



Scotland Learning



SEE YOU SEE ME

Spring 2009

Fridays 11.40–12.00

6 March to 20 March

BBC2

Are You Eco-friendly?

Curriculum for Excellence

These notes relate to re-transmitted programmes, and were conceived within the 5–14 framework. While the 5–14 terminology has been retained, teachers are encouraged to consider the content in terms of its contribution to promoting successful learners, confident individuals, responsible citizens and effective contributors.



See You See Me

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Are you eco-friendly?

Introduction

The three programmes in this unit cover a diverse and complex range of issues. There has, however, been a determined and successful effort to empower the individual by frequently directing the pupil to 'push the buttons they can reach'. In this way we can begin to look locally on a micro scale and eventually understand how this eventually becomes macro.

The unit should enable pupils to:

- develop a better awareness of environmental issues
- understand the relationship between needs and wants and consumerism
- understand the impact of individual behaviour on the environment
- develop a greater awareness of natural resources and the need to conserve them
- develop an awareness of individual responsibility for the environment (the world)
- provide a basis for pupils to identify areas of concern that impact directly on their lives.
- develop a better understanding of Scotland, its natural resources and its landscape from a historical as well as a geographical perspective.

Using the programmes

The programmes will provide a powerful visual resource on the Scottish environment and on issues that affect Scottish children, whether urban or rural. Programmes two and three begin with Grant providing a synopsis of some of the issues and findings, thus providing useful revision and reinforcement for both teacher and pupil.

Using the teacher's notes

The notes are intended to provide the basis from which teachers can develop and plan a rewarding and positive educational experience within the topic of pollution and conservation. There are suggestions for pre-programme activities and post-programme follow-up. There are many instances (whenever Grant is asked a question) where the teacher might pause the programmes in order to discuss the ideas and possible solutions before the answers are provided on the film. Samples of worksheets are provided for pupils to complete, but it is anticipated that worksheets will evolve out of the pupils' own areas of concern which will reflect local issues.

Resources

<http://www.berr.gov.uk/whatwedo/energy>

This website provides comprehensive information about renewable energy – the technologies, their current and potential role, the benefits and the broader issues involved.

Children's Participation

Roger Hart: Earthspan/UNICEF ISBN: 185833323

WWF Learning Website

http://www.wwf.org.uk/what_we_do/working_with_schools/index.cfm

WWF Scotland, 8 The Square, Aberfeldy, Perthshire, PH15 2DD Tel: 01887 820449
Full Resources List

http://www.wwf.org.uk/what_we_do/working_with_schools/resources/index.cfm

<http://www.cat.org.uk>

Centre for Alternative Technology (CAT)
Machynlleth, Mid Wales – includes support material for schools.

<http://www.nef.org.uk/greenschool/index.htm>

National Energy Foundation is an educational charity based in Milton Keynes offering a range of resources and ideas for children and teachers.

Environmental Transport Association

www.eta.co.uk

<http://www.wastewatch.org.uk>

Resources and up-to-date tips about waste and recycling

Sharing Nature with Children

Joseph Cornell, Exley Press: ISBN 0905521366

The Wee Green School Pack by Gill McKinnon and Sudheer Carroll

Lothian Regional Council/Royal Mail/SNH, 1994
Information: High School Yards Primary School 0131 556 6536

<http://www.eco-schools.org>

International programme for environmental education with good links and information about schools, projects and partners.

Scottish Development Education Centre (Scotdec)

Purchase or loan of teaching materials with a global perspective.
Contact: SDEC, 22 Colinton Road, Edinburgh, EH10 5EQ
Website: <http://www.scotdec.org.uk>

Main issues

Programme One

- Do we ever consider how wasteful we are? What does it mean to be eco-friendly?
- The Scottish coastline: Grant meets some eco-friendly children whose school is on the coast of Skye.
- Sea and beach pollution in Skye.

