

ENERGISED!? FOLLOW-ON MATERIAL

“for evil to exist in the world, all it takes is for good people to do nothing”

OUR AIM

- Is to help you become proactive and effective in your approach to energy/carbon use around your school and the wider local community
- It is not about living uncomfortably in cold, dark conditions; In fact, some energy awareness is very much about eradicating distracting draughts and avoiding the discomfort of over-heating
- By taking charge of your energy/carbon use you will be able to make very real financial savings for your school, able to be very well used and enjoyed in other ways. Your school also has an obligation to the government’s Carbon Reduction Commitment: building on from the awareness-raising and emotional engagement of **Energised!?** Will help you achieve the demands of this
- Using the catalyst of the environment, your students will have opportunity to work in teams collecting, collating and understanding information; develop cohesive arguments and effective presentation skills; think creatively ‘outside the box’ on a range of associated issues. You can use the topic as a springboard to explore curriculum areas such as science and technology, geography, maths, English, PSHE and Citizenship

1. CREATING ENERGY CHAMPIONS

- Mobilise your students into taking responsibility for the school’s energy use. Let them learn leadership skills to motivate others into their way of thinking. With the potential for real savings, perhaps they can also decide how to ‘reinvest’ what they have helped to achieve?
- With an eye to Citizenship requirements, this work can promote your students into considering their values, finding their voices, taking action and thinking within the context of the wider world (school – home – local community – global membership)

STEP ONE: KNOWLEDGE IS POWER

1. Data collection: research history of billing for electricity, oil etc; using data collectors for classroom use of resources – heat, light, power
Calculate your carbon footprint: <http://carboncalculator.direct.gov.uk/index.html>
Examples of Date Logging manufacturers: www.fourier-sys.com ; www.dataharvest.co.uk
2. Invite your local Council’s Energy Manager (your School Business Manager/Bursar will know who they are) to visit and discuss key issues with your students – they will also have useful information and potential support to offer on monitoring and making savings

STEP TWO: TAKING ACTION

1. Start pupils (and staff!) spotting significant energy leaks by helping your Energy Champions set up ‘competitions: which is the most draughty door in the school; how many leaky taps can be identified; which toilet never stops flushing etc
2. Have Energy Monitors to ensure lights and equipment are switched off and windows closed at the end of day. Use stickers (available from the Carbon Trust) and make poster to remind shut-down of whiteboards, computers etc. Give pupils authority and a system through which to remind others of careless behaviours
3. Hold trial days with school-wider measured power use and heightened awareness: taking small steps to improve careful energy use and the minimising of waste eg actively controlling use of lights, whiteboards, temperature: assisted by the influence of ‘pupil power’ (ie your Energy Champions)

4. Evaluation of impact – set achievable targets and repeat cost/carbon-cutting activities on a more regular basis

An encouraging note: one school in Dorset who did this reported back that they achieved a 13% power reduction on their first attempt, simply by being aware of lights, whiteboards and keeping heat in the buildings

STEP THREE: WIDENING VISION

1. More small but significant decisions for change, eg
 - removing plastic cups from water fountains reducing cost and waste plastic
 - installing temperature strips in individual classrooms and considering other monitoring systems ('smart meters') allowing all to be aware of what energy is being used at any given time

Display Energy Certificates and their use

<http://www.teachernet.gov.uk/management/resourcesfinanceandbuilding/schoolbuildings/energyefficiency/certificates/>

Smart meters and their uses in teaching and learning – see www.esta.org.uk

2. Larger steps to increase local control of energy use eg alternative, sustainable, power sources

Small scale renewable energy systems – these are pollution free and can help reduce energy bills - see www.lowcarbonbuildings.org.uk

SOME MORE RESOURCES TO HELP YOU BECOME CARBON CLEVER:

TeacherNet: Sustainable Schools support and tips:

<http://www.teachernet.gov.uk/sustainableschools>

Top Tips to develop the global dimension in schools [DCSF-00683-2008](#)

Top Tips to reduce energy and water use in schools [DFES-00369-2007](#)

Top Tips to reduce waste in schools [DFES-00368-2007](#)

Top Tips for Sustainable School Travel [DCSF-00610-2007](#)

A Bursar's guide to sustainable school operation [DFES-00375-2007](#)

Governor's guide [DFES-00445-2007](#)

The Carbon Trust (www.carbontrust.co.uk) has a range of useful and practical publications such as CTV019 – Schools: learning to improve energy efficiency
CTV037 A whole school approach in reducing its carbon footprint
Useful reminder stickers: ref PFL 313 and 338

Eco Schools (www.eco-schools.org.uk)

The Energy Saving Trust: www.est.org.uk

DES: Sustainable Learning – an energy and water management programme for schools. See www.sustainablelearning.info

RWE Npower Climate Cops teaching materials (<http://education.npower.com>)

A challenging and provocative short video: www.wakeupfreakout.org

2 ENTERING THE DRAGON'S DEN

- **Creative thought:** encourage your students to come up with ideas for changing ways we use energy (ie positive versions of Arthur's entrepreneurial response to climate change) – gadgets to grand plans
- **Designing:** turning good ideas into practical realities - some carefully detailed on paper, others as 3-D prototypes
- **Presentation skills:** prepare to share your ideas and get some feedback – why not invite a special audience including eg county energy manager, head of governors. Consider preparation of both personal presentation skills and support materials.

