

## 4. DISSOLVING SEA SHELLS IN VINEGAR

AGE 7-16

### Objectives

To investigate the effects of vinegar on sea life.

### The big questions

What effect does acid have on sea life?

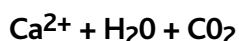
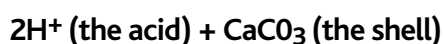
### Unit summary

This unit follows on from Do you like your oceans still or sparkling.

The activity demonstrates the ability of an acidic substance (in this case vinegar) to dissolve sea shells.

### Background

Malt vinegar contains acetic acid. The acid reacts with the calcium carbonate in the shells to form calcium ions, water and carbon dioxide.



### Curriculum links

#### Science year 4

- recognise that environments can change and that this can sometimes pose dangers to living things

#### Science year 5

- compare and group together everyday materials on the basis of their properties

### Working scientifically

#### Lower key stage 2

- identifying differences, similarities or changes related to simple scientific ideas and processes
- make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers

#### Upper key stage 2

- report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate

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### Resources



200ml clear vinegar



Sea shells



Beakers

### Introduction

Discussion – What do the children understand about acidity? What can an acid do?

Allow the children time to explore the different sea shells. What do they think they are made of? Are they living? Or were they once alive? (The children may have done a similar investigation with teeth so may be aware of the intended reaction).

### Activity

Children pour the vinegar into the container. They add the shells to the container and observe what takes place. Can the children explain what is happening to the sea shells as they react with the vinegar?

### Discussion

How might a more acidic ocean affect organisms that rely on shells for protection? How might it affect organisms that depend on these animals for food? Have the children seen anything about the effect that more acidic oceans have on a coral reef. They could research this. What is causing the increase in acidity in our oceans?

How might amphipods be affected by ocean acidification?

