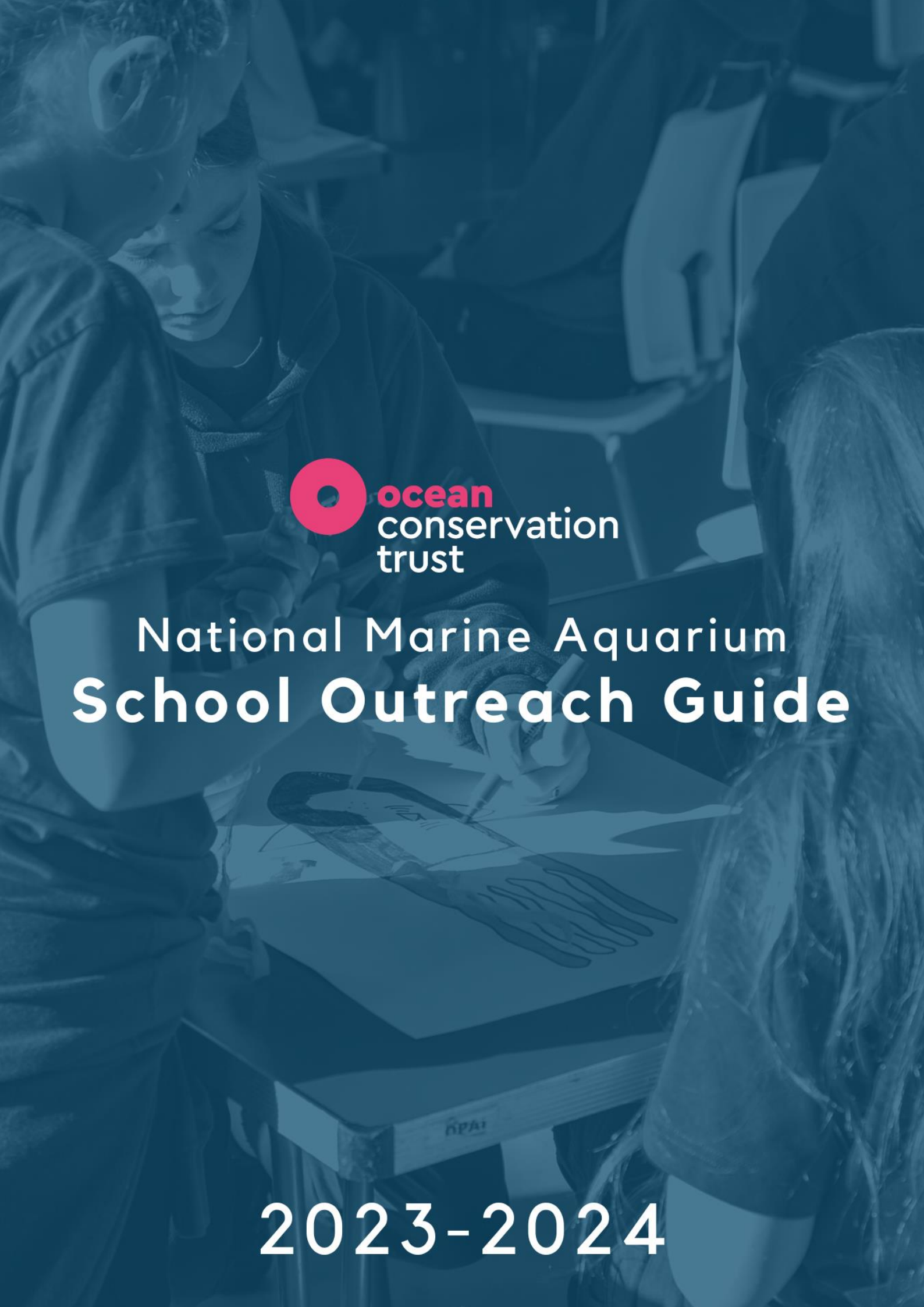


ocean conservation trust

National Marine Aquarium
School Outreach Guide

2023-2024

Contents

Welcome

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 schools, colleges & universities, beaches, exhibitions, libraries, conferences, and more!

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.

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 we look forward to working with you soon.

Sincerely,

The OCT Learning Team

'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"

Activity Options

Our Outreach Experiences have been developed to give students a ‘deep dive’ on a wide range of topics linked to the Ocean. 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.

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

Our Outreach sessions can be delivered on weekdays during term time, between 9am and 5pm.

