Anne Mäusbacher

KIDS for the OCEAN

Strategies and Initiatives for Everyday Life to Prevent Plastic Pollution in the Ocean

- A Step-by-Step Guide for Families and Schools -

For my Son

and all the knowledge-hungry young activists

that Planet Ocean so desperately needs.

IMPRINT

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Gender-neutral formulation:
For reasons of easier readability, this book uses the usual male language form for personal nouns and pronouns. However, this does not imply discrimination against the female sex, but should be understood as gender-neutral in the sense of linguistic simplification.

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„We have to realise that the most important thing we take from the ocean is not minerals, not oil, not gas, it's not fish, not lobsters, not oysters – not a lot of things. It's our existence. "

Dr. Sylvia Earle, Mission Blue

Dr. Sylvia Alice Earle (born August 30, 1935 in Gibbstown, New Jersey) is an American oceanographer and environmental activist to protect the oceans. She was the scientific director of the National Oceanic and Atmospheric Administration (NOAA), advised NASA, and has been a researcher for the National Geographic Society since 1995. As the leader of more than 60 ocean expeditions, she spent more than 7,000 hours underwater. She has founded organizations such as www.mission-blue.org, and inspires humankind with stories from the underwater world and why it's so important to protect it.

The ocean is overfished, over-acidified and polluted. The exact amount of plastic waste in the world‘s ocean can only be estimated in numbers. Several million tons are added each year. How did this happen? Who are the culprits? What can we do to change it?

Not only does this waste have an enormous impact on the undersea world, marine ecosystems and seabirds, but on our health and survival as well.

„Kids for the Ocean“ was developed for “Generation Hope” and its teachers. Generation Hope is the girls and boys between the ages of 6 and 24, tomorrow‘s decision-makers, and who are desperately needed.

The program is easy to incorporate into school syllabi or any other type of teaching environment, such as holiday programs, childcare facilities and day care. It is also ideal for everyday family life.

It is flexible, both as a stand-alone program or as specific topics as individual chapters. The program is great to incorporate into hiking trips, theme days or weekly projects.

The target audience will generally gain a better understanding of the biggest environmental disaster of humanity and will not treat the environment and its resources wastefully or destructively.

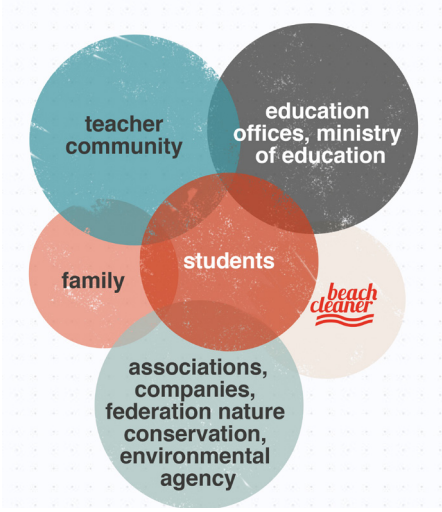
The goal is,

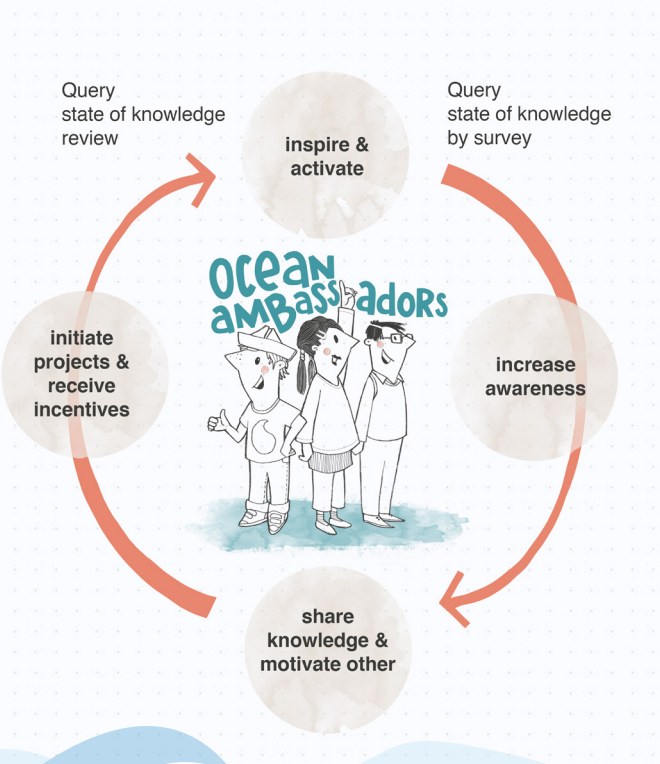
- to pay more attention to plastic pollution in the oceans and to recognize the danger that threatens not only the oceans, but our lives on earth.
- To show alternatives to daily plastic consumption.
- To fight for our planet and our own health as well as for the future of humanity.
- To create examples of living in harmony with nature and sustainably influencing our environment.

