# ASE Evaluation

# Blue Marine Foundation

**https://www.bluemarinefoundation.com/ocean-education-platform/**

## Introduction

Blue Marine Foundation has produced an extensive suite of resources that link to primary and secondary science curriculums in the UK, USA and Australia. These include high quality, interactive experiences, PowerPoints, facilitation guides, lesson plans and learning resources. The resources are high quality with engaging graphics and provide educators with a wealth of options for developing this teaching area. The flexible resources provide educators with complete lessons or individual elements to use in their own teaching.

The Association for Science Education has carried out an evaluation on the following resources (click on the link in the contents below to jump to the evaluation section and the heading title to jump to the resource itself):





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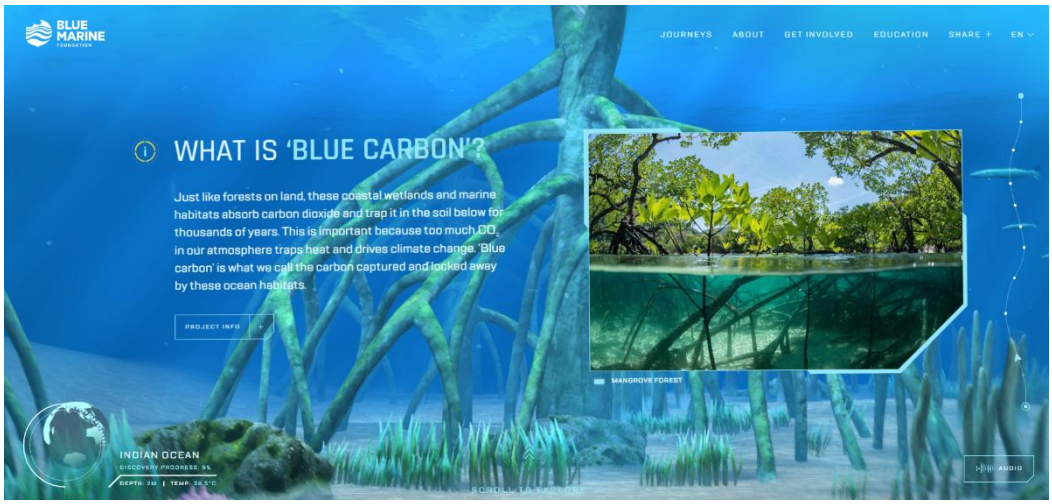
## 1. The Sea We Breathe: Immersive Experience

### Engagement

The immersive experience is an interactive visually engaging, high quality learning experience, where learners are offered three different journeys through the ocean: 'Rainforests of the Sea,' 'The Ocean's Web of Life' and 'Protecting the Underwater World'. The experience starts with a series of waves on screen before you dive into the ocean and then scroll (swim) along the seafloor, learning along the way. The experience has a sci-fi feel to it that will be familiar to learners from watching movies.

As you scroll through the journey, you encounter changing backgrounds (that relate to different habitats), information points, case studies and quizzes. This allows leaners to build and develop their knowledge in an engaging, interactive way, so they want to continue and learn more.

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### Learning opportunities and curriculum links

This experience underpins the associated teaching resources for both primary (8+) and secondary (12+) learners. The language demand and scientific and general vocabulary level are relatively high, with scientific terms, such as 'habitat' and 'marine' used throughout. While students are likely to have encountered these terms, they may not always use them correctly or confidently.

There are some inconsistencies in language. For example, using both carbon dioxide and $CO_2$, 'storing carbon' and 'burying carbon', 'shuttle carbon', 'biological carbon pump'. Younger, lower attaining or learners for whom English is an additional language (EAL students) may may need additional support in accessing this (such as a word mat or glossary of terms) The platform has been updated to improve consistency where possible and now includes a glossary of terms which helps to mitigate this.

