Virtual Experiences in the NSW Stage 6 syllabuses
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Virtual Experiences in the Stage 6 syllabuses
• What is UniServe Science?
• Why UniServe Science became involved
• Why use virtual experiences
• Some examples of virtual field trips
• A local area virtual field trip
• Here’s how we do it
• Proposed virtual experiences

What is UniServe Science?
• clearinghouse for information about the use of IT in science teaching
• sponsored by The University of Sydney
• clients
  – science academics, nationally
  – science teachers, state wide
• through
  – web site
  – publications
  – workshops

Why UniServe Science became involved
• changes to the senior science syllabuses in 2000
  – contextualised content
  – new content
  – pedagogy
    • constructivist framework
    • heavily dependent on the use of secondary sources

Resources for the senior science syllabuses
• content specific links
• alternative strategies for science teaching and assessment
• databases (Excel)
• WebQuests
• virtual experiences
Why virtual experiences?
• Similar role to simulation software
  – too expensive
  – too dangerous
  – too lengthy
  – too removed in time or space

… and reality is
• prohibited areas
• transiency of some locations
• unavailability of sites
• temporary unavailability (quarantine)
• environmental impact
• organisation time
• expense
• responsibility for child protection
• limited time for excursions

Other reasons for using virtual experiences
• prepare students for an actual field trip location
• provide students with skills they will require on an actual excursion
• reinforce an actual field trip
• supplement an actual excursion by providing a contrasting example
• cater for absent or distance students
• cater for students with disabilities
• avoid damaging sensitive environments

Example 1: Towra Point Mangrove Excursion
School of Biological Sciences, The University of Sydney

Example 2: Mangrove Excursion
Jane West, OTEN

Example 3: Minnamurra Rainforest Excursion
HSC On-line

Example 4: Discovering Science
Open University
• Topics in Biology and Geology
• A geological Field Trip to study Permian and Triassic rocks in southwest England

Example 5: Field Excursions: Holyrood Park
Department of Geology and Geophysics The University of Edinburgh
http://www.glg.ed.ac.uk/courses/field/
Our objectives
• not to replace an actual field trip
• provide an example of a field trip which could be adapted to your local area
• provide guidance for directed observations
• provide an alternative area for comparison

Our example:
Virtual Field Trip to a local area: Kiama
http://science.uniserve.edu.au/school/virtexps/vftkiama/

Syllabus reference
• Earth And Environmental Science
  • 8.3 The Local Environment
    – distinguish between igneous, sedimentary and metamorphic rocks …
    – identify and describe the geological features of the local environment that determine its landscape
  • 8.5 Dynamic Earth
    – … describe the main features of igneous rocks associated with effusive volcanic activity

Here’s how we do it
• Digital camera
• Scanner
• photograph manipulation program such as PhotoShop
• QuickTime VR Authoring Studio, PhotoVista or VR Worx
• Web page generator such as BBEdit, Claris Home Page or FrontPage

Other projects

Virtual interviews
• Chemists
• Chemistry: Chemical Monitoring and Management
• gather, process and present information from secondary sources about the work of practising scientists identifying:
  _ the variety of chemical occupations
  _ a specific chemical occupation for more detailed study

Virtual tours
• Chemical laboratory and analytical equipment
• Chemistry: Forensic Chemistry
• … gather, process and present information from secondary sources to assess the value of the following to the forensic chemist:
  _ electron microscopy for chemical analysis
  _ atomic-force microscopy
  _ scanning tunnelling microscopy
Virtual digs
• fossil site
• Earth and Environmental Science: Environments Through Time
• gather information from secondary sources to compare the diversity and number of organisms from a fossil site

Virtual field trips
• salinity
• Earth and Environmental Science: Water issues
• outline problems that may occur in ground water systems, such as pollution, salt water intrusion and ground salinity, and give examples of these problems occurring in Australian environments

http://science.uniserve.edu.au/