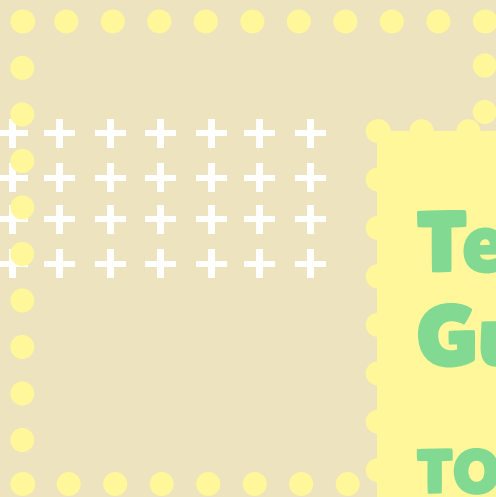
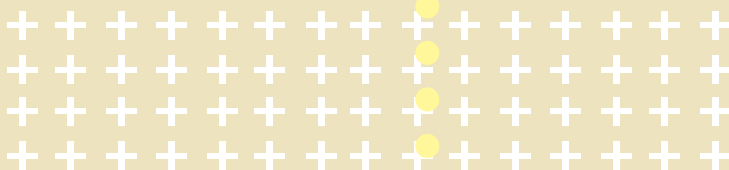


Volvo Ocean Race Sustainability Education Programme



Teachers Guide

TOPIC 3

***How to Reduce
Ocean Plastic
Pollution***

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Introduction

Welcome aboard the Volvo Ocean Race Sustainability Education Programme. The race is putting sustainability at its heart and is focusing on taking action to 'Turn the Tide on Plastic' – the rapidly growing and critical problem of plastic pollution in the ocean, highlighted by the United Nations Clean Seas campaign. The Volvo Ocean Race supports this much-needed campaign, through our sustainability team, education programme and positive actions. It truly is a race for the ocean and we believe Together, we can Turn the Tide on Plastic!

This fun programme will help you and your students (aged 6-12 years) discover the excitement of sailing through the Volvo Ocean Race, the importance of the ocean and how ocean plastic pollution is damaging our blue planet. It will also show you ways to combat ocean plastic pollution and how YOU and your students can make a difference by becoming a Volvo Ocean Race Champion for the Sea!

There are four topics:

1. What is the Volvo Ocean Race?
2. What is ocean plastic pollution?
- 3. How to reduce ocean plastic pollution**
4. My Positive Plastic Footprint

We have developed resources for each topic

- Powerpoint Presentation
- Worksheets (for age groups: 6-8yrs, 8-10yrs & 10-12yrs)
- Student booklet 6-8 years
- Student booklet 8-12 years
- Suggested cross-curricular activities
- Evaluation quiz
- Answer sheets for each worksheet

Resources are available in English, Spanish, Portugese, Swedish, Dutch and Chinese

This teacher's booklet identifies the curriculum undertaken in each worksheet. Different cross-curricular activities are also optional and listed in the following pages.

Worksheets are colour coded for each age group

- Blue 6-8 yr/old
- Red 8-10 yr/old
- Green 10-12 yr/old



She is a Laysan albatross from Midway Atoll in the Pacific Ocean and is featured throughout the education resources. Wisdom's worksheets will enable your students to learn about each topic in a fun way.

Please remember to fill in the feedback survey when you have completed the programme.

All materials are available for download and can be emailed to students or if you choose to print please print any materials on sustainable and recycled paper.

See the table below, to see what curriculum subjects are undertaken using Topic 3 worksheets.

	Worksheet 1	Worksheet 2	Worksheet 3
Subject	Plastic Footprint	Champion Story	The R's
Geography			
History		Learning from the past	
STEM	Math, calculation and multiplication, comparison		
Language		*Report writing, telling the story	Language development
Global Citizenship	Understanding plastic use, knowing your place	Making a difference, positive action	Environmental stewardship
Art			*Drawing, poster work

STEM: Science, Technology, Engineering & Math

Materials available:

1. Powerpoint presentation online

Available for download - with notes on key concepts of how to reduce ocean plastic pollution.

