

RACE FOR WATER

A FOUNDATION TO PRESERVE WATER



titeuf

Together let's protect the most precious resource on the planet:

water!



When the Race for Water Foundation was created back in 2010 by Marco Simeoni, the aim was to take action to preserve water and the oceans.

In this way, in 2015, the first Odyssey was organised with the aim of finding out about the state of the oceans in terms of plastic pollution.

On its return, the report found that the sea was in a sorry state. So, what could be done? It would be impossible to clean up the oceans by collecting all this plastic waste. The solution is to prevent it from reaching the oceans in the first place.

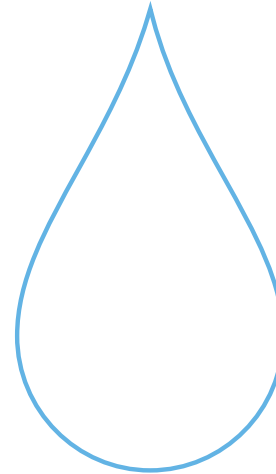
Today, the Race for Water Foundation is heading back out onto the seas of the globe with a vessel powered by clean energies (non-polluting) to put in place a series of solutions.

Tell yourself that it's never too late to take action!

To find out more, read on and join us in this mission with *Titeuf*, our ambassador!



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**We're off again !
Cast off!**



From a drop of water
2 to the ocean
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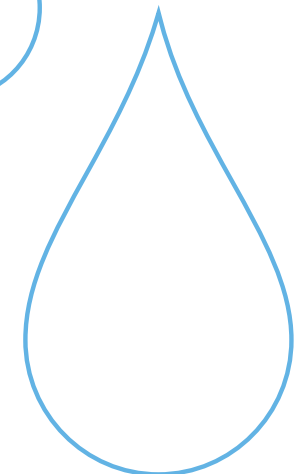
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**S.O.S.
abused oceans**



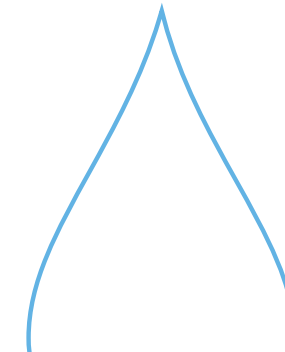
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We're off again! Cast off!

In 2015, Race for Water launched its first expedition to form a global analysis of the plastic pollution of the oceans and reported that plastic was everywhere, even on the planet's remotest beaches.

Did you know

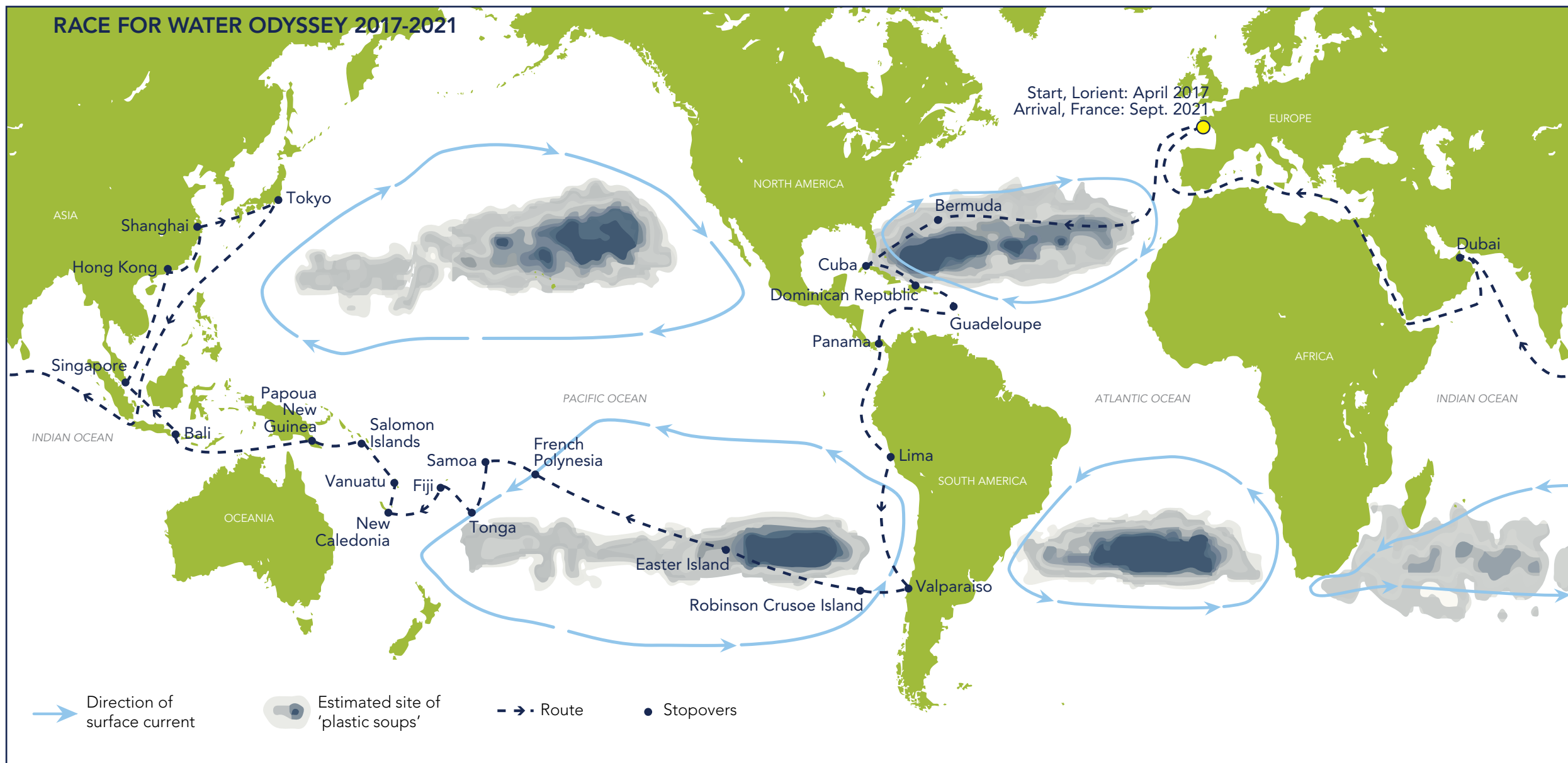
that just 1% of the plastics are floating on the surface and that 99% sinks to the bottom of the ocean or is just below the surface?

