



National Marine Aquarium School Outreach Guide

2023-2024

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www.national-aquarium.co.uk

Welcome

Hello, and welcome to the Ocean Conservation Trust (OCT) Outreach Activities for Schools Guide 2023-2024.

This guide describes the OCT's Ocean-linked activities made available to teachers and educational event organisers at venues other than the National Marine Aquarium, including:

- Education institutions (e.g. Schools, Colleges & Universities)
- Outdoor environments (e.g. Beaches, estuaries & rocky shores)
- Third party private hire venues (e.g. Scout halls, civic centres & libraries)
- Large scale events & conferences (e.g. national exhibitions, conferences & student events)

The National Marine Aquarium (NMA) is the UK's largest aquarium, located in Britain's Ocean City, Plymouth, on the shores of the UK's first National Marine Park: Plymouth Sound. We are home to over 4,000 marine animals and are visited by around 300,000 people per year. It is run by The Ocean Conservation Trust (OCT); a UK based conservation charity established to restore and protect the Ocean. Our work is centred around people and positive action, focusing on inspiring Ocean advocacy through connections with nature.

As well as an overview of our outstanding Aquarium exhibits, the OCT Outreach Activities for Schools Guide also features full session descriptions of our suite of 90-minute workshops and educational tours. Each workshop and tour is based on a different marine topic, tailored around a set of learning outcomes and linked to the National and EYFS curriculums.

The OCT Outreach Activities for School Guide is one of three documents which collectively describe the OCT Learning Programme. The OCT Learning Programme works across the country supporting delivery of the National Curriculum through the context of marine conservation, as well as internationally on a range of globally significant educational themes. The full series includes:

- **OCT Aquarium Visits for Schools Guide** – *activities available through the Learning Programme as part of a physical visit to the National Marine Aquarium*
- **OCT Outreach Activities for Schools Guide** – *relating to the support or delivery of physical events not within the grounds of the National Marine Aquarium, for example at a school or educational event venue*
- **OCT Virtual Experiences for Schools Guide** – *relating to the support or delivery of digital, and online learning activities which can be accessed remotely through internet services*

We believe that everyone, everywhere is connected to the Ocean. It is our hope that you will find the activities described in this document to be valuable tools in your role as an educator, whatever subject you teach or age of your students, and look forward to working with you soon.

Sincerely,

The National Marine Aquarium Schools Team

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‘Ocean Literacy’ for all

The Ocean is the largest living space on the planet and sustains countless plants and animals in a wide variety of habitats. Scientists all over the world are increasingly beginning to understand the role that the Ocean plays in keeping our planet, and its inhabitants alive and healthy. In fact, it is considered so important to the health of the planet that the United Nations have declared 2021 – 2030 as the ‘Decade of Ocean Science for Sustainable Development’.

Did you know:

- The Earth has one big Ocean with many features?
- The Ocean and life in the Ocean shape the features of Earth?
- The Ocean is a major influence on weather and climate?
- The Ocean makes the Earth habitable?
- The Ocean supports a great diversity of life and ecosystems?
- The Ocean and humans are inextricably interconnected?
- The Ocean is largely unexplored?

The seven statements above are known as the ‘**Ocean Literacy Principles**’. These seven principles, along with the more detailed breakdowns of each are considered the foundation of an...

“Understanding of the Ocean’s influence on us, and our influence on the Ocean”

For information on which Principles are linked to each of our workshops, see appendix 1

Ocean in the classroom?

The fascinating world under the waves has always held huge appeal to children and young learners; inspiring dreams and laying the foundations of life-long connections to the natural world for millions of people across the globe.

As concern around climate change and interest in the natural world in general continue to proliferate throughout society, the need for a deeper awareness and understanding of our relationship with the natural world becomes clear.

An academic grounding in the fundamental principles of the natural world is required to equip our children and young people with a necessary understanding of the natural systems and processes of which we are a part. To this end, the Ocean serves as a powerful way of illustrating topics and providing a context for, the National Curriculum in the classroom.

Equally important is the ability to manage and balance conversation around the challenge of climate change. Eco-anxiety amongst young people is a phenomenon unseen among previous generations. It must be addressed through appropriate levels of fact based, yet emotionally sensitive, support from schools and environmental professionals working together to deliver empowering, inspiring messaging for our young learners. Association with the Ocean has consistently been linked to increases in positive mood and reduction of negative mood and stress amongst young people.

With such a wide ranging and powerful impact on young people’s wellbeing, understanding of the world & formation of aspirations, it is clear that Ocean belongs in the classroom.

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Educational Outreach for Schools

Our Schools Outreach Programme has been developed to deliver the same high quality, industry leading standards of curriculum linked education as our Aquarium Visits programme, without the complications of leaving the classroom. Outreach experiences are available to student groups of any age, at venues other than the National Marine Aquarium.

Activity Options

When it comes to outsourcing your education, we understand that finding the right fit is important, and that's why we've put together a tried and tested outreach menu that we're confident can cater for any occasion. Our outreach programme is comprised of a selection of activities that can be purchased individually or as a package of successive activities to cover a full day. For example:

| | | | | |
|-----------------|---------------|---------------|---------------|---------------|
| Activity | Workshop 1 | Workshop 2 | -Lunch- | Workshop 3 |
| Timing | 09:00 – 10:30 | 11:00 – 12:30 | 12:30 – 13:15 | 13:15 – 14:45 |

| | | | | |
|-----------------|---------------|---------------|---------------|---------------|
| Activity | Workshop 1 | -Lunch- | Workshop 2 | Show |
| Timing | 10:00 – 11:30 | 11:30 – 12:30 | 12:30 – 14:00 | 14:30 – 15:00 |

We offer 4 types of outreach engagement:

Classroom workshops (32 students / £150) – a selection of our award winning, 90-minute, curriculum-linked workshops which we're able to deliver at indoor venues, including classrooms. Typically, workshops include one or more of the following elements:

- Artefact handling
- Science experiments
- Arts & craft design activities

Outdoor learning workshops

(32 students / £150) – Similar to the Classroom workshops in duration and themes, these Learning Outside the Classroom certified, 90-minute activities have been developed specifically to enhance school trips to the coast.

STEM shows & assemblies

(no audience size limit / £100) – Our STEM shows have been developed as real crowd pleasers, ideally suited to events with large audiences, or as an exciting conclusion to a day of Classroom workshops these themed stage shows come highly recommended. Typically, our STEM shows include the following elements:

- Mass audience participation
- Specific volunteer opportunities
- STEM demonstrations

Stand operation / mobile busking & event stewarding

(Price on enquiry) - From careers fairs to STEM showcases, our team are experts at standing out from the crowd and inspiring students with tales from the Aquarium and 1:1 engagement that give a glimpse into the exciting world of Marine Science. Ask for further details

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Activity selection

Our Outreach Experiences have been developed to give students a ‘deep dive’ on a wide range of topics linked to the Ocean. Reviewed and updated annually, our activity selection reflects many of the most current themes in the field of Ocean Conservation including Ocean Literacy, marine citizenship, and development of Pro-Ocean Behaviour. Each activity has also been closely linked to the National Curriculum in England.