This informative presentation has helpful information on how to reduce our plastic footprint everyday and inspires students to make a difference.

2. Information booklets for ages 6-8 years and 8-12 years. These booklets are a great reference for fast facts and information on the topic for you and your students.

3. Students to complete **3 worksheets** in time allocated by you. Can be homework or in class.

4 . Challenges: at the end of every worksheet students will find a challenge – students may need guidance completing these challenges

5. Certificate & Badges

6. Optional classroom activities

Optional Cross-Curricular Classroom Activities

STEM

Classroom Plastic Footprint



Skills:

- Calculate class plastic use
- Understand different materials we use
- Where does litter come from
- Teamwork
- Analysing:
 - Sorting and classifying
 - Recognising patterns
 - Interpreting
 - Recording and communicating

Need:

General waste litter from classroom or school bin at end of the week or before bin collection.
Recycling chart from local recycling company or contact your local municipality recycling organization for information.

Directions:

1. Take litter from the general litter bin and recycling bin for the class
2. Ask students to identify the plastic litter and sort it for further use
3. Ask students to
 - Weigh the weekly plastic litter - this is your classrooms plastic footprint
 - Sort weekly plastic litter into different materials - plastic recyclable, plastic non-recyclable (from what you know can be recycled locally)
 - Weigh the non recyclable v's the recyclable plastics and note which weighs more
4. Discuss the plastics found with the students. What are they from? Was there more plastic that could be recycled in the general waste bin?
5. Discuss ways to reduce the classrooms plastic footprint.
6. Are there ways to have a positive plastic footprint? Rethink, Refuse, Reduce, Reuse, Recycle.
7. Create a positive footprint. If there are certain plastic items that can be reused, use them in class. For example yoghurt pots wash and use to plant seedlings with your class. Plastic bottles can be cut in half, students can paint them and use as desk sorters for pencils and pens. Try to reduce your classrooms plastic use and advise students and parents how to participate also. Wash all recyclable plastics and put into the recycle bin.
8. Some schools have had great success in reducing litter and plastic waste by having no sweets or candies in school or only on a Friday. Other schools collaborate with a local grocery store or farm to sponsor fruit snacks for the students instead of pre-packaged snacks, which also reduces the packaging waste in the school.

Extension:

9. Assess if your school has a litter problem. Review types of litter and see what can be recycled. Have your students create an action plan for the school to reduce plastic litter. Appoint a 'Green Crew' to carry out the action plan and plastic guardians to monitor and evaluate how much litter is in the school bins weekly and what types of litter. Can it be reduced? Inform teachers and parents of the action plan to reduce plastic and how they can help. Use reusable lunch boxes, drinks bottles, no plastic wrap for sandwiches. Have the students create a 5R's code that will raise awareness of their Action Plan to reduce plastic waste.

Explain that all the Volvo Ocean Race teams also have green crew who are looking after reducing their plastic footprint as much as possible throughout the race, as well as lots of other efforts to help keep the ocean clean.

Appoint a student ('onboard') reporter to make video recordings of the successes and hurdles the Green Crew face with their action plan in the school. So that they can document their sustainability journey and have online for parents and teachers to see. Ask them to include a piece in the video to explain the R's! The recordings can be dramatic and/or have humour!

GEOGRAPHY & DRAMA

Litter scenarios



Skills:

- Observing
- Questioning
- Investigating
- Communication
- Joined up thinking
- Solution thinking

Need:

- Photo images of littered beaches and litter.
- Print of scenario cards.
- Space at front of classroom for acting.

Directions:

Ask students where they like to play in their community. Elicit answers towards green and blue spaces like playground, the local park, by the river, on the beach.

Show some images of littered beaches and littered ocean. Ask the students why do they think litter is there? Ask them to elaborate and let us know do they think the images are good or bad and why they think this? Discuss what also might happen to the animals in the area if they end up eating the litter; that they would get very sick and possibly die. Allow some time for them to think of other things that might happen.