Programme Two

- The river Clyde in Glasgow.
- Water pollution and treatment.
- Conservation groups.

Programme Three

- Urban use of energy. Consumerism and waste.
- Litter in the city.
- Fossil fuels.
- Traffic pollution.
- Alternative energy solutions.

The emphasis in all the programmes is for teachers and pupils to look at their immediate environment and help children feel that they can have an impact. They should feel that they can make a difference, and that if we start by 'pushing the buttons they can reach' things will change.

Approach the topic in the same way. One way to begin would be by selecting pictures from magazines (*National Geographic*, for example) and let children decide which pictures show pollution, which show conservation and which show examples of sustainability. Ask pupils to justify their choices and discuss and display their work.

Glossary

Programme One

Satellite navigation: using fixed satellites to find an exact location on earth

Ecology: the relationships between living things and the places where they live

Pollution: substances that have a unintentionally harmful effect on their surroundings

Environment: surroundings

Re-usable resources: materials that can be used again

Recycle: find a new use for

Green Flag: an award given for eco-friendly work in UK schools

SEPA: Scottish Environmental Protection Agency

Eco-friendly: beneficial to the environment and to natural resources

Environment Intelligence Unit (EIU): An organisation (made up for the purposes of this programme) which is looking for an agent to take care of the environment for the benefit of future generations

Programme Two

Energy crisis: not having enough fossil fuels to meet demand

Trading port: a place where ships bring in and take away goods

Industrialisation: large scale, and usually mechanised, manufacturing

Loom: a machine that weaves cloth

Vandal: a person who wilfully destroys or damages property for no reason

Effluent: liquid waste

Smog: a thick mixture of smoke and fog, caused by burning fossil fuels

Sewage: the human waste matter which flows through the sewers

Pollutants: things that cause pollution

SEPA: the Scottish Environmental Protection Agency, an organisation that monitors and controls the quality of water

Marine life: Creatures that live in seawater

Estuary: the wide mouth of a large river

CO₂: carbon dioxide

Analysis: a detailed study looking at a subject's separate parts

Programme Three

Fossil fuels: coal, oil and gas

Renewable energy: an energy source that is continually being replenished

Sound pollution: unwanted noise

Ozone layer: a protective layer of gas high in the atmosphere

Asthma: a respiratory disease

Solar power: power generated directly by radiation from the sun

Turbine: A machine which converts the mechanical energy of wind or water into electrical power

Hydro-electricity: electricity generated by water power

Landfill site: a place where rubbish is dumped and then covered to create more land

Programme One **The seashore**

—Transmission date 6 March 2009

Programme Content

The first programme deals with Grant's way of life, which is not very eco-friendly. He is encouraged to think about the consequences of his lack of thought. The presenters go on to look at pollution issues around the coast of the Isle of Skye, and the 'Environment Intelligence Unit' is introduced.

Local investigation

Through class discussion, decide on a local issue you can investigate. It might be litter in the playground or the park, rubbish thrown in a stream or left in the road, the environmental record of a local industry, the ease of recycling, the presence of graffiti, the erosion of footpaths or pollution in the neighbourhood. Try to encourage as many suggestions as possible, and take photos or draw pictures to illustrate them. Then, from all the suggestions, choose one or two to investigate further.

The initial discussion can be carried out as a whole-class, teacher-led exercise. Once it is started, and the aims are clear, smaller groups can investigate different ideas. Each one should choose a speaker (or 'EIU agent') to report back its findings. Make sure there are large sheets of paper and pens available for the groups to use.