Activity planning tables

Our Outreach activities cover a variety of key stages, curriculum areas and subject topics. This guide contains three tables to help you find the perfect option for your group.

| Activities | EYFS | Key Stage One | | Key Stage Two | | | | Key Stage Three | | | Key Stage Four |
|---|---------------------------|---------------|--------|---------------|--------|--------|--------|-----------------|--------|--------|----------------|
| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10* |
| | | | | | | | | | | | |
| School / Classroom workshops | Climate Conundrum | | | | | | | | | | |
| | Habitat Hats | | | | | | | | | | |
| | Inventafish | | | | | | | | | | |
| | Ocean Scientist | | | | | | | | | | |
| | Plastic Seas | | | | | | | | | | |
| | Under the Knife | | | | | | | | | | |
| STEM Shows | Underwater Evolution | | | | | | | | | | |
| | An Animal Like Me | | | | | | | | | | |
| | Climate Heroes | | | | | | | | | | |
| Outdoor Learning (April – October only) | The Mating Game | | | | | | | | | | |
| | Beach Art (& clean) | | | | | | | | | | |
| | Plastic Seas on the Beach | | | | | | | | | | |
| Bespoke activities | Rockpool Safari | | | | | | | | | | |
| | Rockpool Survey | | | | | | | | | | |
| | Careers Talk | | | | | | | | | | |
| Activity Stand | | | | | | | | | | | |

Activity Key Stage matrix: Displays the activities according to their target key stage.

| Activities | Curriculum Subjects | | | | Topics | | | | |
|---|---------------------------|-----|------------|----------|---------|----------------------------|----------------|-------------------|--|
| | Science | Art | Humanities | Literacy | Careers | Plymouth Sound Marine Park | Climate change | Plastic pollution | |
| School / Classroom workshops | Climate Conundrum | X | | X | | | X | | |
| | Habitat Hats | X | X | | | X | | | |
| | Inventafish | X | X | | | | | | |
| | Ocean Scientist | X | | | | X | | | |
| | Plastic Seas | X | | | | | | X | |
| | Under the Knife | X | | | | X | | | |
| STEM Shows | Underwater Evolution | X | | | | | X | | |
| | An Animal Like Me | X | | | | | X | | |
| | Climate Heroes | X | | | | | X | | |
| Outdoor Learning (April – October only) | The Mating Game | X | | | | | X | | |
| | Beach Art (& clean) | | X | X | | | | X* | |
| | Plastic Seas on the Beach | X | | | | | | X* | |
| Bespoke activities | Rockpool Safari | X | | X | | X* | | | |
| | Rockpool Survey | X | | X | | X* | | | |
| | Careers Talk | X | | | | X | | | |
| Activity Stand | X | | | | X | | | | |

Activity Topic matrix: Displays the activities according to their key topics and themes.

| Activities | The Earth has one big Ocean with many features. | The Ocean and life in the Ocean shape the features of Earth. | The Ocean is a major influence on weather and climate. | The Ocean makes the Earth habitable. | The Ocean supports a great diversity of life and ecosystems | The Ocean and humans are inextricably interconnected | The Ocean is largely unexplored. |
|---|---|--|--|--------------------------------------|---|--|----------------------------------|
| | School / Classroom workshops | Climate Conundrum | X | | X | X | X |
| Habitat Hats | | X | | | X | | |
| Inventafish | | | | | X | | X |
| Ocean Scientist | | X | | | X | | |
| Plastic Seas | | X | | | X | | |
| Under the Knife | | | | | X | | |
| STEM Shows | Underwater Evolution | X | X | | X | | |
| | An Animal Like Me | | | | X | X | X |
| | Climate Heroes | X | X | X | X | X | |
| Outdoor Learning (April – October only) | The Mating Game | | | | X | | |
| | Beach Art (& clean) | X | | | | X | |
| | Plastic Seas on the Beach | X | | | X | | |
| Bespoke activities | Rockpool Safari | X | | | X | X | |
| | Rockpool Survey | X | | | X | X | |
| | Careers Talk | | | | X | X | X |
| Activity Stand | | | | | | | |

Activity Ocean Literacy matrix: Displays the activities according to the Ocean Literacy themes each contain.

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Activity Topic matrix

This table displays the activities according to their key topics and themes. Click on the name of any activity to be taken directly its Programme of Study for further information about what is involved.

| Activities | | Curriculum Subjects | | | | Topics | | | |
|--|---------------------------|---------------------|-----|------------|----------|---------|----------------------------|----------------|-------------------|
| | | Science | Art | Humanities | Literacy | Careers | Plymouth Sound Marine Park | Climate change | Plastic pollution |
| School / Classroom workshops | Climate Conundrum | X | | X | | | | X | |
| | Habitat Hats | X | X | | | | X | | |
| | Inventafish | X | X | | | | | | |
| | Ocean Scientist | X | | | | X | | | |
| | Plastic Seas | X | | | | | | | X |
| | Under the Knife | X | | | | X | | | |
| | Underwater Evolution | X | | | | | | X | |
| STEM Shows | An Animal Like Me | X | | | | | | | |
| | Climate Heroes | X | | | | | | X | |
| | The Mating Game | X | | | | | | X | |
| Outdoor Learning (April – October only) | Beach Art (& clean) | | X | X | | | | | X* |
| | Plastic Seas on the Beach | X | | | | | | | X* |
| | Rockpool Safari | X | | X | | | X* | | |
| | Rockpool Survey | X | | X | | | X* | | |
| Bespoke activities | Careers Talk | X | | | | X | | | |
| | Activity Stand | X | | | | X | | | |

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Activity Ocean Literacy matrix

This table displays the activities according to the Ocean Literacy themes each contain. Click on the name of any activity to be taken directly its Programme of Study for further information about what is involved.

