



Ocean World

Lesson EIGHT

'Why are the oceans full of rubbish?'

Contents:

Use the powerpoint to inform your pupils of the problems with pollution in the oceans. Help them to discover how long it takes for materials to break down in the ocean. Use project work to conduct their research and write their own reports. Those pupils who are able to teach others about pollution can be awarded an 'Ambassador for the Oceans' certificate.



Teachers' Resource

'Ocean World'

KS2 - Year 5/6 - UK Curriculum: Science

Lesson Eight

'Why are the oceans full of rubbish ?

Resources in this unit are:

- 1.Ocean World Powerpoint (15 slides.)
- 2.Info Sheets and ideas for discussion and research: Pupils will discover how long it takes for materials to degrade in the oceans. Project work will enable pupils to write their own reports and recommendations. Pupils who have shown they can teach others about the problems with ocean pollution, can be awarded an 'Ambassador for the Oceans' certificate. So much to discuss and learn on an important subject.
3. Activity Sheet Guide for teachers, includes key words, ideas and literacy work.
4. Writing frames are included.
5. A list of 'Sea music' is also included for use throughout the eight-lesson project.
- 6.The BIG Question (pupils are encouraged to discuss and/or write a sentence to answer - The BIG question: - 'Why are the oceans full of rubbish?')

Teachers can establish pupil progress when discussing with pupils what they have learnt so far. It is suggested that work can be glued into a BIG BOOK/JOURNAL where pupil's work can be built up over the full teaching unit of 8 lessons.

All lessons are flexible - so spend a whole day on the lesson, or one section a day or one a week to suit your Geography/Science time slot.

*All materials (c) gloria barnett
The Weird Fish Lady*



Why are the oceans full of rubbish?

Resources:



8: Pollution



Info Sheets:
8a, b, c, d

Certificate for
“Ambassador for
the Oceans”

Suggested Activities:



A: Teacher led discussion – Use PPT 8 : “Ocean Pollution”

Discussion:

Although some slides are likely to raise emotions about how animals are getting injured – it is important for pupils to decide how they can help to stop the distress to these animals, and in the end how to protect the oceans.

The aim of this Ocean World Project is to bring pupils to an understanding of the facts surrounding how important the oceans are, and how we should respect and protect the oceans.

The slide presentation can take place as a whole – or can be delivered more slowly, a few slides each day.

Show and discuss the whole presentation as an overview of Activity 8.

OR



B:break the presentation down into the 4 parts

Progress at your own speed – depending on your timetable requirements.

B1. Teacher led activity - Slides 2-4

Why is the ocean important; Where does pollution come from?

Lead discussion.

Groupings: Pupils to discuss what they have learnt from the Power Point slides and add to their individual ‘Learning Journal’.

Repeat activity above for all the following sections:

B2. Slides 5 - 9 - Plastic Waste

B3. Slide 10 - 11 - Pollution from Fishing activities

B4. Slide 12 - Oil Pollution

B5. Slide 13 - How to help



C: Project Work - Research and Literacy activity..

Pupils to actively participate in discussion and collaboration of Project Work.
 Information Sheet 8a – gives information on decay times.
 Information Sheet 8b and 8c are two sheets of research ideas which should cover enough choice for groups of pupils to complete ICT research on different areas
 Use Information Sheet 8d is the writing frame to develop the arguments through role play.
 The idea of a writing frame (Information Sheet 8e is a blank writing frame) can be used for any of the research areas: Oil Spills, toxins, Sewage, Plastic Waste, Acidification and Good News – with pupils making their own decisions on the arguments they want to make.
 Pupils should now have gained confidence in their ability to research information from the internet.
 Development of decision-making and independent thinking is one of the aims of these activities.



D: Literacy and Communication Skills

Write a report from the ICT research and feed back to the class.
 Groupings: Pupils to discuss what they have learnt from Activity 8 and add information to their individual 'Learning Journal'.



E: Teacher to put Key Words on the board.

POLLUTION SEWAGE OIL PLASTIC



F. Being “Ambassadors for the Ocean”

Learn: Your pupils have now learned about the importance of the oceans (water supply, oxygen, food). Healthy oceans means a healthy Earth.
 Earth is our home – we need to look after it.
Love: Your pupils have now seen some very strange and incredible life that lives in the oceans – they will all have their favourites.
Protect:
 Your pupils now have the opportunity to be involved with helping others understand and love the ocean.
Do your pupils understand the facts surrounding how important the Oceans are, and how we should respect and protect the Ocean.
 Your pupils are now ready to be the voice of the ocean – to help save the oceans for the sake of future generations

By producing either an assembly or drama – to be performed to an invited audience – they will be able to express their passion for this area, and demand that adults help to protect the oceans and its life.