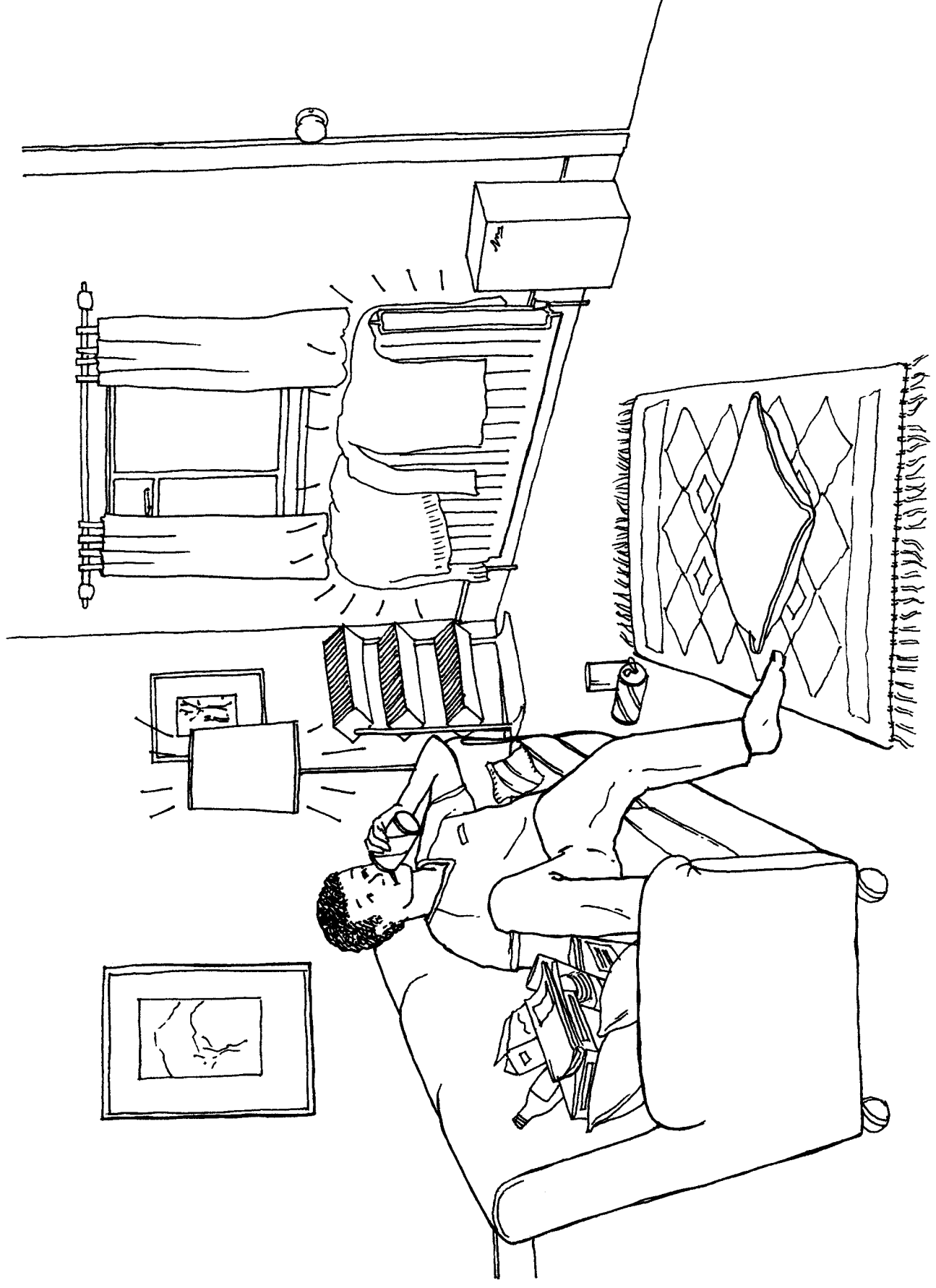
This approach can be used for any or all of the 'Are you eco-friendly?' programmes. Using the programme as the focus for the week's work, the pupils can identify the issues and discuss them. The vocabulary can be used for spelling practice or as the basis of acrostic poems or shape poems.