| Activities | | The Earth has one big Ocean with many features. | The Ocean and life in the Ocean shape the features of Earth. | The Ocean is a major influence on weather and climate. | The Ocean makes the Earth habitable. | The Ocean supports a great diversity of life and ecosystems | The Ocean and humans are inextricably interconnected | The Ocean is largely unexplored. |
|--|---------------------------|---|--|--|--------------------------------------|---|--|----------------------------------|
| School / Classroom workshops | Climate Conundrum | X | | X | X | X | X | |
| | Habitat Hats | X | | | | X | | |
| | Inventafish | | | | | X | | X |
| | Ocean Scientist | X | | | | X | | |
| | Plastic Seas | X | | | | X | | |
| | Under the Knife | | | | | X | | |
| | Underwater Evolution | X | X | | X | X | | |
| STEM Shows | An Animal Like Me | | | | | X | X | X |
| | Climate Heroes | X | X | X | X | | X | |
| | The Mating Game | | | | | X | | |
| Outdoor Learning (April – October only) | Beach Art (& clean) | X | | | | | X | |
| | Plastic Seas on the Beach | X | | | | X | | |
| | Rockpool Safari | X | | | | X | X | |
| | Rockpool Survey | X | | | | X | X | |
| Bespoke activities | Careers Talk | | | | | X | X | X |
| | Activity Stand | | | | | | | |

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Classroom Workshop Programmes of Study

Each workshop has its own Programme of Study (POS) these provide a more detailed overview of the contents, curriculum links, and learning outcomes for each of the workshops available as part of the OCT Learning programme.

Each POS contains the following information:

- **Workshop Title** – Name of the workshop
- **Duration** – Expected run time
- **Key Stage** - Intended audience age (based on curriculum links, but not a requirement)
- **Availability** – Notes on seasonal availability where applicable
- **Pricing tier** – pricing per student
- **Workshop Overview** – Description of how the workshop flows
- **Learning Objectives** – Describes what students will do during the workshop
- **Learning Outcomes** –What students will be able to do after the workshop
- **Pre & Post visit suggestions** – Supporting activities ideas
- **EYFS & National Curriculum links** – Key points of the NC covered by this workshop

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Fantastic Fossils
Duration: 90 minutes
Key Stage: EYFS - KS1 (Year 1)
Availability: All year
Pricing tier: Standard Workshop

Session Overview
Fantastic Fossils presents opportunities for your pupils to explore interactive sensory activities and make exciting discoveries. The activities encourage group co-operation, and verbalization of their ideas. Pupils handle real life fossils from the ocean and imagine the animals they came from. In small groups, pupils use tools to unearth fossils, piece them back together, and identify other items they might unearth in the sand. We take a closer look at how extinct animals might have looked, and finally get creative with textures to make their own fossils from modelling clay and colour-in images to create 3D models of extinct animals using augmented reality software on [hand-held](#) tablets.

Learning Objectives

1. Learn about fossils and where they come from
2. Discover and reconstruct a creature from the ancient seas
3. Find out what we can learn about animals from fossils

Learning Outcomes


1. Describe the range of shapes, sizes and textures that fossils come in
2. Explain how fossils are formed
3. Use your knowledge of extant organisms to formulate an idea of what an extinct organism may have looked like

Pre-Visit Suggestions

- Research prehistoric marine animals (there are lots of images of prehistoric fish online)
- Go for a nature walk in your school, observing and noting down any live animals, things that were alive (e.g. leaves, pinecones etc.), and things that have never been alive

Post-Visit Suggestions

- Collect & explore different rock types, observe & comment on differences between them
- Look up other examples of prehistoric marine animals and create your own interpretations
- Make and paint your own fossils at school using a Plaster of Paris kit



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Climate Conundrum

Duration: 90 minutes

Key Stage: KS2

Availability: All year

Session type: Workshop



Session Overview

Pupils begin Climate Conundrum by learning all about the properties, reproduction, and growth of coral. After examining a range of coral colony skeletons, key features will be identified, and the corals will be grouped using a classification key. These identification skills will then be put to the test on a Virtual Reality survey dive! Next conditions where corals grow will be discussed, locating which parts of the world's oceans are suitable for coral to live. The pupils will then undertake three practical experiments; the first is to understand the impact of carbon dioxide on Ocean pH, the second looks at how carbon dioxide enters the ocean, and the final experiment explores the effects of this. The experiments will culminate in a discussion on how we can help to combat climate change.

Learning Objectives

1. Explore corals skeletons and group them using a classification key
2. Carry out some experiments to understand how we impact coral reefs
3. Discuss ways in which we can reduce our carbon footprint

Learning Outcomes

1. Classify coral skeletons by using a dichotomous key
2. Understand how we impact coral reefs through our actions at home
3. Understand the effects of carbon dioxide on coral reefs

Pre-Visit Suggestions

- Choose and research a coral reef as a case study, build a fact file about it
- Watch the BBC series Blue Planet, episode 6 (Coral Seas)

Post-Visit Suggestions

- Write a newspaper report about a coral reef: what is it and is it important?
- Make & 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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National Curriculum Links

1. Science: Key Stage 2: Working Scientifically

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

2. Science: Key Stage 2: Animals, including humans

- a) Identify that humans and some other animals have skeletons and muscles for support, protection and movement [Y3]

3. Science: Key Stage 2: Living things and their habitats

- a) Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment [Y4]
- b) Recognise that environments can change and that this can sometimes pose dangers to living things [Y4]
- c) Describe the life process of reproduction in some plants and animals [Y5]
- d) Describe how living things are classified into broad groups according to common observable characteristics & based on similarities and differences, including micro-organisms, plants & animals [Y6]
- e) Give reasons for classifying plants and animals based on specific characteristics [Y6]

4. Geography: Key Stage 2: Geographical skills and fieldwork

- a) Use maps, atlases, globes, and digital/computer mapping to locate countries and describe features studied

5. Geography: Key Stage 2: Human and physical geography

- a) Physical geography, including climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle

6. English: Years 1-6 Spoken language

- a) Listen and respond appropriately to adults and their peers
- b) Ask relevant questions to extend their understanding and knowledge
- c) Articulate and justify answers, arguments and opinions
- 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

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Habitat Hats

Duration: 60-90 minutes

Key Stage: KS1/LKS2

Availability: All year

Session type: Workshop



Session Overview

Students will start by discussing the range of habitats they observed in the Aquarium and how they provide animals with what they need to survive. They will then design their chosen habitat on a head band using a range of different texture boards and crayons before creating their own animals to add onto the headband. Students will be encouraged to think about how these creatures are suited to their habitat, but also to consider predator-prey relationships when completing their drawings. Students will then have the option of adding any additional decorations from our range of recycled craft materials.

At the end of this activity, the students will have the opportunity to examine each other's work and offer positive critique. They will also have the chance to present and explain the reasoning behind their design in front of their peers.

Learning Objectives (in this session your students will...)

1. Identify a variety of sea creatures and name the habitats they live in
2. Explore how sea creatures are suited to their habitats
3. Make a habitat-themed craft, using a range of art materials

Learning Outcomes (following this session your students will be able to...)

