

# Applicable standards

## National Curriculum for England Key Stage 2

KS2 Science	Lessons											
	1	2	3	4	5	6	7	8	9	10	11	12
<b>Living things and their habitats</b>												
<ul style="list-style-type: none"> <li>Recognise that environments can change.</li> <li>Explore and use classification keys to help group, identify and name a variety of living things in the local and wider environment.</li> <li>Recognise that living things can be grouped in a variety of ways.</li> <li>Identify how animals and plants are adapted to suit their environment in different ways.</li> <li>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.</li> <li>Give reasons for classifying plants and animals based on specific characteristics.</li> </ul>		✓	✓						✓		✓	
<b>Evolution and inheritance</b>												
<ul style="list-style-type: none"> <li>Recognise that living things have changed over time.</li> <li>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</li> <li>Understand that adaptation may lead to evolution.</li> </ul>												✓
<b>States of matter</b>												
<ul style="list-style-type: none"> <li>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul>						✓						
<b>Working scientifically</b>												
<ul style="list-style-type: none"> <li>Observing over time</li> <li>Pattern seeking</li> <li>Identifying, classifying and grouping</li> <li>Researching using secondary sources</li> <li>Presenting data</li> </ul>						✓			✓			✓
<b>KS2 Geography</b>	Lessons											
<b>Locational knowledge</b>	1	2	3	4	5	6	7	8	9	10	11	12
<ul style="list-style-type: none"> <li>Name and locate the UK's surrounding seas.</li> <li>Develop contextual knowledge of the location of globally significant marine places including their defining physical and human characteristics.</li> </ul>	✓					✓						

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KS2 Geography (continued)	Lessons												
	1	2	3	4	5	6	7	8	9	10	11	12	
<b>Locational knowledge</b>													
<ul style="list-style-type: none"> <li>Identify the position and significance of latitude including the Equator, the Tropics of Cancer and Capricorn, and the Arctic and Antarctic Circles.</li> </ul>							✓						
<ul style="list-style-type: none"> <li>Understand geographical similarities and differences through studying the human geography of a small area of the UK.</li> </ul>				✓									
<ul style="list-style-type: none"> <li>Understand geographical similarities and differences through the study of physical geography of a region of the United Kingdom, a region in a European country, and a region within North America.</li> </ul>							✓						
<b>Human and physical geography</b>													
<ul style="list-style-type: none"> <li>Describe and understand key aspects of human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water.</li> </ul>				✓									
<ul style="list-style-type: none"> <li>Use basic geographical vocabulary to refer to key physical and human features, e.g. beach, cliff, coast, sea, ocean, river, port, harbour.</li> </ul>	✓												
<ul style="list-style-type: none"> <li>Describe and understand key aspects of the water cycle.</li> </ul>							✓						
<ul style="list-style-type: none"> <li>Describe and understand key aspects of climate zones.</li> </ul>								✓					
<b>Geographical skills</b>													
<ul style="list-style-type: none"> <li>Students work geographically by using maps and atlases to locate and describe features studied.</li> </ul>	✓				✓								
<ul style="list-style-type: none"> <li>Students work geographically by handling and processing data.</li> </ul>													✓
<b>KS2 Design &amp; Technology</b>													
<b>Making</b>													
<ul style="list-style-type: none"> <li>Select from and use a wider range of tools and equipment to perform practical tasks accurately.</li> </ul>													✓
<ul style="list-style-type: none"> <li>Select a wider range of materials based on their properties.</li> </ul>													✓
<b>Evaluating</b>													
<ul style="list-style-type: none"> <li>Evaluate ideas and products against students' own design criteria.</li> </ul>													✓

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<b>KS2 English</b>		<b>Lessons</b>											
<b>Spoken English</b>		1	2	3	4	5	6	7	8	9	10	11	12
• Students give well-structured descriptions, explanations and narratives.													✓
• Students speak audibly and fluently with an increasing command of Standard English.													✓
• Students participate in presentations.													✓
• Students gain, maintain and monitor the interest of the listeners.													✓
• Students practise public speaking and self-reflection.													✓

## Lesson 1: The UK seas with Paul Rose

### Overview

This introductory lesson to the Our Ocean Planet topic sees students explore the seas and coasts of the United Kingdom with explorer and TV presenter Paul Rose. Students will be able to name and locate the UK's surrounding seas and major marine features and landmarks, with opportunities to develop map skills.

### Learning outcomes

- Name and locate the UK's surrounding seas
- Name and locate the UK's major marine features and landmarks
- Develop appropriate marine-focused geographical vocabulary
- Develop map skills

### Resources

-  **Slideshow 1:**  
The UK seas
-  **Student Sheet 1a:**  
UK places and seas
- Student Sheet 1b:**  
UK marine landmarks
- Student Sheet 1c:**  
Postcard template
-  **Student Sheet 1d:**  
Travel brochure template

## Lesson 2: UK marine habitats with Susana Lincoln

### Overview

The ocean is not a giant bathtub nor swimming pool, but is composed of different habitats like on land. In this lesson, students learn about the five major marine habitats around the UK and the different conditions in each one. In the following lesson, students will investigate the different types of marine life that live in each habitat.