Source: Eunomia, 2016, Plastics in the marine environment.

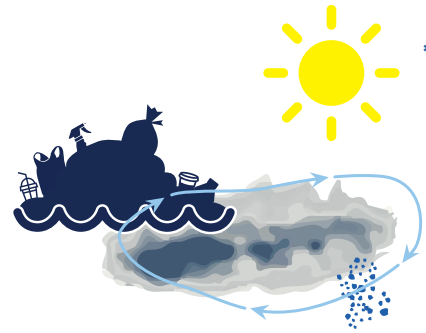
The result says it all

5 to 10% of the world's plastic production ends up in the sea each year. A minimum of one bin lorry of waste a minute is tipped into the oceans; it's a disaster.

Sources: Jambeck and al, 2015; World Economic Forum, 2016.



This flood of plastic can end up in the most remote areas on the planet carried along by the oceanic currents* and form gyres**.



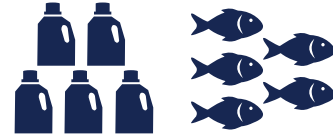
** A gyre is a massive eddy or vortex of water created by the winds and marine currents, within which plastic waste moves around the ocean.

* A current is a kind of river, which moves across the surface of the water and deep down across long distances. The currents influence the climate, sweeping along animal larvae and plankton.

From the effect of the sun's rays, plastic breaks up into microparticles, known as microplastics. Some are so small that they're no longer visible to the naked eye, but they're still just as dangerous for marine life.

Source: Andradý, 2011.

Under the influence of the currents, billions of plastic fragments from human activity pile up in the oceans to form massive soups of waste spanning several million km² circulating around the Pacific, Atlantic and Indian oceans.



Source: UNEP, 2016, Marine plastic debris and microplastics.

If we do nothing, there will be more plastic than fish in the ocean in 2050.

Source: World Economic Forum, 2016.

Following this alarming finding, the Race for Water Foundation has decided to head off on this new five-year Odyssey with an innovative vessel powered by clean energies: sun, wind and water, in order to raise awareness and put in place practical solutions to combat the pollution of the oceans.

Now that you're part of the crew, accompany us on our Odyssey to save the oceans!



2

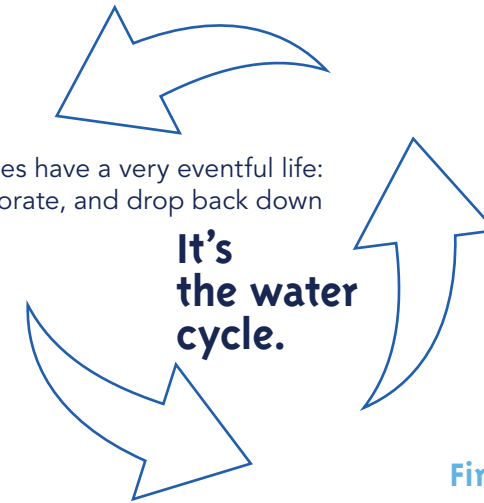
From a drop of water to the ocean

Perhaps you're drinking a glass of orange squash? Then there's a chance that there are water molecules in it, which formed part of the iceberg which sank the *Titanic*.



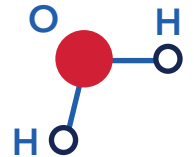
Why?

Because water molecules have a very eventful life: they freeze, melt, evaporate, and drop back down to earth.

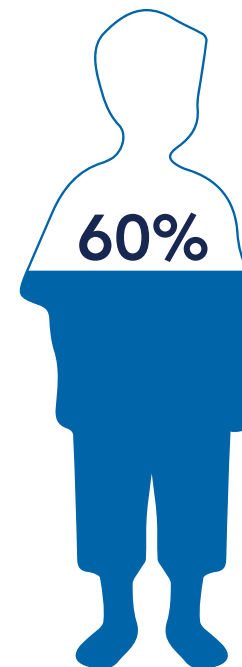


Find out +

H₂O: chemical formula for water
Water is a chemical substance made up of one molecule of oxygen and two molecules of hydrogen.

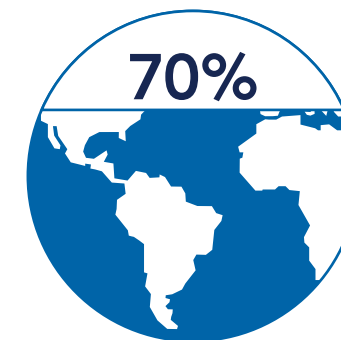


Your life is full of water!



