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# Exploring the energy frontier - our journey to understanding nature

*Friday 22 March 2019 11:00 (30 minutes)*

Particle physics has given us unique insight into what matter is and how it works. It allows us to address questions such as 'What is the world made of?' and 'What holds the world together?'

The fundamental building blocks of our universe have been studied successfully with particle accelerators since the early 20th century. This has allowed new particles to be discovered and existing theories to be tested. The Large Hadron Collider (LHC) is currently the world's largest and highest energy accelerator. In 2012, it enabled the discovery of the Higgs Boson - the last missing piece in the Standard Model of particle physics. The question now is 'What are we looking for next?' and what tools, what accelerators will be best suited to answer this question.

This talk introduces the key concepts of modern particle physics and shows how the LHC and its detectors have helped discover new particles. It also discusses currently open research questions and where our journey might lead us to next.

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