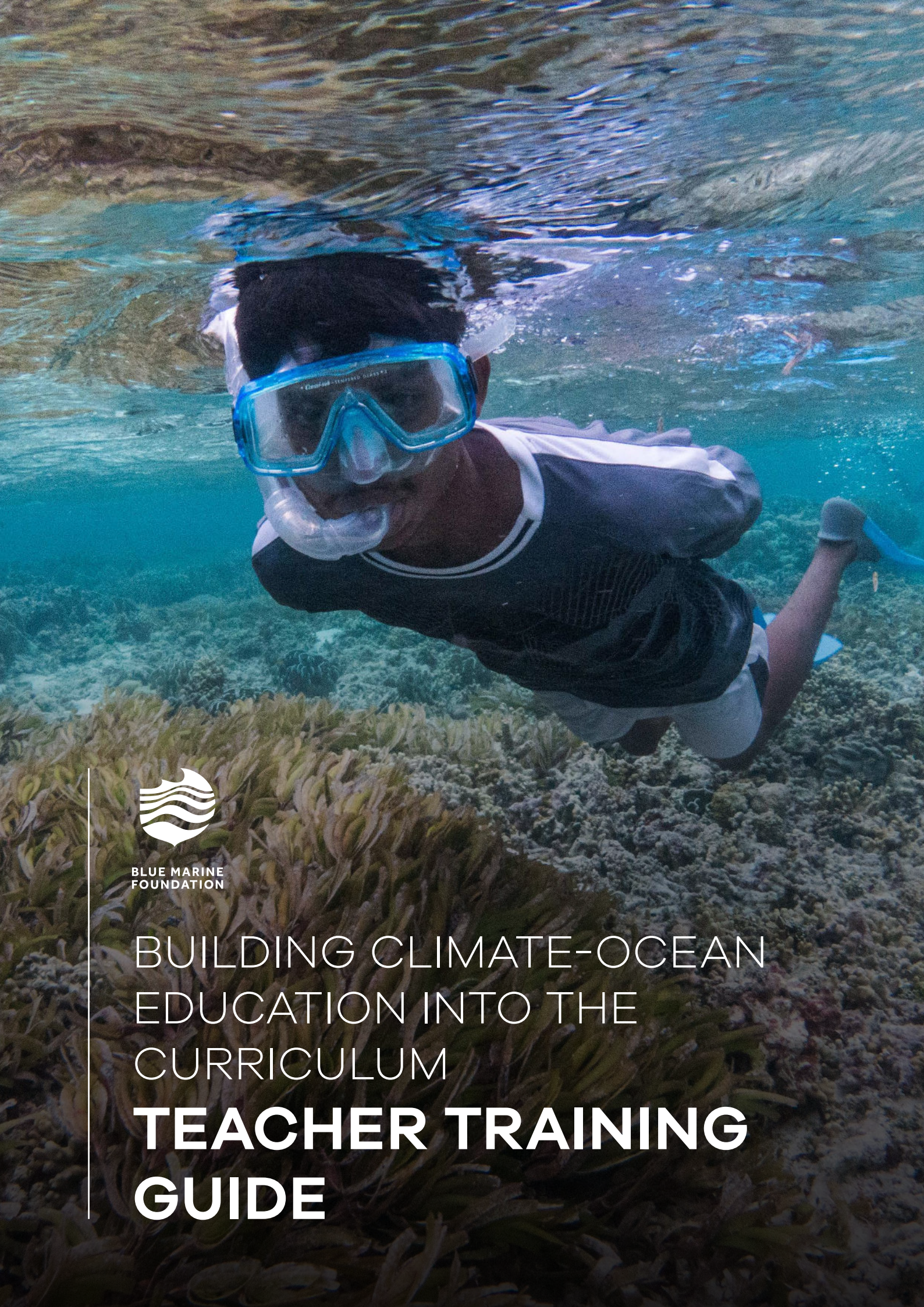


BLUE MARINE FOUNDATION

BUILDING CLIMATE-OCEAN EDUCATION INTO THE CURRICULUM

TEACHER TRAINING GUIDE

SESSION BACKGROUND

We are moving through a critical decade for ocean conservation, where acknowledging and acting on the link between the ocean and climate change has never been more pressing. In addition to encouraging local support for conservation initiatives, there is an urgent need for young people to understand the key principles of climate change and how this is impacting the ocean. It is equally important for them to feel hopeful about securing a more sustainable future considering this immense global challenge. Marine climate change issues are poorly communicated despite the central role of the ocean in the carbon cycle, where it dissolves more than 1 million tonnes of man-made CO2 every hour.

Young people are demanding more climate action, and so they deserve more high-quality climate education that will encourage critical thinking and improve their scientific skills. Climate education must be appropriate for various age groups with a strong focus on action-based learning in addition to knowledge building. Blue Education believes that now is the time to deliver climate content that is more likely to encourage behaviour change, which includes topics around mitigation, adaptation and solutions.