Water is all around you.

In fact, do you know that your body is made up of at least 60% water and the surface of the Earth is covered with 70% water?

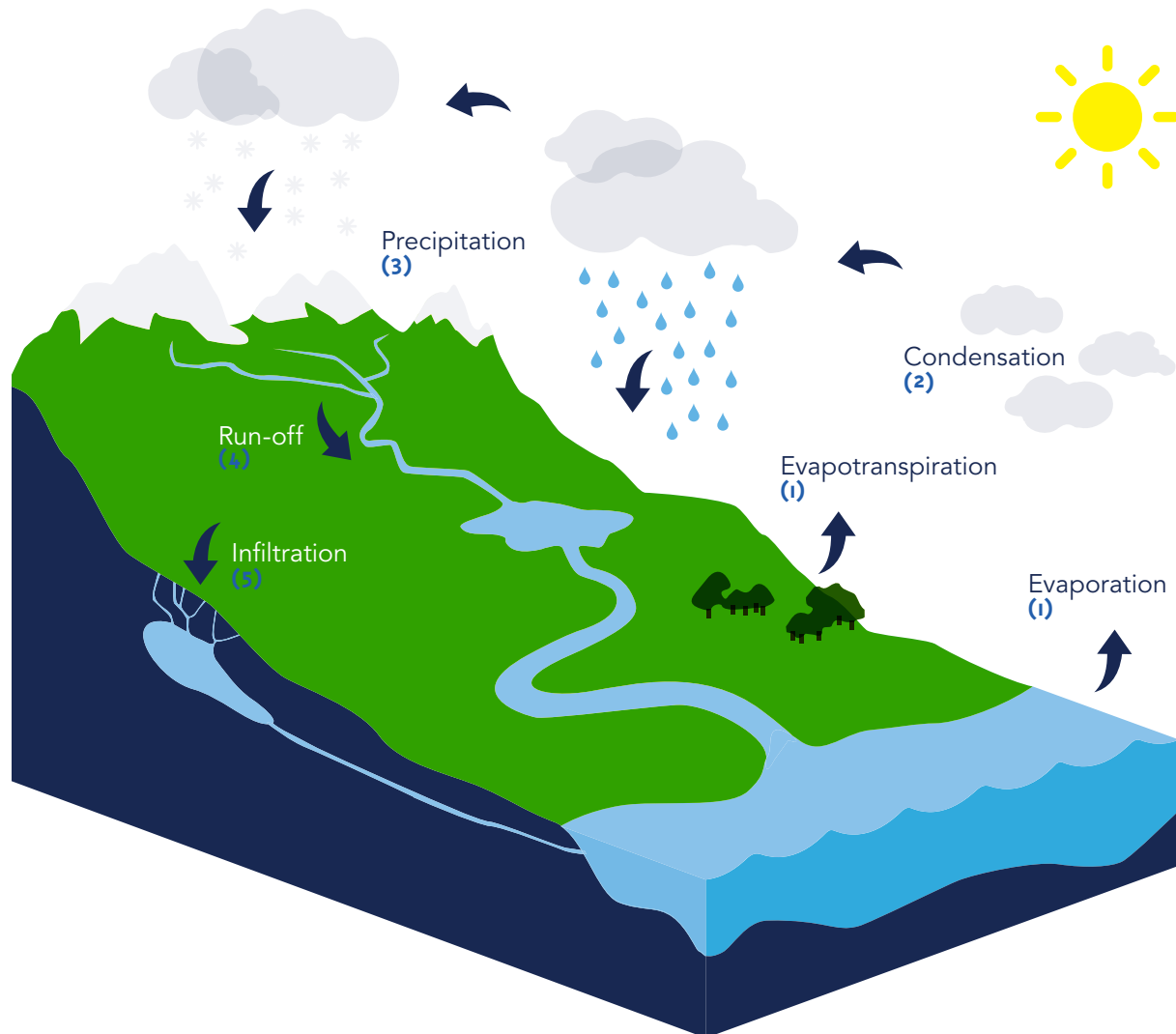


So, planet Earth is full of water, but because there are more and more of us humans on Earth we must be careful with our water consumption... There are not endless supplies of it!

Now, close your eyes and imagine water's journey.

The water from brooks, streams, rivers, ponds, lakes and the sea..., rises up into the atmosphere in the form of invisible gas or steam⁽¹⁾. However, higher in the sky, the atmosphere is cooler and the temperature drops. The steam then becomes liquid again in the form of water droplets, which we call condensation⁽²⁾. You see this phenomenon of condensation when there is mist on a pane of glass and you write your name on it with your finger.

All these water droplets then form clouds and when they become too heavy they fall: this is rain or snow⁽³⁾. Water is then absorbed by the plants, entering the soil to supply the water table⁽⁵⁾ and running into the brooks, streams and rivers before rushing into the sea.⁽⁴⁾



Now's your chance!

What links the following



Answer: The bone, the ice cream and the tomato all contain water.

Who am I?

