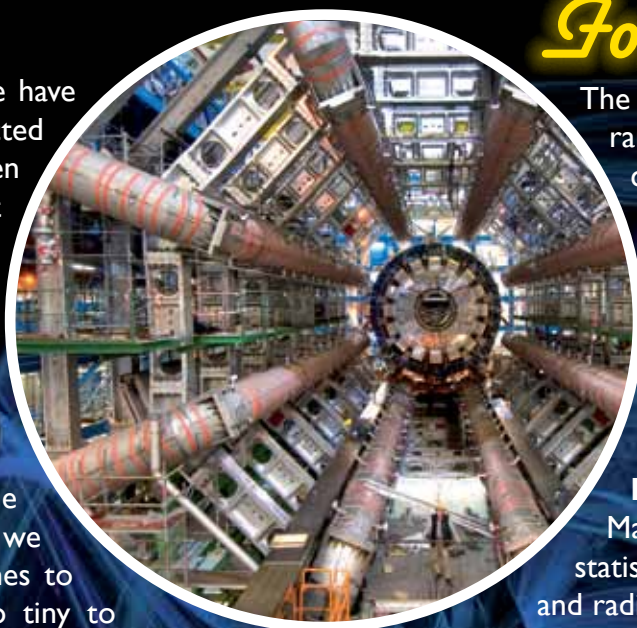
Mathematics: number and algebra, handling data. Science: scientific enquiry, materials and their properties, physical processes. Technology and design: knowledge and understanding of materials and components, systems and control, understanding of structures.

### Key Stage 4 (Years 10 & 11)

Mathematics: number and algebra, geometry and measure, statistics. Science: chemical and material behaviour, energy, electricity and radiation, environment, Earth and Universe. Technology and design: designing and making, creativity.

### AS-/A-Level Physics (Years 12 & 13)

Particles, radiation and quantum phenomena; current, electricity and elastic properties of solids, waves, field and nuclear energy, nuclear instability, turning points in physics.



## Venue

The *Accelerate!* shows are held at a variety of universities across the UK. For more information, check out

[www.physics.ox.ac.uk/accelerate/see-the-show](http://www.physics.ox.ac.uk/accelerate/see-the-show)

## Contact

Whether you want to see the show or have a comment or question, feel free to drop us an e-mail or visit our website:

**E-mail:** [accelerate@physics.ox.ac.uk](mailto:accelerate@physics.ox.ac.uk)

**Website:** [www.physics.ox.ac.uk/accelerate](http://www.physics.ox.ac.uk/accelerate)

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