Swimming through the journey provides an engaging way to access information, alongside changing graphics to support the learning. For example, in 'Rainforests of the Sea', the user swims through mangroves, sea grass meadows and coral reefs, with changing scenery and information relating to the new habitat. Additional explanations have been provided to support those without a science background.

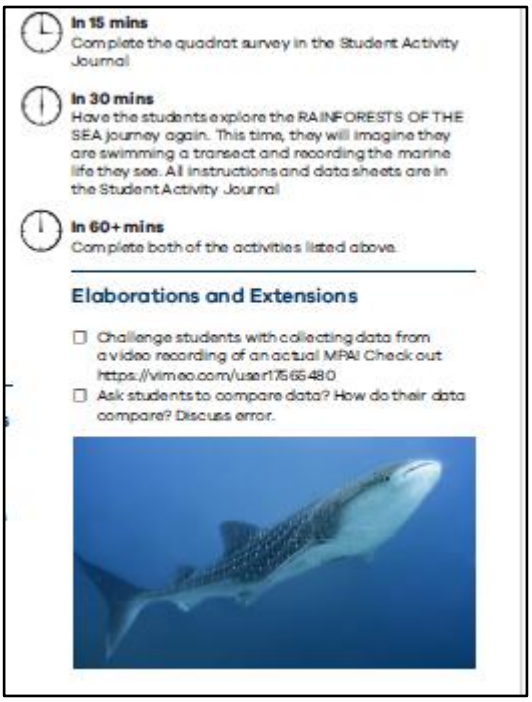
It's good to see scientific language and notation used, this raises expectations of learners and normalises terms like $km^2$ and $CO_2$.

**Accessibility for all learners**

Learning to access information in different ways is an important skill to develop. The information pop-ups are varied in content and the combination of continuous text, a case study with statistics and pictures, maps and quizzes are more likely to encourage children to persevere with different formats and develop this skill.

The onscreen text is available in different languages (the narration is available in English, Spanish and Greek), this provides increased learning opportunities in modern foreign language lessons and is also accessible for EAL learners. There are some sections where the onscreen text changes colour with the narration, which is fantastic for developing reading skills. Occasionally there are areas where text is small, or in block capitals which may be harder for some learners to access, however work is underway to address these areas.

A high-quality downloadable PDF is available to help educators use the immersive experience and slide decks for 8+ and 12+, the Ocean Champion Guide for ages 8+ and the Student Activity Journal for ages 12+. This facilitation guide helps educators plan effective use of the resources, including the order of activities and the time required. Options are provided for sessions ranging from 60 minutes to over five lessons, including homeschool, self-directed learning, and hybrid approaches. This gives educators flexibility to use these resources in a way that is appropriate to their context.




The guide provides details on the specific learning objectives for each of the journeys learners can take, with different time suggestions which offers flexibility. This helps teachers choose how best to use the resources and provides a clear overview of the learning points and activities, without needing to explore the full resource suite.

There are further resources signposted in this document, which are helpfully organised under subheadings.

## 2. The Sea We Breathe: Teaching Resources: A Journey to a Healthy Ocean - Slide Deck for Teachers for Ages 8+

This 44 slide PowerPoint aimed at teachers of pupil 8+, is downloadable and editable, giving teachers flexibility to tailor the resource to their lessons. The slides are well designed and include visually engaging pictures. There is a mix of quotes, questions, facts and diagrams.

**Engagement**

The mixed format, alongside cartoonish graphics and high-quality pictures make this a visually and intellectually engaging resource. The text is large and has good contrast to the background and has been used minimally on the slides, avoiding cognitive overload. There are images that links with 'The Sea We Breath – Immersive Experience' to help pupils link the two learning resources.