### Learning outcomes

- Identify marine habitats and microhabitats
- Describe the features of major marine habitats
- Describe how some habitats change using science words

### Resources

-  **Slideshow 2:**  
UK marine habitats
-  **Activity Overview 2a:**  
Dictogloss of marine habitats
-  **Student Sheet 2a:**  
Marine habitats diagram
- Student Sheet 2b:**  
Marine habitats and conditions cards
- Student Sheet 2c:**  
Marine habitats and life poster
-  **Subject Update:**  
Marine habits

## Lesson 3: UK marine life with Dr Ceri Lewis and Dr Helen Findlay

### Overview

99% of the living space of the planet is in the ocean. It is not just far off and tropical seas that have amazing marine life. The seas around the UK are host to a huge variety of life. This lesson uses a virtual ocean for students to explore the diversity, features and adaptations of marine life around the UK.

### Learning outcomes

- Identify marine organisms
- Match organisms to their habitats
- Describe the adaptations of some marine organisms

### Resources

-  **Slideshow 3:**  
UK marine life
-  **Student Sheet 3a:**  
What lives where?
- Student Sheet 3b:**  
Marine life profiles
- Student Sheet 3c:**  
Marine habitats and life poster (from the last lesson)
-  **Thinglink:**  
Marine life
-  **Subject Update:**  
How to teach evolution

# SCHEME OF WORK

## Lesson 4: Using our seas with Jennifer Gomez Molina

### Overview

The sea is worth over £69 billion to the UK economy. In this lesson, students will investigate the main uses of the sea, before analysing data demonstrating the worth of the major marine industries to the UK economy. Students will develop both a knowledge of the marine economy and develop their data analysis and numeracy skills.

### Learning outcomes

- Name and describe uses of the sea
- Get information from a bar chart
- Draw a chart
- Make a conclusion based on data
- Calculate a percentages

### Resources



**Slideshow 4:**  
Using our seas



**Student Sheet 4a:**  
Using our seas

**Student Sheet 4b:**  
How much is the sea worth?

**Student Sheet 4c:**  
Using our seas poster



**Thinglink:**  
How do we use the seas



**Multimedia Slideshow:**  
Pixels marine economy

## Lesson 5: Our ocean voyage with Prof Alex Rogers

### Overview

This lesson introduces students to the breadth and wonder of the world's ocean. Students will learn about the names and locations of the world's oceans before looking at some of the major marine features. The lesson also sets up the students' ocean voyage over the next six lessons, where they will explore the different parts of the ocean discovering the diversity and importance of the ocean as well as some of the issues it faces.

### Learning outcomes

- Name and locate the world's oceans
- Name and locate major marine features
- Write geographical descriptions for major marine landmarks

### Resources



**Slideshow 5:**  
Our ocean voyage



**Student Sheet 5a:**  
World oceans map

**Student Sheet 5b:**  
Marine wonders card sort

**Student Sheet 5c:**  
Voyage map template



**Subject Update:**  
How many oceans are there?

## Lesson 6: The Arctic Ocean and water cycle with Prof Mark Brandon

### Overview

Students will visit the Arctic Ocean and learn about the water cycle. They will first consider whether it rains / snows more in Belfast or the Arctic, and then will conduct a practical to link the ideas of temperature and evaporation. Students will then put the concepts of evaporation and precipitation into the context of the entire water cycle, through identifying the main features of the water cycle and then use a card sort to combine the processes involved with the main features.

### Learning outcomes

- Name the main geographical features of the water cycle
- Observe how evaporation rates differ with temperature
- Describe the water cycle using precise vocabulary

### Resources



**Slideshow 6:**  
Arctic ocean and the water cycle



**Activity Overview 6a:**  
Evaporation rates practical



**Mark Scheme 6a:**  
Water cycle exam style questions



**Student Sheet 6a:**  
Water cycle card sort

**Student Sheet 6b:**  
Water cycle data

**Student Sheet 6c:**  
Water cycle exam style questions

## Lesson 7: The Atlantic Ocean and climate with Prof Penny Holliday

### Overview

Students will investigate the relationship between latitude and climate, describing the major climate zones before investigating the impact of the ocean on climate with a specific reference to the Gulf Stream and its warming influence on the United Kingdom and northwest Europe. The lesson ends with students evaluating model answers and coming up with their own explanations.