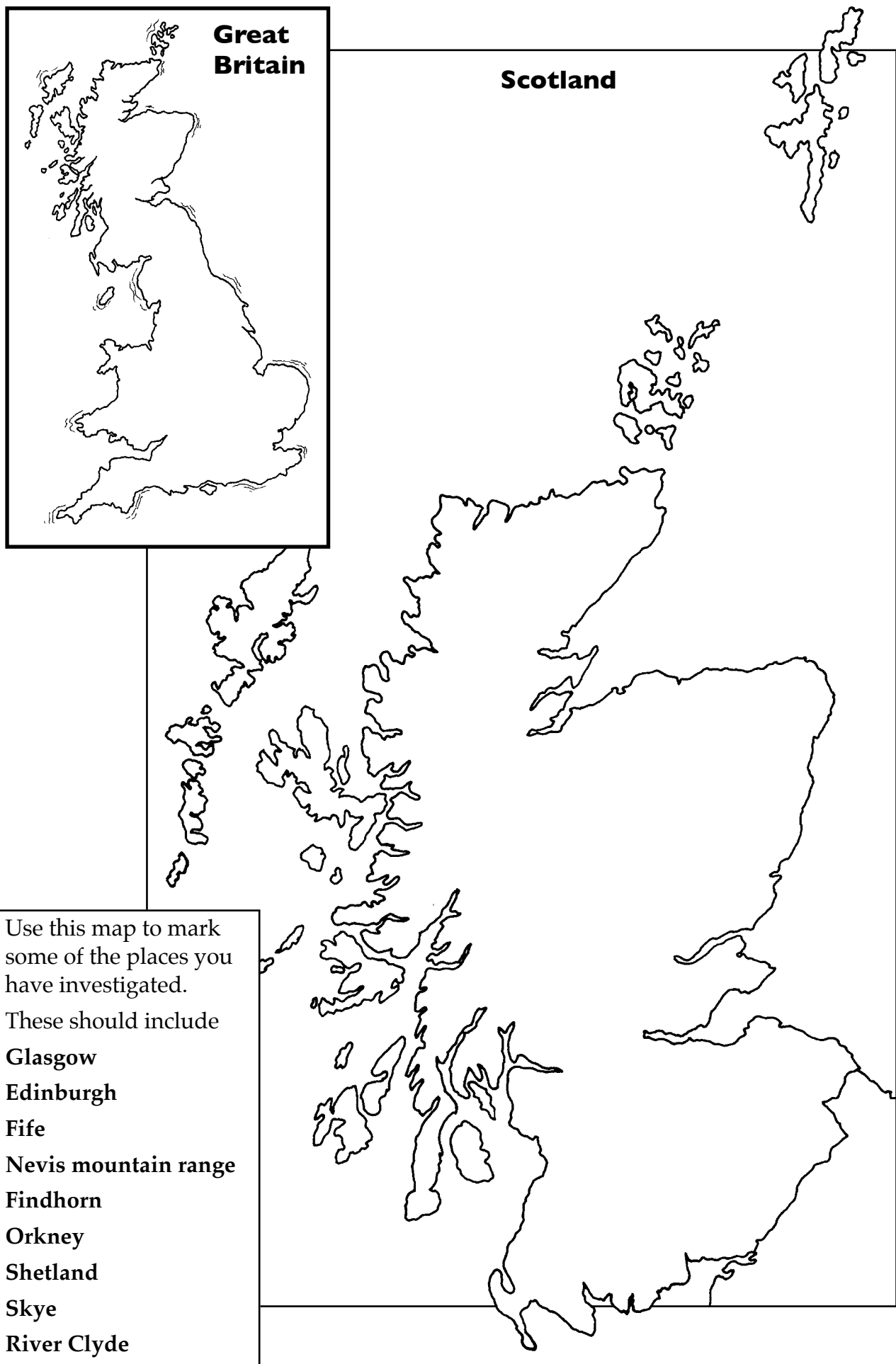
After the programme

- 1 List all the environmentally unfriendly things Grant does. Can any of the pupils identify with his behaviour? Could Grant do things any differently? What solutions can the class offer?

