

BRIEF DESCRIPTION

Students are introduced to the Australian Museum's Eureka Prizes, Australia's premier science awards. The University of Sydney Sleek Geeks Science Eureka Schools Prize asks students with a passion for science and for communicating ideas to produce a short 1-3 minute video that communicates a scientific concept, discovery or invention in an entertaining and accessible way. This prize provides students with the opportunity to develop their scientific knowledge and present it in a creative way. It also provides the means of incorporating science with other currucula.

Online entry forms must be lodged by Friday 5 May with entries received by the Australian Museum by Friday 12 May 2006.

OBJECTIVES/OUTCOMES

Participation in the Sleek Geeks Science Eureka Prize provides students with the opportunity to win significant cash and other prizes for themselves and their school. It can address specific syllabus objectives. For example, participation in this award could address the following outcomes from the NSW syllabi (please consult your syllabus documents to identify specific objectives, outcomes and suitable forms of assessment for your state).

Stage 4-5 (Year 7-10)

Science

Prescribed Focus Areas

- 4.1 identifies historical examples of how scientific knowledge has changed people's understanding of the world
- **4.2** uses examples to illustrate how models, theories and laws contribute to an understanding of phenomena

- 4.3 identifies areas of everyday life that have been affected by scientific developments
- **4.4** identifies choices made by people with regard to scientific developments
- **4.5** describes areas of current scientific research
- **5.1** explains how social factors influence the development and acceptance of scientific ideas
- **5.2** describes the processes that are applied to test and validate models, theories and laws
- **5.3** evaluates the impact of applications of science on society and the environment
- 5.4 discusses evidence supporting different viewpoints
- 5.5 analyses how current research might affect people's lives

Knowledge and Understanding

Various, depending on the topic chosen by individuals or groups

Skills

- **4.16** accesses information from identified secondary sources
- **4.17** evaluates the relevance of data and information
- **4.18** with guidance, presents information to an audience to achieve a particular purpose
- 4.19 draws conclusions based on information available
- **4.20** uses an identified strategy to solve problems
- 4.21 uses creativity and imagination to suggest plausible solutions to familiar problems
- **4.22** undertakes a variety of individual and team tasks with
- **5.16** accesses information from a wide variety of secondary sources

- 5.17 explains trends, patterns and relationships in data and/or information from a variety of sources
- **5.18** selects and uses appropriate forms of communication to present information to an audience
- **5.19** uses critical thinking skills in evaluating information and drawing conclusions
- **5.20** selects and uses appropriate strategies to solve problems
- **5.21** uses creativity and imagination in the analysis of problems and the development of possible solutions
- **5.22** plans, implements and evaluates the effectiveness of a variety of tasks independently and as a team member

This prize could also cover syllabus outcomes of the 7–10 English, Visual Arts, Visual Design, Design and Technology and Information and Software Technology courses.

Stage 6 (Year 11 and 12)

Biology, Chemistry, Physics, Earth and Environmental Science, Senior Science

Relevant outcomes to topics chosen by the students and the following skills;

- P12 discusses the validity and reliability of data gathered from first-hand investigations and secondary sources
- H12 evaluates ways in which accuracy and reliability could be improved in investigations
- P13 identifies appropriate terminology and reporting styles to communicate information and understanding in science
- **H13** uses terminology and reporting styles appropriately and successfully to communicate information and understanding
- P14 draws valid conclusions from gathered data and information
- **H14** assesses the validity of conclusions from gathered data and information
- P15 implements strategies to work effectively as an individual or as a team member
- **H15** explains why an investigation is best undertaken individually or by a team

This prize could also cover syllabus outcomes of the Stage 6 English, Drama, Visual Arts, Visual Design, Photography, Video and Digital Imaging, Information Processes and Technology and Design and Technology syllabi.

PROCEDURE

Step 1: Introduce the Sleek Geeks Science Eureka Schools Prize (40-60 minutes)

Preparation: photocopy the page at www.amonline.net.au/eureka/sleek_geeks/index.htm and organise internet access.

- 1.1 Introduce the Sleek Geeks Science Eureka Prize. Provide students with a print out of the page at www.amonline.net.au/eureka/sleek_geeks/index.htm which outlines the purpose and the prizes to be won. Read through with the class pointing out the entry requirements.
- 1.2 Lead a class discussion and brainstorming exercise on the possible scientific concepts, discoveries or inventions which students could use in their video. These concepts must be based on real science. Stimulus questions could include;
 - 1. Name one scientific concept, discovery or invention associated with the study of living things? [surface area to volume ratio, treatment of burns, osmosis, structure of viruses, DNA, photosynthesis, genetic variations, stem cells etc]

- 2. What are some other science related concepts you have learnt about recently?
- 3. What creative ways can you think of to present this / these concepts?
- 1.3 Read about and view the videos produced by the 2005 winners at www.amonline.net.au/eureka/sleek_geeks/2005_winner.htm. Discus why students think the winners were successful, refer to the judging criteria.
 - 1. What was the concept, discovery or invention portrayed in the video?
 - 2. Why is that concept important to the understanding of science and society?
 - 3. In what way was the video presentation made creative and appealing to the viewer (eg use of humour, unusual approach to presentation etc)?
 - 4. Do the students agree with the judges' in their decision? Why or why not?

Step 2: Deciding on the 'scientific concept' to be covered (40- 60 minutes plus own time)

Preparation: Organise access to library, science related literature or internet.

- 2.1 Ask students to browse books, magazines or internet sites for scientific ideas which they could use in their video. Students decide whether they are working as individuals or in groups and decide on the scientific concept they will represent in their video.
- 2.2 Students write a brief plan for the video. The plan should include an explanation of the concept, discovery or invention and details of how the concept is to be communicated in an original and entertaining way. (Note: this could be used as the 250 word summary needed to accompany the entry.)
- **2.3** Students prepare a storyboard, outlining a scene by scene account of their video.

Step 3: Producing the video (this could be done in students own time or in organised time with teacher supervision)

3.1 Students record their video and edit it to 1–3 minutes in length. Note the preferred format in which entries should be submitted.

Step 4: Judging the class videos (40 - 60 minutes depending on number of videos to be viewed)

Preparation: Organise access to video/DVD and TV for presentation of videos.

There is no limit to the number of entries from a school, and students should be encouraged to enter all completed videos. You may, however, wish to identify a "class winner" from completed entries.

4.1 Conduct a screening and competition of the student's videos. Students award a mark out of 10 for each video, with marks averaged and a class winner announced.

Step 5: Submitting entries (30 minutes)

Preparation: Organise internet access and printer

5.1 Students complete the online entry form by Friday 5 May 2006. Five copies of the entry form and the entry itself in one of the accepted formats is to be sent, with a 250 word summary description of the content of the video, to reach the Australian Museum no later than 5pm AEST on Friday 12 May 2006. View

www.amonline.net.au/eureka/sleek_geeks/index.htm to ensure entries are saved in the correct format.