### Learning outcomes

- Describe weather and climate
- Show major climate zones on a map
- Describe the impact of latitude on climate
- Describe what is meant by the Gulf Stream and its influence on climate
- Explain the differences in climate between specific places in Europe and North America

### Resources



**Slideshow 7:**  
Atlantic Ocean and climate



**Student Sheet 7a:**  
World city cards

**Student Sheet 7b:**  
World climate zones

**Student Sheet 7c:**  
Explaining the UK climate

**Student Sheet 7d:**  
The ocean and climate



**Subject Update:**  
Ocean circulation and climate

## Lesson 8: The Indian Ocean and classification with Sheena Talma

### Overview

A science focused lesson where students classify some organisms that are frequently thought to be other things: dolphins are mammals not fish; sponges are actually animals; and coral are colonies of animals that can look like trees.

### Learning outcomes

- Identify living, dead and non-living things
- Group objects in different ways
- Classify living things using standard scientific groups with reasons
- Create and use a key to classify organisms
- Classify difficult organisms using standard scientific groups with reasons

### Resources



**Slideshow 8:**  
Indian Ocean and classification



**Activity Overview 8a:**  
Sorting objects practical



**Student Sheet 8a:**  
Classifying coral life

**Student Sheet 8b:**  
Making a key

**Student Sheet 8c:**  
Classification card sort

**Student Sheet 8d:**  
Coral life fact sheet



**Video:**  
Wonders of coral



**Gallery:**  
Coral Life



**Subject Update:**  
How to teach classification

## SCHEME OF WORK

### Lesson 9: The Pacific Ocean and plastic pollution with Jo Royle

#### Overview

Nearing the end of their ocean voyage, students will investigate one of the issues facing the world's ocean, plastic pollution. Students will begin by learning about the impact of litter on marine life. They will then explore the 3 Rs (reduce, recycle, reuse) and how they can be applied to the issue of marine plastic pollution. Students will then be guided to reuse common plastic waste to make a new useful object such as a bird-feeder or snack box.

#### Learning outcomes

- Understand the impact of human activity on the environment
- Understand the importance of the 3 Rs (reduce, reuse, recycle)
- Reuse plastic waste to create a high quality product
- Review product design and making against criteria

#### Resources



**Slideshow 9:**  
The Pacific Ocean and plastic pollution



**Activity Overview 9a:**  
Reusing plastic bottles



**Student Sheet 9a:**  
Reusing plastic bottles (preparation)

**Student Sheet 9b:**  
Reusing plastic bottles (guidance)

**Student Sheet 9c:**  
Plastic product review

### Lesson 10: The Southern Ocean and penguin adaptation with Dr Norman Ratcliffe

#### Overview

Students travel to the Southern Ocean and the waters around Antarctica to study how penguins have adapted to this habitat. Students will learn about the different adaptations that allow penguins to live in this frozen world and get their food from the ocean. This lesson can be used as a standalone lesson for lower Key Stage 2 students, or as an introductory lesson to the topic of evolution for upper Key Stage 2 students, which is the focus of Mission 11.

#### Learning outcomes

- Describe similarities between features of penguins and other birds
- Describe how penguins have adapted to their habitat

#### Resources



**Slideshow 10:**  
The Southern Ocean and penguin adaptation



**Student Sheet 8a:**  
Penguin adaptations



**Thinglink:**  
Penguin adaptations



**Subject Update:**  
How to teach classification

## Lesson 11: The Southern Ocean and penguin evolution with Dr Michael Dunn

### Overview

Following on from their study of penguin adaptation in Mission 10, students explore how penguins might have evolved to suit past environmental changes. The core of this lesson is the Penguin Evolution Game, which simulates the six stages of adaptation that lead to evolution. This mission is best suited to older students in Key Stage 2.

### Learning outcomes

- Define the terms evolution and extinction
- Explain how penguins became adapted to their habitat
- Explain how adaptation led to the evolution of penguins

### Resources



**Slideshow 11:**  
The Southern Ocean and penguin evolution



**Activity Overview 11a:**  
Penguin evolution script

**Activity Overview 11b:**  
Penguin evolution game



**Student Sheet 11a:**  
Penguin adaptations

**Student Sheet 11b:**  
Penguin adaptations

**Student Sheet 11c:**  
Penguin adaptations

**Student Sheet 11d:**  
Penguin adaptations



**Subject Update:**  
How to teach evolution

## Lesson 12: Captain's log

### Overview

In this final lesson, students will create and deliver a presentation about their ocean voyage. Students will learn about presentation skills including delivery and slide design. Students will deliver their presentation to the class, receiving feedback from their peers. Celebrate the end of the ocean voyage with certificates or prize giving.

### Learning outcomes

- Give well-structured descriptions, explanations and narratives for different purposes, including for expressing feelings
- Speak audibly and fluently with an increasing command of Standard English
- Participate in presentations
- Gain, maintain and monitor the interest of the listeners

### Resources



**Slideshow 12:**  
Captain's log



**Student Sheet 12a:**  
Presentation storyboard

**Student Sheet 12b:**  
Presentation peer assessment



**Certificate:**  
Our Ocean Planet