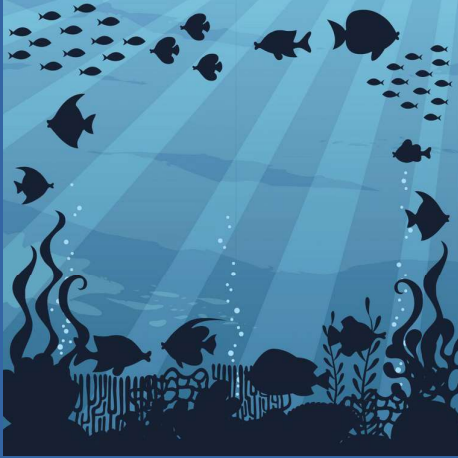


SDG 14 Ocean Literacy Lesson



Science,
Geography
Global Citizenship

Lesson 5 Ocean Pollution

Focus: SDG 14.1
Life Below Water

Lesson Title & Summary: Ocean Pollution

In this lesson, learners begin to understand how our actions can influence ocean health and cause pollution. Learners will consider the extent of the pollution problem with a particular focus on plastic. Using solution-based thinking, learners can imagine what we can do to reduce ocean pollution.

In this lesson the learner, will:

- increase their ocean literacy skills
- increase understanding of nature's influence on humans and interconnectedness
- learn how mindfulness can help us in everyday choices to prevent pollution
- develop solution-based thinking skills
- develop independent thinking
- practise independent and group work

Materials:

- Ocean Health & Ocean Plastic Pollution presentation
- Walking debate statements
- Empty containers/boxes
- Clean and dry litter (recyclable and non-recyclable)
- Coloured pens, pencils
- A4 paper
- Post-its
- Internet access

4 QUALITY
EDUCATION



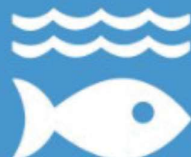
11 SUSTAINABLE CITIES
AND COMMUNITIES



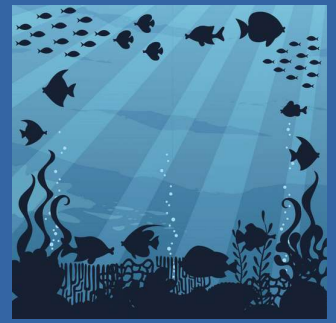
13 CLIMATE
ACTION



14 LIFE
BELOW WATER



SDG 14 Ocean Literacy Lesson



Activity 1 - Walking Debate (30mins)

Introduction to sources of pollution, different types, causes and effects

- 1) Introduce the theme of ocean health and ocean plastic pollution by showing learners the 'Ocean Health & Ocean Plastic Pollution' presentation.
- 2) Walking Debate:
 - a) Designate the sides of the classroom:
Left side: Agree
Right side: Disagree
Centre: On the fence/Do not know
 - b) Read a statement from the walking debate statement list and ask learners to go to the side of the room that matches their opinion. Give them 1-2 minutes to discuss with each other their reasons for their opinion. Ask each side to paraphrase. Repeat with other statements on the list.

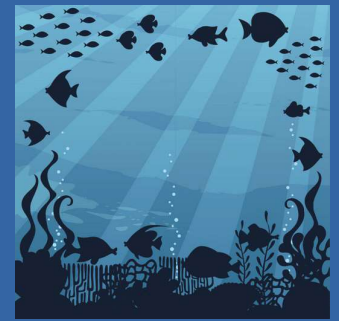
Activity 2 - Trash Dash game (20mins)

- 1) Divide learners into groups/teams of 4 or 5.
- 2) Hand out at least 5 litter items (with team number on them) to each group.
- 3) At the opposite side of the room, have the containers/boxes where the litter must be deposited.
- 4) Teams have 2 minutes to discuss where they think each item must go. Then each team member works in relays bringing one item to the container when they are told to start. It is a race so learners can cheer on their teammates.
- 5) The teams are timed and all litter items are checked to see if they are in the right container (recyclable or non-recyclable). If an item is in the wrong container, 1 point is deducted.
- 6) Have a whole class discussion on what can and cannot be recycled in local household recycling bins.

REFLECTIVE EXERCISE: 3-2-1 End Of Lesson (10 Mins)

- Three things they feel they have learnt from the lesson tasks
- Two things they found most interesting and would like to explore more
- One – their opinion they have about the lessons and tasks

SDG 14 Ocean Literacy Lesson



Extension / Reduction Activities:

Reduction: For a shorter class, show the Ocean Health and Ocean Plastic Pollution presentation and then move straight to the Trash Dash Game.

Extension: For a longer class, use the prompts below for learners to have an extended discussion or write in their journals.

- *What are the problems with the current recycling scheme in Ireland?*
- *How could it be improved?*
- *What are the consequences for the ocean if we don't recycle or improve recycling facilities?*
- *What are three actions I can take to improve my disposal of waste?*

MULTI-MEDIA BOX: (materials, online video links, extra resources, case studies etc.)

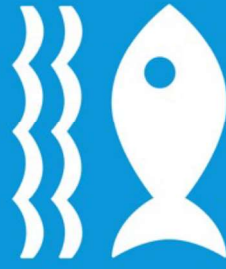
- **Cahersiveen Waste**
<http://docstore.kerrycoco.ie/KCCWebsite/environment/caherciveenwaste.pdf>
- **KWD recycling bins**
https://www.kwd.ie/m/#!/mobile_content.php?t=31
- **Symbols**
<http://www.kwdkids.com/symbols/>
- **I don't want you to recycle I want you to REDUCE**
<https://www.youtube.com/watch?v=-Yp1KKWpPpU>

LOCAL EXPERTISE/ TRIP SUGGESTIONS

- Invite an employee of KWD to come and speak to the class about recycling in Ireland.
- Prepare a list of interview questions.
- Plan a virtual visit with SDG 14 module developer, marine biologist, Lucy Hunt, Sea Synergy, Waterville, Kerry