SESSION OVERVIEW

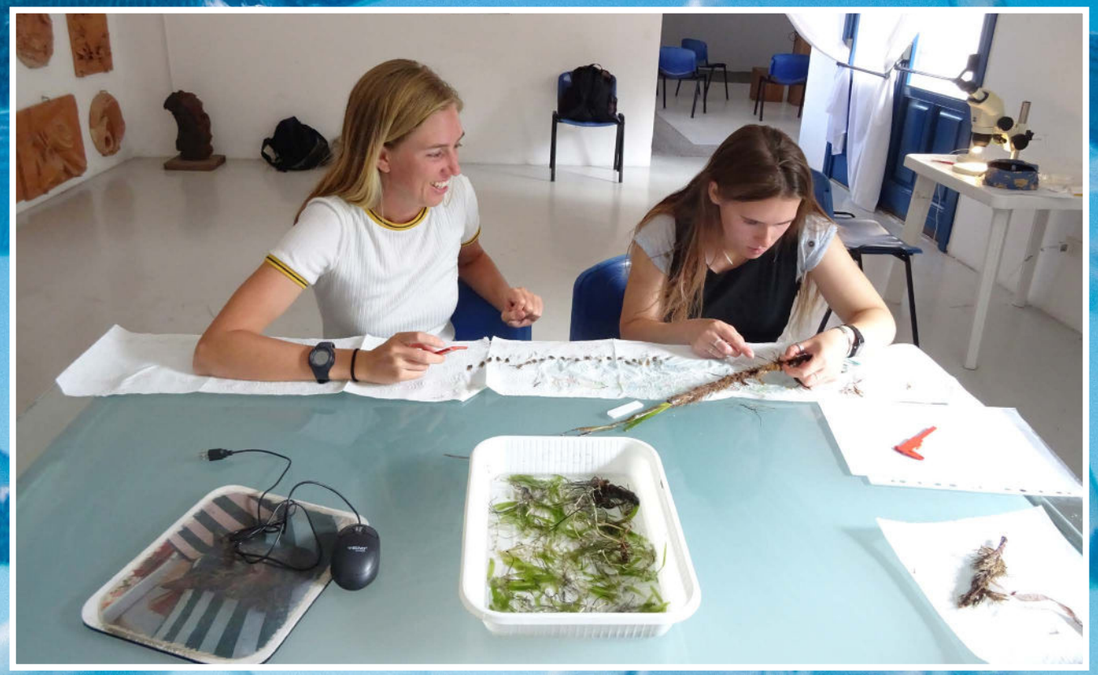
A hands-on session equipping teachers to build student understanding from climate basics to ocean solutions, exploring ready-to-use resources and developing curriculum-aligned activities that will help build confidence in both teacher and pupil.

1. **Introduction** (nature of climate change & baseline knowledge)
2. **Core climate science** (basic mechanisms, evidence, ocean's role & blue carbon)
3. **Teaching approaches** (assertion vs scaffolding)
4. **Curriculum Tasks** (integrating ocean-climate science into the curriculum)
5. **Resource Explore and Lesson Design** (create and present one lesson)
6. **Student wellbeing** (addressing climate anxiety & balance of agency)
7. **Q&A**

1. INTRODUCTION – ADDRESSING CLIMATE CHANGE IN THE CLASSROOM

Climate change can be taught as a simple array of science concepts. However, it may be better understood as a phenomenon reaching into every aspect of what it means to be human, addressing issues as disparate as money, politics, fairness, compassion, anxiety, trust, and even whether to have children. As we turn to address climate change with classes at secondary level, it is worth reflecting on how these diverse aspects can impact both teaching and learning.

This complexity is heightened by the triadic nature of learning (González et al., 2005), where knowledge and attitudes flow between home, child, and educator. Each participant brings their own "funds of knowledge" to climate change discussions, creating a rich but potentially challenging teaching/learning environment.



What do you and your students bring to the classroom?

These prompts will help you explore how different perspectives and experiences shape climate change education in your classroom. By examining various aspects that influence teaching and learning, you can develop more inclusive and effective approaches to this complex topic.

Based on your own experiences of being taught and teaching, consider these questions:

TASK 1:

Discuss the questions in your groups and add some responses to Figure 1 based on your experiences to date.

Science understanding	Values and worldviews	Emotional response	Socioeconomic Context
• What scientific concepts about climate do your students already understand well?	• How do family political perspectives influence student views on climate action?	• What climate-related anxieties do students bring from home discussions?	• How do family circumstances shape students' views of climate solutions?
• Which misconceptions from home environments do you commonly encounter?	• What diverse cultural relationships with nature exist in your classroom community?	• How can coping strategies influence student resilience?	• What assumptions about resources and actions influence our teaching?
• How do gaps in your own scientific knowledge affect your teaching confidence?	• How do you maintain professional objectivity while acknowledging your own views?	• What emotional challenges do you face when teaching climate topics?	• How do our own socioeconomic experiences affect our approach to teaching?

Figure 1 – Addressing climate change in the classroom

2. CORE CLIMATE AND OCEAN SCIENCE

Teaching ocean and climate science can feel daunting, particularly when approaching unfamiliar scientific concepts. This section provides essential subject knowledge to help you feel more confident in delivering lessons about the climate-ocean nexus.

TASK 2:

As we explore these core concepts, consider which areas you would like to develop further in your own understanding. Use the emojis to indicate your confidence in teaching the following themes and add notes to each topic as we move through the slides/discussion:

Links to supportive resources

Interactive diagrams, activities and resources can be found at:

https://encounteredu.com/multimedia/collections/ocean-climate

https://encounteredu.com/teacher-resources/ocean-climate-science-ages-11-14

https://encounteredu.com/cpd/collections/ocean-climate

Greenhouse effect interactive	**Climate science timeline**	**Climate science complexity and (un)certainty**
Explores core mechanisms of how greenhouse gases warm Earth's atmosphere 😊 😐 😱	Showing key science discoveries since the 1850s, and a lag in action 😊 😐 😱	Examines areas of (un)certainty and emerging questions in climate science 😊 😐 😱
Evidence for climate change	**Climate change over time**	**Carbon sources, sinks and stores**
Presents multiple lines of evidence supporting climate change understanding 😊 😐 😱	Charts historical climate patterns and their natural vs human drivers 😊 😐 😱	Maps carbon movement through Earth's systems and human impacts 😊 😐 😱
How does climate change affect the ocean?	**All about blue carbon habitats**	**All about the continental shelf**
Outlines how climate change affects ocean systems and marine life 😊 😐 😱	Examines coastal ecosystems that capture and store carbon 😊 😐 😱	Explores this key marine habitat's role in carbon storage 😊 😐 😱