It's down to you to find the right definition for each one:

- A brook 1
- An ocean 2
- A canal 3
- A river 4
- A sea 5
- A lake 6
- A stream 7

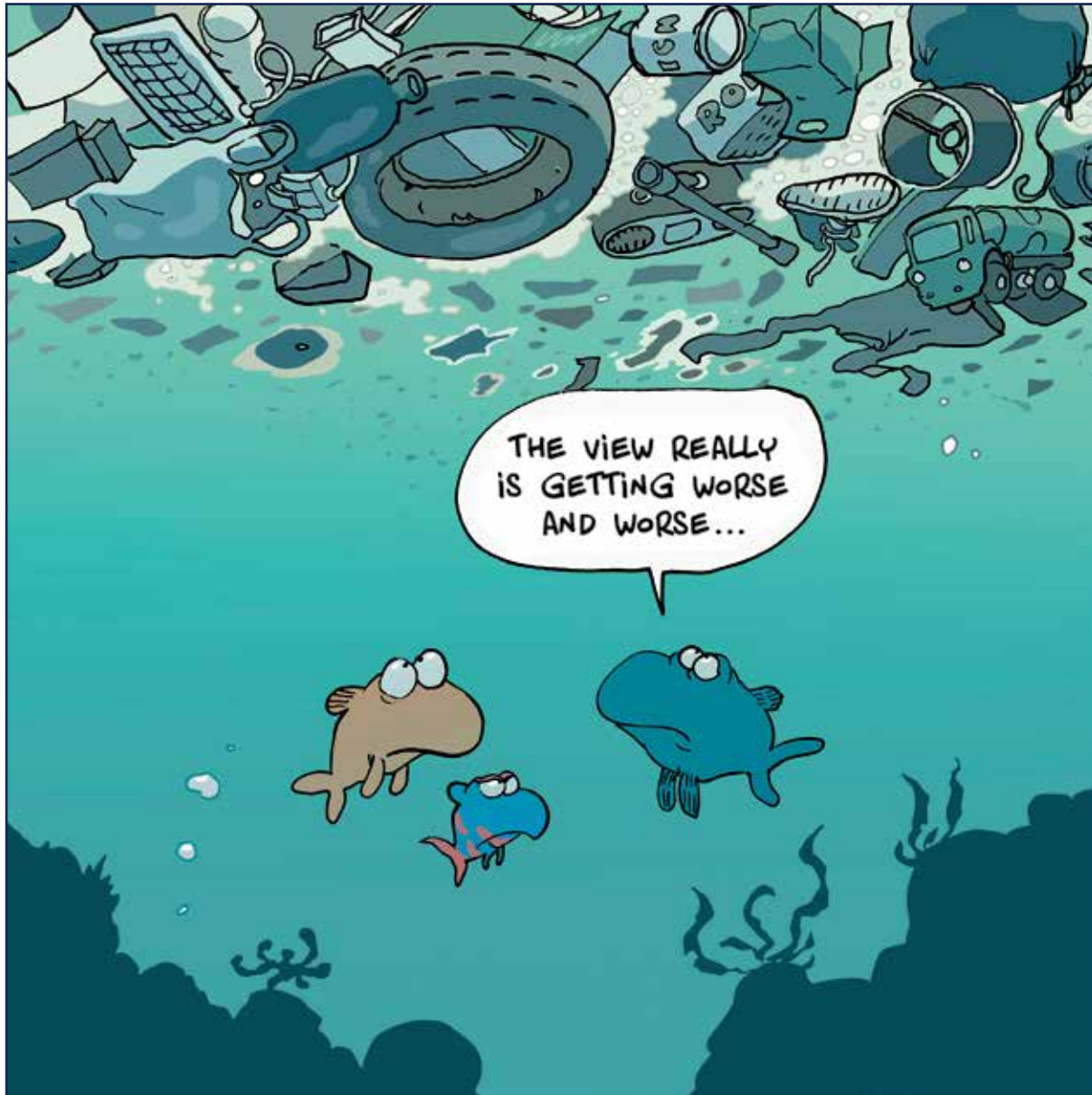
- a I was dug by man and I'm narrower than a river.
- b I'm very deep, I flow alongside different continents and there are 5 of us.
- c I am an expanse of fresh water.
- d I am smaller than a river and my water is fresh.
- e I am smaller than a stream.
- f I'm salty and surrounded by land.
- g I rush into the sea and my water is fresh.

Answer: A3, B2, C6, D7, E1, F5, G4

3

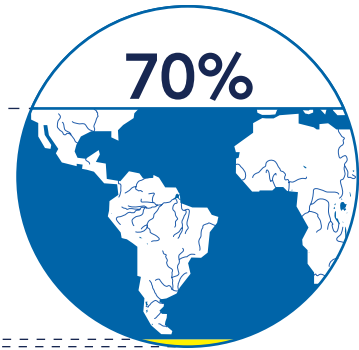
S.O.S. abused oceans

We call it Earth, but we could have named it the Blue Planet.



In fact,

when the first astronauts saw it from space, they observed that 70% of its surface is covered in water and 97% of that is oceans, fresh water only equating to 3%.



The oceans are still an area to be explored, with a dream element to them

but above all they're all about life and an environment to be preserved, as 50% of the global population depends on the ocean to eat, as do a great many other species.

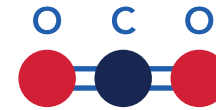
Do you know about phytoplankton?

Phytoplankton produces over half our oxygen. It is made up of billions of microscopic algae, which gets rid of nearly half the CO₂. You see, the oceans act like biological pumps!

