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Snail-powered science: hands-on biology for active classrooms

Activity 1 answers sheet

What differences did you notice in the snail's behaviour in the two types of water?

The snail went to the surface more often in the boiled (hypoxic) water. It stayed near the top for longer and opened its pneumostome more frequently.

Why do you think low oxygen water causes this behaviour?

The snail senses that there isn't enough oxygen in the water, so it breathes air by going to the surface more often.

How does the pneumostome help pond snails survive in different environments?

The pneumostome allows the snail to breathe air when there is not enough oxygen in the water, helping it survive in both clean and poor-quality habitats.

How might pollution or climate change affect the level of oxygen in ponds?

Pollution and higher temperatures can reduce the amount of oxygen in the water, making it harder for aquatic animals to breathe.

What improvements could be made to this experiment?

Repeating the experiment several times or using more containers for each concentration would improve the experiment and allow for clearer comparisons between groups.

How could this experiment relate to real environmental research?

A classroom experiment with snails reflects the same principles scientists apply to real-world ecological and environmental studies. Scientists often use simple organisms, like pond snails, as models to understand pollution effects, climate change, and habitat loss.

How can we study snail behaviour ethically while ensuring scientific curiosity does not harm animal welfare?

We can study snail behaviour ethically by designing experiments that minimise stress, avoid harm, and respect the animals' natural needs. This means keeping exposure times short, using the least invasive methods, and ensuring proper oxygen levels and temperature. Scientific curiosity should never override the duty to protect living organisms.