

Ice is Nice...



United Nations
Educational, Scientific and
Cultural Organization



GEORGIAN BAY
BIOSPHERE RESERVE

Science Experiment: Meltdown!

This cool experiment will show you how melting ice helps out fish every spring.

1. In advance, prepare coloured water and freeze it in an ice cube tray. Food colouring works well or you can try using juice.
2. Fill a tall container or glass with clear water and refrigerate it.
3. Ensure the coloured water is frozen solid. Remove the cold water from the refrigerator and place two or three ice cubes in the water.
4. Watch the coloured ice cubes closely. It may help to place white paper behind the container. What do you see happening?
5. At first the ice cubes float at the surface, but before long the *temperature* increases and the water becomes *more dense*.
6. When the coloured water reaches 4°C it is denser than the water around it, and therefore sinks. It can be seen sinking to the bottom in thin strands as it melts.
7. When the strands of coloured water reach the bottom, they swirl and form a layer. The water from the ice cube appears 'heavier' than the water in the container; because of its temperature, not the colouring.
8. As all the water in the container reaches the same temperature, the colouring becomes evenly dispersed.
9. How do you think the melting ice gives fish a boost?

When the ice on Georgian Bay and inland lakes melts, the denser water from the ice sinks to the bottom, bringing with it oxygen that was trapped in the ice over the winter! The mixing process also stirs the sediments on the bottom and forces the nutrients which have settled there over the winter back into the water. This mixing is important for fish survival.

Citizen Science Alert!

Do you think ice is nice? Consider joining **IceWatch!** This program is one of NatureWatch's volunteer monitoring opportunities to help identify seasonal and animal changes in the environment. IceWatch encourages Canadians of all ages to discover how and why the natural environment is changing.

Learn more and sign up for next winter here: www.naturewatch.ca/icewatch

Fun Fact: Water is most dense at 4°C . This means that the same amount of water weighs more than surrounding water.

