



# Measuring the turbidity of water

**Time needed for activity** 10 minutes

**Location** Indoors or outdoors

## Context

Turbidity is a measurement of how cloudy, dirty or murky a body of water is. Suspended material such as sand, silt, clay or algae can increase the turbidity of water, affecting plant growth and biodiversity. For a detailed explanation of what turbidity is and how it affects water quality please read Information Note - Turbidity.

Ensure your learners understand what is meant by turbidity before completing this experiment. Pour a glass of drinking water. Explain to your learners that it is clear and translucent and has low turbidity levels. Mix in gravy granules or coffee to the water. It is no longer clear and it's impossible to see through it. The turbidity level has increased to high.

This test will use a homemade turbidity meter to determine the turbidity of a water sample. The clearer the water, the lower the turbidity level although just because a water sample has a low turbidity level doesn't mean that it's fit for consumption - it may still be contaminated.

NRW's Resource card - Measuring the turbidity of water is based on OPAL's turbidity resource card.

## Curriculum for Wales

### Science and Technology

- **What matters** - Matter and the way it behaves defines our universe and shapes our lives.

### Mathematics and Numeracy

- **What matters** - Geometry focuses on relationships involving shape, space and position, and measurement focuses on quantifying phenomena in the physical world.

## Objectives

**By the end of this activity learners will be able to:**

- Determine the turbidity of a water sample.
- Come to a conclusion about the clarity of the water and what aspects of water quality this might or might not indicate.

## Equipment and resources

- 1p coin
- Resource card - Measuring the turbidity of water
- Water sample
- Tray or plastic bottle



## What to do

This activity can either be completed as a demonstration with learners observing or by learners working in small groups.

1. Print off, cut out and laminate the 'Resource card - Measuring the turbidity of water'.
2. Tape a 1p coin to the back of the card to weight it down and place at the bottom of the water sample tray or roll up and push down the bottle neck. Ensure the printed surface faces upwards.
3. Collect your water sample in either your tray or sample bottle.
4. Wait a few seconds for the water to settle before looking down on the resource card. How many NRW logos you can see?

Number of NRW logos visible	Turbidity level	Assessment
12-8	Low	Good
8-4	Medium	Medium
0-4	High	Poor

5. Dry out or dispose your resource card and return the water sample to the waterbody.
6. Rinse out your equipment.
7. Ensure everyone washes or disinfects their hands.

## Suggested key questions

- What conclusions can we make about the water quality level of the water sample?
- What do you think has influenced the turbidity level of the water sample?
- Do you think the water sample is drinkable?
- If not and people needed to drink the water sample, how could the water quality be improved?

## Adapting for different needs/abilities

### Less able

- Have a sample of drinking water which has low levels of turbidity available so learners can compare their sample to it.

### More able

- Give the learners a copy of the activity plan and ask them to follow the instructions independently.



## Follow up activity/extension

- Complete a pond or river dip to see what aquatic life can be found in the waterbody.
- Test the pH of the waterbody.
- Take samples from different water bodies, compare turbidity and pH, and discuss the differences.

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## Further information

Information Note – Turbidity

## Looking for more learning resources, information and data?

Please contact: [education@naturalresourceswales.gov.uk](mailto:education@naturalresourceswales.gov.uk) or go to <https://naturalresources.wales/learning>

Alternative format; large print or another language, please contact:  
[enquiries@naturalresourceswales.gov.uk](mailto:enquiries@naturalresourceswales.gov.uk)  
0300 065 3000