By writing letters to industry, politicians, local newspapers, radio stations and leaders of organisations about the need to help to look after the oceans they can become ‘Ambassadors for the Oceans’ – let their voices be heard.

All the work done in this project can be the preparation for the ‘script’ for the drama/assembly.

Certificates of achievement (Photocopy Master 8e) or Head Teachers commendations should be awarded :

- for all pupils involved in the ‘production’ of an assembly /drama
- for all pupils who involved parents, aunts, uncles, grandparents and siblings at home
- for all pupils who have taking part in a beach clean-up or supported the work of the Marine Conservation Society (or other organisation) by fund raising activities
- for all pupils who have written to individual people at important organisations/ businesses/Government/ journalists - to share their knowledge of the oceans and the problems the oceans are facing - to ask for support.
- Helped to campaign to reduce a specific area of pollution i.e. campaigned to stop the use of one-use plastic items (e.g. plastic straws).
- An ‘Ambassador for the Oceans’ should be prepared to support the survival of the oceans and uphold the ideas of respect and protection of the Ocean

The Ambassador’s Promise

“I will support the survival of the oceans
and uphold the ideas of respect and
protection of the Ocean.”

Buy a badge “Ambassador for the Ocean” for every pupil
see the Ocean World Teachers’ Pack website at
www.footprinttothefuture.co.uk



**Allow your pupils to become
“Ambassadors for the Ocean”**

Pollution

How long do things remain in the Ocean before they decay?

Decay is important – when leaves die in the autumn, the leaves fall to the ground. The leaves decay with the help of small bacteria and insects, and eventually turn back into soil.

When we throw things in the sea – how long does it take before they have decayed so small that they cannot harm any animal in the sea, if they accidentally eat it?

Decay can also be called decomposition. Waste can decompose.

Drink holders can do terrible damage to ocean wildlife.



Pollution	
Trash	Time before decomposed
Apple core	2 months
Wool socks	1-5 years
Styrofoam cup	50 years
Foam buoy	50 years
Fishing line	600 years
Newspaper	6 weeks
Waxed carton	3 months
Tin can	50 years
Plastic bottle	450 years
Plastic grocery bag	10-20 years
Cardboard box	2 months
Plywood	1-3 years
Photo degradable drink holder	6 months
Plastic drink holder	400 years
Disposable nappy	450 years
Glass bottle	unknown
Paper towel	2-4 weeks
Cigarette butt	1-5 years
Aluminium can	200 years
Cotton shirt	2-5 months
(source NOAA - Woods Hole Oceanographic Centre, USA)	

Project Work

Pollution of the Oceans

Oil Spills

Research how oil spills can damage the Ocean.

Look up the Deep Water Horizon accident – How did it happen?

Has the Deep Water Horizon accident left any permanent damage?

Are there any other big oil spills which have caused major damage?

Toxins

What are toxins?

What sea creatures give out toxic stings or bite?

How does the poison mercury enter the Ocean?

How dangerous is mercury?

Explain how a toxin or poison can increase its toxicity as it travels up the food chain.

Sewage

What danger is there from sewage being poured into the oceans?

What needs to be done to stop this from happening?

Project Work

Pollution of the Ocean

Plastic Waste

Look up: Ingestion of plastic by turtles, seabirds and marine mammals.

Why do sea creatures eat the plastic?

What sort of plastic objects get into the sea?

What are microbeads and microfibres?

What plastic waste is left by fishermen?

Why are most fishing nets made from plastic?

Which animals get caught up in fishing nets left in the Ocean?

What can be done to stop plastic pollution in the Ocean?

Acidification of the Ocean

The Ocean has always absorbed excess carbon dioxide from the atmosphere, but now the Ocean is full, and the carbon dioxide turns to acid.

The Ocean has become so acidic sea creatures such as plankton, small invertebrates and fish are dying.

What can humans do to avoid an ecological tragedy?

Good News

Research some good news about cleaning up the Ocean and stopping pollution.

There is a lot going on to improve the health of the Ocean – how many

Good News Stories can you find?

Writing Frame for Developing an Argument

Work on a role play. Pupils play the characters below to discuss pollution in the Ocean by plastic bags, plastic bottles, and discarded fishing nets.