1. Compare and contrast habitats which can be found under the sea
2. Describe how animals are suited to different marine environments
3. Explain how animals can be grouped according to diet using scientific terminology

Pre-Visit Suggestions

- Learn about different habitats on land, ready to compare to Ocean habitats when visiting the Aquarium
- Challenge the pupils to spot animals around the school playgrounds and their gardens at home, identifying their habitats

Post-Visit Suggestions

- Use a world map to identify where habitats seen at the Aquarium can be found
- Identify similarities & differences in how creatures are suited to life on land & in the Ocean
- Design Ocean food chains using inspiration from their Aquarium visit

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National Curriculum Links

1. English Years 1-6: Spoken language

- a) Listen and respond appropriately to adults and their peers
- b) Ask relevant questions to extend their understanding and knowledge
- 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

2. Science: Key Stage 1 & 2: Animals, including humans

- a) Describe and compare the structure of a variety of common animal (fish, amphibians, reptiles, birds and mammals, including pets)
- b) Identify and name a variety of common animals that are carnivores, herbivores and omnivore
- c) Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)
- d) 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]
- e) Construct and interpret a variety of food chains, identifying producers, predators and prey [Y4]

3. Science: Key Stage 1 & 2: Living things and their habitats

- a) Identify that most living things live in habitats to which they are suited and describe
- b) How different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
- c) Identify and name a variety of plants and animals in their habitats, including micro-habitats
- d) Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food
- e) Recognise that living things can be grouped in a variety of ways [Y4]

4. Art and Design: Key Stage 1

- a) Produce creative work, exploring their ideas and recording their experiences
- b) To use a range of materials creatively to design and make products
- c) To develop a wide range of art and design techniques using colour, pattern, texture, line, shape, form, and space

5. Art and Design: Key Stage 2

- a) To create sketch books to record their observations and use them to review and revisit ideas
- b) To improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]

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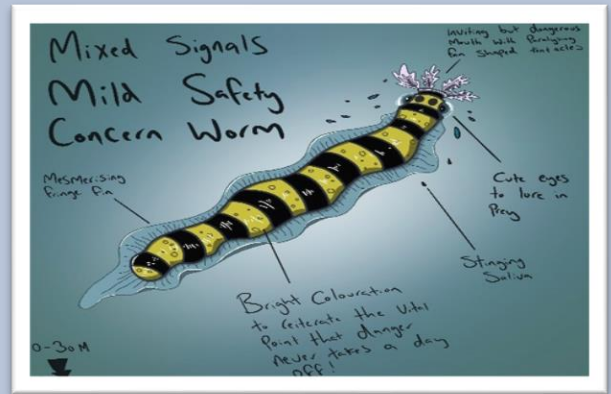
Inventafish

Duration: 90 minutes

Key Stage: KS2 & KS3

Availability: All year

Session type: Workshop



Session Overview

Students will begin this workshop by using our Virtual Reality headsets to extend their exploration of the Ocean into the midnight zone. Here they will come face to face with animals that have strange, otherworldly adaptations unique to the permanent darkness of the Ocean depths.

Upon their return to the surface students will be encouraged to consider how the animals they encountered are suited to their environment, and helped to taxonomically classify them by our Schools Officer. Students will then use these discussions as inspiration to design their own perfectly adapted sea-creatures using an array of features from any animals they can imagine. Once complete students will have the opportunity to present and explain the reasoning behind their design, whilst testing which of their creations would be most suited to survive in changing environments.

Learning Objectives (in this session your students will...)

1. Identify a range of animal species and groups found in the Ocean
2. Explore the physical and behavioural adaptations each has to its natural habitat
3. Create a unique 'composite creature' using knowledge of adaptations and classification throughout the design process

Learning Outcomes (following this session your students will be able to...)

1. Classify any vertebrate according to its physical features
2. Describe how animals are well suited to their environment using scientific terminology
3. Explain how environmental changes may leave animals less well adapted to compete

Pre-Visit Suggestions

- Learn about a range of different habitats, both terrestrial and marine
- Classify a range of common vertebrates and invertebrates
- Research the adaptations of different animals, discovering how they help them to survive

Post-Visit Suggestions

- Create a dichotomous key to help classify the creatures into different groups
- Identify similarities and differences between the students' creatures that live in the same habitat, discussing adaptations which are both physical and behavioural
- Identify which of their creations are herbivores, carnivores, and omnivores, and use this knowledge to create their own food chains and webs

To book, or for more information:

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

National Curriculum Links

1. Art and Design: Key Stage 2

- a) Produce creative work, exploring their ideas and recording their experiences
- b) Create sketch books to record observations & use them to review and revisit ideas
- c) Improve mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]

2. Art and Design: Key Stage 3

- a) Use a range of techniques to record their observations in sketchbooks, journals, and other media as a basis for exploring their ideas
- b) Analyse and evaluate their own work, and that of others, in order to strengthen the visual impact or applications of their work

3. Science: Key Stage 2: Animals, Including Humans

- a) Identify that humans and some other animals have skeletons and muscles for support, protection and movement [Y3]

4. Science: Key Stage 2: Living Things & Their Habitats

- a) Recognise that living things can be grouped in a variety of ways [Y4]
- b) Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants, and animals [Y6]

5. Science: Key Stage 2: Evolution and inheritance

- a) Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution [Y6]

6. Science: Key Stage 3: Interactions and Interdependencies

- a) How organisms affect, and are affected by, their environment, including the accumulation of toxic materials

7. Science: Key Stage 3: Genetics and Evolution

- a) The variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection
- b) Changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete and reproduce, which in turn may lead to extinction

8. English Years 1-6: Spoken Language

- a) Ask relevant questions to extend their understanding and knowledge
- b) Give well-structured descriptions, explanations, and narratives for different purposes, including for expressing feelings
- c) Use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas

9. English: Key Stage 3: Spoken English

- a) Using English confidently in a range of contexts, including classroom discussion
- b) Giving short speeches & presentations, expressing their ideas & keeping to the point
- c) participating in formal debates and structured discussions, summarising and/or building on what has been said

To book, or for more information:

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Ocean Scientist

Duration: 60-90 minutes

Key Stage: KS1

Availability: All year

Session type: Workshop



Session Overview

Our 'Ocean Scientist' workshop is the perfect introduction to Marine Science! Your students will start by working in groups to conduct an experiment on the qualities of sea water. 'Saltwater Eggs' gives pupils the chance to investigate the relationship between salt and buoyancy whilst allowing them to explore and raise questions of their own based on their observations. The group will then investigate a variety of real Ocean specimens, including mermaid's purses, shark jaws and turtle shells, discussing what animal they are from and their function. The final challenge, 'Picking Plankton', is a fun filled practical exploration of the feeding techniques used by basking sharks, humpback whales, butterflyfish, and seahorses to catch plankton. Pupils will have to record the data collected from the four different tools, but who uses what, and how do they work?

