values education

Should Australia build nuclear power stations?

Lesson plan description

As a response to a unit of work on climate change, students research the arguments for and against the generation of electricity by nuclear power in Australia. Initiate the discussion using a values continuum. Students form groups based on their position on the values continuum and research the issue. They share the information and use it to develop a presentation for a government inquiry into the development of nuclear power in Australia.

Year levels

Later Adolescence (16–18 years)

Explicit values focus

- Freedom
- Integrity
- Respect
- Responsibility

Key Learning Areas

- Environmental Science/Earth Science

Lesson plan

Getting started

Students respond to the question 'Should Australia build nuclear power stations?' by placing themselves on a line with 'strongly agree' at one end and 'strongly disagree' at the other. The line allows for gradations with 'don't know' or 'unsure' in the centre. Students discuss with students standing on either side of them why they have positioned themselves at a particular spot.

Discovering

Have students work in groups to research the arguments for and against the building of nuclear power stations in Australia to generate electricity. The web links listed in the Notes for teachers provide a starting point.

Focus questions could include:

- How does nuclear power rank in terms of its contribution to greenhouse gas production?
- How much energy is used in the construction and setting up of nuclear power stations?
- How economically competitive is nuclear power?
- How safe is nuclear power?
- How are nuclear waste materials transported and stored?
- Are there alternatives to nuclear power that will reduce our greenhouse emissions and allow the economy to continue to grow? If so, what are they?

- After gathering the information, the groups share the information they have obtained. Students compile a list of the arguments for and against the building of nuclear power stations in Australia. They then redo the values continuum to allow for changing positions as a result of the

research. Allow students to explain their position, and allow for changes in position as students listen to the views of others. Encourage students to articulate the underlying values that are influencing them. Use the values terminology in the questioning:

- Responsibility
- Fair
- Freedom
- Respect

As an alternative to redoing the values continuum, students could share their research by participating in an 'Oxford debate'. Designate areas in the classroom as 'agree with the statement', 'disagree with the statement' and 'unsure'. To start, one student moves to each of the designated areas and gives a reason for choosing their position. At the end of each round, a further three students move to the area that represents their view, again giving their reasons for choosing their position. Continue until all students have positioned themselves. Movement between areas can occur as students listen to the arguments presented. Encourage students to articulate the underlying values that are influencing their decision.

Bringing it together

- Students prepare a submission to a government inquiry into nuclear power in Australia, clearly presenting their reasons for either supporting or not supporting the building of nuclear power stations in Australia.
- An issues map can help students organise the material that they have researched. Students group the material under headings such as Environmental factors, Social factors, Political factors and Economic factors.

Notes for teachers

The following sites provide a starting point for research.

'Nuclear energy prospects in Australia'
http://www.world-nuclear.org/info/inf74.html

'Uranium is the key to curbing climate change'
http://www.aua.org.au/Content/Articles.aspx

'Is nuclear power part of Australia's global warming solutions?'
http://www.acfonline.org.au/news.asp?news_id=582

'Nuclear energy debate'
http://nukefreeaus.org/campaigns/Reactors/indexclimatechange.html

An additional resource is 'Energy's future beyond carbon', *Scientific Magazine*, September 2006.