We offer 4 types of outreach engagement:

Classroom Workshops - *£150.00 per workshop (for up to 32 pupils)*

A selection of our award winning, 90-minute, curriculum-linked workshops which we’re able to deliver at indoor venues, such as classrooms and school halls. Typically, workshops include one or more of the following elements: artefact handling, science experiments, and arts & craft design activities.

You can choose from:

- **Climate Conundrum (KS2 & KS3):** Pupils will handle real coral skeletons, learning all about what corals are and how they are being impacted by climate change.
- **Habitat Hats (EYFS/KS1):** A craft which allows pupils to apply their knowledge of Ocean creatures and the variety of habitats that can be found under the sea.
- **Inventafish (KS2/KS3):** Pupils will explore real Ocean artefacts before designing their own unique sea-creature, which is perfectly adapted to life in the Ocean.
- **Ocean Scientist (KS1):** Pupils will carry out an experiment on the quality of seawater and explore some real artefacts from animals which live under the sea!
- **Plastic Seas (KS1 & KS2):** This workshop involves pupils Investigating the contents of a whale’s stomach, learning about the impact of plastic pollution and what we can do to help.
- **Underwater Evolution (KS2 & KS3):** Pupils will play an immersive game in which they watch their own creature evolve over time, learning key terminology throughout.
- **Under the Knife (Upper KS2 - KS4):** Pupils will be led through a step-by-step squid dissection, learning all about the anatomy and adaptations of these fascinating creatures.

Please see pages 7-10 for more details.

Beach Workshops - *£150.00 per workshop (for up to 32 pupils)*

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.

You can choose from:

- **Beach Art (KS3)** Pupils will explore the beach in search of Ocean treasures and record their findings in their sketchbooks, before working on a scientific illustration of their chosen item.
- **Rockpool Safari (KS1 & KS2)** Pupils will have the opportunity to explore local rockpools, identifying different sea creatures and learning about how they are suited for survival.
- **Rockpool Survey (KS3 & KS4)** This workshop will focus on some of the more intricate elements of shoreline exploration, where pupils will employ scientific methods to explore species distribution, frequency, and abundance.

Please see page 10-11 for more details.

STEM Shows & Assemblies - *£100 per show (for an unlimited number of pupils)*

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. Our STEM shows include mass audience participation and specific volunteer opportunities.

You can choose from:

- **Slimy Seas (KS1 & KS2):** This interactive show is full of weird and wonderful facts about slimy creatures that live under the sea!
- **Climate Heroes (KS2 & KS3):** This engaging show teaches pupils all about the factors contributing to climate change, in an inspiring and positive way.

Please see page 12 for more details.

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. Please contact our team for further details.

Activity Key Stage matrix

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

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											
	Underwater Evolution											
STEM Shows	Slimy Seas											
	Climate Heroes											
Outdoor Learning (April – October only)	Beach Art (& clean)											
	Rockpool Safari											
	Rockpool Survey											
Bespoke activities	Careers Talk											
	Activity Stand											

Climate Conundrum (KS2)

Science	Tech	English	Art	Maths	Humanities	O.L. Principle
✓		✓			✓	3

Session Overview:

Students will begin by examining real coral colony skeletons, identifying their key features, and sharing their observations. Students will move onto learning about coral reproduction before grouping the coral skeletons using a classification key. Following this, students will locate on a map where corals can be found and learn about the impact of Ocean acidification through conducting some practical experiments. The session will conclude with a sensitive discussion on how we can reduce our carbon footprints, leaving pupils feeling inspired to make a difference.

Learning Outcomes: (Following this session your students will be able to…)

1. Classify coral skeletons by using a dichotomous key.
2. Understand how carbon dioxide affects coral reefs.
3. Explain how we can impact climate change through our actions at home.

Habitat Hats (EYFS & KS1)

Science	Tech	English	Art	Maths	Humanities	O.L. Principle
✓		✓	✓			1

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 their work. Students will be encouraged to think about how these creatures are suited to their habitat throughout the workshop. Students will then have the option of adding any additional decorations from our range of recycled craft 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. Select and use appropriate materials to represent different marine habitats.

Inventafish (KS2)

✓ Science	Tech	✓ English	✓ Art	Maths	Humanities	5 O.L. Principle

Session Overview:

Students will begin this immersive workshop by exploring the adaptations of a variety of sea creatures, examining a variety of Ocean artefacts such as turtle shells, baleen plates and shark jaws. Students will then be challenged to design their own perfectly adapted sea-creatures! They will use an array of recycled materials to bring their design to life and will be encouraged to annotate their work to explain their thought processes. The session will end with the students presenting their work to their peers.