Find out +

CO₂: chemical formula for carbon dioxide

Carbon dioxide, sometimes called carbonic acid gas, is a gas whose molecular structure is made up of one atom of carbon and two atoms of oxygen. This gas plays an important role in the greenhouse effect, which keeps the Earth warm, but in increasing quantities it causes global warming.



Did you know

that there are billions of pieces of plastic waste at the bottom of the seas and the oceans, and that 80% stems from human activity on land?

Source: Eunomia, 2016, Plastics in the marine environment.

But what is pollution?

Pollutants are chemical substances, which contaminate or alter the balance of ecosystems* and the way they operate.

*An ecosystem is a network formed by a natural environment and all the animal and vegetable species that live there.

The pollution of fresh water or sea water has several sources. There is '**localised pollution**', which can be accidental and whose consequences are catastrophic for the environment, though they will be neutralised over time (e.g.: oil).

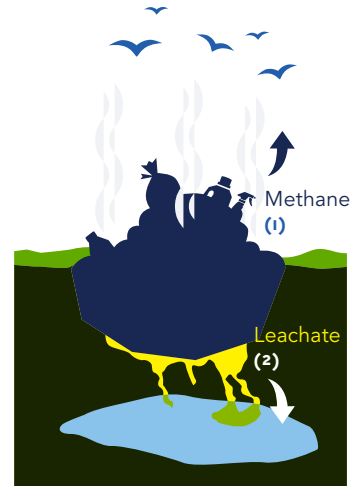
And then there's '**repeated pollution**' like industrial discharge, domestic sewage in waterways and waste of all kinds like plastics.

Why does it all end up in the sea?

The water cycle clearly shows that everything ends up in the sea, even pollution.

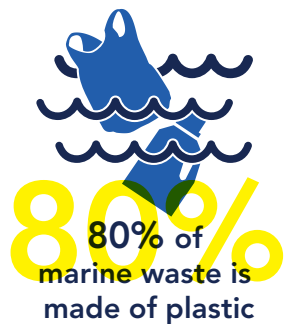
Via underground run-off onto soils washed by rains, via evaporation followed by the help of the winds and clouds, as well as via the drains, the streams and the rivers.

When you throw something down the toilet, don't forget that it may end up in the oceans. That's why it's important you only throw toilet paper down there and nothing else!



(1) Methane is a greenhouse gas, which is released when organic matter decomposes.

(2) Leachate is the result of the decomposition of waste; it is a highly toxic juice, which pollutes the soil and underground water.



Source: UNEP, 2016, Marine plastic debris and microplastics.

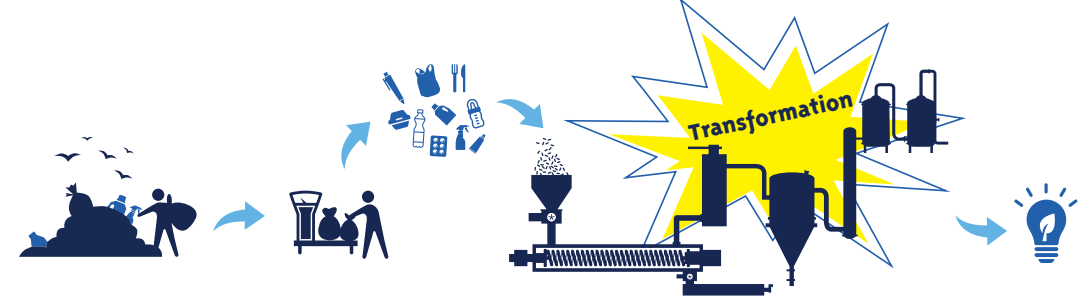
Right around the world, plastic waste is being tipped into uncontrolled dumps, fly-tipped, thrown into the rivers or even directly into the sea.

Every second, over 250 kg of waste ends up in the ocean. Plastic bags, straws, cups and other single-use plastics* are a significant source of pollution. And even those, which are said to be 'biodegradable' are a danger for marine species since in the aquatic environment, they too are set to break down into microparticles and take hundreds of years to disappear.

*Single-use items are not designed to be kept, they are disposable. However, certain countries ban or will ban these single-use items. This is already the case for plastic bags, which are replaced by reusable bags and soon it will be the turn of straws, disposable cutlery sets... but there's nothing to prevent you from stopping using them now!

So, to avoid all that, the priority is to change our behaviour!

And, in some places, we can take this another step further thanks to an innovative and very special machine, which would mean that plastic waste does not end up in the sea... Through its Odysseys, the Race for Water Foundation has noticed that in some countries, people called collectors gather up recyclable waste: cardboard, glass... but plastics not much as they often have no value. Generally nobody is buying them plastic!

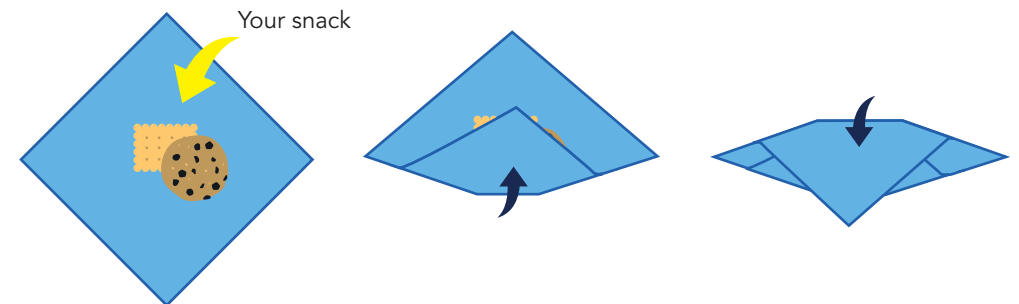


But imagine if plastic could be converted into electricity?

