# *Science in Schools*

## Proposal form

**Please provide names, status and affiliations of people who will be running the workshop:**

Kate Palmer, PhD researcher on improving air quality in urban environments at the University of Leeds
Jennifer Norris, PhD researcher in road and aviation transport at the University of Leeds
Katrina Adam, PhD researcher in anaerobic digestion at the University of Leeds

**In plain English and layman's terms please explain the content of your proposed workshop, highlighting both demonstrations and interactive experiments**

The workshop will focus on energy. Through interactive exercises and activities, we will address where energy comes from, the problems surrounding current energy use and raise awareness to reduce energy consumption. The session will combine energy related learning with English language practice. Throughout the session we aim to inspire the students to think about energy issues which are pertinent to their lives.

First we will give a short introduction, asking the students how they think energy is defined, where their energy comes from and problems of future energy supply. As part of the introduction we play an icebreaker which gives a crude assessment of their comparative carbon footprints. This will involve all the students standing in a line and they will be asked a series of questions such as do you get the car, bus or walk to school, taking steps forward or back depending on the carbon cost of different parts of their lifestyle. This activity will be undertaken in English to help with language skills.

Next we will ask the students to think about energy problems on a national scale by participating in an interactive team game called Energy Islands (developed by the UK Energy Research Centre and adapted by them for use with secondary age pupils). They will be divided into three groups which represent three different countries and charged with making national decisions which would affect every person in their country throughout the activity. They effectively must manage their national economies as global events occur such as coal supplies run out or trade embargoes are created. This will help them to use their English language skills in the energy context, practicing new vocabulary they will have prepared for the event, from vocabulary sheets sent prior to our arrival.

Following this, the students will be split into groups and they will rotate around three different activities all addressing the nuclear debate and personal energy use. The first will explore where energy comes from with an interactive nuclear game. This will require the students to work together to retrieve a "nuclear waste container" from within an exclusion zone, without entering the zone themselves. Inside the container will be an activity relating to the use of nuclear power and associated ethics. The second activity will look at energy use in the home with a mini top-trumps tournament, making students aware of appliances with high energy consumption. The last activity will make the students think about low carbon transport issues by making them design a low carbon vehicle.

To finish we will have a short quiz using electronic voting sets to summarise the session's learning objectives.

**Please list and describe material required for the workshop or presentation. State the materials that you will not be able to bring with you.**

Energy vocabulary list sent to schools for preparation before the event.
Energy islands A4 cards
Electronic voting set
Pens and Paper
Appliance top-trumps
Nuclear waste game – container with activity within, ropes and tape to mark exclusion zone.

All these items will be brought with us.