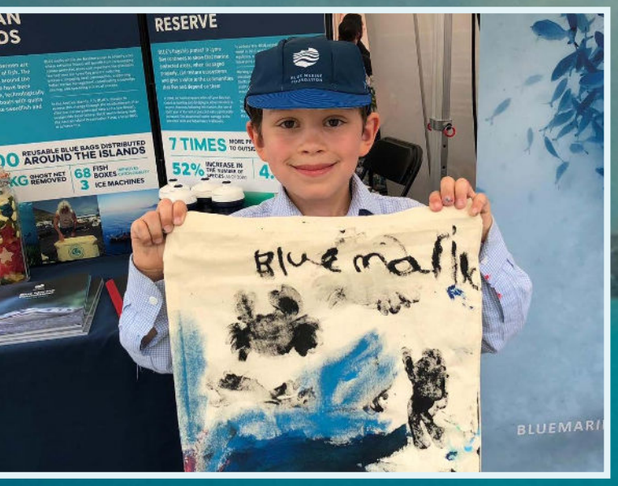
Figure 2 – List of Topics

3. TEACHING APPROACHES

Teaching about **Earth's climate and ocean systems** presents important pedagogical choices: do we begin **with values and emotional connections (Assertion-based),** then build up **scientific understanding (Scaffolding approach)** systematically, or find a way to combine both?

Both topics involve complex systems that directly affect students' lives, while also presenting opportunities for hope and positive action. Your teaching approach may depend on your students' needs, your teaching context, and your own confidence with these interconnected topics.

Many teachers find that **combining elements of both approaches works best – using emotional connections to spark interest while gradually building scientific understanding** of Earth's interconnected systems. The key is finding the right balance for your specific context.
As you read through the characteristics of each approach, consider which elements would best serve your students' needs and your teaching style.



Assertion-based approach

This values-first method aims to build environmental behaviours, emotional resilience, and competencies without requiring deep scientific understanding, focusing on developing care for self, others and the environment through **practical engagement and emotional connection.**

This approach to climate and ocean education can be systematically developed through **four key areas.** Each area builds different aspects of environmental understanding and action while connecting to existing school priorities and frameworks.

The framework in Figure 3 provides practical examples of how each area can be implemented, with specific ideas that can be successful in school settings. Many of these suggestions may align with initiatives already happening in your school, allowing you to build on existing practices rather than starting from scratch.

1. Traditional environmental values

- Pro-environmental behaviours, e.g. school recycling monitors
- Environmental citizenship, e.g. Eco-Schools Green Flag program
- Basic understanding of human-nature relationship, e.g. school garden and growing food
- School value statements and ethos, e.g. linking to the UN Sustainable Development Goals and sharing these across displays and in assemblies

2. Emotional intelligence & wellbeing

- Self-care practices, e.g. mindfulness including in natural settings
- Building emotional resilience, e.g. through PSHE curriculum
- Developing environmental empathy, e.g. through nature time and wildlife surveys
- Links to PSHE objectives, e.g. exploring responsibility for the wider world

3. Social-emotional development

- Care for others, e.g. community gardening and environmental projects
- Building community connections, e.g. working with local environmental groups
- Supporting spiritual development, e.g. exploring environmental ethics
- Promoting democratic values, e.g. through eco-committees or school council

4. Competency building

- Teamwork and leadership, e.g. group environmental projects and ambassador programs
- Planning and problem-solving, e.g. designing and maintaining school environmental initiatives
- Communication and advocacy, e.g. presenting to different audiences and engaging decision-makers
- Curriculum integration, e.g. using environmental monitoring for data handling

Figure 3 – Suggestions for an assertion-based approach in a school setting

TASK 3:

Highlight in Figure 3 any examples of how you may have taken an 'assertion' approach to climate education. Consider the pros and cons of this approach and complete the table below.

Assertions Approach – Pros and Cons:

Pros	Cons

Scaffolding Approach

A systematic building of scientific concepts and understanding that follows the primary curriculum progression, gradually constructing a comprehensive grasp of ocean and climate science through connected learning of underlying principles and processes.

Understanding how to teach ocean and climate science effectively requires careful consideration of how concepts build over time. The next task aims to help you identify how existing National Curriculum content in Key Stage 3 Geography and Science can be a platform for scaffolding climate and ocean science, even though not all these topics are explicitly mentioned.

Understanding how to teach ocean and climate science effectively requires careful consideration of how concepts build over time.

While the DfE's climate change strategy emphasises the importance of climate education, core concepts like photosynthesis, respiration, the carbon cycle, and climate change itself are not explicitly included in the **primary curriculum.** However, by identifying and building on existing curriculum foundations, we can help students develop meaningful understanding of these concepts, particularly in lower KS3 where many students are already encountering climate change through media and daily life.

Rather than attempting to fit climate change into the curriculum as a standalone topic, this scaffolding task helps you identify and strengthen crucial building blocks in students' understanding.

