

## Searching for scientists

### Topic description

Students identify stereotypes of scientists by drawing them or using clip art or photos. They then conduct a web search in teams to find scientists who don't fit the profile and prepare a brief presentation to the class of one non-stereotypical scientist they found. They use the presentations to lead into a class discussion about how stereotyping arises and its effects on groups. The lesson concludes with the students writing a non-stereotypical entry for a 'Scientist' for *Wikipedia*.

### Age

12-15 years

### Explicit values focus

- Fair Go
- Respect
- Responsibility
- Understanding, Tolerance and Inclusion

### KLAs

- Science
- Technology
- Society and Environment

## Teaching and learning activities

### Getting started

Students draw a picture of what they think a scientist looks like and then explore clip art for pictures of scientists and prepare a collage on a page and print it off.

Display the pages on the board and then lead a class discussion as to what the stereotype of a scientist is and what groups are excluded.

Make a list of common scientist stereotypes.

### Discovering

Discuss with students online search strategies, including:

- search terms they might need to use
- using advanced searches to narrow fields and exclude unwanted results
- authentication of websites.

Students work in pairs to identify key words that could be used to search for information about non-stereotypical scientists. They complete the [Pre-search Checklist](#) in the 'Notes for Teachers' section of this activity to refine their search terms.

Students use the terms from their Pre-search checklist to conduct a websearch to identify at least four non-stereotypical scientists. They record the results of their searches in the [Websearch Student Record Sheet](#) (in 'Notes for Teachers') and evaluate the suitability of the sites.

They then choose one scientist and prepare a one-page presentation outlining the following:

- date and place of birth
- an image of the scientist
- early life, education, work experience
- scientific discovery
- the significance of the discovery
- how the discovery affects our daily life
- in what ways the scientist does or does not fit the stereotype.

## Bringing it together

Students share the information they found about the scientists then have a group discussion about stereotypes using the following questions for direction:

- What are stereotypes and how do they affect people's lives? Is it fair to have stereotypes?
- Can you think of any events in history that were influenced by stereotypes and biases?
- How do people learn to make stereotypes? How might they unlearn them?
- What responsibility can the media (newspapers, television, movies) take to help reduce stereotyping?
- What do you think an individual can do to help reduce bias and stereotyping and give everyone a fair go? What responsibility can *you* take to reduce stereotyping?
- How have the scientists demonstrated the values covered in this lesson? That is, fair go, respect, responsibility, understanding, tolerance and inclusion?
- What does this information mean for people wanting to become scientists?

Students view the entry for 'Scientist' in *Wikipedia*

([http://en.wikipedia.org/wiki/Scientist#Who\\_are\\_scientists.3F](http://en.wikipedia.org/wiki/Scientist#Who_are_scientists.3F)) and comment on how inclusive this definition is for all scientists, based on their research. Have the students prepare their own entry that demonstrates inclusion of a range of aspects of being a scientist, including an image, which does not present the stereotypical view.

## Notes for teachers

Following are a Pre-search checklist and Websearch student record sheet which may be printed out for student use.

## Pre-search checklist

<p>1. What unique words, distinctive names, abbreviations, or acronyms are associated with your topic? These will help you zero in on relevant pages.</p>
<p>2. What organisations/groups might have information on your subject in their pages? Search these as a <b>"phrase in quotes"</b>, looking for a homepage that might contain links to other pages, journals, discussion groups, or databases on your subject.</p>
<p>3. What other words are likely to be in ANY Web documents on your topic? You may want to search for these by joining them with <b>AND</b> or preceding each by <b>+ [no space]</b>.</p>
<p>4. Do any of the words in 1, 2, or 3 belong together in a certain order, such as a cliché? Search these as a <b>"phrase in quotes"</b> (eg "mad scientist" or "14th century scientist").</p>
<p>5. For any of the terms in #4, can you think of similar words or spellings or equivalent terms?</p>
<p>6. Can you think of any extraneous or irrelevant documents these words might pick up? You may want to allow these terms by joining them by <b>OR</b> and including each set of equivalent terms in parentheses ( ). You may want to exclude terms or phrases with <b>- [no space]</b> before each term, or <b>AND NOT</b>.</p>

**Websearch student record sheet**

Key word /refined search	Website visited and site owner/author	Useful information	Suitability of website
Scientist	<a href="http://www.ziplink.net/~pik/Famous%20Scientists.html">http://www.ziplink.net/~pik/Famous%20Scientists.html</a> – Dr K’s Science Education Bookmarks - Famous scientists	Links to other pages about famous scientists but most are stereotypes	★★★☆☆
			☆☆☆☆☆
			☆☆☆☆☆
			☆☆☆☆☆
			☆☆☆☆☆

The University of California Berkley Library tutorial pages at <http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/FindInfo.html> provide useful hints and checklists for searching on the World Wide Web and for evaluating sites.