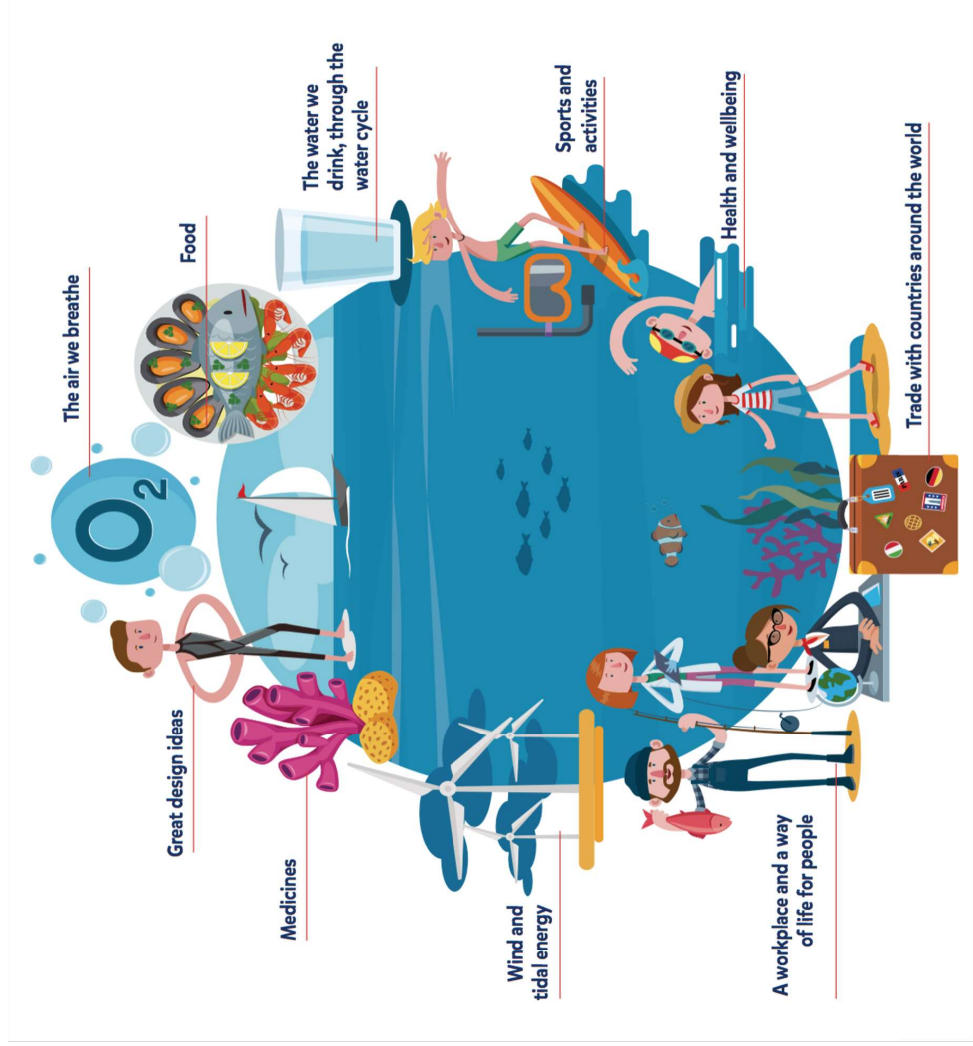
Ocean Pollution

14 LIFE BELOW WATER

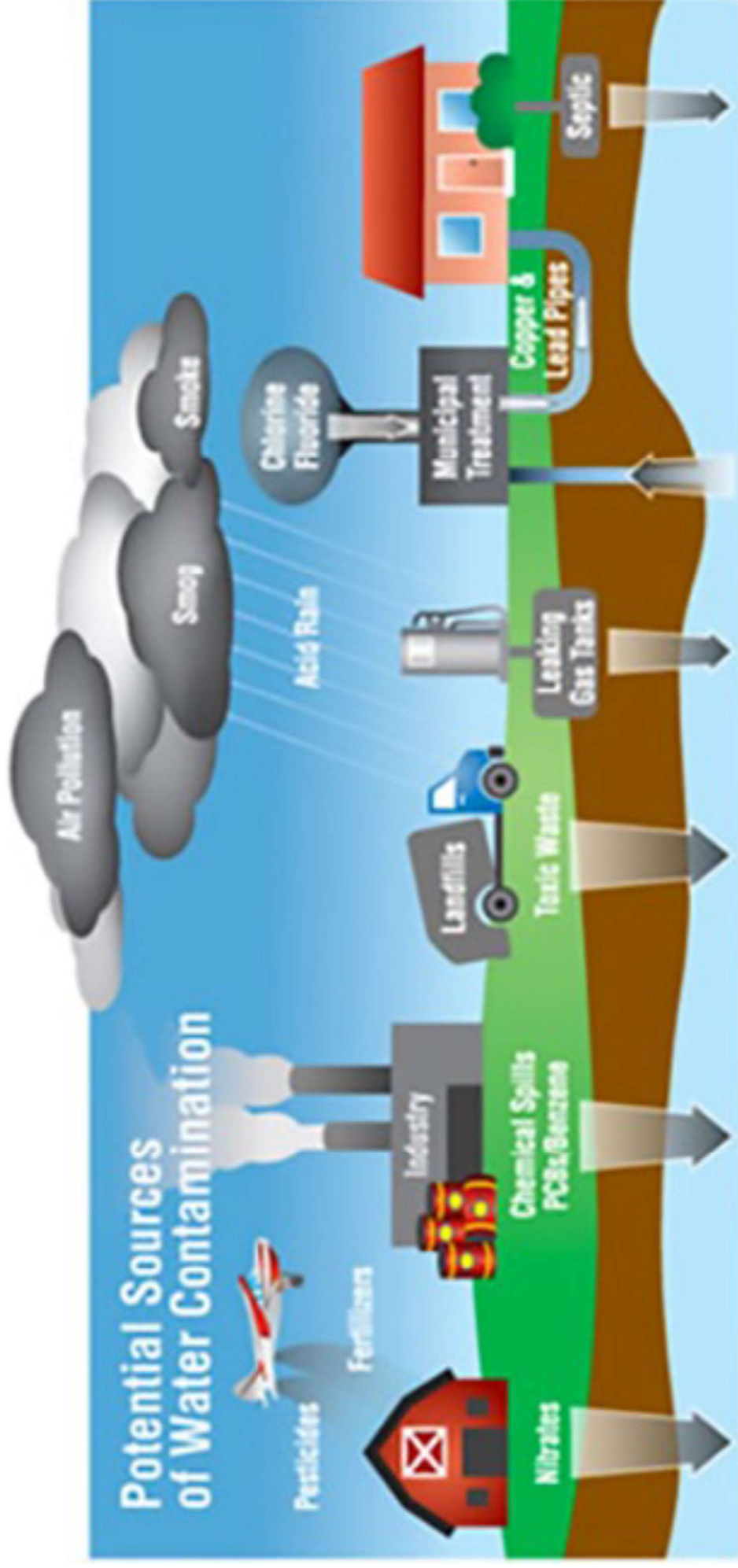


Understanding the
ocean's influence on you
and your influence on
the ocean



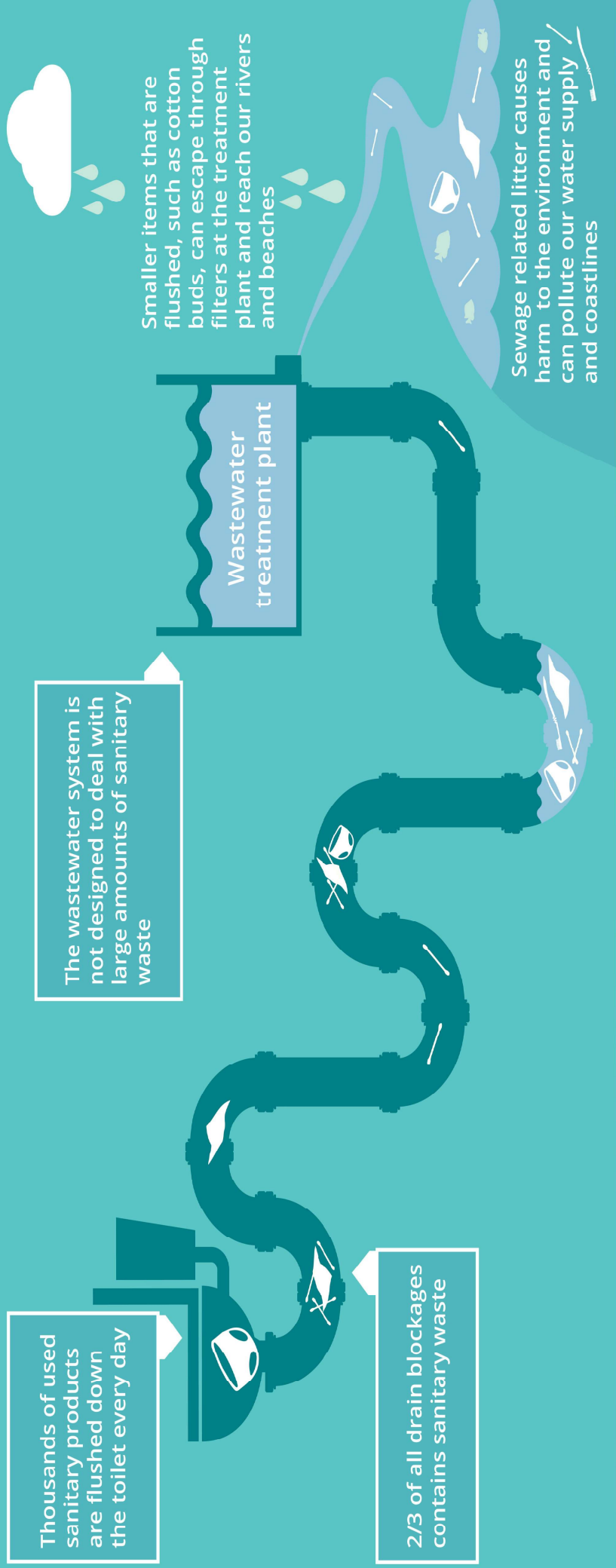


Sources of pollution in the Ocean



Think before you flush

