
Session type: Workshop

Duration: 60 minutes

Key Stage: KS2 and 3

Main Curriculum Link:

- **Key stage 2 Science:** Working scientifically
- **Key Stage 3 Science, Biology:** Interactions and interdependencies

Additional Curriculum Links:

- **Key stage 2 Science:** Animals, including humans
- **Key stage 2 Science:** Living things and their habitats
- **Key Stage 3 Science:** Working scientifically
- English Years 1-6: Spoken language

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 specific animals to think about, and work together to decide the most likely diets of their specific animal. Once complete, pupils take part in a structured discussion to identify the features and diet of a Hammerhead Shark. They will then be given the recreated stomach contents of the Hammerhead, and asked to investigate and classify their findings. This will include organic material such as fish and squid from the animal husbandry kitchen, as well as plastic waste. 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.

National Curriculum Links

Key Stage 2 Science: Working scientifically

- Lower KS2
 - Asking relevant questions and using different types of scientific enquiries to answer them
 - Gathering, recording, and presenting data in a variety of ways to help in answering questions
 - Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
 - Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
 - Using straightforward scientific evidence to answer questions or to support their findings
- Upper KS2
 - Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms

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- Identifying scientific evidence that has been used to support or refute ideas or arguments

Key Stage 2 Science: Animals, including humans

- 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 [Y3]
- Identify some animals have skeletons and muscles for support, protection and movement [Y3]
- Construct and interpret a variety of food chains, identifying producers, predators and prey [Y4]

Key Stage 2 Science: Living things and their habitats

- Recognise that living things can be grouped in a variety of ways [Y4]
- Recognise that environments can change and that this can sometimes pose dangers to living things [Y4]
- Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and difference, including micro-organisms, plants and animals [Y6]
- Give reasons for classifying plants and animals based on specific characteristics [Y6]

English Years 1-6: Spoken language

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

Key Stage 3 Science: Working scientifically

Scientific attitudes

- Understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
- Evaluate risks.

Experimental skills and investigations

- Ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
- Make predictions using scientific knowledge and understanding
- Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
- Apply sampling techniques

Key Stage 3 Science: Biology

Interactions and interdependencies

Relationships in an ecosystem

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- The interdependence of organisms in an ecosystem, including food webs and insect pollinated crops
 - How organisms affect, and are affected by, their environment, including the accumulation of toxic materials.
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Learning Outcomes

After this session, the groups should be able to:

- Conduct a scientific enquiry to explore marine animal diet and feeding behaviour
 - Raise and answer question of their own, based on scientific investigation
 - Present their findings to an audience and explain their reasoning
 - Recognise that animals have varied diets and be able to explain related words including predator, prey, carnivore, omnivore and herbivore
 - Recognize that some animals have been found to consume plastic waste and that this can have a strong negative effect on their health
 - Recognise that we can all do something to help reduce the amount of plastic in the ocean through Reducing, Recycling and Re-using our plastic products.
 - Physically examine a number of animal species, including fish, prawns, mussels and squid.
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Pre-Visit Suggestions

- Learn about predator, prey relationships and food chains (KS2)
- Classify a range animals as herbivores, carnivores & omnivores (KS2)
- Keep food diaries for a week to explore your own diet (KS2)
- Research the diet of different animals and how this makes animals dependent on one another (KS2/3)
- Investigate the diet of different marine animals and note how they are different to land animals (KS2/3)

Post-Visit Suggestions

- Set up a Reduce Reuse Recycle scheme or competition at school
- Make a wall display about plastic in the oceans
- Get involved in an MSC beach clean (<http://www.mcsuk.org/beachwatch/>)
- 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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