Learning Objectives (in this session your students will...)

1. Carry out a scientific experiment using appropriate terminology
2. Handle real Ocean artefacts such as shark jaws and whale bones
3. Explore animal feeding techniques through a practical investigation

Learning Outcomes (following this session your students will be able to...)

1. Give examples of how a variety of marine animals are suited to their Ocean habitat
2. Formulate questions and develop simple investigations to determine answers

Pre-Visit Suggestions

- Use a world map to investigate how all the Oceans in the world are connected to make one big Ocean
- Choose a variety of different animals and try to place them on the map, exploring the idea that different animals need different environmental conditions to survive
- Research adaptations that animals have and think about how they help them to survive

Post-Visit Suggestions

- Investigate the water cycle and consider how fresh and saltwater habitats are connected
- Continue the Saltwater Eggs experiment in the class – what other objects can you find which sink or float in different concentrations of salt solution?

To book, or for more information:

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www.national-aquarium.co.uk

EYFS Statutory Framework Links

1. Communication and Language: ELG: Listening, Attention and Understanding

- a) Listen attentively and respond to what they hear with relevant questions, comments & actions when being read to & during whole class discussions & small group interactions
- b) Make comments about what they have heard & ask questions to clarify understanding

2. Communication and Language: ELG: Speaking

- a) Participate in small group, class, and one-to-one discussions, offering their own ideas
- b) Offer explanations for why things might happen, using recently introduced vocabulary

3. Physical Development: ELG: Fine Motor Skills

- a) Use a range of small tools, including scissors, paint brushes and cutlery

4. Understanding the World: ELG: The Natural World

- a) Explore the natural world around them, making observations
- b) Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences

National Curriculum Links

1. English Years 1-6: Spoken language

- a) Listen and respond appropriately to adults and their peers
- b) Ask relevant questions to extend their understanding and knowledge
- c) Articulate and justify answers, arguments, and opinions
- d) Maintain attention and participate actively in collaborative conversations

2. Science: Key Stage 1: Working Scientifically

- a) Asking simple questions & recognising that they can be answered in different ways
- b) Observing closely, using simple equipment. Performing simple tests
- c) Identifying and classifying
- d) Using their observations and ideas to suggest answers to questions

3. Science: Key Stage 1: Animals including humans

- a) Identify and name a variety of common animals including fish, amphibians, reptiles, birds, and mammals
- b) Identify & name a variety of animals that are carnivores, herbivores, & omnivores
- c) Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)
- d) Find out about and describe the basic needs of animals, including humans

4. Science: Key Stage 1: Living things and their habitats

- a) Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
- b) Identify & name a variety of plants & animals in their habitats & microhabitats

5. Mathematics: Key Stage 1: Measurement

- a) Measure and begin to record capacity and volume & Time
- b) Choose and use appropriate units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit

To book, or for more information:

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Plastic Seas

Duration: 90 minutes

Key Stage: KS2 & KS3

Availability: All year

Session type: Workshop



Session Overview

Your pupils will begin Plastic Seas by discussing how scientists make new discoveries. They will be provided with Virtual Reality headsets, allowing them to explore the Midnight Zone and discover what creatures of the deep might eat. Once completed, pupils will 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 recent beach clean.

To conclude, students will explore how they are able to make positive changes to combat plastic pollution, with a focus on 'Refuse, Reduce, Reuse, Recycle.' One way in which students will do this is to complete a shopping challenge, considering what materials their desired items are made from, how many times the item can be used and the overall eco-friendliness of the product, finally identifying the most ocean positive choice to make.

Learning Objectives (in this session your students will...)

1. Learn about animal food chains
2. Investigate the issue of plastic pollution
3. Explore ways in which we can have a positive impact on the Ocean

Learning Outcomes (following this session your students will be able to...)

1. Represent predator/prey relationships in a food chain
2. Recognise that plastic pollution can harm or kill marine animals
3. State ways that individuals can act to combat plastic pollution in the Ocean

Pre-Visit Suggestions

- Classify a range of animals as herbivores, carnivores or omnivores
- Keep food diaries for a week to explore your own diet
- Research different animals' diets & how this makes animals dependent on one another

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
- Host a discussion to think about impacts that humans have on the ocean and its' habitats.

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National Curriculum Links:**1. Science: Lower Key Stage 2: Working Scientifically**

- a) Ask relevant questions & using different types of scientific enquiries to answer them
- b) Gather, record, and present 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) Use straightforward scientific evidence to answer questions or support findings

2. Science: Upper Key Stage 2: Working Scientifically

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

3. Science: 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, identify producers, predators & prey

4. Science: 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

5. Science: KS3 Working Scientifically: Experimental skills & investigations

- a) Ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
- b) Make predictions using scientific knowledge and understanding

6. Science: KS3 Biology: Interactions and interdependencies

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

7. English Years 1-6: Spoken language

- a) Articulate and justify answers, arguments and opinions
- b) Maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments
- c) Use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas

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Under the Knife

Duration: 90 minutes

Key Stage: KS2 & 3

Availability: All year

Session type: Workshop



Session Overview

This guided dissection workshop gives students an opportunity to gain an in depth understanding of the biology, anatomy and behaviour of a squid in real detail. Through a process of sequential dissection, observation and comparison students will identify organs widely found across the *Animalia* kingdom, including in humans, such as hearts and eyes. Students will also explore the role and function of a range of features unique to the *Cephalopoda* including ink sacks, and the remnants of internalised shells.

Students will work in groups of 5 to complete the dissections under the direction of one of our Schools Officers who will draw on their detailed knowledge of squid behaviour and life cycles to make sure no questions go unanswered.

Learning Objectives (in this session your students will...)

1. Conduct a scientific dissection
2. Explore the internal and external anatomy of a squid, identifying its key features
3. Discover how a squid is uniquely adapted to life in the Ocean

Learning Outcomes (following this session your students will be able to...)

