5th experiment: Make your own oxygen depletion

We share a sea. Diet for a clean Baltic

In *We share a sea* the children discover that fish die if there is too little oxygen in the water and the fisherman Poul Elo explains how too many nutrients can make algae in the ocean grow so much that it becomes a problem. Algae produce oxygen, as you discovered in experiment 4, but when they die, they fall down to the seabed and there they rot. This process consumes oxygen. In this experiment, you´ll find out what happens when there is no oxygen in the water.

This is what you need:

- Two small aquaria
- Aquarium sand
- Water – if possible sea water but you may also just use tap water
- Two large potatoes
- A grater
- An oxygen pump
- Black cardboard, scissors and tape

This is what you do:

1. Put sand at the bottom of the two aquaria and smooth it out evenly.
2. Grate the potatoes - one for each aquarium - and sprinkle equal amounts at the bottom in both aquaria.
3. Fill the aquaria with water.
4. Cut black cardboard and tape it to the outside of the glass close to the bottom of the aquaria (to create a dark environment on your “seabed”). Make sure, you can lift it, so you can observe what happens.
5. Use the pump to add oxygen to the water in one of the aquaria. No oxygen should be added to the other one.

Questions:

- Follow the development in the two aquaria, write down your observations and make drawings.
- What does the bottom look like?
- What does the water smell like?
- What happens to the potato?
- Compare the development in the two aquaria.
- What causes the differences?
- What have your experiments to do with oxygen depletion in the marine environment?
- Discuss the experiment in class.