

Coral Calamity

Overview and Learning Outcomes

Session Overview:

Pupils begin Coral Calamity by using magnifying glasses to examine a range of coral colony skeletons. Through this activity corals are recognized as colonial animals, and colonies as being made of hundreds of individual coral polyps, each of which lives symbiotically with its internal algae. The group will be able then to recognise the coral key features. Pupils use our Virtual Reality Headsets take a dive in the Red Sea to see a real coral reef. Once completed, pupils are then given access to materials for the coral building activity, in which they build their own model corals and together we make a class reef in to which the groups can add creatures.

This hands-on scientific workshop allows the students to get fully immersed in coral reefs, their function, structure and conservation using a variety of different methods.

| | Foundation Phase: | Key Stage 2: | Key Stage 3: |
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| Learning Outcomes | Our younger learners will explore coral reefs as a vital habitat in our Ocean. They will discover what makes reef systems unique and how they are important nurseries and sanctuaries for a quarter of all fish species. | Our Junior pupils will discover what coral actually is, how it works and why coral reefs are such important ecosystems for marine life. We will begin to think about how climate change driven through our actions is threatening it's future survival. | Our Key Stage 3 pupils will explore the classification of corals, dive deeper into their structure and physiology. Exploring a coral reef system underwater, pupils will evaluate the threats to coral reef ecosystems. Finally we suggest simple changes that we can make to our daily living that helps to protect our corals. |
| | <ol style="list-style-type: none"> 1. Describe the structure of Coral in its three parts: animal, plant and rock 2. Demonstrate the diversity of habitats in a coral reef 3. Explain why it is important to protect coral reefs | <ol style="list-style-type: none"> 1. Describe the structure of Coral in its three parts: polyp, zooxanthellae and calcium carbonate 2. Understand that we impact coral reefs through our actions at home 3. Recommend actions to help protect coral reefs from harm | <ol style="list-style-type: none"> 1. Classify a selection of coral species 2. Hypothesise about where in the world coral reefs are found 3. Evaluate the impact of direct and indirect actions that humans have on the health of coral reefs |

| Pre-Workshop Ideas | Post-Workshop Ideas |
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| <ul style="list-style-type: none"> • Choose and research one coral reef in the world as a case study, build a fact file about it • Watch the BBC series Blue Planet, episode 6 (Coral Seas) | <ul style="list-style-type: none"> • Write a newspaper report about a coral reef you have researched: what is it and is it important? • Make and decorate your own coral reef display at school using clay, or other craft materials • Have a look in newspapers to see if there is any up-to-date news on climate change and how it is affecting the environment • Think about the impact that humans have on other habitats around the world, both on the land or in the ocean. Is there anything you can do to help? |

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Welsh Curriculum links

National Curriculum for Wales 2022: SCIENCE AND TECHNOLOGY

Being curious and searching for answers helps further our understanding of the natural world and helps society progress.

| | Progression Step 2: | Progression Step 3: | Progression Step 4: |
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| Models | | | I can make and use physical, mathematical and conceptual models to explain and predict the behaviour of real-world systems. |
| Evaluating Evidence | | I can engage with scientific and technological issues to inform my own opinions. | I can select relevant scientific knowledge from a range of evidence sources to evaluate claims presented as scientific facts. I can review my own opinions based on new scientific evidence. |
| Impact of Science & Technology | I can recognise that what I do, and the things I use, can have an impact on my environment and on living things. | I can take responsible actions in my daily life that take into account the impact on the environment and others. I can describe the positive and negative impacts of Science and Technology in my everyday life. | I can explain why we sometimes choose to act in ways that impact negatively on the environment. I can describe the positive and negative impacts of Science and Technology on society. |

The world around us is full of living things which depend on each other for survival.

| | Progression Step 2: | Progression Step 3: | Progression Step 4: |
|-----------------------------|--|---|--|
| Diversity of Life | I can recognise and compare some features of living things and discuss similarities and differences. I can compare and contrast how living things develop and have offspring. I can explore how different habitats provide resources for living things to survive. | I can use scientific criteria to describe the features of living things and use these to classify. I can describe how living things have changed over generations. I can describe how living things compete for specific resources and depend on each other for survival. | I can explain how adaptation of organisms can affect their chances of survival. I can explain how reproduction, mutations and the environment can lead to variation. I can explain the interdependence of organisms in an ecosystem and how this leads to survival. |
| Biological Processes | I can identify parts of living things and their function. | I can discuss the positive and negative impact that changes in the environment and human activity have on living things and habitats. I can name and describe the functions of organs within my body and in plants. I can describe how some organs work together to perform a function. | I can analyse how environmental factors and human activity can contribute to changes in habitats and population size. I can describe cells within organisms and relate structure to function. I can describe biological processes within organisms and explain how these contribute to their development and survival. |

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Ocean Conservation links

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
2. The ocean and life in the ocean shape the features of Earth
3. The ocean is a major influence on weather and climate
4. The ocean makes Earth habitable
5. The ocean supports a great diversity of life and ecosystems
6. The ocean and humans inextricably interconnected
7. The ocean is largely unexplored

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

OCT Generic Learning Outcomes

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

1). Knowledge & Understanding

- A) Broaden knowledge of the marine environment and associated species.
- B) Deeper understanding of the relationship between myself and the seas.
- C) Raise awareness of the role that science plays in understanding our seas.

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2). Skills

- A) Develop observation skills.
- B) Formulate scientific questions based on observations.
- C) Develop communication (speaking and listening) and social (learning together, working together, meeting people) skills.

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3) Attitudes & Values

- A) Appreciate the value of the marine environment and develop respect and empathy for its inhabitants.
- B) Promote a positive view of science and scientists.
- C) Recognise that learning can be a positive process.

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4) Enjoyment, Inspiration, Creativity

- A) Have fun with the National Marine Aquarium.
- B) Be surprised by the variety of marine life.
- C) Be inspired by the experience.

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5) Activity Behaviour and Progression

- A) Motivation to go out and explore the marine environment further.
- B) Take steps to further understanding of the relationship between myself, my actions and the sea.
- C) Take action to reduce my negative impacts & increase my positive impacts on the marine environment.

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