1. Recognise the moral implications of carrying out a dissection
2. Identify key anatomical features of a squid and compare to humans
3. Locate and explain the function of the respiratory, circulatory and digestive systems

Pre-Visit Suggestions

- Learn about classification of different invertebrate and vertebrate groups
- Research different marine habitats and identify key adaptations that animals need to survive in those habitats
- Research what other animals can be found in these habitats and construct a food chain/web

Post-Visit Suggestions

- Draw a scientific diagram of a squid based on what pupils learned in the workshop
- Compare the anatomy of a squid to an animal in a different habitat, identifying key similarities and differences. Investigate how each are adapted to suit their habitats
- Carry out research on different careers that involve working with animals

To book, or for more information:

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www.national-aquarium.co.uk

National Curriculum Links

1. Science: Key Stage 2: Working Scientifically

- a) Asking relevant questions & using different types of scientific enquiries to answer them
- b) Setting up simple practical enquiries, comparative and fair tests
- c) Making systematic observations and taking accurate measurements using units, using a range of equipment, including thermometers and data loggers
- d) Using straightforward scientific evidence to answer questions or support findings
- e) Pay attention to objectivity & concern for accuracy, precision, repeatability
- f) Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety

2. Science: 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) Identify that humans and some other animals have skeletons and muscles for support, protection and movement
- c) Describe the simple functions of the basic parts of the digestive system in humans
- d) Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood

3. Science: Key Stage 2: Living things and their habitats

- a) Recognise that living things can be grouped in a variety of ways
- b) Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals
- c) Give reasons for classifying plants and animals based on specific characteristics

4. Biology: Key Stage 3: Structure and function of living organisms

- a) The skeletal and muscular systems - The structure and functions of the human skeleton, to include support, protection, movement and making blood cells
- b) Biomechanics - the interaction between skeleton and muscles
- c) Biomechanics - The functions of muscles
- d) Nutrition and digestion - The tissues & organs of the human digestive system, including adaptations to function & how the digestive system digests food.
- e) Nutrition and digestion - Content of a healthy human diet: carbohydrates, lipids (fats and oils), proteins, vitamins, minerals, dietary fibre and water, and why each is needed

5. Biology: Key Stage 3: Material cycles and energy

- a) Cellular respiration - Aerobic and anaerobic respiration in living organisms

6. Biology: Key Stage 3: Interactions and interdependencies

- a) Relationships in an ecosystem - How organisms affect, and are affected by, their environment, including the accumulation of toxic materials

7. English: Years 1-6: Spoken language

- a) Ask relevant questions to extend their understanding and knowledge
- b) Articulate and justify answers, arguments and opinions
- c) Use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas

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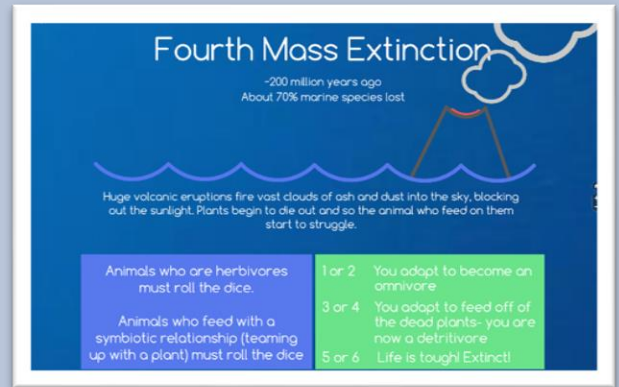
Underwater Evolution

Duration: 90 minutes

Key Stage: KS2

Availability: All year

Session type: Workshop



Session Overview

How do you fit 800 million years of evolution into a single 90-minute activity? – By choosing the OCT’s Underwater Evolution Workshop of course!

The best learning is fun learning, and this workshop is one of our most enjoyable for teachers and students alike. The session begins with a simple introduction to essential evolution-linked terminology; adaptation, inheritance, variation, and natural selection, before taking participants on a journey from the origins of life on earth all the way through to the modern age. Pencils and dice in hand, students will track and document the evolution of their own single celled organisms through it all, but who will make it to the modern age, and what new challenges await in an uncertain future?

Learning Objectives (in this session your students will...)

1. Create a new and unique creature by playing a fun game
2. Test the principles of survival of the fittest in an ever changing environment
3. Think about how human actions can change the environment.

Learning Outcomes (following this session your students will be able to...)

1. Describe the process of evolution
2. Explain the process of natural selection
3. Talk confidently about the threat posed to some animal and plant species by environmental change

Pre-Visit Suggestions

- Look at some animals in different habitats and notice similarities and differences between them – what makes them separate species?
- Discuss how we have similar traits in very different species (e.g flight or eyesight)– why do you think that is?

Post-Visit Suggestions

- Take the creatures created in the session and design a whole ecosystem for them, placing the animals in habitats that suit them.
- Make some food chains with the animals created in the session
- Create a 3D model of your animals out of clay or plasticine

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National Curriculum Links

1. Science: Key Stage 2: Evolution and inheritance

- a) Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago [Y6]
- b) Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents [Y6]
- c) Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution [Y6]

2. Science: 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 [Y3]
- b) Identify that humans and some other animals have skeletons and muscles for support, protection and movement [Y3]
- c) Identify the different types of teeth in humans and their simple functions [Y4]
- d) Construct and interpret a variety of food chains, identifying producers, predators and prey [Y4]

3. Science: Key Stage 2: Living things and their habitats

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

4. English: 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

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Outdoor Learning Workshop Programmes of Study


Each workshop has its own Programme of Study (POS) these provide a more detailed overview of the contents, curriculum links, and learning outcomes for each of the workshops available as part of the OCT Learning programme.

Each POS contains the following information:

- **Workshop Title** – Name of the workshop
- **Duration** – Expected run time
- **Key Stage** - Intended audience age (based on curriculum links, but not a requirement)
- **Availability** – Notes on seasonal availability where applicable
- **Pricing tier** – pricing per student
- **Workshop Overview** – Description of how the workshop flows
- **Learning Objectives** – Describes what students will do during the workshop
- **Learning Outcomes** –What students will be able to do after the workshop
- **Pre & Post visit suggestions** – Supporting activities ideas
- **EYFS & National Curriculum links** – Key points of the NC covered by this workshop

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Fantastic Fossils
Duration: 90 minutes
Key Stage: EYFS - KS1 (Year 1)
Availability: All year
Pricing tier: Standard Workshop



Session Overview

Fantastic Fossils presents opportunities for your pupils to explore interactive sensory activities and make exciting discoveries. The activities encourage group co-operation, and verbalization of their ideas. Pupils handle real life fossils from the ocean and imagine the animals they came from. In small groups, pupils use tools to unearth fossils, piece them back together, and identify other items they might unearth in the sand. We take a closer look at how extinct animals might have looked, and finally get creative with textures to make their own fossils from modelling clay and colour-in images to create 3D models of extinct animals using augmented reality software on [hand-held](#) tablets.