4. SCAFFOLDING APPROACH WITHIN THE CURRICULUM

TASK 4:

In your groups work through the KS3 Geography/Science Curriculum below and consider how/where the climate-oceans nexus could be integrated. Work in your groups to consider the following:

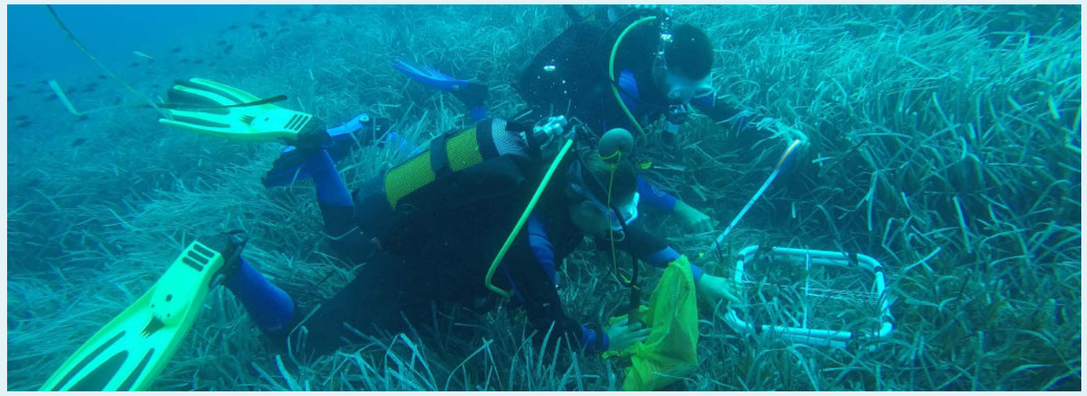
- Existing curriculum content that supports ocean and climate understanding
- How these elements connect to build scientific and geographical comprehension
- Ways to make explicit links between familiar topics and environmental concepts
- Identify foundations you can build upon in each year group 7-9.
- Make connections between familiar topics and ocean/climate concepts
- Plan how to strengthen key understanding at each stage
- Ensure students develop both knowledge and values systematically
- Prepare students for more detailed study of these topics from KS4

TIP: Use the Figure 2 – List of Topics Table – to help you consider what to integrate

GEOGRAPHY KS3	Development of climate-ocean knowledge		
	YEAR 7	YEAR 8	YEAR 9
Locational knowledge • extend their locational knowledge and deepen their spatial awareness of the world's countries using maps of the world to focus on Africa, Russia, Asia (including China and India), and the Middle East, focusing on their environmental regions, including polar and hot deserts, key physical and human characteristics, countries and major cities			
Place Knowledge • understand geographical similarities, differences and links between places through the study of human and physical geography of a region within Africa, and of a region within Asia			
Human and physical geography Understand, through the use of detailed place-based exemplars at a variety of scales, the key processes in: • physical geography relating to: geological timescales and plate tectonics; rocks, weathering and soils; weather and climate, including the change in climate from the Ice Age to the present; and glaciation, hydrology and coasts			
• human geography relating to: population and urbanisation; international development; economic activity in the primary, secondary, tertiary and quaternary sectors; and the use of natural resources Understand how human and physical processes interact to influence, and change landscapes, environments and the climate; and how human activity relies on effective functioning of natural systems			
Geographical skills and fieldwork • build on their knowledge of globes, maps and atlases and apply and develop this knowledge routinely in the classroom and in the field • interpret Ordnance Survey maps in the classroom and the field, including using grid references and scale, topographical and other thematic mapping, and aerial and satellite photographs • use Geographical Information Systems (GIS) to view, analyse and interpret places and data • use fieldwork in contrasting locations to collect, analyse and draw conclusions from geographical data, using multiple sources of increasingly complex information.			

BIOLOGY KS3	Development of climate-ocean knowledge		
	YEAR 7	YEAR 8	YEAR 9
Subject content – Biology Pupils should be taught about: **Structure and function of living organisms** **Cells and organisation** • the functions of the cell wall, cell membrane, cytoplasm, nucleus, vacuole, mitochondria and chloroplasts • the similarities and differences between plant and animal cells • the role of diffusion in the movement of materials in and between cells • the structural adaptations of some unicellular organisms • the hierarchical organisation of multicellular organisms: from cells to tissues to organs to systems to organisms.			
The skeletal and muscular systems • the structure and functions of the human skeleton, to include support, protection, movement and making blood cells • biomechanics – the interaction between skeleton and muscles, including the measurement of force exerted by different muscles • the function of muscles and examples of antagonistic muscles.			

BIOLOGY KS3	Development of climate-ocean knowledge		
	YEAR 7	YEAR 8	YEAR 9
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 • calculations of energy requirements in a healthy daily diet • the consequences of imbalances in the diet, including obesity, starvation and deficiency diseases • the tissues and organs of the human digestive system, including adaptations to function and how the digestive system digests food (enzymes simply as biological catalysts) • the importance of bacteria in the human digestive system • plants making carbohydrates in their leaves by photosynthesis and gaining mineral nutrients and water from the soil via their roots.			



BIOLOGY KS3	Development of climate-ocean knowledge		
	YEAR 7	YEAR 8	YEAR 9
Gas exchange systems • the structure and functions of the gas exchange system in humans, including adaptations to function • the mechanism of breathing to move air in and out of the lungs, using a pressure model to explain the movement of gases, including simple measurements of lung volume • the impact of exercise, asthma and smoking on the human gas exchange system • the role of leaf stomata in gas exchange in plants.			
Reproduction • reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta • reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms.			