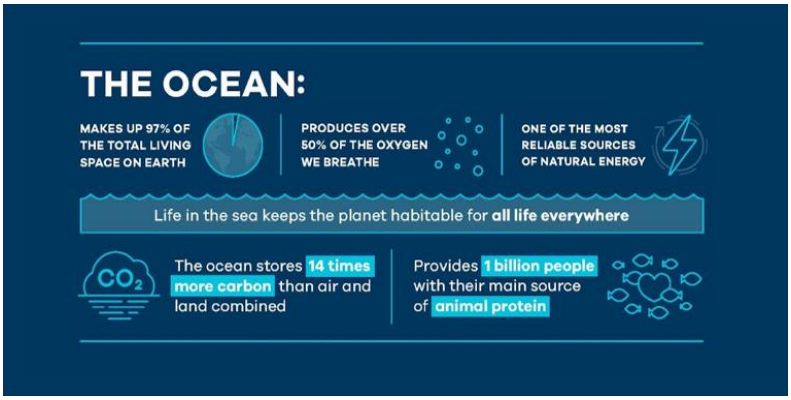
The questions specifically draw on learners' experiences, for example, "How does the ocean impact you?." This is an effective way to make the learning relevant. The notes provide a range of examples to help teachers connect this relevance for all learners and to share different perspectives with children. This is a great way to develop empathy, whilst making it relevant to their daily lives. The platform will also contain further explanations to support those without a science background which will help to build teachers' confidence and support them to have deeper conversations with learners.

**Learning opportunities and curriculum links**

Each slide contains notes for the educator, providing key information as well as suggested learning points. This supports all teachers but will help ensure that the science is taught accurately, for those teaching out of specialism.

The mix of slides support the learners to develop skills in extracting information from different forms. The infographics have been well designed, and present information in text, percentages, a pie chart and chemical formula. The colour pallet is simple, so it is not visually overwhelming, allowing learners to focus on the information.

The notes suggest some high-level links, which extend beyond the primary curriculum. These offer good extension opportunities, for example discussion around 'nutrient run off,' 'coastal habitat destruction' and 'invasive species. Teachers can challenge students, but the slide the student sees ensures the teacher retains autonomy over what is appropriate.




There are strong opportunities for pupils to see their learning develop, for example by asking a question, taking part in one of the immersive journeys and then returning to the

same question. Learners are unlikely to produce a complete answer before the underwater experience, but posing questions in this way with appropriate scaffolding helps to develop resilience, build confidence and develop effective learning strategies.

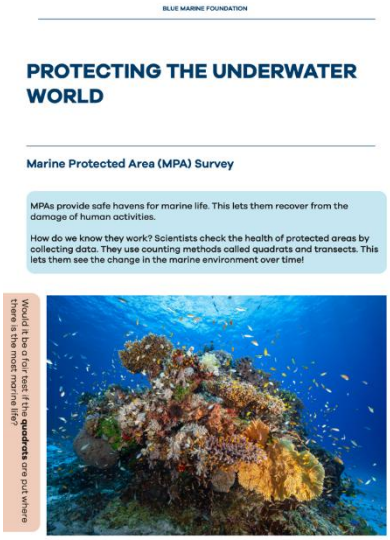
The inclusion of quotes from Sylvia Earle offers teachers a useful opportunity to present a scientific role model who does not fit the traditional stereotype of a scientist.

## 3. The Sea we Breathe Teaching Resources: Ocean Champion Guide for Ages 8+

This resource for children aged 8+ accompanies the immersive experience and teacher slide deck. It is a downloadable PDF with space for children to write answers. Information is presented clearly and broken up by attractive pictures showcasing different marine animals and environments. A black and white version would make this more accessible and less expensive for schools to print.

**Engagement**

There are 3 different activities that link to each of the three journeys in the immersive experience: a social media campaign, collecting data using a quadrat and collecting data and managing a fishery.