Learning Objectives

1. Learn about fossils and where they come from
2. Discover and reconstruct a creature from the ancient seas
3. Find out what we can learn about animals from fossils

Learning Outcomes

1. Describe the range of shapes, sizes and textures that fossils come in
2. Explain how fossils are formed
3. Use your knowledge of extant organisms to formulate an idea of what an extinct organism may have looked like

Pre-Visit Suggestions

- Research prehistoric marine animals (there are lots of images of prehistoric fish online)
- Go for a nature walk in your school, observing and noting down any live animals, things that were alive (e.g. leaves, pinecones etc.), and things that have never been alive

Post-Visit Suggestions

- Collect & explore different rock types, observe & comment on differences between them
- Look up other examples of prehistoric marine animals and create your own interpretations
- Make and paint your own fossils at school using a Plaster of Paris kit

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Beach Art (& Clean)

Duration: 90 minutes

Key Stage: KS2/3/4

Availability: April - October

Session type: Outdoor Learning Workshop



Session Overview

This workshop provides a creative and thoughtful blend of conservation education and artistic interpretation. Students will be given the opportunity to explore art in three different mediums. This will improve their mastery of current art and design techniques, whilst exposing them to unique methods of connecting people to the ocean. The session focuses on nature connectivity and provides different ways that art can be inspired by, and made from, the nature that surrounds us. The workshop draws on the wellness benefits of blue space, the scientific need for artistic interpretation and the ways art can be used as a vehicle for change.

Throughout the session the students will be encouraged to collect any man-made items they come across, and either incorporate it into their art, or dispose of it appropriately.

Learning Objectives (in this session your students will...)

1. Take inspiration from zen gardens, creating a 'zen beach' using materials found in the surrounding environment.
2. Use scientific drawing techniques to communicate the natural world.
3. Combine natural and man-made materials to create a temporary installation on the beach.

Learning Outcomes (following this session your students will be able to...)

1. Use new mediums that build on current skills.
2. Acknowledge the different purposes, intentions and functions of art.
3. Evaluate the role art can have within different sectors.

Pre-Visit Suggestions

- Research different marine conservation issues.
- Explore the artwork of naturalist illustrators such as Ernst Haeckel.
- Practice drawing natural objects in the school playground.
- Discuss how visiting the beach or a blue space makes you feel.

Post-Visit Suggestions

- Organise a litter pick in your local area and repurpose the items.
- Explore other ways of using beach materials for art, such as a seaweed press or driftwood sculptures

To book, or for more information:

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National Curriculum Links

1. Art: Key Stage 2

- a) To improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials
- b) About great artists, architects and designers in history.

2. Art: Key Stage 3

- a) To use a range of techniques to record their observations in sketchbooks, journals and
- b) other media as a basis for exploring their ideas
- c) To increase their proficiency in the handling of different materials
- d) To analyse and evaluate their own work, and that of others, in order to strengthen the visual impact or applications of their work

3. Art: GCSE

- a) Actively engage in the creative process of art, craft and design in order to develop as effective and independent learners, and as critical and reflective thinkers with enquiring minds
- b) Develop creative, imaginative and intuitive capabilities when exploring and making images, artefacts and products
- c) Become confident in taking risks and learn from experience when exploring and experimenting with ideas,
- d) Processes, media, materials and techniques
- e) Develop knowledge and understanding of art, craft and design in historical and contemporary contexts, societies and cultures
- f) Develop an awareness of the purposes, intentions and functions of art, craft and design in a variety of contexts and as appropriate to students' own work
- g) Demonstrate safe working practices in art, craft and design

To book, or for more information:

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www.national-aquarium.co.uk

Plastic Seas on the Beach

Duration: 90 minutes

Key Stage: KS2 & KS3

Availability: All year

Session type: Outdoor Learning Workshop



Session Overview

Your pupils will begin Plastic Seas by discussing how scientists make new discoveries. They will be provided with Virtual Reality headsets, allowing them to explore the Midnight Zone and discover what creatures of the deep might eat. Once completed, pupils will 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 recent beach clean.

To conclude, students will explore how they are able to make positive changes to combat plastic pollution, with a focus on 'Refuse, Reduce, Reuse, Recycle.' One way in which students will do this is to complete a shopping challenge, considering what materials their desired items are made from, how many times the item can be used and the overall eco-friendliness of the product, finally identifying the most ocean positive choice to make.

Learning Objectives (in this session your students will...)

4. Learn about animal food chains
5. Investigate the issue of plastic pollution
6. Explore ways in which we can have a positive impact on the Ocean

Learning Outcomes (following this session your students will be able to...)

4. Represent predator/prey relationships in a food chain
5. Recognise that plastic pollution can harm or kill marine animals
6. State ways that individuals can act to combat plastic pollution in the Ocean

Pre-Visit Suggestions

- Classify a range of animals as herbivores, carnivores or omnivores
- Keep food diaries for a week to explore your own diet
- Research different animals' diets & how this makes animals dependent on one another

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
- Host a discussion to think about impacts that humans have on the ocean and its' habitats.

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www.national-aquarium.co.uk

National Curriculum Links:

8. Science: Lower Key Stage 2: Working Scientifically

- f) Ask relevant questions & using different types of scientific enquiries to answer them
- g) Gather, record, and present data in a variety of ways to help in answering questions
- h) Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- i) Using results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions
- j) Use straightforward scientific evidence to answer questions or support findings

9. Science: Upper Key Stage 2: Working Scientifically

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

10. Science: Key Stage 2: Animals, including humans

- c) 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
- d) Construct and interpret a variety of food chains, identify producers, predators & prey

11. Science: Key Stage 2: Living things and their habitats

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

12. Science: KS3 Working Scientifically: Experimental skills & investigations

- c) Ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
- d) Make predictions using scientific knowledge and understanding

13. Science: KS3 Biology: Interactions and interdependencies

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

14. English Years 1-6: Spoken language

- d) Articulate and justify answers, arguments and opinions
- e) Maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments
- f) Use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas

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www.national-aquarium.co.uk

Rockpool Safari

Duration: 90 minutes

Key Stage: KS1 – KS2

Availability: April – October

Session type: Outdoor Learning Workshop



Session Overview

This immersive workshop is an excellent opportunity to explore the incredible world beneath the waves when the tide goes out. Rockpooling is a fantastic activity for people of all ages to discover the many plants and animals that live in the curious pools of wonder along the shoreline. Animals have to be hardy to survive in a constantly changing environment with fluctuating water temperatures, decreasing oxygen levels and exposure to sunlight for long periods of time, as well as rough treatment from the incoming sea. This workshop will detail some of the more intricate elements of rockpooling for older students, and instil an explorer mentality for the younger ages, all participants will learn the best spots to look out for specific animals in their habitat and they will understand the rockpooling code while looking out for swimming shrimp, skulking crabs and starfish clinging to the rocks. After participating in our rockpooling safari students will not be able to visit a beach without being drawn to the rockpools!