Worksheet 1 is a drawing of Grant's sitting room. Ask the pupils to draw arrows to label all the eco-unfriendly things he is doing. As an extension exercise, they could explain the harm that is being done by his actions.

- 2 Ask the pupils to draw a vertical line down the middle of a sheet of A4 paper or a jotter page. On one side, they should list environmentally unfriendly actions, and on the other side list the solutions they would suggest.
- 3 Ingrid wants Grant to be an EIU agent so that he can do his bit for the environment and safeguard the planet for future generations. Ask the pupils to design EIU cards for themselves. They can be hand drawn, or you could use a computer. Perhaps you could take digital photos to add to the cards, or ask pupils to bring in their own photos for scanning. If you can, laminate the cards so they last longer.
- 4 Talk about the qualities that an agent in the EIU would need. Use it as the basis for writing a job description for the job, or write a description of the type of person who would be perfect for the work.
- 5 Programme one deals with issues of needs as opposed to wants. What do we really need to live and what do we want? Ask the children to draw a line down the middle of a sheet of paper. On one side they should draw pictures representing water, shelter, food and love, the four things they need to live, and on the other draw four things that they'd like to have, but don't actually need.
- 6 Ask the children to use Worksheet 2, the outline map of Scotland, to plot Grant's travels. They could also show the areas of forestry, recycling plants, rivers and cities that were looked at in the programme.





Programme Two **The river**

—Transmission date 13 March 2009

Programme Content

This programme focuses on the necessity for water. In it, Ingrid asks Grant why water is so important to people. Before listening with the class, try to have a class discussion where pupils can throw around their own ideas.

The programme looks at the historical roots of Glasgow. As we learn about the importance of coal as an energy source and of water for steam engines, it becomes clear why Glasgow became so industrialised. We learn of the pollution from the mills through sulphuric acid and dyes.

Through Grant's relatives we are introduced to extreme views about rivers. His uncle Ernie thinks that rivers are there to be used and exploited while his cousin Lawrence wants all rivers protected, and thinks there should be signs to keep people out. Neither of these views is very practical. We see how, with careful management by organisations like SEPA (the Scottish Environmental Protection Agency), that rivers can do a job for industry and at the same time be healthy environments for fish and birds.

The topic of global warming is introduced. We learn that risks of floods are increasing and that Glasgow has an early detection system to prepare for floods. The programme also looks at pollutants which remove oxygen from the water and so kill the living things which depend on the oxygen to live. We learn about the rôle of Scottish Water, whose job it is to treat sewage and upgrade water works. Some drains run directly into rivers and therefore any pollutants washed down them are untreated and very dangerous.

The idea of acting locally is reinforced. While the government and large organisations can take on the big companies, each of us can challenge the behaviour of friends and family, and so make a difference.

After the programme

- 1 Using an atlas, look at the locations of cities in relation to rivers. Talk about how important water is for cities, and help reinforce the connection that Ingrid makes between cities and rivers in the programme.
- 2 Carry out experiments to see the impact that a single drop of ink or paint has when added to a glass of water. Make comparisons between this effect and pollution in rivers. Ask the pupils to write up the experiment, using labelled diagrams to explain the method and equipment which were used, and to record the results they obtained.
- 3 Use Worksheet 2 to trace the route of the River Clyde and show all the work that it does between source and sea. Use the information from the programme, and write a sentence on a separate piece of paper explaining each use. The information can be added to same copy of the worksheet as was used for Programme 1, to integrate the work, or new copies can be given out for greater clarity.
- 4 Have a class investigation into global warming. Select four of its important effects and draw labelled pictures to illustrate them. Compare and discuss the most serious problems.
- 5 We can all become environmental agents. Ask the class to devise their own 'eco-code' for the school. You could run a competition in class (or even throughout the whole school). See who can come up with the most memorable or catchy slogan about saving energy, recycling, putting litter in the bin or other eco-friendly messages. You could start them off with ideas like 'When you're out, put out the light', or 'Read the paper recycle it later'.
- 6 Make a poster explaining what global warming is and what everyone can do to help reduce it.
- 7 Discuss why recycling is more eco-friendly than manufacturing from raw materials. (Normally, raw materials require more energy to process them.)