Learning Outcomes: (Following this session your students will be able to…)

1. Describe challenges of living in the marine environment.
2. Explain how animals are adapted to their environment using scientific terminology.
3. Creatively apply their knowledge to design their own imaginary sea creature.

Ocean Scientist (KS1)

✓ Science	Tech	✓ English	Art	✓ Maths	Humanities	5 O.L. Principle

Session Overview:

This workshop is the perfect introduction to Marine Science! Your students will start by conducting an experiment on the qualities of sea water, and through doing so, will learn about the relationship between salt and buoyancy. Students will then investigate a variety of real Ocean specimens, including mermaid's purses and turtle shells. They will discuss what animal they are from, and how they allow them to survive in the Ocean. The final challenge will be a fun filled practical exploration of the feeding techniques used by creatures who feed on plankton, allowing students to consider their importance in our Ocean.

Learning Outcomes: (Following this session your students will be able to…)

1. Conduct simple investigations and predict outcomes.
2. Give examples of how a variety of marine animals are suited to their Ocean habitat.
3. Describe the feeding techniques of different types of sea creatures.

Plastic Seas (KS1 & KS2)

Science	Tech	English	Art	Maths	Humanities	O.L. Principle
✓		✓				6

Session Overview:

Your students will begin by discussing the role of a Marine Biologist, before handling a variety of real Ocean artefacts including shark jaws and whale bones. After a discussion about which animals they are from and how they are adapted to survive, they will be given the recreated stomach contents of a whale and asked to classify their findings. This will include organic material such as fish and squid, as well as plastic waste from a recent beach clean. Following an interactive activity on how plastic makes its way into the food chain, students will discuss how to combat plastic pollution and make Ocean-positive choices.

Learning Outcomes: (Following this session your students will be able to…)

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

Under the Knife (KS2)

Science	Tech	English	Art	Maths	Humanities	O.L. Principle
✓		✓				7

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. The students will begin by discussing what they know about squid, before identifying the key parts of the body and what they are used for. Through a process of sequential dissection, observation and comparison, students will identify organs widely found across the animal kingdom and explore the role and function of a range of features unique to cephalopods.

Learning Outcomes: (Following this session your students will be able to…)

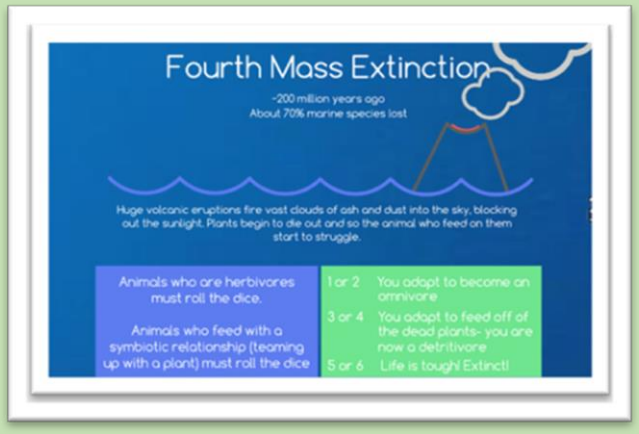
1. Recognise the moral implications of carrying out a dissection.
2. Identify key anatomical features of a squid and compare to humans.
3. Locate and explain the function of the respiratory, circulatory, and digestive systems.

Underwater Evolution (KS2)

Science	Tech	English	Art	Maths	Humanities	O.L. Principle
✓		✓	✓		✓	4

Session Overview:

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, including adaptation, inheritance, variation, and natural selection. Participants will then be taken 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, but who will make it to the modern age, and what new challenges await in an uncertain future?



Learning Outcomes: (Following this session your students will be able to…)

4. Define key terminology used in the study of evolution.
5. Explain the process of natural selection and how it drives evolution.
6. Talk about how environmental change poses a threat to species in the Ocean.

Beach Art (KS3+)

Science	Tech	English	Art	Maths	Humanities	O.L. Principle
✓		✓			✓	5

Session Overview:

This session begins with students getting stuck into an immersive 'beach combing' activity, during which they will search for hidden treasures on the beach such as cuttlebone, mermaid's purses, and shells. The students will record their findings in their sketchbooks using a variety of media, before using the items as inspiration for two different pieces of artwork. Firstly, they will observe, measure, and draw a chosen item with the aim of creating an accurate scientific illustration.