Learning Objectives

1. Have fun exploring rockpools along the seashore.
2. Handle and examine species carefully applying the rockpool code.
3. Develop an understanding of the interconnected nature of ecosystems and feel more connected to the ocean.

Learning Outcomes

1. Understand and apply the key points of the rockpool code.
2. Identify species using a dichotomous ID key.
3. Explain how some animals are able to survive in rockpools

Pre-Visit Suggestions

- Learn about how to use/write ID keys
- Practise some key common names of local rockpool species.
- Carryout a local freshwater ramble (lake, river, or pond) to identify freshwater species

Post-Visit Suggestions

- Apply learning to a different outdoor learning habitat using ID keys.
- Make a poster to inform/teach about the rockpool code.
- Make information profiles or a top trumps card about a creature or seaweed species they found in the rockpools.

To book, or for more information:

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

National Curriculum Links

1. Science: Key Stage 1: Working Scientifically

- a) Observing closely, using simple equipment.
- b) Identifying and classifying.
- c) Gathering and recording data to help in answering questions.

2. Science: Key Stage 1: Animals, including humans

- a) Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
- b) Identify and name a variety of common animals that are carnivores, herbivores and omnivores.
- c) Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)

3. Science: 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 straightforward scientific evidence to answer questions or to support their findings

4. 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

5. Key Stage 2: Animals, including humans

- a) Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
- b) Identify that animal, 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
- c) Construct and interpret a variety of food chains, identifying producers, predators and prey

6. Key Stage 2: Living things and their habitats

- a) Recognise that living things can be grouped in a variety of ways
- b) Explore and compare the differences between things that are living, dead, and things that have never been alive.
- c) Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
- d) Identify and name a variety of plants and animals in their habitats, including micro-habitats
- e) describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.
- f) Recognise that environments can change and that this can sometimes pose dangers to living things

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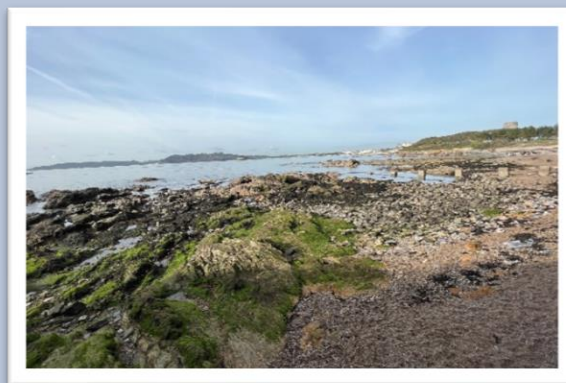
Rockpool Survey

Duration: 90 minutes

Key Stage: KS3 – KS4

Availability: April – October

Session type: Outdoor Learning Workshop



Session Overview

Rockpool surveying is a fantastic activity for budding scientists to immerse themselves in the marine environment and explore the interdependencies within the rockpool habitat through hands-on fieldwork and investigation.

Intertidal organisms make fascinating subjects in a constantly changing environment with fluctuating water temperatures, shifting oxygen levels and exposure to sunlight for long periods of time. This workshop will detail some of the more intricate elements of shoreline exploration, employing scientific methods to explore species distribution, frequency, and abundance alongside techniques to investigate the intertidal organisms and habitats themselves, both biotic and abiotic.

After conducting their own shoreline survey, students will have breadth of knowledge on the intertidal regions and a data set that can be analysed and presented following their visit.

Learning Objectives

1. Investigate the intertidal zone and its inhabitants.
2. Handle and examine species using best practice and employing scientific techniques.
3. Develop an understanding of the interconnected nature of ecosystems and the impact human interaction has on the marine environment.

Learning Outcomes

1. Apply the use of survey techniques in the intertidal zone ecosystem.
2. Discuss species and adaptations and deduct their role within the ecosystem.
3. Demonstrate an understanding of the interconnected nature of marine environments.

Pre-Visit Suggestions

- Learn about how to use/write ID keys
- Practise some key common names of local rockpool species.
- Carryout a local freshwater ramble (lake, river, or pond) to identify freshwater species

Post-Visit Suggestions

- Apply learning to a different outdoor learning habitat using ID keys.
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National Curriculum Links

1. Science: Key Stage 3: Working Scientifically

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

2. Biology: Key Stage 3: Interactions and interdependencies

- a) The interdependence of organisms in an ecosystem, including food webs.
- b) How organisms affect, and are affected by, their environment, including the accumulation of toxic materials from human sources and interaction.

3. Science: Key Stage 4: Working scientifically

- a) Explore the scientific rationale for investigating the marine environment and intertidal regions.
- b) Evaluating risks both in practical science and the wider societal context, including perception of risk.
- c) Recognising the importance of peer review of results and of communication of results to a range of audiences
- d) Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety

4. Biology: Interactions and interdependencies

- a) The importance of biodiversity
- b) Methods of identifying species and measuring distribution, frequency, and abundance of species within a habitat
- c) Some abiotic and biotic factors which affect communities, the importance of interactions between organisms in a community
- d) Positive and negative human interactions with ecosystems

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Price list

This price list is correct as of February 2023 and reflects the programme prices for the academic year 2023-2024. Please check our website (www.national-aquarium.co.uk) for the latest prices, deals and special offers available for schools.

| Activity option | Cost (all prices include VAT) |
|--|--|
| <p>School & Classroom workshops</p> <ul style="list-style-type: none"> • <i>Climate Conundrum</i> • <i>Habitat Hats</i> • <i>Inventafish</i> • <i>Ocean Scientist</i> • <i>Plastic Seas</i> • <i>Under the Knife</i> • <i>Underwater Evolution</i> <p>Outdoor Learning workshops (April – October only. Subject to tide times)</p> <ul style="list-style-type: none"> • <i>Beach Art (& Clean)</i> • <i>Rockpool Safari</i> • <i>Plastic Seas on the Beach</i> • <i>Rockpool Survey</i> | <p>£150 per workshop</p> |
| <p>STEM Shows & Assemblies</p> <ul style="list-style-type: none"> • <i>An animal like me</i> • <i>Climate Heroes</i> • <i>The Mating Game</i> | <p>£100 per show</p> |
| <p>Table stands / mobile busking & event stewarding (activities by agreement)</p> <ul style="list-style-type: none"> • <i>Busking</i> • <i>Careers talks</i> • <i>Science demonstrations</i> • <i>Table activities</i> | <p>(Cost by agreement)</p> |
| <p>Travel contribution</p> | <p>£0.45 per mile return journey (PL1-9 venues exempt from travel contributions)</p> |

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Booking process

To book any of the experiences contained in this brochure, please contact the Schools Team directly on 01752 275 233, or email learning@oceanconservationtrust.org

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