BIOLOGY KS3	Development of climate-ocean knowledge		
	YEAR 7	YEAR 8	YEAR 9
Health • the effects of recreational drugs (including substance misuse) on behaviour, health and life processes.			
Material cycles and energy Photosynthesis • the reactants in, and products of, photosynthesis, and a word summary for photosynthesis • the dependence of almost all life on Earth on the ability of photosynthetic organisms, such as plants and algae, to use sunlight in photosynthesis to build organic molecules that are an essential energy store and to maintain levels of oxygen and carbon dioxide in the atmosphere • the adaptations of leaves for photosynthesis.			
Cellular respiration • aerobic and anaerobic respiration in living organisms, including the breakdown of organic molecules to enable all the other chemical processes necessary for life • a word summary for aerobic respiration • the process of anaerobic respiration in humans and micro-organisms, including fermentation, and a word summary for anaerobic respiration • the differences between aerobic and anaerobic respiration in terms of the reactants, the products formed and the implications for the organism.			

BIOLOGY KS3	Development of climate-ocean knowledge		
	YEAR 7	YEAR 8	YEAR 9
Interactions and interdependencies • Relationships in an ecosystem • the interdependence of organisms in an ecosystem, including food webs and insect pollinated crops • the importance of plant reproduction through insect pollination in human food security • how organisms affect, and are affected by, their environment, including the accumulation of toxic materials.			
Genetics and evolution Inheritance, chromosomes, DNA and genes • heredity as the process by which genetic information is transmitted from one generation to the next • a simple model of chromosomes, genes and DNA in heredity, including the part played by Watson, Crick, Wilkins and Franklin in the development of the DNA model • differences between species • the variation between individuals within a species being continuous or discontinuous, to include measurement and graphical representation of variation • the variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection			

BIOLOGY KS3	Development of climate-ocean knowledge		
	YEAR 7	YEAR 8	YEAR 9
• changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction • the importance of maintaining biodiversity and the use of gene banks to preserve hereditary material.			

CHEMISTRY	Development of climate-ocean knowledge		
	YEAR 7	YEAR 8	YEAR 9
Pupils should be taught about: **The particulate nature of matter** • the properties of the different states of matter (solid, liquid and gas) in terms of the particle model, including gas pressure • changes of state in terms of the particle model.			
Atoms, elements and compounds • a simple (Dalton) atomic model • differences between atoms, elements and compounds • chemical symbols and formulae for elements and compounds • conservation of mass changes of state and chemical reactions.			

CHEMISTRY	Development of climate-ocean knowledge		
	YEAR 7	YEAR 8	YEAR 9
Pure and impure substances • the concept of a pure substance • mixtures, including dissolving • diffusion in terms of the particle model • simple techniques for separating mixtures: filtration, evaporation, distillation and chromatography • the identification of pure substances.			
Chemical reactions • chemical reactions as the rearrangement of atoms • representing chemical reactions using formulae and using equations • combustion, thermal decomposition, oxidation and displacement reactions • defining acids and alkalis in terms of neutralisation reactions • the pH scale for measuring acidity/alkalinity; and indicators • reactions of acids with metals to produce a salt plus hydrogen • reactions of acids with alkalis to produce a salt plus water • what catalysts do.			
Energetics • energy changes on changes of state (qualitative) • exothermic and endothermic chemical reactions (qualitative).			

CHEMISTRY	Development of climate-ocean knowledge		
	YEAR 7	YEAR 8	YEAR 9
Science – key stage 3 9 • The Periodic Table • the varying physical and chemical properties of different elements • the principles underpinning the Mendeleev Periodic Table • the Periodic Table: periods and groups; metals and non-metals • how patterns in reactions can be predicted with reference to the Periodic Table • the properties of metals and non-metals • the chemical properties of metal and non-metal oxides with respect to acidity.			
Materials • the order of metals and carbon in the reactivity series • the use of carbon in obtaining metals from metal oxides • properties of ceramics, polymers and composites (qualitative).			
Earth and atmosphere • the composition of the Earth • the structure of the Earth • the rock cycle and the formation of igneous, sedimentary and metamorphic rocks • Earth as a source of limited resources and the efficacy of recycling • the carbon cycle • the composition of the atmosphere • the production of carbon dioxide by human activity and the impact on climate.			

Figure 4 – Scaffolding Climate-Ocean knowledge into the curriculum

5. BLUE MARINE'S OCEAN RESOURCES

An important part of Blue Marine's strategy for a healthier ocean is strengthening education through community engagement, schools' initiatives, collaboration with local stakeholders and strategic partnerships with education providers. Recognising the lack of marine conservation education in school curriculums, our Blue Education unit has developed free educational resources and online platforms to help bridge the gap in education. Resources like these help to cultivate a personal interest in ocean protection among younger generations while also informing climate change education.

In 2023, we transformed 'The Sea We Breathe', our award-winning educational website, into a VR experience. Guided by a voiceover from British actor Helena Bonham Carter, it explores three marine habitats — **open ocean, kelp forest and seagrass meadow** — allowing viewers who live far from the coast, or can't visit marine environments, to dive into the wonders of the ocean.

'The Sea We Breathe' is now available in 8 languages, with Arabic launched in 2023 at COP28 in Dubai and Greek launched in 2024.