Flushing sanitary products down the toilet can cause blockages and can end up polluting our marine environment



@CleanCoasts

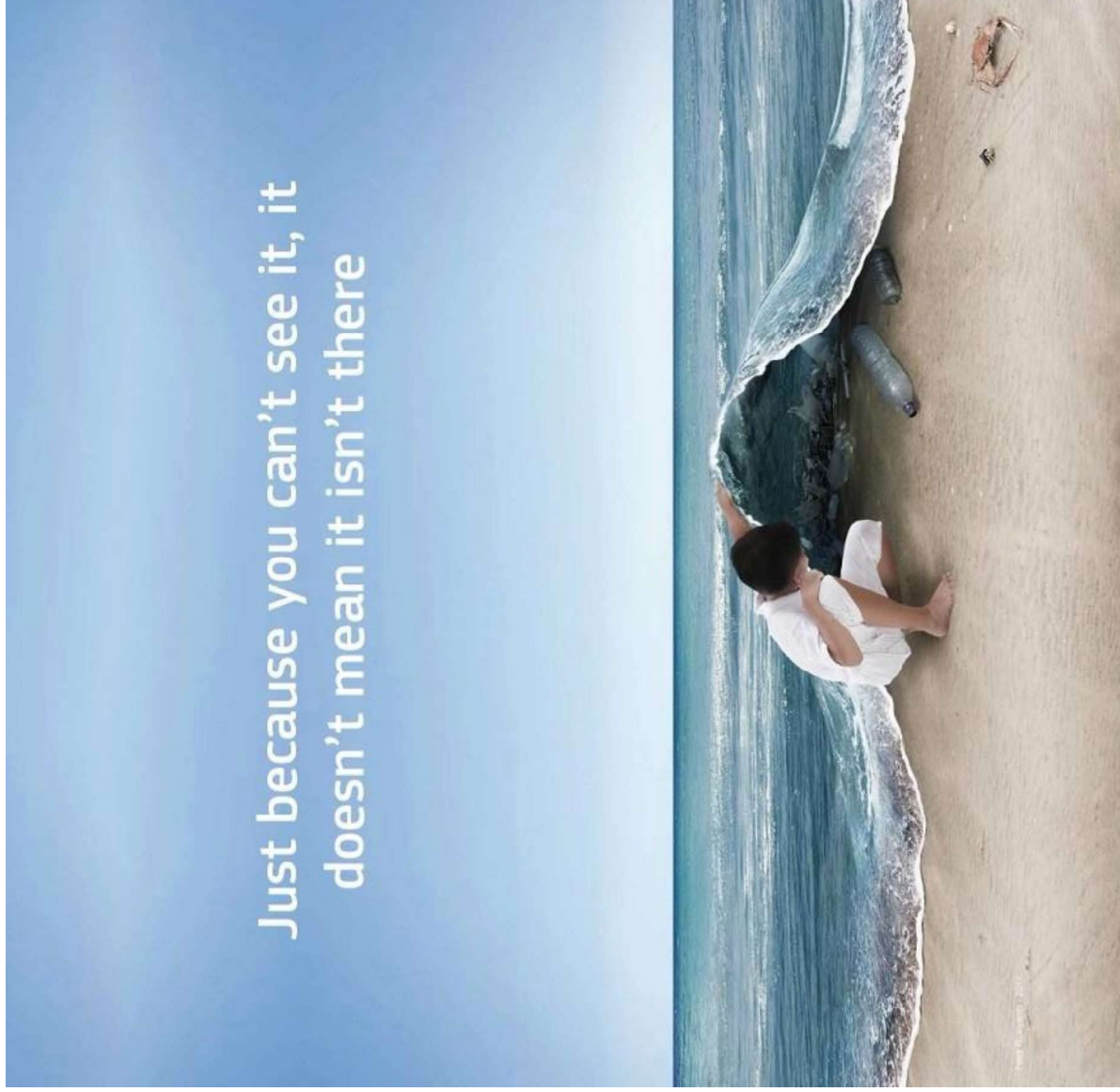
#thinkbeforeyouflush

www.thinkbeforeyouflush.org

Think Before You Flush is operated by An Taisce's Clean Coasts programme and is supported by Irish Water



