

Session type: Workshop
Duration: 60 minutes
Key Stage: KS2

Session Overview

Your pupils will begin Plastic Seas by thinking about the importance of diet and nutrition for different animals. They will then be given Virtual Reality headsets to explore the Midnight Zone and discover what a marine animal might eat. Once completed, pupils take part in a structured discussion to identify the features and diet of a marine animal. They will then be given the recreated stomach contents of the marine animal and asked to investigate and classify their findings. This will include organic material such as fish and squid from a local supplier, as well as plastic waste from a local beach clean. Pupils will be asked to think about the origins of these materials, how they got there, and ultimately, what we can do to help protect our marine life.

At the end of this activity, the group will work together to build a food chain using marine organisms and demonstrate the transfer of energy up the trophic levels to the apex predator, as well as the potential for the accumulation of plastics and pollution through this process.

Learning Objectives

1. Learn about animals and what they eat
2. Investigate plastic pollution
3. Think about our impact on our oceans

Learning Outcomes

1. Recognise that plastic pollution can harm or kill marine animals
 2. Represent predator/prey relationships in a food chain
 3. Group the stomach contents of a marine apex predator
 4. Explain the transfer of energy and/or microplastics between trophic levels within a pyramid of biomass
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Pre-Visit Suggestions

- Learn about predator, prey relationships and food chains
- Classify a range of animals as herbivores, carnivores or omnivores
- Keep food diaries for a week to explore your own diet
- Research the diet of different animals and how this makes animals dependent on one another
- Investigate the diet of different marine animals and note how they are different to land animals

Post-Visit Suggestions

- Make a wall display about plastic in the oceans in school
 - Set up a Reduce, Reuse, Recycle scheme at home
 - Get involved in a NMA or local beach clean
 - Carry out a microbead investigation using a range of household products (<http://www.scienceinschool.org/content/microplastics-small-deadly>)
 - Hold a discussion to think about other impacts that humans have on the ocean and its' habitats
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To book, or for more information:

Call us now on 01752 275 233 or email learning@national-aquarium.co.uk

www.national-aquarium.co.uk

English: National Curriculum Links

Science:

1. Lower Key Stage 2: Working Scientifically

- a) Asking relevant questions and using different types of scientific enquiries to answer them
- b) Gathering, recording, and presenting data in a variety of ways to help in answering questions
- c) Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- d) Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- e) Using straightforward scientific evidence to answer questions or to support their findings

2. Upper Key Stage 2: Working Scientifically

- a) Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms
- b) Identifying scientific evidence that has been used to support or refute ideas or arguments

3. Key Stage 2: Animals, including humans

- a) Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat
- b) Construct and interpret a variety of food chains, identifying producers, predators and prey

4. Key Stage 2: Living things and their habitats

- a) Recognise that living things can be grouped in a variety of ways
- b) Recognise that environments can change and that this can sometimes pose dangers to living things

English:

5. Years 1-6: Spoken language

- a) Listen and respond appropriately to adults and their peers
- b) Articulate and justify answers, arguments and opinions
- c) Give well-structured descriptions, explanations and narratives for different purposes, including for expressing feelings
- d) Maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments
- e) Use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas

Welsh: National Curriculum Links

1. Skills across the Curriculum:

- a) Developing thinking
- b) Developing communication
- c) Developing ICT

2. Learning across the Curriculum:

- a) Personal and social education

Science: Key Stage 2

Enquiry Type: Classifying and identifying

3. Skills:

- a) **Planning:** Predict
- b) **Developing:** Observe and measure
Explaining
Conclusions and decisions
- c) **Reflecting:** Review success

4. Range:

- a) Interdependence of organisms
 - The environmental factors that affect what grows and lives in different environments
 - How humans affect the local environment
- b) The sustainable Earth
 - A consideration of what waste is and what happens to local waste that can be recycled and that which cannot be recycled

English: Key Stage 2

Strand: Oracy

5. Element: Developing and presenting information and ideas

- a) Speaking
- b) Listening
- c) Collaboration and discussion

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Ocean Literacy Principles

The Ocean Literacy Principles are international standards of education. The following Principles are achieved through this workshop:

- | | |
|--|-------------------------------------|
| 1) The Earth has one big ocean with many features | <input checked="" type="checkbox"/> |
| 2) The ocean and life in the ocean shape the features of Earth | <input type="checkbox"/> |
| 3) The ocean is a major influence on weather and climate | <input type="checkbox"/> |
| 4) The ocean makes Earth habitable | <input checked="" type="checkbox"/> |
| 5) The ocean supports a great diversity of life and ecosystems | <input checked="" type="checkbox"/> |
| 6) The ocean and humans inextricably interconnected | <input checked="" type="checkbox"/> |
| 7) The ocean is largely unexplored | <input checked="" type="checkbox"/> |

To find out more, please visit our website: <http://www.national-aquarium.co.uk/education/lessonideas/>.

NMA Generic Learning Outcomes

The Generic Learning Outcomes are a collection of conservation guiding principles that the NMA aim to achieve in all aspects of our work. The following GLOs are achieved through this workshop:

1). Knowledge & Understanding

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|--|-------------------------------------|
| a) Broaden knowledge of the marine environment and associated species. | <input checked="" type="checkbox"/> |
| b) Deeper understanding of the relationship between myself and the seas. | <input checked="" type="checkbox"/> |
| c) Raise awareness of the role that science plays in understanding our seas. | <input checked="" type="checkbox"/> |

2). Skills

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|--|-------------------------------------|
| a) Develop observation skills. | <input checked="" type="checkbox"/> |
| b) Formulate scientific questions based on observations. | <input type="checkbox"/> |
| c) Develop communication (speaking and listening) and social (learning together, working together, meeting people) skills. | <input checked="" type="checkbox"/> |

3) Attitudes & Values

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|--|-------------------------------------|
| a) Appreciate the value of the marine environment and develop respect and empathy for its inhabitants. | <input checked="" type="checkbox"/> |
| b) Promote a positive view of science and scientists. | <input checked="" type="checkbox"/> |
| c) Recognise that learning can be a positive process. | <input checked="" type="checkbox"/> |

4) Enjoyment, Inspiration, Creativity

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|--|-------------------------------------|
| a) Have fun with the National Marine Aquarium. | <input checked="" type="checkbox"/> |
| b) Be surprised by the variety of marine life. | <input type="checkbox"/> |
| c) Be inspired by the experience. | <input checked="" type="checkbox"/> |

5) Activity Behaviour and Progression

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|--|-------------------------------------|
| a) Motivation to go out and explore the marine environment further. | <input type="checkbox"/> |
| b) Take steps to further understanding of the relationship between myself, my actions and the sea. | <input checked="" type="checkbox"/> |
| c) Take action to reduce my negative impacts & increase my positive impacts on the marine environment. | <input checked="" type="checkbox"/> |

To find out more, please visit our website: <http://www.national-aquarium.co.uk/marine-conservation/>.

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