Each of us can play an important role in reducing plastic pollution and working on new, exciting solutions.

Anne Mäusbacher
Founder, beach cleaner

- An educational program about ocean plastic pollution for children, teachers and parents.
- Children and teenagers act as „ocean ambassadors“ and a catalyst for change in their communities. i.e. sharing their knowledge with parents, friends, at schools, sports clubs, etc.
- Due to the urgency of the topic, the program would ideally be included in regular syllabi.





A questionnaire is given in the beginning of the program. At the end, it is given again, but with more in-depth and sophisticated questions.

Ideally, the content should be worked through in order, but it's not absolutely necessary. It's possible to work through individual topics independently of each other. Each chapter has a fact section, a work section for the students/children and a response section for the teacher or parent.

The videos are all available on our website:

www.beachcleaner.de/english/kids-for-the-ocean/videos/

Q & A	*Video to watch*	*Facts / answers for teachers & parents*	*Timing for exercise*

Because the program evolves with the commitment of every one of us, we look forward to your feedback.

Have fun with *Kids for the Ocean*.

INTRODUCTION & KNOWLEDGE TRANSFER

to be copied and printed out for parents and teachers

The children should fill this out by themselves before begjnning the program.

Why does waste end up in the ocean?

What do you know about plastic waste islands or -continents?

What can you do about it in your community?

What can you do about it as an individual?

Does plastic stay in its original form, or does it dissolve?

Have you heard that plastic water bottles aren't healthy to drink out of?

After 7 weeks, a final questionnaire will be given, ideally,
after the Zero waste challenge (7 weeks) in the end of the book.

beach cleaner

INTRODUCTION & KNOWLEDGE TRANSFER

Why does waste end up in the ocean?

20% of the waste in the sea comes from container ships, oil rigs, fishing nets and cruise liners. 80% comes from land, is blown into the ocean (overcrowded dumps, rubbish bins, garbage left on the beach), industrial wastewater in rivers and the ocean, illegal waste disposal.

What do you know about plastic waste islands or -continents?

Waste is swept together by the ocean's natural currents. There are already 5-7 plastic continents in the ocean, one the size of Europe!

What can be done in society?

Stricter laws, manufacturing controls on plastic, with the legal responsibility of recycling under ethical and environmentally-friendly conditions.

What can you do as a individual to reduce plastic pollution?

Consuming consciously, avoiding packaged products, buying unpackaged food, and creating the least amount of waste as possible.

Does plastic stay in its original form, or does it dissolve?

Biodegradation time frames vary, from a few decades to a hundred years.

Have you heard that plastic water bottles aren't healthy to drink out of?

Microplastics have been detected in returnable PET bottles, in both the closure and the bottle wall, so it's advised to change completely to glass or stainless steel bottles.

INTRODUCTION & KNOWLEDGE TRANSFER

to be copied and printed out for parents and teachers

To be completed at the end of the program by the children themselves.

Why does waste end up in the ocean?

How much waste enters the ocean each minute?

Have you heard of the *5 Gyres*? What are they?

Who discovered them?

