

# Live investigation: Ocean acidification



Age 7-14



45 minutes

### Prep resources



#### Lesson

Arctic live preparation lesson

#### Unit

Frozen Oceans Science / Geography



#### PD Collection

Live lesson support

### Encounter Live support

If you have never joined a live lesson before use the guidance at <https://encounteredu.com/cpd/collections/live-lessons>, where you will find technical and educational support.

### Live resources



#### Encounter Live

Live lesson homepage



#### Student Sheet

Ocean acidification

### Safety and Guidance



#### Precautions

Each participant will need their own straw.

To avoid dizziness due to excessive exhalation, participants should swap who is blowing every 30 seconds.

### Live lesson overview

This fun investigation aims to show how water becomes more acidic when carbon dioxide is bubbled through it. It demonstrates the link between carbon dioxide in the atmosphere and a process called ocean acidification, a change in the pH or acidity of the ocean. Students will also observe over time the effects of acid (in this case, vinegar) on shells.

### Preparation

Live lessons work best when students have some prior knowledge and have prepared questions. Either teach a lesson from one of the Frozen Oceans units at <https://encounteredu.com/teacher-resources/topics/polar> or choose a one-off Arctic Live Preparation lesson, available to download on each live lesson web-page.

Questions generated by your class can be submitted via the Live Lesson tab in your Encounter Edu profile.

Check that you can view live chats by testing any YouTube Live video. Ensure you have the correct materials for the Live Lesson.

### Learning objectives

- Explain the process of ocean acidification
- Measure and observe change over time
- Describe ocean acidification affects life in the ocean

### Session steps

#### 1. Introduction (5 mins)

The presenter will open the session with a welcome and brief introduction to the expedition and any shout-outs to registered classes. The presenter will then explain that this investigation incorporates two activities, Ocean acidification in a cup, and Dissolving 'coral' and 'shells' in vinegar.

#### 2. Subject knowledge (5 mins)

The presenter will speak about what ocean acidification is and how we can simulate an extreme version of ocean acidification right in the classroom. There will be a brief introduction to acids and alkalis and how the pH scale can be useful for comparing the acidity of liquids. During this time students to get into their allocated groups and set up their experiments.

#### 3. Activity (20 mins)

The presenter will demonstrate how to set-up models of the ocean to demonstrate Ocean acidification in a cup. The presenter will ask your students to predict how the colour of the indicator may change. Write your answers on the live chat.

#### 4. Q&A (15 mins)

After completing the activity, the presenter will be able to answer pre-submitted questions and take part in the live chat.