

## Unit 10 Information: reliability, validity and bias

### About the unit

In this unit pupils use the internet to gather information on a particular topic, collate it and present it from a particular viewpoint.

Pupils are given a stance to take and select information to produce an argument that supports this view and challenges other views. This requires them to consider the usefulness, provenance, reliability, status and bias of the information they collect and use. The audience is used to evaluate how successfully the pupils have presented arguments to support their stance.

Areas for research could include any topical subject arousing controversy, *eg genetically modified foods, growth-enhancing hormones*, as long as it is one that allows for a variety of points of view.

This unit is expected to take approximately 7 hours.

### Where the unit fits in

This unit builds on unit 2 'Information and presentation' and unit 8 'Public information systems', which may also have a possible environmental context.

### Expectations

#### At the end of this unit

**most pupils will:** find and use a number of sources to select relevant information appropriate for their task; refine the information and use it to make informed judgements about the content and messages they want to give their intended audience; apply criteria to determine the success of their project; discuss the implications of implementing their project

**some pupils will not have made so much progress and will:** search a number of sources to find information; be able to save their work

**some pupils will have progressed further and will:** use presentation software and convert their information into both electronic and document form; become increasingly autonomous users of ICT

### Prior learning

It is helpful if pupils have:

- searched the internet, CD-ROMs and other sources to find answers to simple queries
- cut, pasted and saved information from a number of sources to a word processor, desktop publishing or presentation software
- exported data from one package to another

### Language for learning

Through the activities in this unit pupils will be able to understand, use and spell correctly vocabulary relating to:

- extracting information, *eg export, import*
- searching, *eg internet address, search engine, URL (uniform resource locator)*

Reading – through the activities pupils could:

- understand information that is not explicitly stated or that the reader is assumed to understand

### Resources

Resources include:

- internet access
- a variety of internet sites, previously selected and marked
- CD-ROMs (from which text and images can be copied) with appropriate information
- an internet browser
- presentation software

**Learning objectives**

Pupils should learn:

**Possible teaching activities****Learning outcomes**

Pupils:

**Points to note****Activity 1**

- that a web address is a unique location and gives information about origin
- that search engines use different search techniques
- (biased) opinions can be expressed as factual information
- Pupils should revise searching the internet. Ask the pupils to use a variety of search engines to search on a given topic, *eg genetically modified foods*. Without opening the sites, discuss with the pupils the results of their searches, *eg which sites look useful, what the title tells us, what information we can get from a URL, if the site appears more than once on a list*. Explain what a search engine does and how it handles vast amounts of data. Discuss which search engines produce different top 20 hits and why.
- search the internet systematically to find information
- understand that a URL can give information about a source
- Homework could involve pupils planning a search for items relating to food.

**Activity 2**

- that information can be expressed as opinion
- that evaluation criteria are established at the start of a project
- that success can be judged objectively using established criteria
- Hold a brainstorming session about how the pupils will attempt the project. Through discussion allow the pupils to identify the information required, and to plan how they will obtain it – this may take the form of homework. Show graphs of prepared data to illustrate that information is being provided. Emphasise that information may be qualitative (*not easily measured*) and quantitative (*able to be measured*). It is important for pupils to realise that in evaluating and analysing sources, they need to be aware of the views of the person who prepared the source and the cultural, political and social values that may have influenced that person. Use previously marked sites to illustrate these points.
- Ask pupils to plan intended outcomes by considering the context and purpose of the project.
- Ask pupils to identify success criteria, *eg by asking 'who, what, when, where, why and how' questions, perhaps using action planning as a tool for project development*.
- make decisions about the information required to complete a project
- identify information that may be biased
- review the progress of their project and adjust its direction accordingly
- Emphasis is placed on using the established criteria to determine if the work is progressing as planned. Ask pupils to say what is good about their project so far – then make reference to their criteria. After discussion pupils can make adjustments as appropriate. This should continue throughout the project.

**Activity 3**

- to search the internet using an appropriate search engine
- to collect appropriate data that can be used, including text extracted from continuous prose
- to understand information that is not explicitly stated or that the reader is assumed to understand
- Ask the pupils to collect data using systematic searches of information sources – do not necessarily limit their search to the internet. Ask pupils to keep a log of their searches and the origins of sources to enable presentations to include references.
- Show pupils how to save the search results to use in their presentation, *eg page saving, text and graphic saving and frame saving*. Encourage pupils to make judgements about sources and their accuracy while choosing subject matter to support their stance.
- Review progress by applying criteria to modify the direction of the project if necessary.
- make informed judgements about the validity of information
- collect data for use in presentation
- extract information from continuous prose
- Teachers and/or pupils should prepare a log sheet for searching, including, *eg the search engine used, URL, key words, opinion on usefulness, where hosted, type of content*. This could be a product of activities 1 and 2.
- Homework could involve pupils reviewing information from a range of sources appropriate to the stance being taken.

**Learning objectives**

Pupils should learn:

**Possible teaching activities****Learning outcomes**

Pupils:

**Points to note****Activity 4**

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| <ul style="list-style-type: none"> <li>• to refine information to focus on the purpose of the presentation</li> <li>• that software packages have relative strengths and weaknesses</li> </ul> | <ul style="list-style-type: none"> <li>• Ask pupils to review the information they have gathered in order to determine project requirements.</li> <li>• Ask pupils to review a number of the features of a presentation package identifying its advantages and disadvantages.</li> <li>• Finally, ask pupils to plan and prepare their presentation. Sources of information should be acknowledged.</li> </ul> | <ul style="list-style-type: none"> <li>• produce a presentation of subject matter from a chosen perspective</li> <li>• make informed judgements about the software tools they use for their presentation</li> </ul> | <ul style="list-style-type: none"> <li>• Continue to collect information and begin the initial planning for the content of the presentation. Review the information available and select the content of the presentation.</li> <li>• Homework could involve pupils continuing the planning process and preparing an outline structure of their presentation.</li> </ul> |
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**Activity 5**

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| <ul style="list-style-type: none"> <li>• to apply evaluation criteria</li> <li>• to make informed judgements on the quality of presentation</li> </ul> | <ul style="list-style-type: none"> <li>• Ask pupils to demonstrate their completed presentation and to determine the success of their presentation by applying their chosen evaluation criteria.</li> <li>• Discuss with pupils the bias shown in their presentation, the accuracy of the information contained in it and what they might change to lessen the impact of the bias.</li> </ul> | <ul style="list-style-type: none"> <li>• understand the value of success criteria in determining the success of a project</li> <li>• apply criteria and make judgements about their project</li> </ul> | <ul style="list-style-type: none"> <li>• Pupils will need to have a copy of their criteria and then take each criterion in turn and apply it to the project. They will need to decide on:             <ul style="list-style-type: none"> <li>– whether they have met the requirements of the criterion</li> <li>– how well each criterion is met</li> <li>– what areas need to be improved</li> <li>– how each area for development could be improved</li> </ul> </li> <li>• Homework could involve pupils writing about the bias of their presentation, what could be done to change it and how bias might affect accuracy and veracity.</li> </ul> |
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