

# THE OPALOMETER (Water Clarity Measurer)

## How it works and what it can tell you about a pond or lake

Water clarity is a measure of how far light penetrates into water. This depends on particles suspended in the water and dissolved substances. High water clarity means more light can reach a greater depth in a lake or pond which is good for aquatic plants. A healthy population of plants is good for the animals living in the water and the health of the water body. Low water clarity can be caused by suspended sediment and soil washed into the lake, high concentrations of algae feeding on nutrients in the water or significant amounts of dissolved substances. Some lakes have naturally high or low water clarity. Plants and animals are affected in lakes when water clarity changes.

Common particles suspended in pond and lake water include:

- Small mineral grains (silt) and clay particles
- Dead vegetable matter
- Algae (phytoplankton) and animals (zooplankton)

Common dissolved substance in lakes and ponds:

- Organic carbon

Because water clarity is so important we are asking people to measure it as part of the OPAL Water Survey so we can see how it affects the animals that live there. Sending us your results will help us do this.

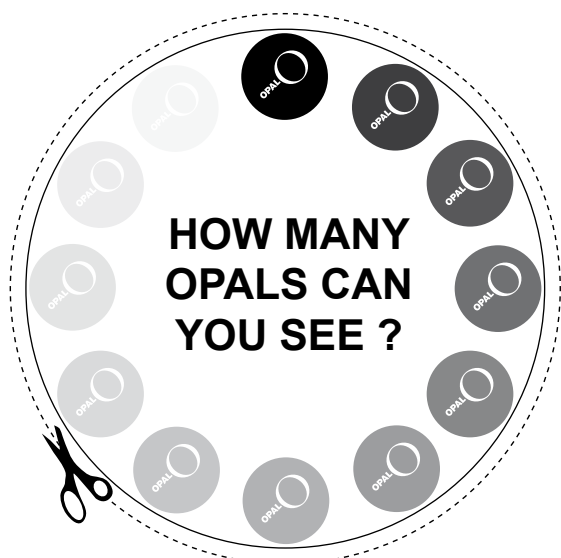
### What your results mean

The OPALOMETER shows the OPAL logo in a scale of decreasing blackness (100% to 20%, 15%, 10%, 5%). It is more difficult to see the lighter OPALs when there is a higher amount of suspended particles and dissolved substances in the water. You can see how effectively light is scattered and absorbed in lake water in this way if you compare what you see when you look in the top (A, right) and from the side (B, right).

We have been comparing OPALOMETER readings with measurements of suspended solids, dissolved organic carbon and chlorophyll carried out by the OPAL Water Centre over the last two years. This will allow us to interpret results we receive from the OPAL Water Survey.



Count the OPALs from here



### How to use the OPALOMETER

Print out this sheet and cut out the disc (left). Laminate it or cover in clear plastic tape. Tape a 1p coin to the back of the disc, roll it up and push through the neck of an empty clear 2 litre drinks bottle. Fill the bottle with water from the pond or lake to the height of an A4 sheet of paper. Look in the top of the bottle (A, above) and count the number of OPAL logos you can see. Record this number in the OPAL Water Survey workbook. You can tell us about the water clarity at the pond either online or by sending us your workbook.

[www.OPALexploreNature.org](http://www.OPALexploreNature.org)