BLUE MARINE FOUNDATION

PROTECTING THE UNDERWATER WORLD

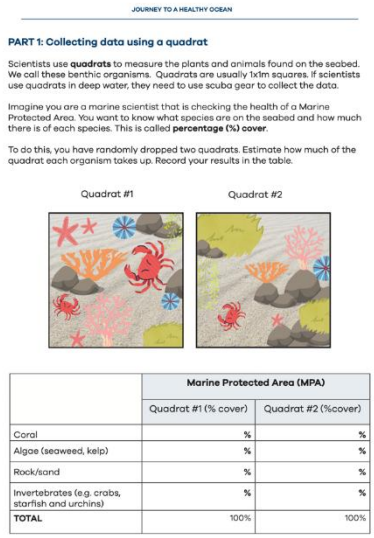
Marine Protected Area (MPA) Survey

MPAs provide safe havens for marine life. This lets them recover from the damage of human activities.

How do we know they work? Scientists check the health of protected areas by collecting data. They use counting methods called quadrats and transects. This lets them see the change in the marine environment over time!

Would it be a fair test if the **quadrats** are put where there is the most marine life?




JOURNEY TO A HEALTHY OCEAN

PART 1: Collecting data using a quadrat

Scientists use **quadrats** to measure the plants and animals found on the seabed. We call these benthic organisms. Quadrats are usually 1x1m squares. If scientists use quadrats in deep water, they need to use scuba gear to collect the data.

Imagine you are a marine scientist that is checking the health of a Marine Protected Area. You want to know what species are on the seabed and how much there is of each species. This is called **percentage (%) cover**.

To do this, you have randomly dropped two quadrats. Estimate how much of the quadrat each organism takes up. Record your results in the table.

Quadrat #1 Quadrat #2

| | Marine Protected Area (MPA) | |
|---|---|---|
| | Quadrat #1 (% cover) | Quadrat #2 (%cover) |
| Coral | % | % |
| Algae (seaweed, kelp) | % | % |
| Rock/sand | % | % |
| Invertebrates (e.g. crabs, starfish and urchins) | % | % |
| **TOTAL** | 100% | 100% |

This resource has attractive and engaging visuals, which are directly relevant to the children's learning. The questioning on the shark campaign will allow children to consider both the visual aspects of the posts and the information.

The range of activities mean that learners are writing, counting, estimating, reading, drawing and using fine motor skills, alongside the primary learning objectives. These are excellent, engaging activities that help support their understanding around complex ideas, but also developing other learning skills. The variety will help keep learners engaged and/or give teachers the opportunity to choose the best activity for their learners.

The ID images are colourful and engaging, supporting the activity while introducing appropriate reading challenges through unfamiliar vocabulary, developing identification skills, and highlighting the diversity of marine life.

## 4. The Sea We Breathe Teaching Resources: Journey to a Healthy Ocean Slide Deck for Teachers for Ages 12+

**Engagement**

Students listen to a recording of the sea and are asked to think of the ocean, their memories and how they would describe it. This is a nice introduction that uses different senses and makes the learning personal to each student. The suggestion is well phrased, to accommodate any students that haven't visited the sea, so it doesn't assume this is a common experience.

**Learning opportunities and curriculum links**

Questions in this resource link to learning about food chains and food webs, for example: "What do you think the problem is with removing large predatory fish from marine ecosystems?" This builds on curriculum learning and can prompt useful discussion. Students are likely to be familiar with food chains and food webs but may not have used ocean ecosystems as examples before. This provides a strong link to prior learning while broadening the application of their knowledge. The explanation in the notes is clear but presenting it as an additional slide would help learners visualise the impact and reduce cognitive load as they engage with the learning.

The pictures used through the slide deck are attractive, some represent marine environments that children are more likely to be familiar with, but others, such as the 'Rainforests of the Sea' will challenge their preconceptions.


## 5. The Sea We Breathe Teaching Resources: Journey to a Healthy Ocean: A Student Activity Journal for Ages 12+

This is a similar activity the one for ages 8+, but with more challenging questions. As with the 8+ there are opportunities for cross curricula learning, especially on the social media campaign activity.

**Engagement**

The social media campaign activity cleverly develops students' learning about marine life (sharks) and encourages them to analyse social media posts. Choosing an animal that they know but probably don't know very much about is a good hook to engage them in the activity.