List of links:

https://vrbluemarine.com

Home - The Sea We Breathe - https://www.bluemarinefoundation.com/the-sea-we-breathe

Jersey Ocean Observatory - Your portal to Jersey's underwater world - https://ocean-observatory.bluemarinefoundation.com/jersey

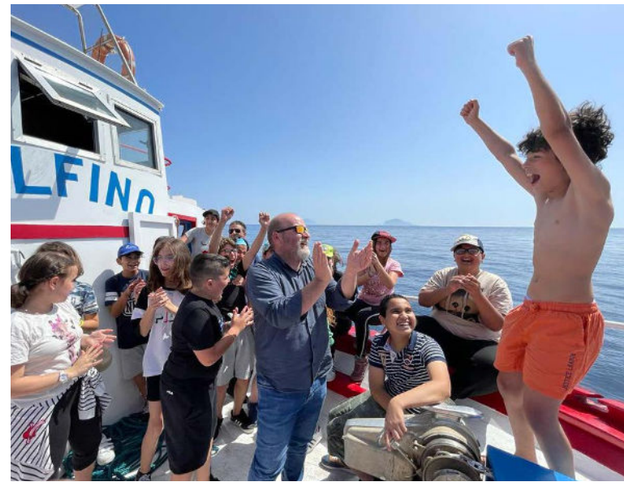
Virtual Experience - Convex Seascape Survey - https://convexseascapesurvey.com/virtual-experience

Blue Education Resources | Blue Marine Foundation - https://www.bluemarinefoundation.com/2020/03/25/blue-education-resources

Marine Conservation Projects | Blue Marine Foundation - https://www.bluemarinefoundation.com/our-projects

TASK 5:

- **Explore the resources in the links and guide. Return to Figure 4 to add reference to appropriate activities/ case studies to facilitate your Climate-Ocean teaching.**
- **In your tables plan a 25-minute lesson with the objective of integrating the oceans into climate education.**



Scaffolding Approach – Pros and Cons

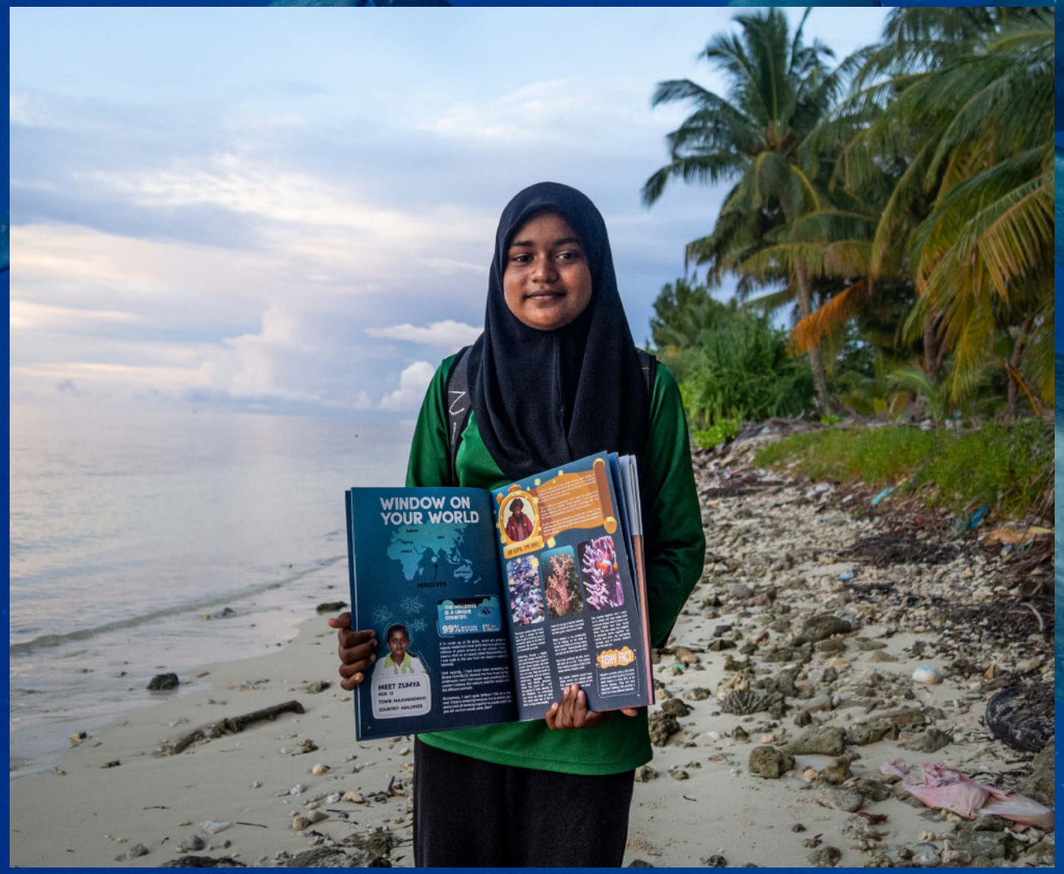
Pros	Cons

6. STUDENT WELLBEING IN CLIMATE AND OCEAN EDUCATION

The teaching of climate change and ocean literacy requires careful consideration of student wellbeing, particularly in how we approach emotional support while fostering meaningful engagement with environmental challenges. When teaching about **climate change there are two main aspects to consider:**

1. Intergenerational justice

2. Importance of agency



Addressing intergenerational justice

The discourse around climate change often places undue burden on young people through rhetoric about the "next generation saving the planet." This responsibility-shifting has significant psychological impacts, as documented by Hickman et al. (2021), who found that 59% of young people surveyed were very or extremely worried about climate change, with many reporting feelings of betrayal by government inaction. The psychological impact of framing climate action as solely youth responsibility extends beyond immediate anxiety. Studies by Marks et al. (2021) demonstrate how this approach can lead to decreased sense of efficacy and increased eco-anxiety among young people.

The issue of intergenerational justice comes sharply into focus when we examine how politicians and celebrities often praise the 'next generation' as planetary saviours while avoiding accountability for damage done over past decades. Burke et al. (2022) show that this transfer of responsibility to future generations, while current decision-makers avoid action, creates significant psychological distress in young people. This shifting of responsibility, especially through individual behaviour change programmes, can drive climate anxiety and lead to feelings of anger and apathy.