Compare recycling figures from other countries and draw bar graphs to show your results. You might look at Sweden, Germany, Japan, America and India. Alternatively, you could choose one country from each continent. There is a massive variation between European countries. Scotland, unfortunately, has a poor record.
- 8 Talk to the children about the 'buttons they can push' themselves. They could, for example,
 - join an environmental action group,
 - form their own group to take local environmental action,
 - do a 'litter clean-up' around the school, or
 - try to get a Green Flag award for the school.

Programme Three **The town**

—Transmission date 20 March 2009

Programme Content

Programme three focuses on the consumption of resources. Ingrid gives a passionate plea about consumerism in society, and the waste of energy and pollution this involves. Amongst the issues she covers are cars, litter, landfill sites, building work and the sheer volume of goods available in the twenty first century.

The programme investigates the problem of children dropping litter. A leader of the *Keep Scotland Beautiful* campaign gives us some statistics which show that boys are worse than girls and children in the age range 13–16 are particularly poor.

Grant wants to find out whether cities can ever be eco-friendly. Two of the main factors affecting this are energy use and pollution. All energy comes, ultimately, from the sun. Plants store the sun's energy, and animals eat plants and other animals. Fossil fuels such as coal, oil and gas were made millions of years ago when plants and animals died and were compressed by a huge weight of earth. Fossil fuels, which release their energy when burned, are used in vast amounts in our cities, but the supply will not last forever. Electricity may appear to be clean, but most of it is generated in power stations which run on either fossil fuels or nuclear power, which produces radioactive waste.

After the programme

- 1 Ask the children to have another look at the needs and wants they identified in 'After the programme' activity 5 in Programme One. Have they changed their minds about anything?
- 2 Talk about how the children might encourage their friends to stop dropping litter for good, not just the duration of the project. Ask them to design and make posters to get the message across.
- 3 Scotland has a poor track record in eco-friendliness. As Grant puts it, 'If there was an eco-European Cup, Scotland wouldn't even qualify'. Discuss why other European countries are more eco-friendly.
- 4 How many energy-saving ideas can the class come up with for the school or the home?
- 5 Carry out an energy or resources survey in the school. Divide the class into groups, and ask each one to select a topic to investigate, such as heating, lighting, the consumption of paper, or the use of equipment such as computers and photocopiers. They should each decide what they want to find out from the survey and write their questions accordingly.

If you investigate lighting, for example, you could ask how many lights are usually on? Do they use energy efficient bulbs? Are so many lights really needed? What happens at break times? Are the staff good at turning the lights off? What about the pupils?

Once the different groups have recorded their different areas of interest they can share them with each other and decide on areas and strategies for improvement.

Extension ideas

Other possible extensions of the programme content into the classroom include the following.

- Appoint 'eco-monitors' for each class, whose job it is to turn off unnecessary lights and monitor the temperature.
- A class temperature logbook can be kept and used (in full consultation with the janitor) to approve or recommend changes to the school heating.
- The local council might come out and audit your energy use for a day to provide statistical information.
- Have an 'energy saving' day. Audit energy use and compare the results with a normal day.
- Present an 'Eco-class of the Week' award in assembly to most energy-conscious class.

In cities, motor cars use a huge amount of energy and create a great deal of pollution which can make life difficult for asthma sufferers.

- Find out how many asthma sufferers there are in the school.
- Find as many ideas as you can for reducing traffic in cities.
- Carry out a survey of the class, the year group or the whole school to find how people get to school.