**Learning opportunities and curriculum links**

The extension task is well designed and realistically highlights the conflicts of interest and strain on resources. It's a useful task to apply and deepen students learning, as well as allowing space for discussion and debate.

Although the tasks are like those for ages 8+ and some of the questions are the same, there are age-appropriate additional tasks and questions that will ensure older and more able learners are challenged in line with their curriculum learning. For example, when recording the transect data, asking students to compare results offers teachers an example to teach about data collection, accuracy and averages.

## 6. Ocean Observatories: Your Portals to the Underwater World

The Ocean Observatories website provides educators with three case studies to explore marine environments: Berwickshire, Jersey and the Dutch Caribbean.

**Engagement**

The webpages give children a chance to explore three coastal environments, no matter where they are. It would be useful to have a map showing locations of the observatories.

Within each location, there is an 'Observatory' underwater video archive. There are nine different themes across all the observatories: fish, marine mammals and seabirds (Berwickshire and Dutch Caribbean), above the waves, habitats, invertebrates and shipwrecks (Berwickshire), sharks and rays (Jersey & Dutch Caribbean), and people and the sea (Dutch Caribbean). For each theme, there is a series of short videos accompanied by a small fact file.

Each observatory has a 'Science Centre' aimed at ages 11-14. As the user scrolls down, a short guide on how to use the deep-dive discovery packs appears. There are three discovery packs for each observatory (4 for Berwickshire), each is unique to that location.

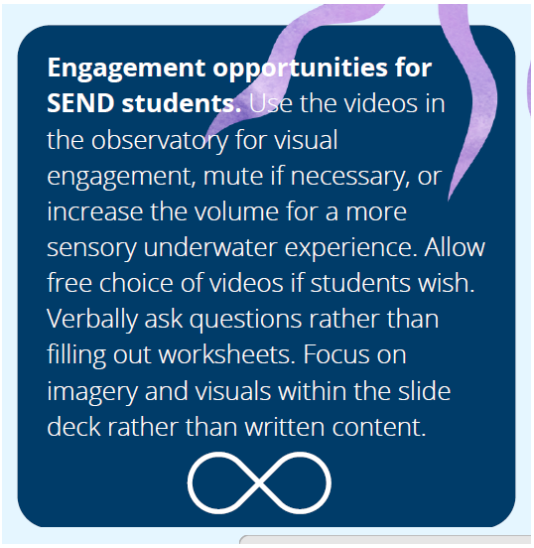
The discovery packs contain a downloadable PDF fact file, a video and some questions. The fact files are high quality, visually attractive resources. The text is broken into blocks, helping prevent the information from being overwhelming. Where relevant the fact files also have tips for what learners can do to help the oceans, for example 'what can we do to help Jersey's sea?' This approach promotes collective and social responsibility amongst young learners.

**Learning opportunities and curriculum links**

The fact files enable learners to develop their knowledge of individual species and could be extended to compare species from different parts of the ocean or identify similarities. Including living organisms alongside social aspects such as "people and the sea" and "shipwrecks" helps learners understand marine environments as complex interactions between nature and people. The videos show organisms in their habitats and give pupils a strong sense of diving below the waves to explore.

**Berwickshire slide deck and facilitator guide**

This slide deck provides teachers with useful background knowledge, enabling them to support students in exploring the video footage and fact files in the "Observatory" underwater film archives and the science centre discovery packs. This helps teachers turn the videos and deep-dive packs into structured lessons. The facilitator guide includes clear curriculum links, supporting teachers to integrate the resources into appropriate lessons. It also offers a range of suggested itineraries and approaches, including options for minimal technology use and home or self-directed learning.




We welcome Blue Marine Foundation's consideration of all learners by including 'engagement opportunities for SEND students'. This reminds teachers to consider their learners and how to use these resources in a way that meets their needs.

## 7. Convex Seascape Survey - Climate Education

**Overview of resources**

The homepage has a dramatic an evocative introduction, outlining how little we know about the oceans, but the critical role it can play in our efforts to tackle climate change.