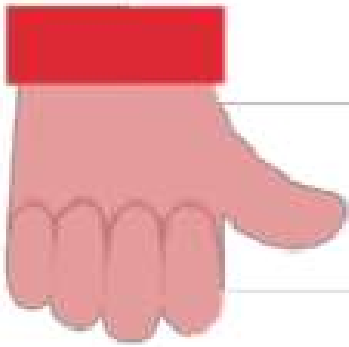
Just because you can't see it, it
doesn't mean it isn't there





Plastic









1. Cigarette butts
(contain plastic)



2. Plastic bottles



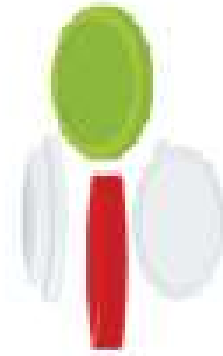
3. Plastic bottle caps



4. Food wrappers



5. Plastic bags



6. Plastic lids



8. Glass beverage bottles



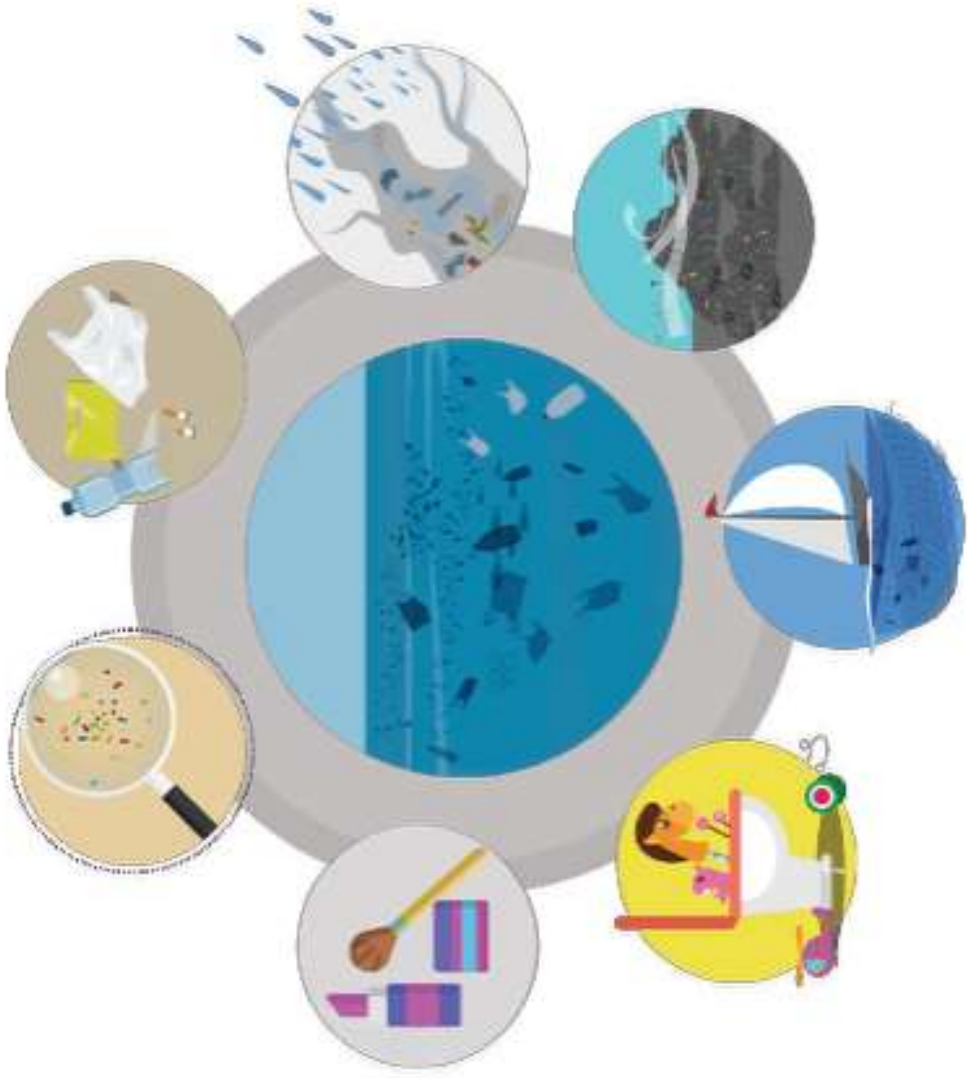
7. Plastic straws



9. Other types of plastic bags



10. Take-away containers made from foam (a type of plastic)





Plastic is not
so fantastic

More than
50%
of sea turtles

are estimated to have ingested plastic or
other forms of marine debris

Plastic Ingestion



PLASTIC

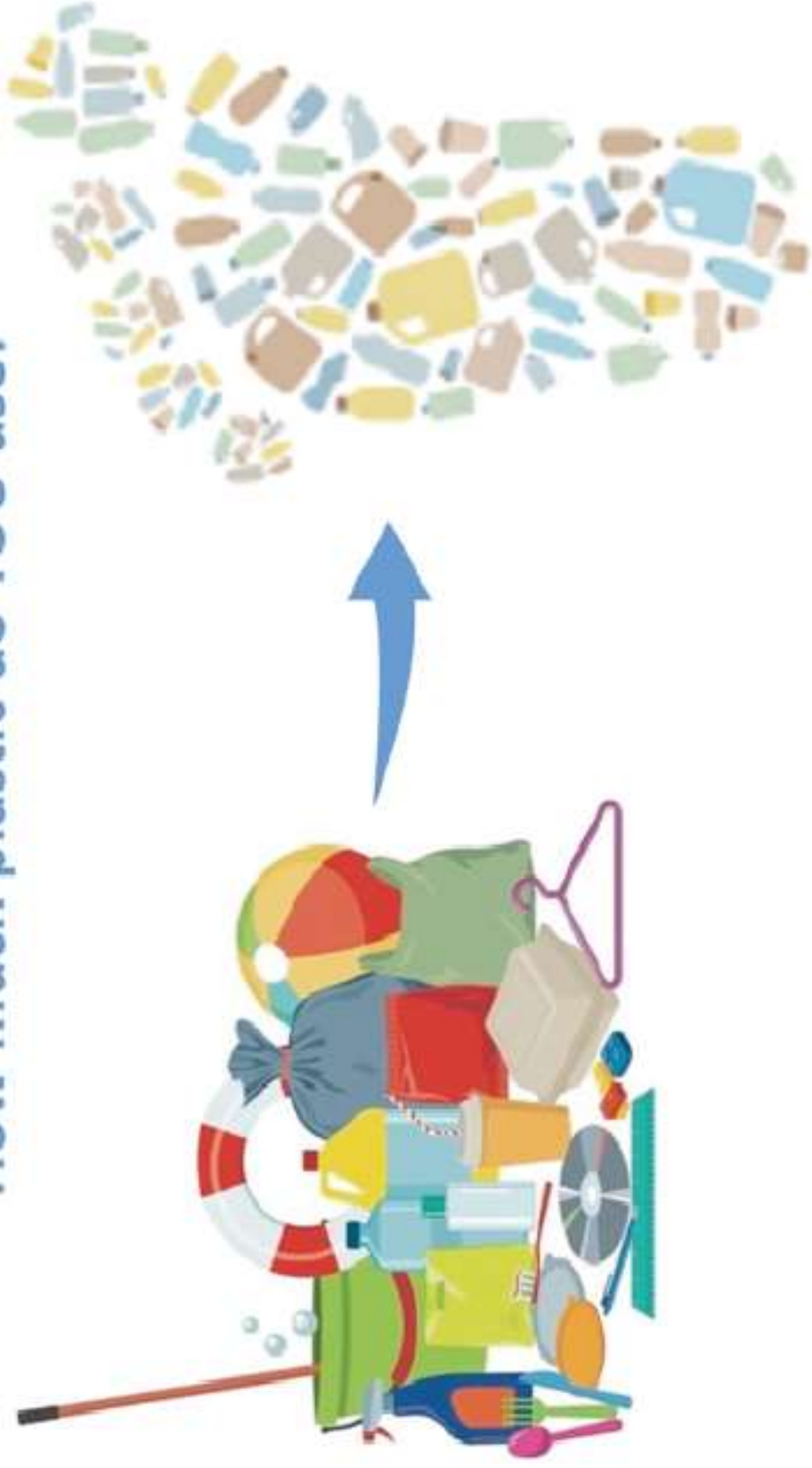
PLANKTON