Street collectors would then gather up end-of-life plastic and sell it on. This is the work the Race for Water Foundation and its partners are doing: designing a machine, which converts plastic into an energy resource.

Plastic is both the problem and the solution.

Now's your chance!



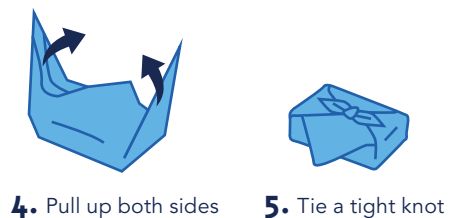
1. Take a square of fabric

2. Fold the bottom corner up

3. Fold the top corner down

The furoshiki

Here's another idea for avoiding using plastic, make a Furoshiki, which is a traditional Japanese fabric wrapping technique. You can use it to transport a meal or anything else.



4. Pull up both sides

5. Tie a tight knot

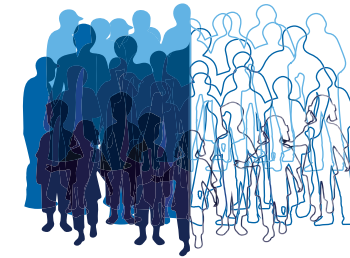
4

That's enough says the whale!

Since the dawn of time, man has travelled the oceans to conquer new territories or exploit its resources.



Today, despite its immensity, the ocean is fragile and in danger because excessive human activity is increasing levels of pollution.



7-billion humans live on the planet and half the global population lives near the coast.

For a very long time we believed that the sea could absorb everything and that the waste was diluted in the ocean. But the sea moves and the currents drive the waste to the four corners of the world and sometimes bunch up together along the way to form a plastic soup.

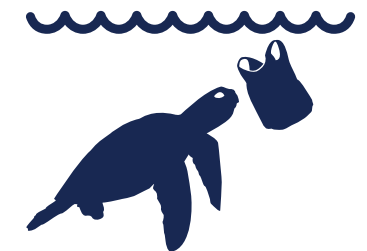


The equivalent of a bin lorry of plastic waste is tipped into the oceans every minute.

Source: World Economic Forum, 2016.

The consequences in the ocean are tragic for the marine fauna searching for molluscs, sponges and algae to bite into, or jellyfish. The latter being confused with plastic bags which cause suffocation.

Even the largest mammal in the world is at risk from plastics. In fact, whales are regularly found washed up on the beach with plastic waste filling their stomach. Their bodies believe that they've had enough to eat, but plastic has never been a source of food to anyone or anything.



100,000 marine mammals and one million birds die each year from ingesting plastic.

Source: Greenpeace, 2016, Plastic Debris in the World's Oceans.

Now's your chance!

You can reduce your waste, it's not difficult, you'll see

Match each piece of rubbish to its solution

- | | | | |
|-----------------------|---|---|--|
| Cake packet | 1 | a | Furoshiki or reusable bag |
| Bottle of fizzy drink | 2 | b | Loose cereal |
| Plastic bag | 3 | c | Home-made mashed potato |
| Packet mashed potato | 4 | d | Home-made soup |
| Cereal packet | 5 | e | Home-made cake |
| Soup sachet | 6 | f | Home-made freshly-squeezed fruit juice |

