

## 6 CLEAN WATER AND SANITATION



### Goal 6: Clean Water and Sanitation

Ensure access to water and sanitation for all.

One of the most basic human needs for health and well-being is access to clean, safe water.

You may have heard the phrase “Water, water everywhere but not a drop to drink”. Even though nearly 72% of the Earth’s surface is covered with water we are not able to

drink all types of water.

World leaders are taking action to ensure that we have clean water for all. In 2022, 73% of the world's population had access to safely managed drinking water.

We are now going to explore the importance of water and the importance of clean water and build a water filtration system.

#### Why do we need clean water?

All living things on Earth need water – from animals to plants to tiny microorganisms to humans. This small molecule, made of two hydrogen atoms and one oxygen atom, is so important that life on Earth would not exist without it.

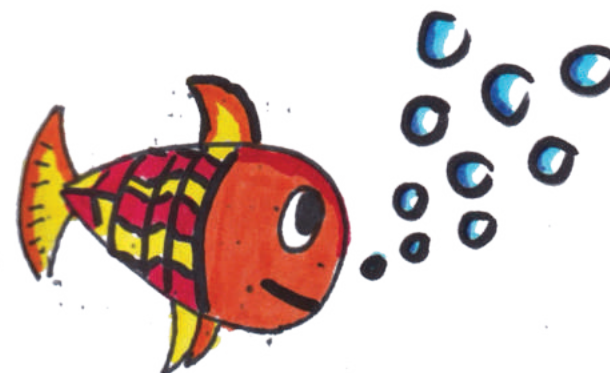
There are many reasons why it is important that we keep our rivers, lakes, and oceans clean. It will help us protect the many animals and organisms that live in them and beside them. It will provide us with the water that we need for daily activities such as drinking, cooking, and washing.

We must take care of water, use it wisely, and keep it clean, so that all living things can enjoy its life-giving powers!

1. Microorganisms are tiny creatures that you can't see without a microscope. 2. Organisms are living things.



Clean water is key to a better and sustainable environment!



# Experiment - Make a Water Filter



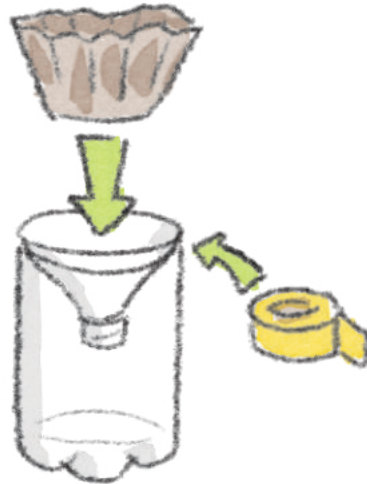
- What you need:
- Sand
  - 2-L clear bottle
  - Dirty water
  - Coffee filter
  - Gravel
  - Cotton balls
  - Stopwatch



4. Make a note of how long it took and how clean the water looks.



1. Cut the bottle about two thirds from the bottom using a scissors (ask an adult for help with this).



2. Invert the top part of the bottle and tape it in place as shown. Then place the coffee filter inside.



3. Add gravel into the filter and then pour a cup of dirty water on top. Use a stopwatch to time how long it takes for all of the water to reach the bottom of the filter.



5. Try the filter again for each material - sand and then cotton balls. See which one was the fastest and which one was the cleanest.

## What are your thoughts?

Have you learned something new about the importance of water?

What would you do to ensure we have clean water for all?

