Protecting the Earth: how big is your ecological footprint? (teachers' notes)

Topic

This activity is aimed at teaching pupils about **sustainability** by considering the impact that their own actions have on the environment, finding out how sustainable their own lifestyles are, and thinking about ways to reduce their environmental impact.

Description

The students respond to a questionnaire, score points for each question, and use their final score to calculate their 'ecological footprint' (how much land is required to support their lifestyle). From this they can look up how many 'Earths' would be required should every one on Earth share the same lifestyle, thus highlighting the inequality of wealth and quality-of-life distribution across the globe.

Context

The questionnaire is a good way to get pupils thinking about how their own actions affect the environment and to introduce the concept of **sustainability**. The exercise is based on the idea that everything we do that has some impact on the environment can be translated into an area of land used. Since there is only a finite amount of land available on the Earth, it follows that we cannot use more than our fair share indefinitely without others losing out, now and in the future. It touches on water use, agricultural and urban land use, waste, recycling, pollution, energy generation and transport and highlights the global impact of lifestyle choices we make as individuals.

Teaching points

The questionnaire itself would make a good homework exercise, and then perhaps a class could begin with comparing scores and discussing what they mean. Some of the questions at the end could then be tackled in pairs, or small groups in class and then the results of the discussion could be presented to the rest of the class. The last two questions of this activity could form the basis of a class discussion or a longer project.

Role-play might be a useful technique to draw out a discussion of any controversial issues that arise. To take a very simple example, one person could argue that that one must only bathe once a week for the sake of the environment, and another could counter this by arguing that their daily bath is far more important than the environmental consequences. How might one persuade the other of their point of view? Such a role-play could take place in front of the class who might be able to offer advice about means of persuading either side.

Sustainability, or **sustainable development**, was defined by the World Commission on Environment and Development (the Brundtland Commission) as development that 'seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future' in their publication *Our Common Future*, 1983. The *Concise Oxford Dictionary of Ecology* defines sustainability as 'economic development that takes full account of the environmental consequences of economic activity and is based on the use of resources that can be replaced or renewed and therefore are not depleted'. The expression was first introduced in the late 1970s.

To help introduce the concept of sustainability, an interesting class exercise is to make a list of environmental problems (such as disposing of plastic packaging), Students can then list all the solutions that they can think of for each one (burn, bury,

recycle *etc*) and then work out which of these solutions are most ‘sustainable’ and which are least, and why this is so.

Everything we do that has some impact on the environment can be translated into an area of land used. Since there is only a finite amount of land available on the Earth, it follows that we cannot use more than our fair share indefinitely without others losing out, now and in the future. The principle that ‘actions’ equate to an ‘area of land used’ forms the fundamental premise of this exercise.

Acknowledgements

This questionnaire is adapted from one that was published in the *New Scientis*t global environment supplement on the 28th April 2001. Adaptations of the same idea appear elsewhere (as an interactive display at the Earth Centre in Doncaster for example).