Goal 14: Life Below Water

Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

Healthy oceans and seas are essential for human life. Our oceans are home to a over 50% of all the life on the planet. They also provide us with food and medicines. Oceans have a very important role as the planet's greatest carbon sink. Did you know that oceans absorb almost 23% of CO_2 emissions generated by human activities?

World leaders are taking action to protect our oceans from pollution and to protect our marine resources. In 2023 world leaders made a very important promise to protect our marine environment when they signed the High Seas Treaty. This treaty will help to achieve SDG 14.

We are now going to explore how oceans move.

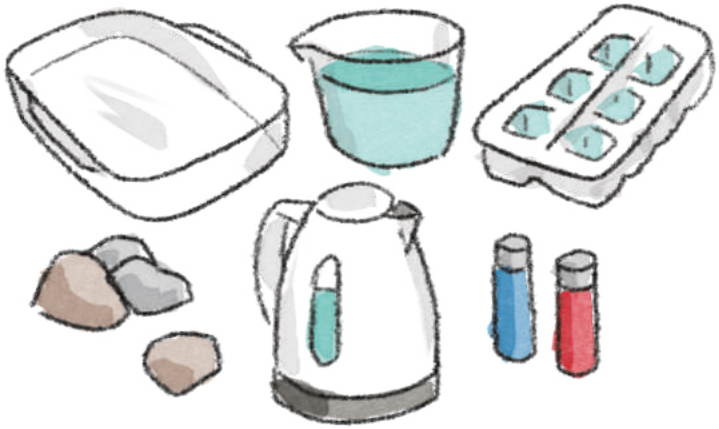
What are ocean currents?

Water continually moves through oceans in fast-moving, long-distance channels called currents. Imagine them as giant streams beneath the surface. They are guided by the wind, the temperature and the Earth's spin. Some currents are warm such as the Gulf Stream. Some currents are cool such as the Canary Current. An important role of the ocean currents is to help marine organisms move around the world. These watery highways connect oceans, influence weather and help creatures travel.

Ocean currents play a big role in our planet's natural rhythm and influence the climate in many regions of the planet.

1. Conserve means to prevent something from being changed, spoiled or wasted. 2. Sustainable means Using materials and energy in a way that doesn't let it run out. 3. Rhythm is a regular repeated pattern of movement.

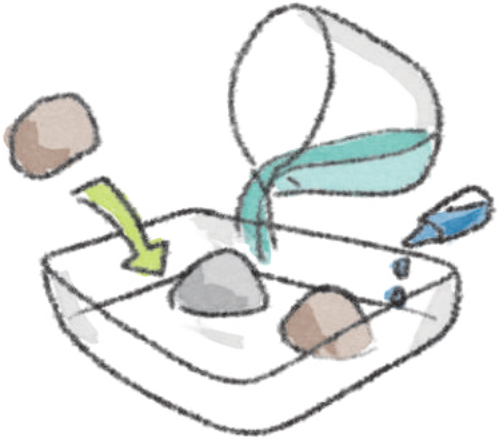
Experiment - Ocean Currents



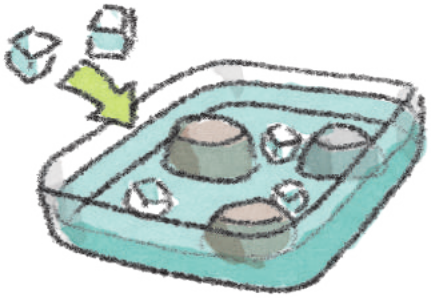
What you need:

- Hot water (must be boiling water and so adult supervision required)
- Cold water
- Clear container
- Ice
- Blue food colouring
- Red food colouring

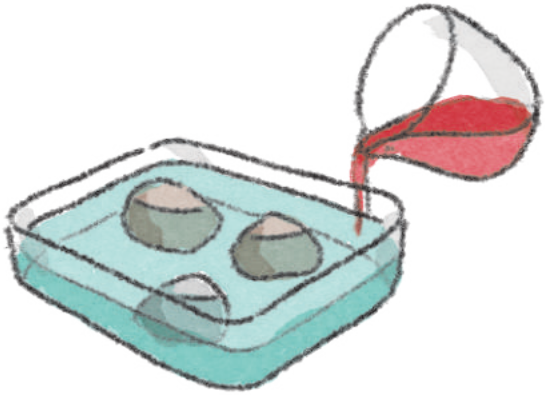
3. While the ice is melting, ask an adult to boil some water and to add red food colouring to the boiled water.



1. Place some stones in the container to act as obstacles. Fill a clear container about 1/3 full with cold water. Add a few drops of blue food colouring. Don't make it too dark or you won't see the currents forming.



2. Add 1-2 cups of ice to the cold water and stir. Let it sit for a few minutes for some of the ice to melt.



4. Ask an adult to gently pour some of the boiling water into a corner of the container filled with cold water.

What patterns do you see? Do any currents form?

What are your thoughts?

Have you learned something new about the ocean?

What would you do to ensure we protect our ocean health?

What Do We Learn From This Experiment?

Ocean Currents

The ocean currents experiment explores the different patterns that will occur as hot water interacts with cold water and ice cubes. We need to understand how temperature effects density to explain the patterns that are observed in the experiment. Density is related to how close each of the water molecules are to each other. The closer the molecules are to each other the greater the density is. As water is heated the molecules will begin to spread out from each other. This means that hot water is less dense than cold water.

Therefore, we should see the cold water sink to the bottom and hot water create patterns on the top of the cold water. You may have observed a ring-like pattern forming in some places. Did you notice any other patterns? The cold and hot water will eventually mix together. You will observe the formation of a purple colour in the water as the blue and red dyes mix together.

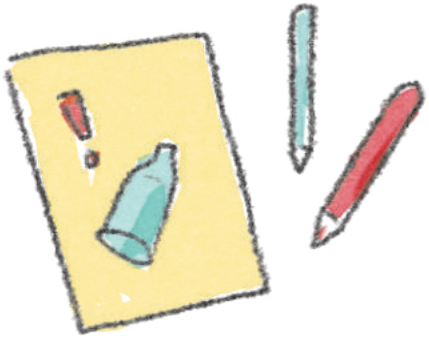
Did you know that the ocean consists of many layers? The top layer is called the Sunlight Zone and there is an abundance of light in this zone. The next layer is the called the Twilight Zone where it gets darker. Some cool creatures with glowing lights (called bioluminescence) live in this zone. The Midnight Zone is next. It is much, much deeper and there is no sunlight in this zone at all. We are now almost 4,000 kilometres below the surface of the water!!! The next layer is the Abyssal Zone, where it is very dark and very cold. The deepest part of the ocean is called the Trench Zone.

SDG 14 - Life Below Water

What Can We Do?

SDG 14 is all about conserving and sustainably using the oceans, seas and marine resources for sustainable development.

It can be hard to know the things we can do in our lives to make a difference, but by following some of the tips on this page we can start making the world better for everyone. You may not think that little changes will make a difference, but everyone making little changes adds up to big change.



Make posters about the impacts of plastic pollution and what people can do to reduce it.

Get involved in World Ocean Day.

Create a challenge for your class to reduce plastic use in school.

Volunteer at river clean-up and beach clean-up days with family and friends.

Encourage your family and friends to support organisations that protect the ocean.