

## 1a/b How is water collected for us to use?

### Aims:

- To provide pupils with information about how water is collected
- To check their knowledge and understanding of the information

### Materials:

- Worksheets 1a and 1b at the appropriate level
- Map of Scotland
- Coloured chalk
- Clear plastic beakers

### Method:

- Read Worksheet 1a
- Tell the class the key pieces of information about
  - reservoirs - where they are, how they are made
  - how the water is cleaned - key words such as silt
  - underground reservoirs
- Pupils may be familiar with visiting reservoirs for picnics or walks

## 2. How does clean water get into our homes?

### Aims:

- To provide pupils with information about how water reaches their homes

### Materials:

- Worksheet 2

### Method:

- Ask pupils how they think water travels from the treatment works to the taps in their home
- Hand out Worksheet 2
- Read together and identify how water is being used and the location of the stop cock and the water main
- Pupils write up answers
- Ask them to find out where the stop cock is at home

## 3. Clean water investigation

### Aims:

- For pupils to research algae and bacteria

### Materials:

- Worksheet 3

### Method:

- Ask pupils what they think algae and bacteria are. Provide them with a description
- Hand out Worksheet 3 - set the task and give pupils a deadline to return the information
- When the task is complete discuss their findings

## 4. Collecting water

### Aims:

- To enable pupils to find out how water can be collected
- To identify parts of the world where water is collected in these ways

### Materials:

- Worksheet 4

### Method:

- Review with the pupils their understanding of how water arrives in their homes
- Explain that this is not the case in some parts of the world
- If there has been recent media reports about drought conditions share with pupils and discuss
- Hand out Worksheet 4 and ask pupils to answer the questions
- The investigation could be a homework activity

## 5. Water treatment and the environment

### Aims:

- To enable pupils to understand the process of water treatment
- To introduce pupils to the scientific processes involved in water treatment

### Materials:

- Worksheet 5

### Method:

- Remind pupils that before water from the reservoir reaches their home it has to be cleaned at the water treatment works
- Hand out Worksheet 5 and discuss with the pupils or teach the process and use card as a follow up

## 6. Why must water be treated?

### Aim:

- To give pupils knowledge and understanding of the water treatment process and why it is necessary

### Material:

- Worksheet 6

### Method:

- Hand out worksheet and discuss the content with pupils
- Link to their investigation of algae and bacteria

## 7. Making water clean and safe Fantastic Filters

### Aims:

- To provide experience of filtering water
- To enable pupils to recognise the effectiveness of different filters
- To relate this to their knowledge of the water treatment process

### Materials:

- Measuring jug, a small amount of gravel, 3 empty glass jars, 3 plastic cups that fit the jam jars
- Worksheet 7

### Method:

- Decide whether you will conduct the experiment as a class in small groups or organise small groups to do it at different times during the day/week
- Remind pupils that water from the environment is not clean enough to drink and has to go through the water treatment process
- Tell them that they are going to try different ways of filtering dirty water
- Hand out Worksheet 7 at appropriate level
- Pupils conduct experiment and write up their findings

## 8. Making water clean and safe Magnetic attraction

### Aims:

- To enable pupils to understand how the chemicals react with the dirt in the water and make it clean and safe

### Materials:

- A magnet
- Iron filings
- A sheet of paper
- Worksheet 8

### Method:

- Decide whether you will conduct the experiment as a class or in small groups
- Explain that water from the reservoir has tiny bits of dirt in it which have to be taken out before the water can be piped into their homes
- Review which chemicals are used in the process (Worksheet 5) explaining that they are like a magnet
- Hand out equipment and Worksheet 8 at appropriate level
- Pupils conduct experiment and write up their findings.

## 9a/b Water treatment quiz

### Aim:

- To assess pupils knowledge and understanding of the water treatment process in a fun way

### Materials:

- Worksheet 9a/b

### Method:

- This can be used as an assessment/homework activity
- Hand out a copy of Worksheet 9 to each pupil
- Review answers as a whole class using the answer sheet provided