

FUTURE TRAVEL

Communication Project
For Teachers **p2&3**, for Students **p4**

HEALTH AND SAFETY

Students should be encouraged to make their own risk assessment before they carry out any activity, including surveys. In all circumstances this must be checked by a competent person. Students using specialised equipment should be supervised at all times.

Combustion of fuels requires careful risk assessment and close supervision. Students should plan and carry out their project, but all practical work must be vetted.

The aim of the project is to investigate how CO₂ emissions can be measured. Petrol and other low flash point hydrocarbons must not be used. Alcohols, paraffin, cooking oil and gaseous fuels may be acceptable.

Students may want to set up unorthodox experiments and you may need to seek specialist advice. Organisations such as CLEAPSS and the Royal Society of Chemistry are able to help.

FUTURE TRAVEL:

Bronze Communication Project - For Teachers

Commuters can offset their carbon footprint

Every day, millions of people travel to work or school. They use cars, buses and trains – which all leave a carbon footprint. To pay for this footprint, some commuters use schemes called 'carbon offsetting'. They use online calculators which work out the carbon footprint of their daily commute. Then they pay some money. The money goes towards projects that reduce the emission of greenhouse gases. Some people think this is a great idea. Other people think we should just be greener – and walk to work or school!

HAVE YOU EVER WONDERED?

...what 'offsetting your carbon footprint' actually means?
How you can do it?

...whether offsetting really helps the environment? Wouldn't it be better to make smaller footprints in the first place?

You might like to imagine yourself in a situation such as...

Your school is holding a mock election. You're the Green Party candidate. You need to explain your 'green' transport policies. You decide to collect information on reducing and offsetting carbon footprints left by transporting people and goods. Then you can **use your communication skills** to:

- explain carbon footprints, and why it is particularly important to target travel and transport.
- convince the voters that your policies will work.

NOTE: Assume the voters are pupils in all year groups across the school, and also the staff. The amount of science they know and understand will vary a lot.

Prompts

The **Student Brief** gives some triggers to start students thinking. They should realise that each trigger implies several aspects to think about. Encourage students to identify these themselves. However, if necessary, prompts such as those below might be given, to point students in suitable directions.

- Which age-group(s) will you aim at – and will they need different approaches?
 - How could targeting different materials at different groups show off your communication skills?
- How your party will make transport 'greener' and what individual people can do to reduce their travel and transport carbon footprints
 - For travel and transport, what do 'green' and 'carbon footprint' mean?
 - What new technologies can help make transport 'greener'?
- Presenting arguments both for and against 'green' transport, but making it clear why people should support your policies
- How to be entertaining as well as informative
 - How can you get your ideas across to the voters? Have you thought about:
 - an election poster or video?
 - answering questions from a radio or television presenter?
- Making sure that you use scientific information, rather than emotive arguments.
 - How will you check your facts? What is the evidence that your ideas can actually work?
 - What might your opponents say? Can you counter their arguments?
- Using correct scientific language and terminology.
 - Which scientific words may your audience not understand? What is the best way to explain them?
 - How do you avoid people misunderstanding you?

Suggestions for supporting students

Communicators should spend the majority of their time working on how to deliver their message.

Communicator students are responsible for selecting information and using it in their chosen format. However, they may need some direction from you to identify suitable sources of relevant information at an appropriate level.

Although Bronze Award students are not expected to have an official Mentor for their project, access to expert advice makes student feel their work is important. Also, if the topic is not in your area of expertise, you may find a Mentor valuable. Your CREST Local Coordinator may be able to suggest suitable contacts.

Depending upon focus, someone with knowledge and/or experience of one or more of the following would be ideal:

- quantifying CO₂ emissions / measuring carbon footprints
- comparing CO₂ emissions from different modes of transport
- environmental effects of emissions
- a carbon capture or offsetting scheme
- a commercial trial of 'environmentally friendly' vehicles or fuels.

Discuss with students how they will manage their time (after school clubs, working during lunch hours, homework). Agree a completion date with them.

- Students should decide their focus, although this may alter in the light of experience as the project progresses.

POSSIBLE EQUIPMENT, MATERIALS AND RESOURCES

These will depend on the presentation format(s) chosen by the student. They might include:

- access to desk-top publishing and reprographics facilities
- digital camera and access to photo-manipulation software
- video camera and editing facilities
- an area for a debate or 'election hustings' meeting
- access to someone skilled in preparing and delivering presentations
- an audience for a dress rehearsal
- an independent audience of appropriate age to act as voters

Internet search

Combine 'carbon' with terms such as 'footprint', 'emission', 'reduction', 'travel', 'transport' and 'offset'. Or try:

- Local Green Party contacts, for up-to-date policy information
greenparty.org.uk/contact
- Global warming issues (including cars):
eon-uk.com/EnergyExperience/509.htm
- Definitions, explanations, calculators and advice
carbonfootprint.com
www.carbontrust.co.uk
- Calculate your carbon footprint
carboncalculator.direct.gov.uk/index.html
- Analysis of CO₂ emissions for trains
bestfootforward.com/media/upload/report/East_Coast_Line_Report.pdf

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Some things to think about...

- Which age-group(s) you will aim at – and whether they need different approaches.
- How your party will make transport 'greener' and what individual people can do to reduce their travel and transport carbon footprints.
- Presenting arguments both for and against 'green' transport, but making it clear why people should support your policies.
- Using a mixture of written, spoken and visual communication, including experiments, if appropriate.
- Making sure that you present scientific information, rather than emotive arguments.
- Using correct scientific language and terminology. Who will advise you on presentation skills?

Health and Safety

Should you decide to carry out any experiment or practical activity:

- (a) find out if any of the substances, equipment or procedures are hazardous.
- (b) assess the risks (think about what could go wrong and how serious it might be).
- (c) decide what you need to do to reduce any risks (such as wearing personal protective equipment, knowing how to deal with emergencies and so on).
- (d) make sure your teacher agrees with your plan and risk assessment.

NOTE: Your teacher will check your risk assessment against that of your school. If no risk assessment exists for the activity, your teacher may need to obtain special advice. This may take some time.

- (e) if special tools or machines are needed, arrange to use them in a properly supervised D&T workshop.