Learning Outcomes: (Following this session your students will be able to…)

1. Record observations of the natural world in sketchbooks using a variety of media.
2. Complete a scientific illustration using a variety of techniques.
3. Understand how different types of art can be used to serve different purposes.

Rockpool Safari (KS1 & KS2)

Science	Tech	English	Art	Maths	Humanities	O.L. Principle
✓		✓			✓	5

Session Overview:

This immersive workshop is a fantastic way for students to discover the many plants and animals that can be found in the rock pools along the shoreline. Taking place at Mount Batten beach, students will learn all about how to rock pool creatures are suited to living in a constantly changing environment. All participants will learn the best spots to look out for crabs, shrimp, and starfish in their natural habitat, whilst gaining an understanding of the rock pool code. No trip to the beach would be complete without a short beach clean, and a discussion on the importance of looking after our Ocean.

Learning Outcomes: (Following this session your students will be able to…)

1. Understand and apply the Rockpool Code.
2. Safely navigate rockpool environments.
3. Find, identify, and appropriately handle a range of rockpool animals.

Rockpool Survey (KS3+)

Science	Tech	English	Art	Maths	Humanities	O.L. Principle
✓		✓		✓	✓	3

Session Overview:

Intertidal organisms make fascinating subjects in a constantly changing environment with fluctuating water temperatures, shifting oxygen levels and exposure to sunlight. 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. 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 Outcomes: (Following this session your students will be able to…)

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.

Slimy Seas Show (KS1 & KS2)

Science	Tech	English	Art	Maths	Humanities	O.L. Principle
✓		✓				5

Show Overview:

This interactive show is full of weird and wonderful facts about slimy sea creatures! Pupils will learn how a range of animals use slime for protection, movement, and to escape their predators. There will be plenty of volunteer opportunities throughout, and pupils will leave with lots of knowledge about how clownfish, hagfish, limpets, and more are adapted to life under the sea!

Climate Heroes Show (KS2 & KS3)

Science	Tech	English	Art	Maths	Humanities	O.L. Principle
✓	✓	✓				3

This fun and engaging show teaches pupils all about the factors contributing to climate change, the actions we can take to combat climate change, and the power of sharing knowledge with others to create a positive impact. Students will leave with a greater understanding of the connection between the Ocean and the climate and feel inspired to work together to reduce their carbon footprints!

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.oceanconservationtrust.org) for the latest prices, deals and special offers available for schools.

Activity option	**Cost** *(all prices include VAT)*
School & Classroom workshops • *Climate Conundrum* • *Habitat Hats* • *Inventafish* • *Ocean Scientist* • *Plastic Seas* • *Under the Knife* • *Underwater Evolution*	£150 per workshop
Outdoor Learning workshops *(April – October only. Subject to tide times)* • *Beach Art (& Clean)* • *Rockpool Safari* • *Rockpool Survey*	£150 per workshop
STEM Shows & Assemblies • *Climate Heroes* • *Slimy Seas*	£100 per show
Table stands / mobile busking & event stewarding *(activities by agreement)* • *Busking* • *Careers talks* • *Science demonstrations* • *Table activities*	(Cost by agreement)

Travel contribution	£0.45 per mile return journey (PL1-9 venues exempt from travel contributions)

Booking your Outreach Session

To book, just call us on 01752 275233 or email us at learning@oceanconservationtrust.org.

Our Schools Administrator will talk you through your options and answer any questions you may have. You will need to let us know:

- Your preferred date.
- Location of your Outreach sessions.
- Workshop/show choices.
- Number of classes/pupils taking part.
- Year group of pupils.
- Preferred timings of your sessions.

Once this information is confirmed, you will receive an Enquiry Form, which will outline the details of your visit. You will need to check this through and complete the relevant sections before returning it to us. Once we have received your completed forms, your booking will be confirmed.

Paying for your Outreach Session

An invoice will be sent out from our Finance Office after your session has taken place.

Amending and cancelling your booking

Booking Amendments: If you would like to make any amendments to your booking, such as arrival time or workshop choice, please tell us as far in advance as possible.

Booking Cancelation: Please let us know as soon as you can if you wish to cancel your booking. We require 7 days' notice of cancellation or significant alteration to the agreed programme. A £50 cancellation fee may be charged if insufficient notice is provided.

Safety Notes

Risk Management: Our generic Risk Assessment will be emailed to you as part of the booking process.