TRIATHLON

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.

For surveys and other activities on open water, the PE department or local water sports clubs may be able to help with risk assessments and ways to avoid risks. Students using specialised equipment should be supervised at all times.

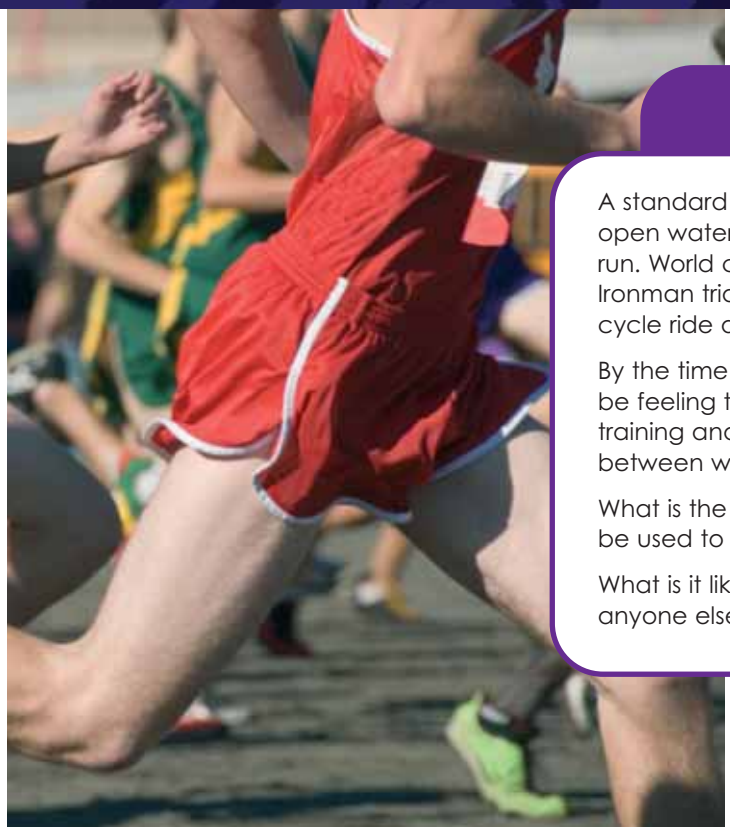
Students may want to set up unorthodox experiments and you may need to seek specialist advice. In particular:

- Any investigations into the actual effect on real people of immersion in cool or cold water must only be done with medical supervision and appropriate medical resources on hand in case of emergency
- Any activity associated with open water will require specialised risk assessment.

Organisations such as CLEAPSS are able to help.

TRIATHLON:

Gold **Communication** Project - For Teachers



Making every step count

A standard distance triathlon consists of a 1500 m swim in open water, followed by a 40 km cycle ride, then a 10 km run. World class athletes complete it in less than two hours. Ironman triathlons are even longer - 3.8 km swim, 180 km cycle ride and 42 km run!

By the time the athletes reach the run, even the very best will be feeling the effects of the swim and cycle. The right training and the right equipment can make the difference between winning and losing.

What is the science behind efficient running, and how can it be used to enhance performance?

What is it like to be in her shoes? Could she have won in anyone else's?

HAVE YOU EVER WONDERED?

…how effective you might be as a sports science research funding advocate

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

Scientific research and development costs money. You are a member of a research team that develops prosthetic limbs and running shoes. One of your responsibilities is raising funds. You need to decide what research you want funding for, then approach suitable potential donors, **using your communication skills** to:

- explain why you believe that the research you are proposing should be done
- convince them that you are the right team to do the research, and that they are the right people to support it financially.

Prompts

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

- The nature of your target audience, and how to make an impact on them
  - How is scientific research funded?
  - Should you face a sceptical audience, manufacturers or sponsors?
- Using a mixture of written, spoken and visual communication, including practical demonstrations, if appropriate
  - What alternatives to PowerPoint are there? Initial ideas could be:
    - role playing, a video documentary film, or long-term business plan
- How can presentations be entertaining as well as informative?
- Use correct scientific language and terminology
- Present the possible difficulties with the research, but making it clear why you think it worth doing
- Ensure that you present scientific information, rather than emotive arguments.

Suggestions for supporting students

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

Gold Award students are required to have an external Mentor (normally a scientist or engineer) for their project. The Mentor's role is to provide guidance and support, but it must be the student who leads and manages the project.

Depending on the nature of the project, someone with knowledge and/or experience of one or more of the following could be ideal...

- academic or industrial research into, for instance:
  - development of prosthetic limbs
  - robotics or electronics
  - sports equipment
  - properties of materials
- scientific publishing
- sports training
- treatment or rehabilitation of amputees

Contact your Local Coordinator for guidance.

POSSIBLE EQUIPMENT, MATERIALS AND RESOURCES

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

- digital camera and access to photo-manipulation software
- video camera and editing facilities
- access to someone skilled in preparing and delivering presentations

Though primarily a 'theoretical' research project, some time could usefully be spent in the laboratory, developing demonstrations to illustrate, and explain or clarify, points to be made during the presentation.

Internet search

Combine 'prosthetic limb' or 'running shoe' with terms such as: Olympics, materials, design, technology, performance, sports medicine, impulse, sports injuries, research, building or robotics. Or try:

Information on specific topics

- Introduction to designing and building artificial limbs
  enotes.com/how-products-encyclopedia/artificial-limb
- Using the brain to control artificial limbs
  news.bbc.co.uk/1/hi/sci/tech/7423184.stm
- Features of a running shoe that a designer considers
  madsci.org/posts/archives/2007-01/1169069607.Ph.r.html
- How the legs, feet and body move during running
  en.wikipedia.org/wiki/Running

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- explain why you believe that the research you are proposing should be done
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Some things to think about...

- The nature of your target audience
- Using a mixture of written, spoken and visual communication
- How to be entertaining as well as informative
- Using correct scientific language and terminology
- Presenting possible difficulties with the research, but making it clear why you think it worth doing
- Ensuring that you present scientific information, rather than emotive arguments
- Who will advise you about preparation and delivery of your presentation?

Health and Safety

Before you carry out any experiment:

(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 that you can carry out your project safely 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 design & technology workshop

(f) if an experiment involves physical activity, you may need the support and supervision of a P.E. teacher.