

## 1. Fascinating Facts

### Aims:

- To introduce pupils to key facts about water pollution
- To assist the development of informed attitudes about water pollution

### Materials:

- A copy of Worksheet 1 at the appropriate level for each pupil

### Method:

- Ask pupils 'What is water pollution' and 'How is water polluted?' and ask for examples of when/where they have seen polluted water
- Note their answers on a central board or large sheet of paper
- Hand out worksheet 1 and read through with the class discussing key points

## 2a/2b. Testing for harmful substances

### Aims:

- To enable pupils to learn the difference between acid and alkali
- To practice measuring and recording skills
- To experience writing results in tabular form

### Materials:

- A copy of Worksheet 2a/2b for each pupil
- 5 jam jars with lids, 1 teaspoon, 1 tablespoon, automatic washing powder, white vinegar, bleach, garden peat, pH paper, a pH scale chart, plain paper, sticky tape, duckweed for each group and disposable gloves for each pupil

### Method:

- This experiment is best managed in small groups with adult supervision, but could also be carried out by the teacher with the class observing and recording results
- Hand out worksheet 2a and read through with the group - check understanding of the procedures and the safety issues
- Pupils conduct experiment 1 and write up their results in tabular form and answer the questions on the worksheet
- Discuss the results and what information this provides
- Pupils then begin experiment 2 on worksheet 2b. This lasts 4 weeks and pupils should again record their results in tabular form
- After 4 weeks, pupils write up the experiment using the questions on the worksheet as a guide
- Review the results and what they have learned

### NB.

**This experiment uses bleach. Please observe normal safety procedures when using harmful substances with this age group.**

## 3. Be a Pollution Detective

### Aims:

- To investigate water pollution in the local area
- To experience writing results in tabular form
- To practice measuring skills

### Materials:

- A copy of Worksheet 3 at the appropriate level for each pupil
- 5 clear jars, half a cup of milk, 1 teaspoon, 1 dropper, a measuring jug, a sheet of white paper and a green leaf for each group

### Method:

- Explain to pupils that this is the first stage of an investigation to see whether a local pond or stream is polluted
- Hand out worksheet 3 and read with the pupils
- Pupils prepare the results table before carrying out the experiment
- Pupils collect equipment and carry out the experiment and write up their results
- Discuss their findings

**This experiment can be carried out by small groups or by the teacher with the whole class**

## 4a/b. How healthy is your pond, river or stream?

### Aims:

- To experience checking levels of pollution in the local area
- To introduce pupils to indicator species

### Materials:

- A copy of Worksheet 4a/4b at the appropriate level for each pupil or group (laminated for use out of doors)
- a plastic container, a plastic tray, a magnifying glass, a long handled net, a pond life book, pH paper for each group

### Method:

- Explain the purpose of the field trip and what pupils will be doing
- Discuss worksheet 4a
- Pupils dip-net in the water and record what they see on worksheet 4b and answer the questions 1-4 on worksheet 4a
- In the classroom pupils write up a report of the field trip and answer question 5
- Discuss the findings and display the results

**NB.**  
**Normal safety rules for any field trip apply**

## 5. Oil and Water

### Aims:

- To enable pupils to be aware of the effect of oil on water

### Materials:

- A copy of worksheet 5 for each pupil/group, a bottle of tap water, cooking oil and washing up liquid for each pupil/group

### Method:

- Hand out worksheet 5 to each pupil/group and the equipment
- Discuss the task and check understanding
- Pupils carry out experiment and write up their results
- Discuss findings as a class
- Relate what they have learned to any recent environmental clean up operation following an oil spill. Archive material may be available via the internet on the Shetland oil spill.

**This experiment could be a homework activity**

## 6. Pollution and the environment 7. Dot to dot / 8. Wordsearch 9a/9b. Bag it and Bin it Quiz and Answer Sheet

### Aims:

- To encourage pupils to think about environmental pollution caused by man and develop informed attitudes to pollution

### Materials:

- Copies of worksheets 6,7,8 and 9a/9b for each pupil

### Method:

- Hand out worksheet 6 and discuss how things that are flushed down the toilet sometimes end up on the beach because the sewage screens cannot stop them
- Pupils complete the activity
- Collate their ideas of other things that pollute the beach on a central board or large sheet of paper
- Pupils complete worksheets 7, 8 and 9 for fun - worksheet 9 will check their knowledge about Bag it and Bin it

## 10. Oil Tanker Sinks in Storm

### Aims:

- To introduce pupils to the measures that are put in place after an oil spill and the effect that an oil spill has on a community
- To practice comprehension skills

### Materials:

- Copy of Worksheet 10 for each pupil

### Method:

- Read the newspaper article and set a time limit for pupils to answer questions
- Discuss their answers and relate these to any current news stories

## 11. What causes pollution?

### Aims:

- To enable pupils to identify what can pollute water in burns, rivers, lochs and streams
- To check their knowledge on causes of water pollution

### Materials:

- A copy of worksheet 11 for each pupil

### Method:

- Discuss with pupils what they have learned about water pollution
- Hand out worksheet 11 and ask pupils in small groups to provide the information
- Collate the class answers and use this to lead into the water pollution campaign

## 12. Water Pollution Campaign

### Aims:

- For pupils to design and run a real Water Pollution Campaign in school and their community
- To increase their knowledge and understanding of water pollution
- To develop informed attitudes to the use of water and the need to save it

### Materials:

- worksheets 12a - 12d
- art materials
- computer graphics package
- video cameras

### Method:

- Decide how you will organise the campaign with the class. A group of pupils can be allocated a specific task within the campaign or small groups could produce the whole campaign and the class decide which are the best elements of each and create the class campaign for this
- Hand out Worksheet 12a to each pupil, and as a class discuss the campaign (You could ask Scottish Water to write to the class asking them to undertake the campaign on their behalf and invite them in, to see the results.)
- Note ideas for all parts of the campaign on a central board or large sheet of paper
- Pupils select which part of the campaign they would like to work on and are given related worksheets at the appropriate level
- Agree deadline and allocate time during the week for pupils to work on their task
- Encourage pupils to speak to the Headteacher about how they could run the campaign in school
- Discuss with the pupils what could be circulated in the community and how this might be done

**NB. This could be run as an enterprise project using materials from the 'Go for Enterprise' resource pack. (Schools Enterprise Programme)**