SQUEAKY CLEAN

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.

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. The MISAC (Microbiology in Schools Advisory Committee) can provide advice concerning microbiological investigations.

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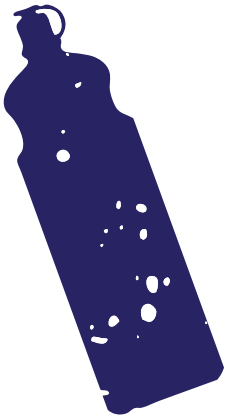

Brand X or X-factor?

When the credit crunch began to bite in 2009, many people changed from expensive branded products, to the cheaper value for money lines. Is this a wise move? Are cheap cleaning products poor quality? Will the clothes of the nation become grey and shabby? Is it true that well known washing powders produce dazzling, good as new clothing?

HAVE YOU EVER WONDERED? ...why there are so many different cleaning products on the market?

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

You are convinced that a lot of money is wasted when people buy expensive cleaning products: it's just because they have been extensively marketed and have a positive brand image. You decide to hold an open meeting at school to persuade as many people as possible that they can save money without losing performance. You need to find out how cleaning products such as soaps, detergents and surfactants work, then **use your communication skills** to:

- compare cleaning products and explain how they are suitable for different cleaning problems
- explain the vocabulary used on labels and in advertising for cleaning agents
- convince people that, nowadays, cheaper alternatives can be used to get the same results as more expensive cleaning products.

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) you will aim at and if they need different approaches
  - Will your audience be mixed ages or abilities or both?
  - Who buys cleaning products?
  - What are your key points?
- Presenting a balanced argument, with arguments for and against your proposals, but making it clear that the evidence supports your point of view
  - What kind of evidence will people believe?
  - What kind of facts and figures will you need?
  - How could explaining how cleaning products work help your argument?
  - Which advertising terms are genuine and useful? Which are 'pseudoscience'?
- How you will know if you have convinced people with your arguments
  - How can you find out about opinions or shopping habits before and after your presentation?
- Using a mixture of written, spoken and visual communication, including experiments, if appropriate
  - What kinds of written or visual materials can you use in a presentation?
  - How can you emphasise your key points?
- Presenting scientific information, rather than emotive arguments
  - How will you choose your sources of information?
  - How will you check your facts?
- Using scientific language and terminology correctly
  - Are there any terms that you are unsure of?
  - Can you explain the technical terms in simple language?

Suggestions for supporting students

Communicators should spend the majority of their time working on how to deliver their message, rather than on information seeking.

Science Communication students are responsible for selecting information and using it in their chosen format. However, they may need some direction from the teacher 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 students 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:

- professional cleaning
- enzyme technology applied to cleaning agents
- school cleaning problems

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 and set manageable targets, although these 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
- data projection facilities
- digital camera
- video camera and editing facilities
- an area for the presentation
- a laboratory demonstration bench
- an independent audience of appropriate age.

Internet search

Combine 'cleaning' with terms such as: products, health, environmentally friendly, cheap, safe, hygiene, infection control, inexpensive, house, domestic, household; or try: soap, detergent or surfactant, or try:

- Soap
  elmhurst.edu/~chm/ vchembook/554soap.html
- Soaps and detergents, Cleaning Institute
  cleaninginstitute.org/cleanliving/ cleaning-practices.aspx
- Science in the box, Proctor and Gamble
  scienceinthebox.com
- Enzymes for detergent
  mapsenzymes.com/ Enzymes_Detergent.asp
- Soap and detergent chemistry, Science Project Ideas
  scienceprojectideas.co.uk/ soap-detergent-chemistry.html

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- compare cleaning products and explain how they are suitable for different cleaning problems
- explain the vocabulary used on labels and in advertising for cleaning agents
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Some things to think about...

- Which age-group(s) you will aim at and if they need different approaches
- Presenting a balanced argument, with arguments for and against your proposals, but making it clear that the evidence supports your point of view
- How you will know if you have convinced people with your arguments
- Using a mixture of written, spoken and visual communication, including experiments, if appropriate
- Presenting scientific information, rather than emotive arguments
- Using scientific language and terminology correctly
- 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.