

## About the Activity

Participants investigate pollution in a freshwater environment through chemical and biological methods. Nitrate and pH tests are carried out and participants conduct sweep samples to investigate the freshwater invertebrates present. The BMWP score is used to assess the site based on the freshwater invertebrates found there. Several measuring sites are used and differences between the sites are discussed.

## Activity Aims

The aim of this activity is to:

- Introduce the freshwater pollution activity and the necessary equipment.
- Allow each participant to collect, record and analyse data.
- Ensure participants work together, supporting and encouraging each other.
- Provide an opportunity for participants to discuss what they have accomplished.

## Learning Outcomes

Upon completion of the activity, participants will have:

- Described the main features of the sites visited.
- Understood why data collection must be fair and consistent between sites.
- Observed how organisms adapt to their environment.
- Recognised that pollution affects the types of invertebrates found at a site and explain why the observed distributions occur.
- Understood that freshwater invertebrates can be used as indicators of water quality.
- Understood ways humans have an impact on the environment.
- Demonstrated the ability to listen to, understand and act on instructions received.
- Understanding of the importance of teamwork.
- Consolidated and then improved abilities through performance.
- Understood the importance of safety, risk, risk assessment, hazards and rules.
- Contributed to a post activity review led by the instructor identifying what they did well and then suggested ways to improve.

## Progression Opportunities

Some participants may also:

- Identify limitations of and improvements to the methods of data collection used.
- Understand the benefits of using biological rather than chemical indicators to measure water quality.
- Consider the ways in which human impact on the freshwater environment can be controlled.
- Take the initiative in evaluating their performance and that of the group.

## In addition, participants should also have developed in the following:

- Interpersonal communication
- Teamwork

## Associated Vocabulary:

**Words relevant to safety** e.g. boundaries, hazards, risk assessment, rules.

**Words relevant to equipment** e.g. bug pot, digital camera, identification sheet, nitrate test kit, pH test kit, sample tray, sweep net.

**Words relevant to the activity** e.g. BMWP score, chemical test, consumer, habitat, human impact, industry, food chain, identification key, indicator species, nutrition, organism, pollution, predator, prey, producer.

**Words relevant to teamwork** e.g. discussion, instruction, listening, opinion, participation, responsibility, understanding.