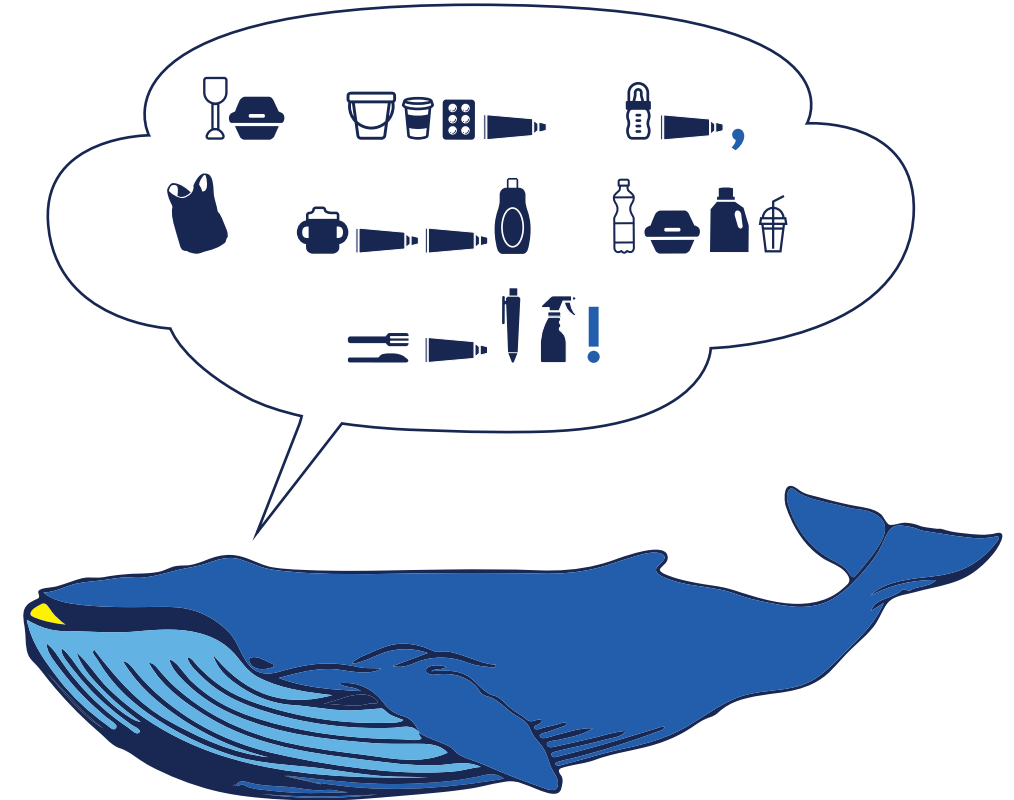
Answer: 1E, 2F, 3A, 4C, 5B, 6D

5 simple eco-friendly actions to preserve the oceans

- 
1 I give up plastic bags.
- 
3 I use my Furoshiki or a reusable bag.
- 
4 I don't throw any rubbish on the ground or down the toilet.
- 
5 I use a flask of water wherever possible.
- 
2 I choose products with less plastic packaging.

The message from the whale

By replacing each pictogram with a letter, you'll discover what the whale is asking you.



- | | | | | | | | | | | | |
|---|--|---|--|---|--|---|--|---|--|---|--|
| a | | h | | p | | o | | d | | v | |
| i | | y | | s | | e | | m | | l | |
| t | | u | | n | | r | | | | | |

Answer: "To save me, I need your help!"

5

Stop the waste! Three cheers for eco-design!

Now that you know the environmental value of things, try to be more careful in your daily actions.



Perhaps you've heard about the ecological footprint?

It's an estimate of the size of the earth's surface required to meet your needs. To calculate it, you need to analyse your lifestyle: for example, the water and food you consume and how much rubbish you create...



In your view, what is the ecological footprint of someone who consumes a lot?

- a. Small
- b. Big

Answer: big

The more we consume, the bigger our ecological footprint.

But the Earth can no longer cope with the way we live today. In a lot of cases, we need to reduce our consumption and produce better and more intelligently so that everyone can live on our blue planet!

Also, don't forget that a large amount of the population lives in extreme poverty. Two billion inhabitants on Earth do not have access to drinking water and suffer from malnutrition*.

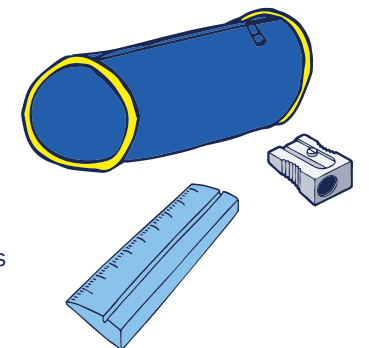
*Someone who does not have enough food in terms of quantity or quality to remain in good health.

And you, what can you do on a daily basis?

In addition to certain governments, which are making decisions to preserve the future of the planet, you can start taking action on things that depend on you, because every action counts and it's never too late!

A few tips on how to become a zero waste student!

Regularly review your school supplies so you don't make needless purchases when your supplies are still in good condition. Particularly at the start of a new school term, sort out your things from the previous year and use what's still good again. However, if you have to buy or replace equipment, make sure that it's good quality and durable without too much packaging.



The good news is that you can change things!

First of all, ask yourselves the right questions:



These actions reduce waste as it avoids producing it and using up supplies of raw materials.

Be careful though, recycling has its limits as people don't always sort it out correctly or even at all and plastic can't be recycled forever!

As an ambassador, you can also talk about the problem of plastic pollution, the daily actions you can take and lots of other solutions...

Now's your chance!

The Race for Water Odyssey's Snakes and Ladders

You will need

One dice
One game piece per player

The aim of the game

The first to reach the **FINISH** square

Rules of the game

Place all the game pieces on the **START** square. Each person throws the dice and the person with the highest number begins. That person throws the dice and moves his/her piece as many squares. Read the instructions in the square. If you land on a question: throw the dice again if you answer correctly, stay where you are if your answer is wrong. To win you must land exactly on the **FINISH** square. If you throw a higher number you go backwards.



6

Moving forward, thanks to the sun, wind and water!

The biggest solar-powered boat in the world, *Race for Water* only uses clean and renewable energies to make headway on this latest odyssey.



Though man has been exploiting the planet's resources for centuries without thinking about the day after, today that's no longer an option.

Resources are running out. So, it's time to develop other sources of energy and take action on a daily basis.



What are clean energies?

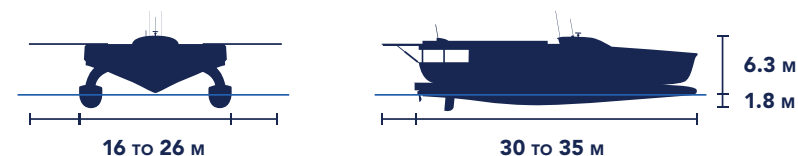
We have everything in nature to replace fossil fuels* with renewable energies. The wind, the water and the sun. These energies are considered to be inexhaustible and 'clean' because they don't discharge pollutants or give off greenhouse gases**.

*Fossil fuels: gas, coal or oil, which were formed tens of millions of years ago by the decomposition in the ground of plants and dead animals.