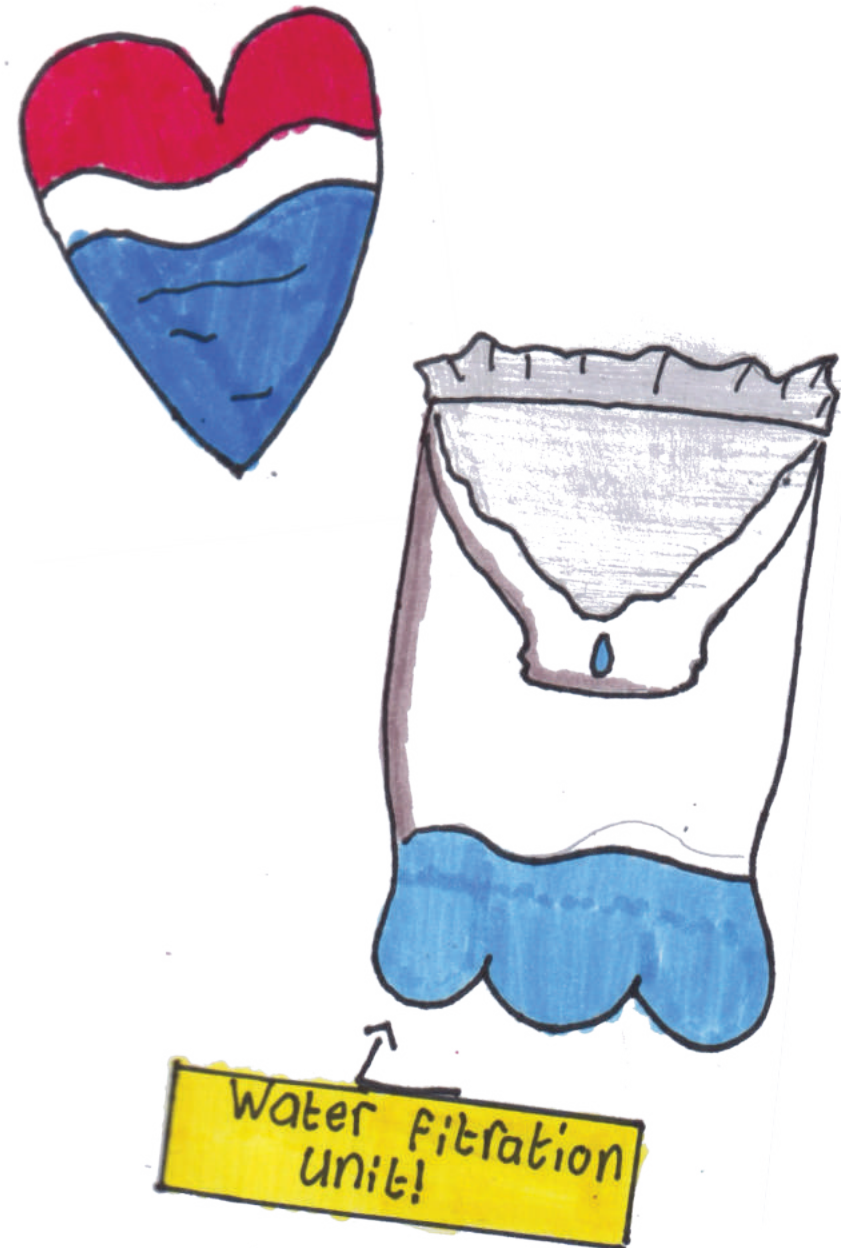
# What Do We Learn From This Experiment?

## Make a Water Filter

Water from lakes, rivers, oceans or from underground can contain chemicals and microorganisms that can be unsafe. We call this dirty water or polluted water, and we must clean it before humans can use it. The first step involves a process called filtration. This is similar to passing water through a sieve to catch all the large things that we do not want in the water. Next, smaller particles and germs are removed using chemicals or natural methods such as sand and rocks filters. After that, the water is disinfected to remove any remaining bugs, bacteria, or microorganisms. The clean water is ready to drink or use for all our needs.

In the experiment we investigated filtration by using the gravel, the sand and the cotton wool as different sieves to capture the "dirt" in the water.

The water should have passed through the gravel sieve the fastest, and it should have been slowest passing through the cotton wool. The rate at which the water will pass through the sieve depends on the size of the holes in the sieve. The larger the holes the faster the water will move through the sieve. Things that are smaller than the holes in the sieve will also pass through with the water. You should notice that the water from the gravel sieve appears less clean than the water from the cotton wool sieve.



# What Can We Do?



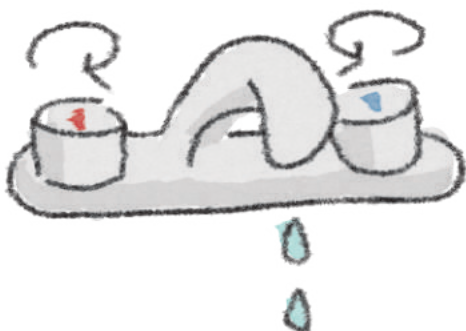
Use reusable water bottles to reduce plastic waste.

SDG 6 is all about ensuring access to water and sanitation for all.

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.



Get involved in World Water Day and World Toilet Day to take action on clean water and sanitation.



Conserve water, make sure the tap is off after you wash your hands or teeth.



Learn about water conservation techniques that can be used both at home and in school.



Organise a water saving challenge with friends and family.