What impact do plastics and pollution have on our health and ecosystems?

What can you do as an individual?

Does plastic stay in its original form, or does it dissolve?

How long does a plastic bottle take to completely decompose?

Have you heard that plastic water bottles aren't healthy to drink out of?

After 7 weeks, this questionnaire will be given again (ideally after the 7-week "zero waste challenge" at the end of the book).

INTRODUCTION & KNOWLEDGE TRANSFER

Why does waste end up in the ocean?

20% of the garbage in the sea comes from container ships, oil rigs, fishing nets and cruise liners. 80% comes from land, is blown into the ocean (overcrowded dumps, rubbish bins, garbage left on the beach), industrial wastewater in rivers and the ocean, and illegal waste disposal.

How much trash enters the ocean every minute?

Every minute, one garbage truck of plastic gets dumped into the ocean.

Have you heard of the 5 gyres? What are they?

They are so-called plastic continents in the ocean, one being the size of Europe. There are now 5 - 7 of these „garbage patches". They were formed by the ocean's currents, collecting the floating pieces of plastic to form these massive bodies of plastic waste.

Who discovered them?

US marine explorer Captain Charles Moore in 1997.

What impact do plastics and pollution have on our health and ecosystems?

Animals confuse plastic in the ocean with food. Plastic has already been detected in shellfish and fish, which then end up on our plate. Some animal species are critically endangered, i.e. through plastic food intake.

What can you do as an individual against it?

Consuming consciously, avoiding packaging waste, buying unpackaged food, and creating the least amount of waste as possible.

Does plastic always stay in its original form, or does it dissolve?

Biodegradation time frames vary, from a few decades to a hundred years.

How long does it take for a plastic bottle to completely decompose?

A plastic bottle remains in the ocean for 450 years until it dissolves into micro-plastic.

Have you heard that plastic water bottles aren't healthy to drink out of?

Microplastics have been detected in returnable PET bottles. Both the cap and bottle contain micropolastics, so it's advised to change completely to glass or stainless steel bottles.

THE BLUE PLANET

We haven't explored most of the ocean.

Did you know that squid have three hearts?
Two hearts are needed to pump the blood into the gills, and the third transports the oxygenated blood throughout the rest of the body.

Cuttlefish can transform completely and adapt to their environment, I.e., to sand or stones.

1. What is the smallest sea animal?
2. What is the biggest sea animal?

Research in the library or on the internet.

1. Smallest sea animal: nanoplankton, from 4 microns (µm), zooplankton from 0.5 mm.
2. Biggest sea animal: Blue whale, 35 meters. Its heart is the size of a small car.

THE BLUE PLANET

Biodiversity & Marine Ecosystem

1. What role does phytoplankton play?
2. What role does zooplankton play in the food chain?

Research and explain using a collage you design (A3 poster).

© Matthew Cole, Plymouth Marine Labs, Five Films.

1. The phytoplankton is usually invisible to the naked eye but extremely important for life in the oceans. It is a unicellular vegetable (mostly diatoms). It lives near the water's surface and operates through sunlight photosynthesis. It converts carbon dioxide into plant biomass, producing oxygen. Half of the oxygen we breathe is produced by the ocean.
2. Zooplankton (microorganisms, such as krill) play a vital role as a food source for fish and many other forms of marine life. It feeds on phytoplankton. Due to the presence of plankton just below the water surface, large areas of the ocean often discolor, signaling to fishermen the shoals of fish, like herring and mackerel, feeding on the zooplankton below.

Quelle: Wikipedia

1. How many animal species have been discovered in the ocean so far?
2. How many are undiscovered yet?
3. What percentage of the ocean has been explored?
4. What percentage of „the ocean“ is under special protection?

Research on the internet.

1. 80% of the world‘s wildlife live in the ocean, with over 230,000 known species.
2. Undetected, probably several more *millions*.
3. Only 5%, more than 95% of the ocean, are unexplored.
4. Only 3 - 5% are currently under protection worldwide (Marine Protected Areas, MPA).