Split the class into teams of four. Have the scenario cards (below) cut up and in a jar for one team member to take out one piece of paper with a scenario on it. The team must act out this scenario for the class. Then you can ask the class to guess what has happened. The team will reveal what has happened to the class if they have not already guessed it. Then the class must decide on solutions to prevent this scenario happening and try to protect the environment.

Scenario cards:

A family had a picnic at one of the park benches and decided to leave all their food wrappers there. Later on some birds come and see shiny food wrappers and thinking they are food, try to eat them. One bird can't swallow the wrapper and chokes; the other bird has a bellyache!

It is a very windy day and a lady is unpacking her shopping bags into the car. When unpacking one of the plastic bags comes loose and flies away in the wind. She tries to run after it but the wind was too fast. A hungry turtle is swimming along in the sea and sees a tasty looking white jellyfish, it has some different markings the turtle has not seen before. Hungrily it gobbles up the 'jellyfish' but a few hours later feels very unwell.

There was a big street festival and every one had lots of fun and ate and drank on the street with take out containers. They didn't see any bins so they assumed that it would be cleaned up after and just left the plastic food and drink containers on the ground. That evening before any cleaners came a big rainfall came and washed everything into the drain and out to the ocean. The plastic containers floated around the ocean and were mistaken as food and nibbled on by fish and plankton.

A child is building a sandcastle and decides to use bottle tops from the families drinking bottles to decorate it. After a swim in the ocean she forgets about her pretty sandcastle and goes home with the family. The plastic bottle tops are washed into the ocean where they will remain for hundreds of years. An albatross is out looking for food for its chick and spots one of the bottle tops floating at the surface, thinking it is food it then picks it up and feeds it to its chick. The chick eats what its parent gives it trusting it is food. But within a few days the chick is very sick and dies with a stomach full of plastic.

A girl buys a face wash she sees in the advertisement as being the best for 'keeping your skin clean and clear with fantastic micro beads to make you sparkle'.

She uses the face wash every day and there is no amazing sparkle from her face. Meanwhile in the sea there are some small zooplankton and fish eating the 'fantastic micro beads to make you sparkle' thinking that they are food. These animals are then eaten by bigger fish and then caught by fishermen. The fishermen sell the fish to people. These people eat the fish for dinner.

Acting out these scenarios or any others that your students think of, will allow the students to question what has happened and ways to prevent it. Students can discover joined up and solution based thinking.

LANGUAGE

Debate Single Use Plastic Good v's Bad for the Environment



Skills:

- Teamwork
- Communication
- Comparisons
- Researching

Need:

Students

Directions:

Select two teams of 6, the affirmative team is 'single use plastic is good for the ocean' and the negative team is 'single use plastic is bad for the ocean'. Have half the students selected to be researchers and other half as speakers. Give the debating teams allocated time to research and practice what they want to say for the debate. Tell them to use Topic 2 & 3 booklets and to research their topic online also.

The rest of the class can be the audience and you can give them different questions to ask, as well as encouraging them to ask their own questions after the debate. For the debate the affirmative team will go first with two minutes to present their argument, then the negative team shall take two minutes to give their argument. After this you can open the debate to the floor for questions for some minutes, then allow the teams some time to come up with their final statements in debate and allow the teams to have two minutes each again to speak, this time the negative team to go first.

Teachers can be judges or you can allow the class to vote for either team and have majority rules to decide the winning team.

ART

Trash to Treasure



Skills:

- Creativity
- Fine motor skills
- Cutting/pasting and organisational skills

Need:

Washed plastic litter, scissors, glue, paints, paintbrushes, card paper, colouring pencils, sequins, craft decorations

Directions:

1. Ask the students to pick some of the washed plastic litter items and have them decide what they would like to make from it.
2. Using the backing card they can have a base for their piece of art. Assist them with cutting and gluing any plastic if they need help.
3. Allow the students to be creative with their pieces using paint and craft decorations
4. Have the students present their work to the class and explain their art and what litter they used to create their art pieces.