**Gas contained in the atmosphere and produced by man, which contributes to global warming. Carbon dioxide (return to page 11 and look up the definition of CO₂) is one example of greenhouse gas.

Find out +

The *Race for Water* vessel in figures



5 CREW AND UP TO 11 GUESTS WHEN OFFSHORE SAILING

100 METRIC TONS

5 KNOTS AVERAGE SPEED

8 KNOTS MAXIMUM SPEED

How does the Race for Water boat work?

The Race for Water catamaran moves forward using a mixture of several clean energies: the sun⁽¹⁾ thanks to solar panels, the wind⁽²⁾ thanks to a kite which tows the boat's 100 metric tons, and water⁽³⁾ from the sea which is converted into hydrogen* under the effect of electrolysis**.

* A single, gaseous body, which produces water when it's combined with oxygen. (return to page 7 and look up the definition of H₂O).

** Chemical decomposition of certain substances, water in this case, under the effect of an electric current.



The sun

The 512 m² of solar panels provide the necessary electricity to get the boat moving forward for 36 hrs.



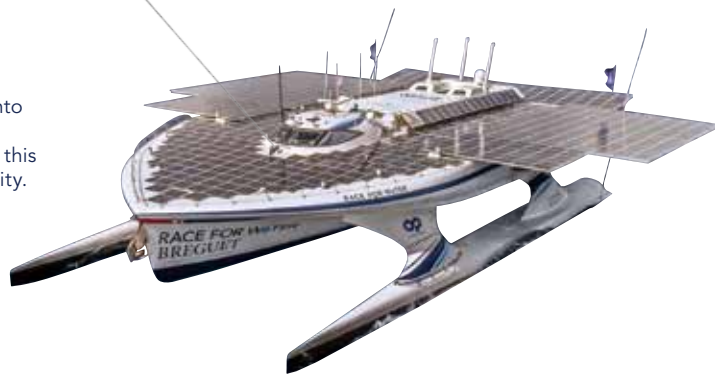
The wind

The kite's 40 m² wing rises to 150 metres via a very fine, solid line, which enables the strength of the wind to be transmitted to the boat to tow it along behind it.



The sea water

The water is converted into hydrogen via electrolysis then via another process this is converted into electricity.



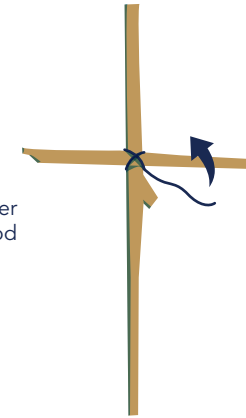
You see, the Race for Water boat is a prime example of everything that can be done in terms of 'clean' energy thanks to an energy mix.

Now's your chance!

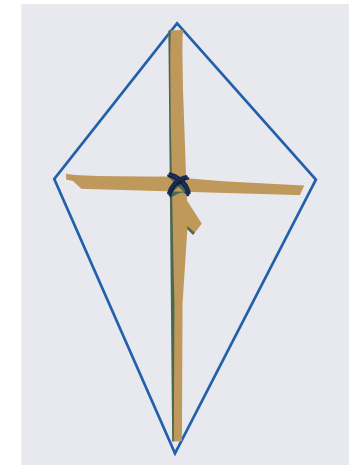
Make a toy kite, similar to the Race for Water kite!

You will need

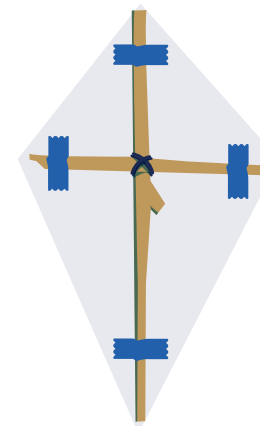
A piece of fabric or paper
Two small pieces of wood (skewer, bamboo stalk, stake, etc.)
String
Sticky tape



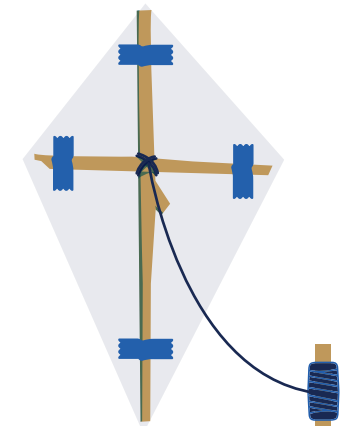
1. Form a cross with the two pieces of wood and tie them together with string.



2. Place the cross on the fabric or the paper and draw a diamond around it.



3. Cut out the diamond and attach it with the sticky tape.



4. Tie a piece of string to the intersection of the cross.

When the wind blows on your kite and you pull on the string, this will create a force called lift*. This force will lift the kite up.

* Force directed upwards due to the shape of the wing.

Your kite is ready!

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Support us

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#R4WO



Thank you:



The Race for Water Foundation is an organisation dedicated to the preservation of water and oceans in particular. Today, seriously under threat from plastic pollution, it is vital that this essential resource to life is protected.

As such the foundation has set itself the goal of identifying, promoting and helping to implement solutions

to recover plastic waste, which creates new sources of revenue for the populations most affected by this pollution. In this way, via an innovative approach inspired by the circular economy and social entrepreneurship, the Race for Water Foundation is preventing plastic waste from entering the waterways and ending up in the oceans.

RACE FOR
WATER

A FOUNDATION
TO PRESERVE
WATER