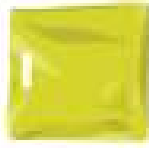
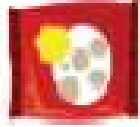


**YOU SEE THE DIFFERENCE.
A TURTLE DOES NOT.**






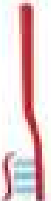




































How much plastic do YOU use?



MONDAY			
TUESDAY			 
WEDNESDAY			
THURSDAY			 
FRIDAY			
SATURDAY			 
SUNDAY			

RETHINK!





<https://www.youtube.com/watch?v=-Yp1KKWpPpU>

REDUCE!



REFUSE!



Plastic cups and mugs for take-out juices and hot drinks



Plastic bags



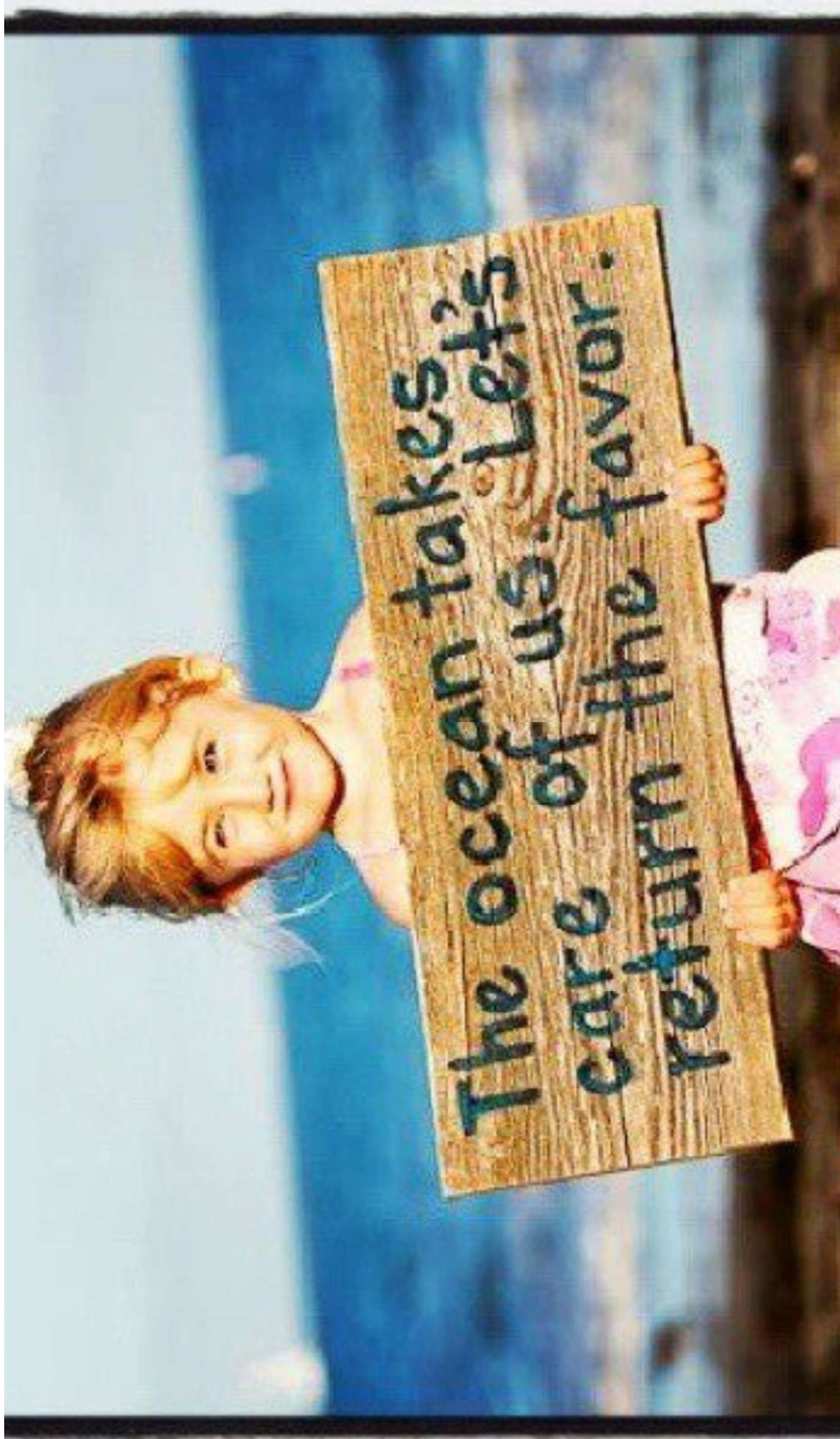
Foam containers from fast food producers and take away



Individually wrapped condiments



Drinking straws

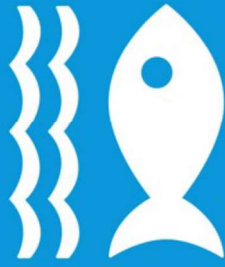


The ocean takes care of us. Let's return the favor.