STEM

Natural v's synthetic



Skills:

- Observing
- Investigating
- Analysing
- Recording
- Floating and sinking

Need:

Body scrub with plastic micro beads and a body scrub with natural scrub material such as walnut or oatmeal.
Depending on number in your class you will need 2 jars per team of four.
Tap water.
A permanent marker to label jars.

Directions:

1. Discuss micro plastics and sources of micro plastics such as micro beads in body/face scrubs and toothpastes. See Topic 2 booklet.
2. Separate the class into teams of four
3. Each team receives two jars labelled with permanent marker A & B. Add a spoonful of synthetic micro bead scrub (A) and a spoonful of natural scrub (B) to each jar – IMPORTANT- Do not tell the students which is the natural or synthetic scrub
4. Jar A (synthetic scrub with micro beads) & B (natural scrub)
5. Pour water into the jars 2/3rd full and close with lid
6. Shake the contents of the jar gently so that the scrub mixes with the water
7. Have the students observe the materials inside the jar
8. Have students write down what happens in each jar
9. What did they notice that was different between the two jars? How did the particles in the scrubs act? Which jar do they think has plastic in it? What evidence do they have?
10. Discuss why they are different and possible different materials
11. Discuss use of micro beads and what they can be found in, that we must avoid micro bead use and products that contain them.
12. When finished please do not put the plastic micro beads in the sink. Filter the soapy water through some kitchen towel and dispose of the kitchen towel in a dustbin.

**Please note that not all micro plastics float.
Micro beads in soaps can float but many micro plastics
in the ocean will sink to the sea floor.**

Challenges, Certificates & More info

Once the students complete the worksheets and challenges for each topic you can print the badge and attach/stick it to their certificate. When all four badges are acquired your student has become a Volvo Ocean Race Champion for the Sea! Please register your students and let us know how many students completed the Sustainability Education Programme.

Be sure to sign up and give your contact details as throughout the race we will be developing more resources, sending out newsletters and hooking up with some of the sailors to give interviews for schools through live and recorded webinars!

Also if you want to organise a Volvo Ocean Race day in your school we can virtually visit your classroom from one of the race locations to speak with your students on sustainability and ocean plastic pollution!

To find out more check out www.volvooceanrace.com/education and log into our Sustainability Education section for teachers where you will find out lots more information and fun facts and resources on the Volvo Ocean Race and all the topics in the programme.

Track the boats

Follow the race online with the TRACKER or download the Volvo Ocean Race App to keep up to date on all the news and how the teams are doing!

Want to see the boats?

Don't forget to book your classroom's place on one of our tours and workshops in the Race village as soon as possible! Stopover dates for each race village are below. School workshops are only run during the weekdays.

Host City	Stopover Dates
Alicante	11 – 22 October 2017
Lisbon	31 October – 5 Nov 2017
Cape Town	24 Nov – 10 Dec 2017
Melbourne	27 Dec 2017 – 2 Jan 2018
Hong Kong	17 January – 7 Feb 2018
Guangzhou	1 – 5 February 2018
Auckland	24 Feb – 18 March 2018
Itajai	4 – 22 April 2018
Newport	8 – 20 May 2018
Cardiff	27 May – 10 June 2018
Gothenburg	14 – 21 June 2018
The Hague	24 – 30 June 2018

Visit the Museum!

Our **Volvo Ocean Race Museum** in Alicante is open to schools and is perfect for school tours, day trips and workshops. For more info see museovolvoceanrace.com

To book into a school workshop in the race village or for more information on the education programme contact:

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This education programme was created by marine biologist and ocean advocate Lucy Hunt

Illustrations & design by wearesmall.es

Also see :

UN Environment Clean Seas Campaign

Thanks for joining us, Together let's Turn the Tide on Plastic!

volvoceanrace.com

Founding Principal Partner



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