The turtle said

The manufacturer of plastic bags said

The shopper said

The fisherman said

After considering what everyone has to say I think

Writing Frame for Developing an Argument

Work on a role play. Pupils play the characters below to discuss:

The said:

The said:

The said:

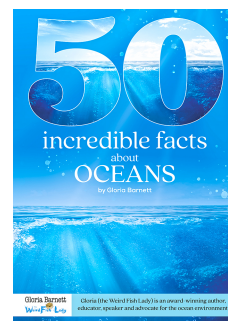
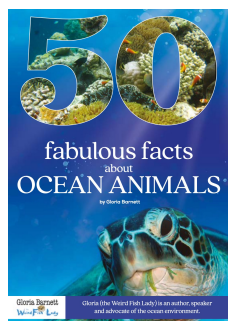
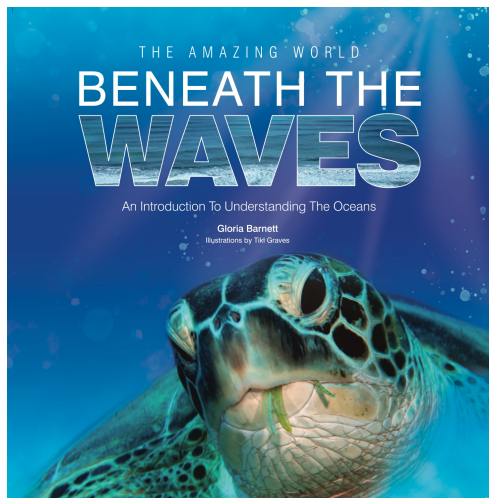
The said:

After considering what everyone has to say I think

1	The Mystic	Van Morrison
2	Yellow Submarine	The Beatles
3	https://www.youtube.com/watch?v=GHgE5fQxvW8	
4	The Hebrides (Fingal's Cave http://www.bbc.co.uk/programmes/articles/3Fm3H66YnxNZsLLrSX3mMvh/top-six-sea-pieces	Felix Mendelssohn
5	La Mer	Debussy
6	Sea Fever	John Ireland
7	Storm	Benjamin Britten
8	The Flying Dutchman	Richard Wagner
9	Octopuses Garden	Beatles
10	Under the Sea	Little Mermaid
11	Hawaii Five-O	The Ventures
12	Shark Attack	John Williams
13	Wipe Out	The Safaris
14	Sittin' on the Dock of the Bay	Ottis Reding
15	Pirates of the Caribbean	Any
16	Sparticus (Onedin Line Theme)	Kachaturian
17	Preservation / Kyance Cove / Marazion	Keynvor
18	The Aquarium: Carnival of the Animals	Saint -Saens

Ideas to enhance this Lesson ...

Buy '*The Amazing World Beneath the Waves -Guide to the Oceans*' or the '*50 Facts*' Books for your classroom from the book section on www.barnettauthor.co.uk



Ocean World

“Ambassador for the Ocean”

Certificate

The Ambassador’s Promise

.....

“I promise to respect the oceans
and endeavour to protect the survival
of all creatures which live there”

Date.....

Head Teacher.....



Ocean World



© NOAA

Ocean Pollution

1

Ocean World

Why the Ocean is important to Humans

Food – protein source

Jobs – fishing to ferries

Transport – trade/economy



© Mats Hagwell



© P&O



© Maersk

2

Pollution from human activities



© NOAA

Oil spills
Poisons
Sewage
Plastic Waste
Litter

3

Where does the pollution and waste come from?

When humans dump litter
on land it can get washed
into the sea.



© Daniel Müller / Greenpeace

Oil can be spilt at sea from
ships and oil rigs.



© Wiki PD

4

Plastic takes a long time to decompose



© wiki CC



5

1.85 gallons of water is used to manufacture the plastic for the bottle in the average bottle of drink.



© wiki CC

6

What's needed to reduce plastic waste?

Reduce plastic use.

Reuse & Recycle.

Manufacturers need to be more responsible.

Shoppers need to demand less plastic



© wiki CC ⁷

Eating plastic waste

Turtles, seabirds, marine mammals and fish mistake plastic bags for jellyfish.



© wiki CC

8

The skeleton of a dead seabird shows small coloured pieces of plastic that were in its stomach.
Eaten by mistake –it was not food.



© wiki CC

9

Dolphins and porpoises get caught up in fishing nets



© Blue Ocean network

10

Albatross are large sea birds that get caught up in fishing lines.



© world atlas .com



© RSPB

11

Oil Pollution



© business insider.com

12

Public Awareness Campaigns



© Wiki CC

13

Support Organisations



Find out more about the Marine Conservation Society at
<http://www.mcsuk.org/>



Find out more about Blue Marine Foundation at
<http://www.blumarinefoundation.com/>

14

© Educational Materials prepared by
www.footprinttothefuture.co.uk