It introduces Convex Seascape Survey Education, a five-year mission to understand how healthy seascapes absorb and store carbon. Educational resources have been produced in conjunction with Encounter Edu. These start at KS1 through to KS3.

This webpage links through to 'The Sea We Breathe' resources, as well as a 'The Sea We Breathe' virtual reality experience. This is an engaging activity, giving a sense of the underwater world and would make a nice introduction to learning about marine environments, but there is little further learning in this.

There is also access to additional resources that support related programmes, including the Blue Ocean Learning Toolkits (BOLT), which aim to promote ocean literacy in project locations around the world; the Blue Marine Foundation's conservation projects to strengthen Marine Protected Areas (MPAs); and Climate–Ocean Education resources, including a Teacher Training Guide. The Teacher Training Guide would be particularly useful for curriculum leads when considering a Climate Change Education (CCE) strategy. The curriculum links provide helpful guidance for developing a plan to embed CCE within the curriculum, although including examples of potential links would further support teachers with implementation. There is a link to Encounter Edu, an extensive suite of resources developed in partnership between Blue Marine Foundation and Encounter Edu that focus on the link between climate and the ocean.

The teacher resources are extensive, covering Science, Computing, Geography, Cross-curricular, citizenship, English and Design and Technology and can be filtered by subject, ages (from 5 to 16), topic (14, including Coding, Coral, Science Research, Explorers and Climate) and education programme (7, including Ocean Education, Plankton, Plastics and Poo and Common Seas Ocean Plastics Academy).

The user can explore the programmes, but to access the resources they will need a (free) login. Once an account is set up, the user can download lesson plans, PowerPoints and additional resources (for example fact sheet and question sheets).

The volume of resources is impressive but possibly overwhelming. However, plans to create unit overviews and curriculum links will help teachers to navigate the resources and decide how to use them most effectively.

**Using the resources**

The lesson plans are clear and easy to follow, giving timings and curriculum links. These link to PowerPoints. Learning outcomes are clearly stated, so teachers can measure progress and success. There are some nice activities to support learning, such as dominos to match up keywords and definitions, that will engage students. There is a clear purpose to the activities that develop knowledge and skills.

The PowerPoints are well designed and visually engaging with detailed content. Examples such as the interactive carbon cycle allows students to see the cycle in full, as well as revealing further details through clickable links. This interactivity supports

engagement whilst avoiding cognitive overload by presenting all the information at once.

Encounter Edu also run more challenging live lessons for a narrower age bracket (12 - 18) that schools can attend. These are recorded and can be accessed on demand. These 45-minute-long sessions are a useful opportunity to directly hear from scientists and give students' academic challenge. The structure of the lessons is well considered and engaging, giving shout outs to attending schools, activities through the session, quizzes and a Q & A.

## Concluding remarks

Overall, the resources are thoughtfully designed, high-quality materials that support effective science teaching across a range of contexts. They combine strong curriculum alignment with engaging, immersive content that helps pupils build knowledge, develop scientific language, and apply learning in meaningful ways. Clear facilitation guidance, flexible delivery options, and well-considered scaffolding enable teachers, including those teaching out of specialism or without a science background to use the resources confidently, while interactive elements and opportunities for reflection support pupil engagement, resilience, and metacognitive development. The inclusion of diverse role models, real-world contexts, and social and environmental perspectives further strengthens the resources.

**Resources Reviewed December 2025**

**About ASE Evaluated**

ASE Evaluated' is a recognised mark of quality assurance that indicates science education resources have been reviewed and evaluated by ASE. ASE can evaluate any type of resource including teaching guidance, lesson plans, practical activities, books and equipment.

Resources are evaluated to ensure they meet good standards for:

- Engagement and accessibility
- Evidence-informed and scientifically accurate content
- Alignment with national curricula
- Connection to clear and relevant pedagogy
- Innovation or added value
- Compliance with health and safety regulations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