Just to start you off, how about:

Solar-charged mobile phone batteries; using pedal-power to create electricity for another useful purpose: get fit and save money at the same time!; recycling textiles to create new products; creating 'green buildings' from sustainable materials, complete with grazing sheep on the grassed roof!

3 UNDERSTANDING ALBERT EINSTEIN

- OK, so we were a bit creative with the facts in suggesting a pair of his pants is on public display... but nonetheless Albert Einstein was very much alive, very successful in his achievements and equally influential in his thinking!
With a life spanning the years 1879 – 1955 Einstein experienced some seminal moments and movements in the past century. He made interesting and outspoken comments on many of these – and some wryly amusing more personal statements too
(eg 1929, at the Sorbonne, Paris: *"If my theory of relativity is proven correct, Germany will claim me as a German and France will declare I am a citizen of the world. Should my theory prove untrue, France will say that I am a German and Germany will declare that I am a Jew"*)
- Spend time researching his life history, interests and achievements. Did you know he was dyslexic? We deliberately do not explain $e=mc^2$ in **Energised!?**, leaving you the opportunity to set the theory of relativity into the context of energy resource and climate change today
- Use some of Einstein's views as an opportunity to open up debate on wider social and historical issues (eg scientific responsibility as with the discovery of atomic power; war; education; racism)
- How else does Einstein's work impact us today and for the future?

FEEDING BACK

We would love to hear how you get on with these ideas, and what else you do to maximise the impact of our visit.

Please do share with us your successes and questions and we will add to our resources so that others may benefit

Contact us via fiona@solomon-theatre.co.uk

APPENDIX

THE CARBON REDUCTION COMMITMENT

The main aim of the CRC is to encourage greater energy efficiency and therefore deliver a reduction in CO2 emissions.

The Carbon Reduction Commitment (CRC) represents the first mandatory trading scheme in the UK. The aim is to reduce the level of carbon emissions by approximately 1.2 million tonnes of CO2 per annum by 2020. It forms part of the Climate Change Bill commitment to aim for an 80% reduction in CO2 emissions by 2050, compared to levels in 1990. The Act also imposes an intermediate reduction goal for the period including the year 2020 of at least 26% against the 1990 baseline.

It covers both the public and private sector, and is designed to encourage large non-energy intensive organisations in the UK to reduce their CO2 emissions. All state-funded schools within the geographical area of local authority portfolios are included, meaning school emissions would form part of the local authorities' overall carbon footprint. A duty will be placed on schools, requiring them to supply the local authority with annual energy use data. The guidance states that the aim is for local authorities to work with schools and provide energy management advice and resources. It is estimated by some larger county councils that schools and colleges would amount to up to 75% of carbon emissions of a local authority under CRC.

SOME ENERGY MYTHS AND LEGENDS

"Turning computers on and off uses more energy than it saves" False

Insignificant relative to switch off saving. Start-up current surges are of very short duration and at most they consume a few seconds of average running energy. If your equipment is not being used for more than a few minutes it makes sense to turn it off or switch to a lower power setting.

"Turning monitors off is bad for them" False

Technology has improved greatly in this area and nowadays a monitor is likely to become obsolete long before it stops working because it has been repeatedly switched off and on.

"Screensavers save energy" False

Screen savers are energy wasters. Most computers use about twice as much energy lighting up the screen as they use for processing. Originally screen savers were designed to stop screens being burnt by a constant image, but they aren't needed for modern screens. Not only can screen savers use as much energy as a full screen of work, but many require considerable processing energy as well. If you want to save energy you can set your screen saver to "none" or "blank screen".

"It takes a lot of energy to start up a fluorescent light, so there's no point in switching it off" False

With modern lighting it makes sound financial and environmental sense to switch it off, if it has been on for more than five minutes. The savings are greater by switching the light off than leaving it on.

"Low energy light bulbs are more expensive" False

They last up to eight times longer and use only 20% of the energy of a normal light bulb.

"If all electrical appliance stand-by buttons (like the ones on your TV) in the UK were switched off at night, it would save enough energy to supply a town the size of Reading for a whole year." True