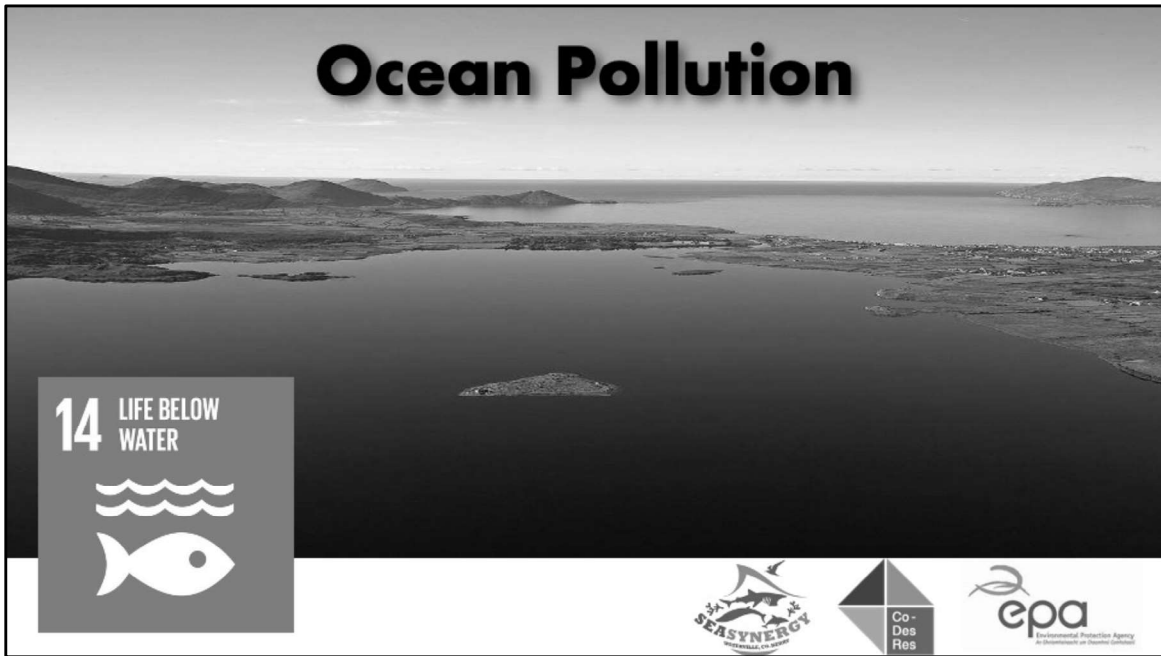
Thank you!

14 LIFE BELOW
WATER



Any Questions?





Today we're learning about ocean literacy – the last video got us started with some main points so now we are going to delve a little deeper. What is ocean literacy – what do we mean when we say ocean literacy? We are talking about how much we know about the ocean and how it helps the planet to function.

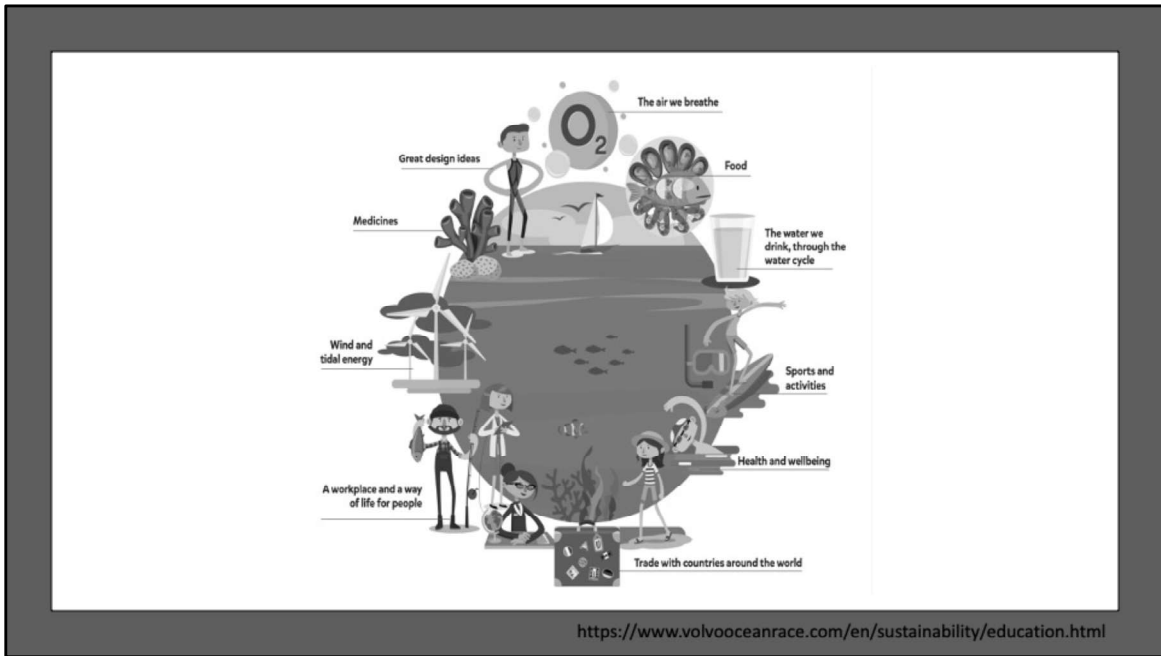
Understanding the
oceans influence on you
and your influence on
the ocean



A basic definition for ocean literacy is to understand the ocean's influence on you and your influence on the ocean.

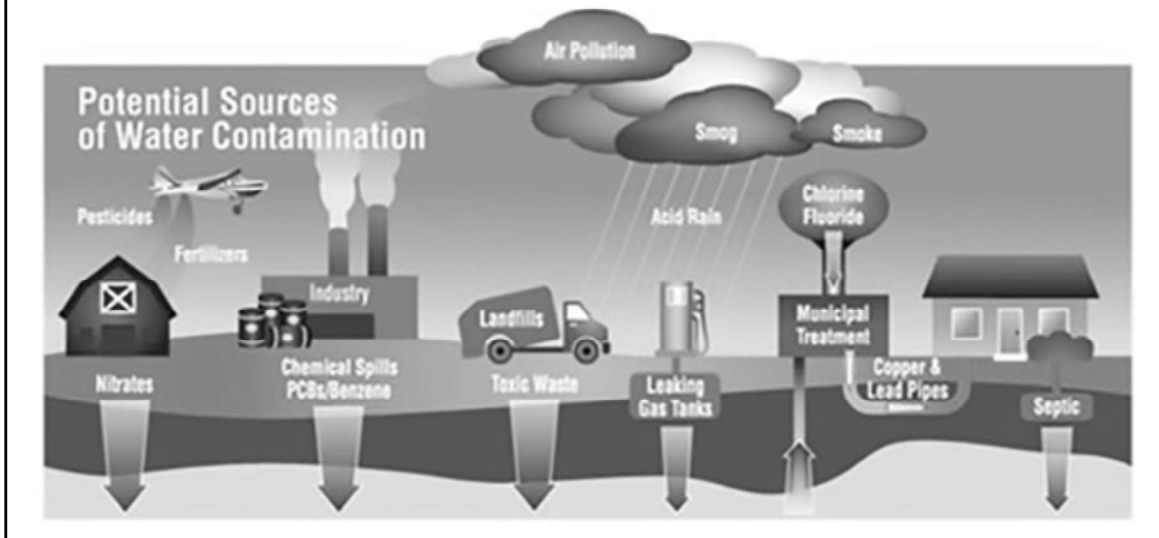
An Ocean-Literate person:

- **Understands** the importance of the ocean to humankind
- Can **communicate** about the ocean in a meaningful way
- Is able to make informed and responsible **decisions** regarding the ocean and its resources



What do we get from the Ocean? Why is it important to us – well here's just a few things from vital nutrients to the blue economy and recreation – in fact, it has been shown that living on or near water can make you happier and healthier.

Sources of pollution in the Ocean



Think before you flush

Flushing sanitary products down the toilet can cause blockages and can end up polluting our marine environment

Thousands of used sanitary products are flushed down the toilet every day

The wastewater system is not designed to deal with large amounts of sanitary waste

2/3 of all drain blockages contains sanitary waste

Wastewater treatment plant

Smaller items that are flushed, such as cotton buds, can escape through filters at the treatment plant and reach our rivers and beaches

Sewage related litter causes harm to the environment and can pollute our water supply and coastlines



@CleanCoasts

#thinkbeforeyouflush

www.thinkbeforeyouflush.org

Think Before You Flush is operated by An Taisce's Clean Coasts programme and is supported by Irish Water



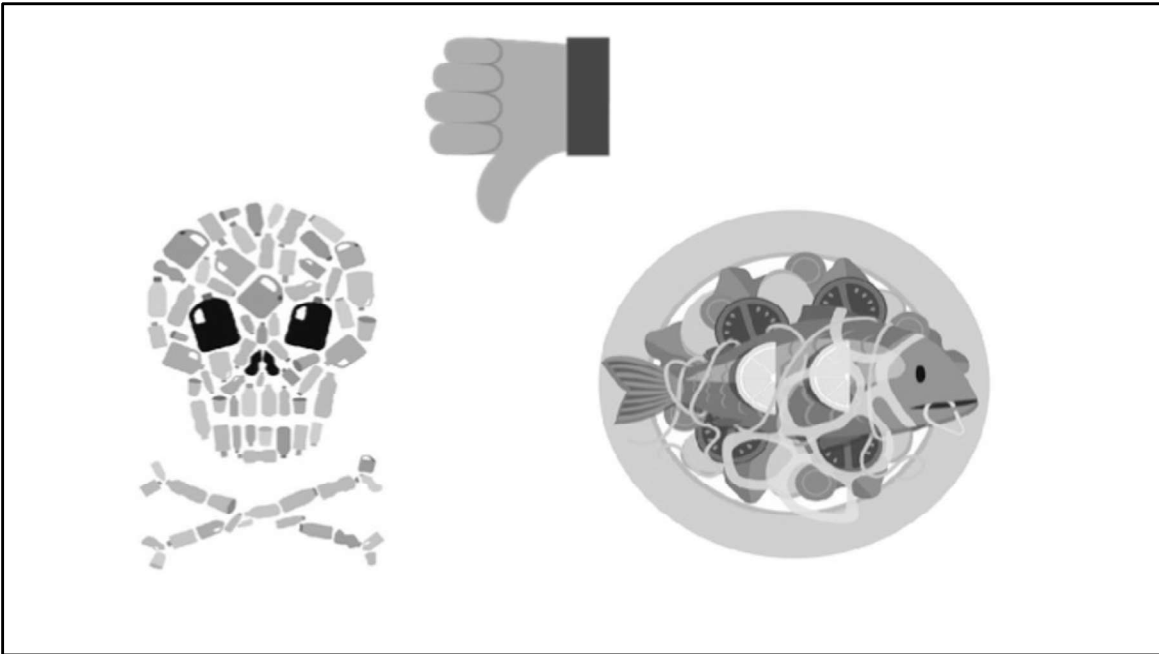
Just because you can't see it, it
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Plastic







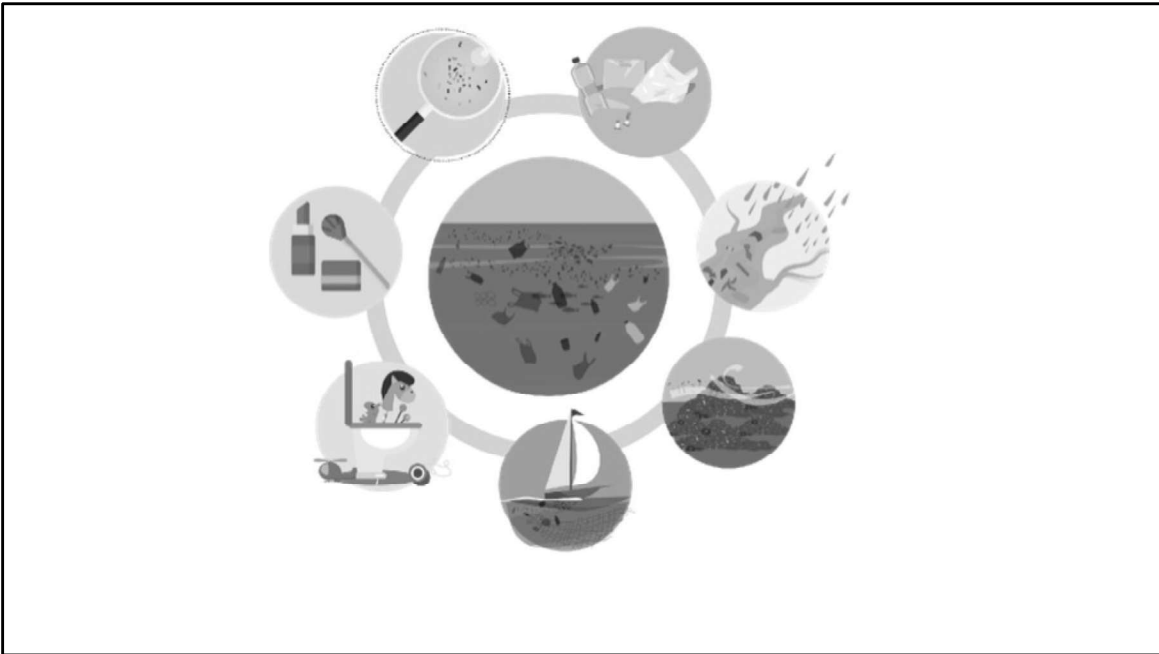
HOW LONG UNTIL IT'S GONE?