To address these challenges, schools can create structured opportunities for students to engage with decision-makers. This means enabling young people to ask, demand, and persuade adults to take meaningful action on climate change, whether those adults are school leaders, community representatives, or politicians. Such engagement requires real frameworks and opportunities within the school, supported by senior management and governors who are willing to commit resources and take action.

Connection with local action groups plays a crucial role in building hope and agency. Schools should actively seek partnerships that create opportunities for classes to take collective action, or bring individuals and organisations into schools to demonstrate how adults are making a difference. As Ojala (2012) emphasises, exposure to examples of hope, whether through curriculum case studies or visiting speakers, is vital for maintaining student engagement and well-being.

Schools can create structured opportunities for students to engage with decision-makers.

Developing agency

Agency in climate and ocean action manifests in two distinct forms. External agency involves creating tangible opportunities for students to take action, advocate, organize events, and engage with decision-makers. Equally important is internal agency - creating spaces and mechanisms for students' concerns to be heard and acknowledged, whether through discussion forums, feedback walls, or other channels of expression. Stevenson et al. (2019) highlight how this dual approach to agency can help build lasting environmental engagement while supporting emotional well-being.

The My School ACTS Framework provides a structured approach to climate and ocean action:

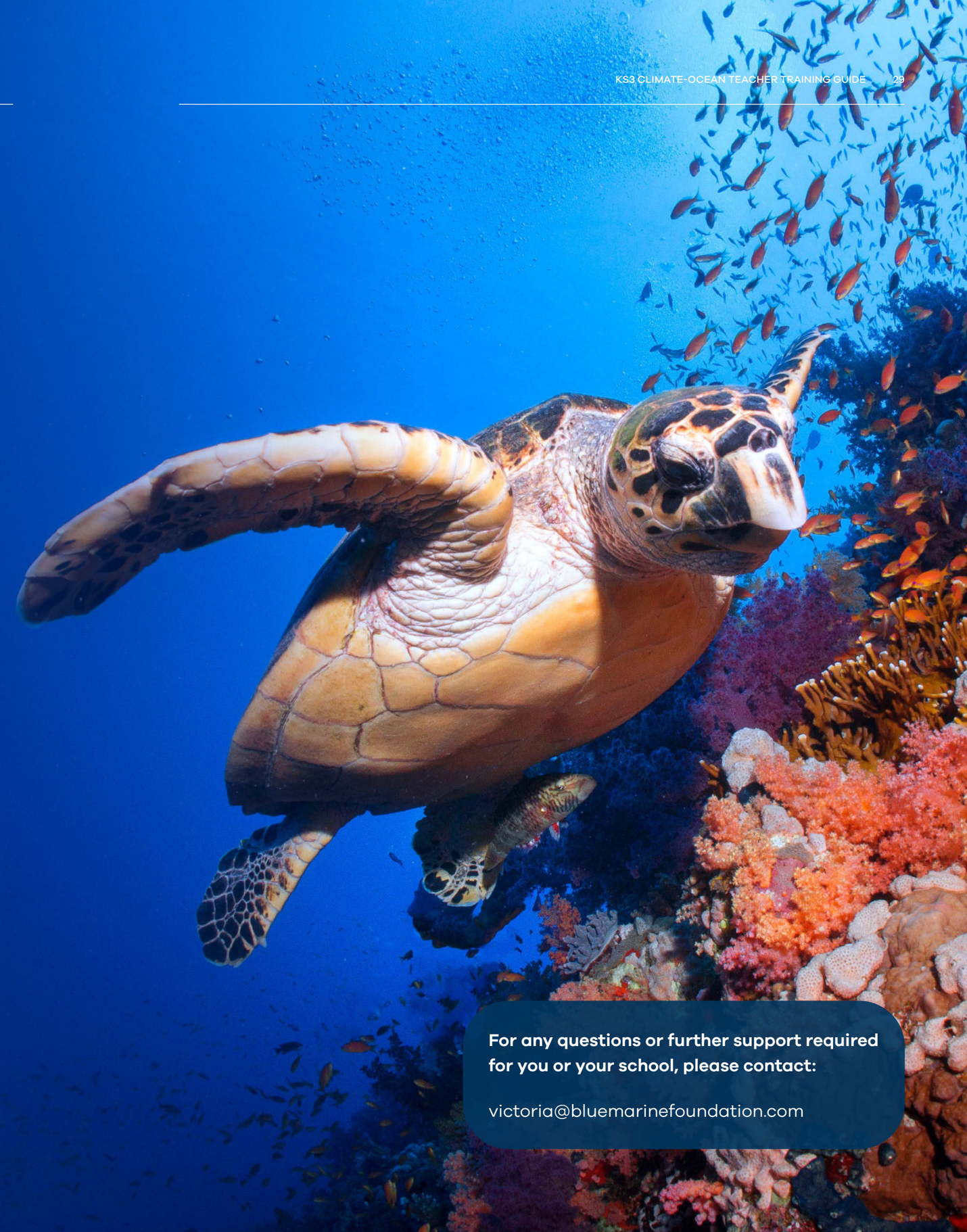
- **Advocate** - we ask those responsible to make the change
- **Compassion** - we act with compassion towards others and the world, even if we disagree with them
- **Together** - we celebrate coming together to take collective action
- **Solutions** - we think of new ways of doing things that decrease harm to people and the planet

This framework can be embedded within broader school structures that support both action and well-being. Schools should establish clear pathways for student advocacy while ensuring appropriate emotional support is available. This might involve dedicated time for environmental initiatives, clear channels for student voice, and regular opportunities for community engagement.

