

## SCHOOLS HYDROGEN WORKSHOP: BUILDING FUEL CELL CAR

### Arcola Energy Educational Services

Arcola Energy's science and technology workshops, run by expert practitioners, explore renewable energies, hydrogen and fuel cells and the possibilities that they offer for a low-carbon future. Over 5000 people have participated to date. Workshops can be delivered in a range of formats including:

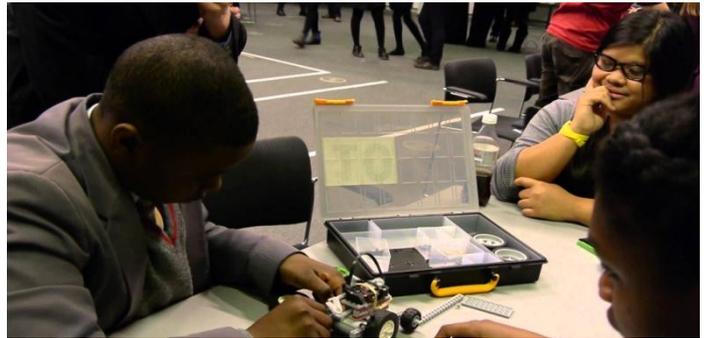
- Schools Hydrogen Challenge - See Other Brochures
- **Schools Hydrogen Workshop – See Below**
- Science Festival - See Other Brochures
- Public Events - See Other Brochures

### School Hydrogen Challenge

The School Hydrogen Workshop puts the technology of the future into the hands of young people – challenging them to design the most energy efficient hydrogen powered vehicle.

The workshop is designed to inspire the next generation of renewable energy engineers to get involved in developing cleaner and greener transport.

Generally delivered to pupils from key stage 3 and 4 (years 7-11) who design, build and test a hydrogen powered model car while learning about the environment.



- Arcola Energy delivers hydrogen fuel cell car workshops in schools giving pupils hands-on experience of hydrogen and fuel cells.
- We work with a single class (approx 30 pupils) for 1hr 30mins. The class will work in groups of 3 or 4 to design a hydrogen powered model car from one of our kits.
- The children then race their hydrogen powered model cars against other model cars.
- Each child will have the opportunity to test their design a number of times in order to improve their car to travel furthest distance possible.

## What We Need

- A table per group (4-5 pupils in each group)
- Floor for testing; Tiles are best, carpeted floor can be used. A roll-out track can be provided by us

## Workshop Design

Custom-designed Lego kits and 1.5W hydrogen fuel cells supplied by Arcola Energy are used in the workshops.

Workshops and education kits have been designed with extensive input from teachers, education authorities and education consultants to deliver specific curriculum requirements. Success in achieving this has been confirmed by teacher feedback.



## Learning Outcomes

- Hydrogen fuel cells: exploring the role that hydrogen could play within a low carbon society
- Electrolysis as a method for generating hydrogen
- Iteration based scientific enquiry
- Building Stuff
- Mechanics e.g. cogs, gears etc
- Renewable energies vs. carbon-based fuels

## Arcola Energy and Partners

Arcola Energy is the UK partner to Horizon Fuel Cell, supplier of the fuel cells at the heart of the kits. Arcola is supported in developing and delivering the challenge by some of the world's leading hydrogen businesses.

Arcola is expanding the challenge nationwide and creating challenge partnerships around the world, working with hydrogen champions in regions across the UK. Arcola Energy offers a wide range of opportunities for pupils to learn in a creative environment. Whether your school is looking for workshops, performances or bespoke projects, we have a team of expert practitioners able to deliver work in your school.

## Other Fuel Cell Products

Introducing the HYDROGEN DEVELOPER KIT powered by Horizon's 1.5W, 12W or 30W fuel cells. These ranges of kits allow inventors, researchers, commercial product inventors and hobbyists to build fuel cell systems for whatever applications they require.