Estimated decomposition rates of common marine debris items



Estimated individual item lifetimes depend on product composition and environmental conditions.
Source: NOAA National Oceanic and Atmospheric Administration, US; Beach Watch Sea Grant, US.
Graphic: Illustrations provided by GoodFuture, Boston, MA.





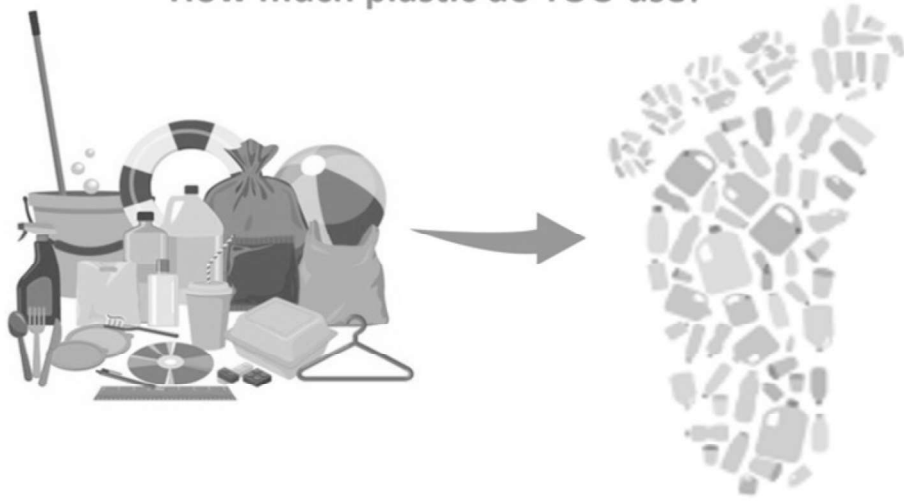
Plastic is not so fantastic

























More than **50%** of sea turtles are estimated to have ingested plastic or other forms of marine debris

The infographic features a dark background with a wavy line at the top representing a layer of plastic debris, including various items like bottles, bags, and fragments. Below this layer, five sea turtles of different sizes are swimming. The text is presented in a clean, sans-serif font, with the percentage '50%' being the largest and most prominent element.



How much plastic do YOU use?

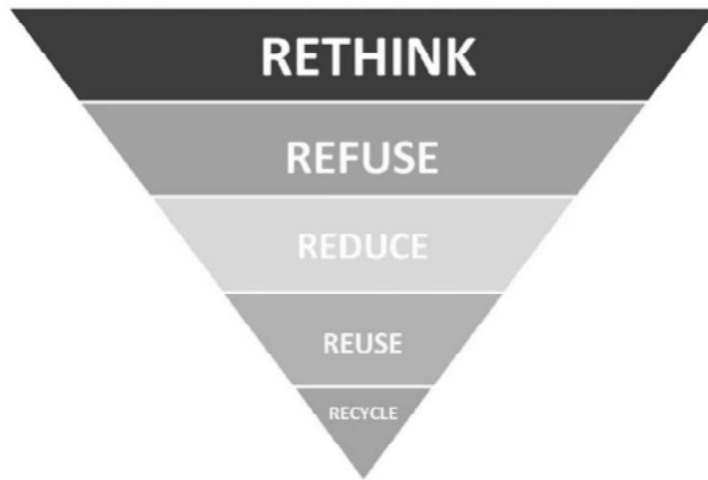


MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
						
						
						
						

RETHINK!



X					✓
X					✓
X					✓
X					✓
X					✓
X					✓
X					✓
X					✓
X					✓



<https://www.youtube.com/watch?v=-Yp1KKWpPpU>

REDUCE!



REFUSE!



Plastic cups and mugs for take-out juices and hot drinks



Plastic bags



Foam containers from fast food producers and take away



Individually wrapped condiments



Drinking straws



So, you can see what an amazing place the ocean is and all it does for us, but the question remains, what are we doing for it? In 2018, with the release of blue planet 2, we have seen a huge jump in the public's awareness of the ocean's problems – warming temperatures, acidification, biodiversity loss and particularly plastic pollution, micro-plastics. These issues are ever increasing, and governments are struggling to meet global targets for reversing the situation.



So, what can we do? As individuals and communities, it is falling on our shoulders to make changes from the ground up that are inspiring massive shifts in societies behaviour such as organising beach cleans, refusing single use plastics, eating local, etc. By using consumer power to demand products that are better for the environment and for us, each one of us has the opportunity to help save the ocean.



And learning just a little more about them, becoming ocean literate as we say, is the first place to start. Our ocean really is the blue heart of our planet Earth, studies have shown that just being beside the ocean makes us happier and healthier, reduces stress and anxiety and increases creativity and confidence. For all we get from our ocean, it deserves a little care from us!

LESSON 5 OCEAN POLLUTION



Name: _____

Date: _____

Write down 2-5 words you think of when you hear the phrase 'ocean pollution'.

- | | |
|----|----|
| 1. | 2. |
| 3. | 4. |
| 5. | |

What is ocean literacy?

List 3 benefits we get from the ocean:

- | | |
|----|-------|
| 1. | _____ |
| 2. | _____ |
| 3. | _____ |

What are some sources of ocean pollution? How many can you list?

What type of rubbish is typically flushed down the toilet (that should NOT be!)?

Plastic pollution in our ocean is a huge problem. What are some of the consequences of plastic ending up there? List as many consequences as you can.

- | | |
|----|----|
| 1. | 5. |
| 2. | 6. |
| 3. | 7. |
| 4. | 8. |



LESSON 5 OCEAN POLLUTION



Name one common piece of marine rubbish and how long it takes to decompose.

1. _____

2. _____

List 1 -3 facts/statistics you remember from the presentation on Ocean Pollution.

1. _____

2. _____

2. _____



LESSON 5 WALKING DEBATE



Walking Debate Questions

Designate areas of the room or outside area as Yes, Maybe and No.

Ask the questions and ask learners to go to the place that reflects their answer.
Encourage short discussions on learners' answers.

Why did they choose that place / position? Give examples of etc.

1. Do you believe there is that much (8 million tonnes per year) plastic pollution entering the Ocean every year?
2. Do you believe that there could be more plastic than fish in the Ocean by 2050?
3. Are you afraid of what the environment and our life might look like in the future?
4. Do you believe you can make a difference?
5. Are you already starting to make a difference?
6. Do you use a reusable bottle?
7. Do you speak about environmental issues like climate change and marine pollution with friends or family?
8. Have you ever helped a Tidy Towns group or Clean Coasts group?
9. Do you use a reusable shopping bag?
10. Do you pick up litter when you see it on the ground?
11. Do you try to Reduce Reuse Recycle?