The role of community connections cannot be overstated. Regular interaction with environmental practitioners, partnerships with local action groups, and meaningful involvement of parents and governors all help create a supportive ecosystem for climate education. These connections help demonstrate that action is possible and that young people are not alone in their concerns about environmental challenges.

Success in climate and ocean education requires careful balance. While we must be honest about environmental challenges, we should also ensure that young people feel supported rather than overwhelmed. Through structured support, meaningful agency, and clear pathways for action, educators can help students engage with these crucial issues while maintaining their emotional well-being.

> Exposure to examples of hope, whether through curriculum case studies or visiting speakers, is vital for maintaining student engagement and well-being.



For any questions or further support required for you or your school, please contact:

victoria@bluemarinefoundation.com

FURTHER READING

Addressing climate change in the classroom

González, N., Moll, L. C., & Amanti, C. (2005). Funds of knowledge: Theorizing practices in households, communities, and classrooms. Lawrence Erlbaum.

Ojala, M. (2012). How do children cope with global climate change? Coping strategies, engagement, and well-being. Journal of Environmental Psychology, 32(3), 225-233.

Lawson, D. F., et al. (2019). Children can foster climate change concern among their parents. Nature Climate Change, 9(6), 458-462.

Basic assertions/values-based approach

Chawla, L., & Cushing, D. F. (2007). Education for strategic environmental behavior. Environmental Education Research, 13(4), 437-452.

Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? Environmental Education Research, 8(3), 239-260.

Scaffolding/knowledge-building approach

Shepardson, D. P., Niyogi, D., Roychoudhury, A., & Hirsch, A. (2012). Conceptualizing climate change in the context of a climate system: Implications for climate and environmental education. Environmental Education Research, 18(3), 323-352.

Wynes, S., & Nicholas, K. A. (2019). Climate science curricula in Canadian secondary schools focus on human warming, not scientific consensus, impacts or solutions. PloS one, 14(7), e0218305.

Discussing both approaches

Monroe, M. C., Plate, R. R., Oxarart, A., Bowers, A., & Chaves, W. A. (2019). Identifying effective climate change education strategies: A systematic review of the research. Environmental Education Research, 25(6), 791-812.

Student wellbeing in climate and ocean education

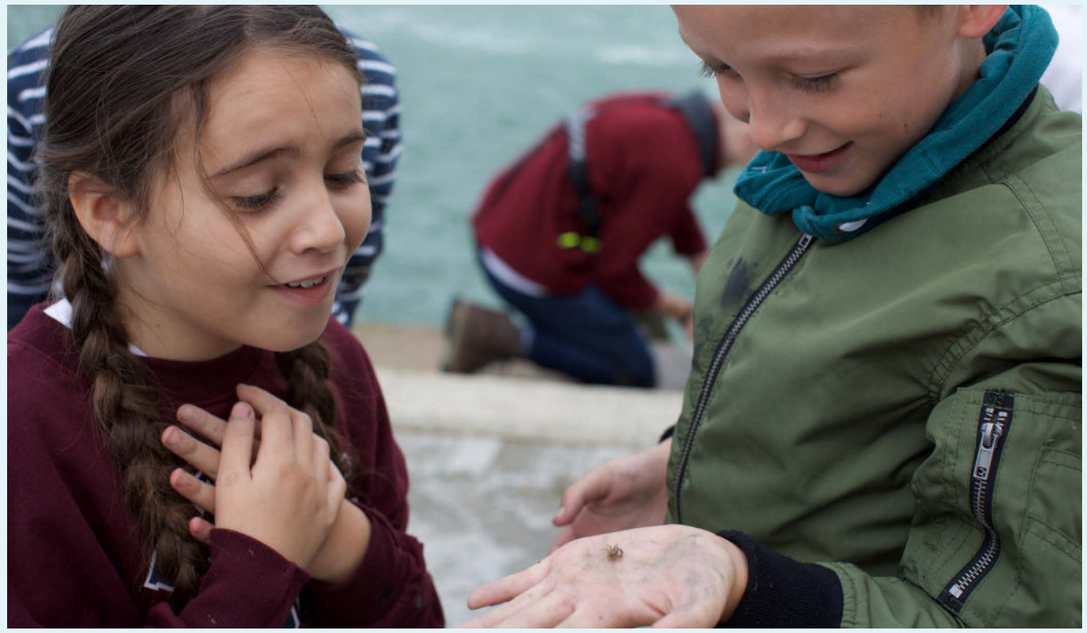
Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R. E., Mayall, E. E., ... & van Susteren, L. (2021). Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey. The Lancet Planetary Health, 5(12), e863-e873.

Marks, E., Hickman, C., Pihkala, P., Clayton, S., Lewandowski, R. E., Mayall, E. E., ... & van Susteren, L. (2021). Young People's Voices on Climate Anxiety, Government Betrayal and Moral Injury: A Global Phenomenon. SSRN Electronic Journal.

Burke, S. E. L., Sanson, A. V., & Van Hoorn, J. (2022). The Psychological Effects of Climate Change on Children. Current Psychiatry Reports, 24(1), 1-10.

Ojala, M. (2012). Hope and climate change: the importance of hope for environmental engagement among young people. Environmental Education Research, 18(5), 625-642.

Stevenson, K. T., Peterson, M. N., & Bondell, H. D. (2019). The influence of personal beliefs, friends, and family in building climate change concern among adolescents. Environmental Education Research, 25(6), 832-845.



BLUE MARINE
FOUNDATION

3rd Floor South Building,
Somerset House, Strand, London,
WC2R 1LA

+44 0207 845 5850
info@bluemarinefoundation.com
www.bluemarinefoundation.com