



Year 1 Science lessons pack

What would it be like to live on an island
elsewhere in the world?



Year 1

Science lessons pack

ENQUIRY QUESTION

What would it be like to live on an island elsewhere in the world?

LINKED HARMONY PRINCIPLE

The principle of Oneness

The six lesson plans in this pack can be used to deliver the science content for the Year 1 enquiry of learning *What would it be like to live on an island elsewhere in the world?*, linked to the principle of Oneness.

This science learning builds on children's understanding of animals, including humans, and the foundations of science learning, which will have been explored through the area of Understanding the World in the EYFS and their prior learning in Year 1.

‘When we care for our world, we care for all the animals we share it with.’

Each lesson plan includes opportunities to refer to the children's prior learning, as well as questions to use to reflect on current learning and to assess the children's developing knowledge and understanding. In addition, lessons feature key elements that are distinctive to the Harmony approach to teaching and learning, for example: opportunities to **learn about Nature**, to **learn in Nature** and to **learn from Nature**.

A summary of each of these elements in relation to the six lesson plans in this pack is set out on the next pages.



01 - Learning about Nature

The statutory requirements of the National Curriculum set out what children need to learn about Nature – although, of course, their wider learning about Nature will extend beyond this.

As children progress through their primary education, we can map the journey that their science learning about animals, including humans, and living things and their habitats takes.

By understanding their prior learning about animals, including humans, in the EYFS, and by looking ahead to the path that their learning about animals, including humans, will take in Years 2 to 6, we are better able to plan for progression.

The table below shows where the science learning about animals, including humans, covered in the lesson plans in this pack, sits within this journey.

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
ENQUIRY	Understanding the world	What would it be like to live on an island elsewhere in the world?	Where are the polar regions and how are they changing?	How did life change from the Stone Age to the Iron Age?	Why should we protect the biodiversity of the rainforest?	How can we restore our UK habitats back to health?	Where do migratory animals travel to and from and why?
SUMMARY OF LEARNING	Children will be guided to increase their knowledge and sense of the ecologically diverse world around them, including the animals that live within it. They will explore and begin to recognise some environments that are different from the one in which they live and will start to identify some of the animals that live in different places around the world	Children identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals and those that are carnivores, herbivores and omnivores	Children explore and compare the differences between living, dead and never been alive. They identify that most living things live in habitats to which they are suited and that these habitats provide for their basic needs They begin to explore simple food chains and how different animals care for their young	Children will identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. They will identify that humans and some other animals have skeletons and muscles for support, protection and movement	Children explore living things within different food chains, identifying producers, predators and prey. They learn how to use classification keys to help group, identify and name a variety of plants and animals within local and wider environments. They learn about the potential dangers to living things that can be caused by changes in environments	Children learn to describe the differences in life cycles of different living species within a variety of UK habitats. They will build on their knowledge of how plants reproduce, including seed dispersal and pollination, and learn about photosynthesis	Children explore how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, and give reasons for classifying animals based on specific characteristics *They identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution
KEY VOCABULARY	key animals and their young, fish, birds, pets, habitat, farm, zoo, fur, feathers, skin, paws, claws, hooves, wings, camouflage	birds, mammals, reptiles, fish, amphibians, vertebrates, invertebrates, herbivore, carnivore, omnivore, structure, coral reef	polar, living, dead, never been alive, microhabitat, Arctic, Antarctica, offspring, adaptation, food chain, producer, consumer, source, sea ice, temperature	skull, ribs, spine, joints, protein, minerals, fibre, carbohydrates, skeleton, bones, muscles, support, protect	tropical, temperate, rainforest, food chain, producer, predator, prey, environment, habitat, microhabitat, classification key	moorland, heathland, wetland, reproduction, carpel, stamen, anther, filament, stigma, style, ovary, ovule, indicator species, endangered, photosynthesis	resident, migrate, (non) migratory, classification, taxonomy, observable characteristics, Linnaean, kingdom, phylum, class, order, family, genus, species

The table below sets out what the children’s learning about animals, including humans, looks like over the course of the six lessons.

Week 1	Week 2	Week 3
What animals might we see on and around a coral reef?	What do the animals on and around a coral reef eat?	How do we know that a sea turtle is a reptile, not an amphibian?
Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Describe and compare the structure of a variety of common animals	Identify and name a variety of common animals that are carnivores, herbivores and omnivores	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Describe and compare the structure of a variety of common animals
Week 4	Week 5	Week 6
Do dolphins have scales?	Where would we find a parrotfish?	Who is working to restore our coral reefs?
Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Describe and compare the structure of a variety of common animals	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals; describe and compare the structure of a variety of common animals; identify and name a variety of common animals that are carnivores, herbivores and omnivores	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals

02 – Learning in Nature

In addition to learning about Nature, a Harmony approach also provides suggestions for rich opportunities to learn in or alongside Nature, as the six science lessons in this pack demonstrate.

For example, the children will experience opportunities to immerse themselves in the awe and wonder of a coral reef through film, books, images and activities that link their experiences of the area where they live with a contrasting environment in another part of the world.

As they learn in Nature, the children will also experience opportunities to develop their skills in working scientifically. Although these skills will be developed incrementally over time (as shown in Appendix A), the coverage of these skills within the sequence of these six lessons is set out below.

Week 1	Week 2	Week 3
What animals might we see on and around a coral reef?	What do the animals on and around a coral reef eat?	How do we know that a sea turtle is a reptile, not an amphibian?
Identifying and classifying	Using their observations and ideas to suggest answers to questions	Identifying and classifying
Scientific enquiry type: Identifying, classifying and grouping	Scientific enquiry type: Pattern seeking	Scientific enquiry type: Identifying, classifying and grouping
Week 4	Week 5	Week 6
Do dolphins have scales?	Where would we find a parrotfish?	Who is working to restore our coral reefs?
Using their observations and ideas to suggest answers to questions	Using their observations and ideas to suggest answers to questions	Asking simple questions and recognising that they can be answered in different ways
Scientific enquiry type: Identifying, classifying and grouping	Scientific enquiry type: Pattern seeking	Scientific enquiry type: Research using secondary sources

Working scientifically vocabulary

- pattern
- compare
- justify
- explain
- research

03 – Learning from Nature

The third key element of a Harmony approach to learning is learning from Nature, which is linked to progression in understanding of Harmony principles. This aspect of learning supports the development of children’s understanding of what it means to live sustainably.

The six lessons in this pack, and the wider enquiry they are part of, are underpinned by the principle of Oneness; they build on the children’s prior learning in the EYFS and prepare them for further learning in Years 2 to 6.

The children’s progression in their understanding of the principle of Oneness, through enquiries of learning that help us to think and live more sustainably, is shown below.

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
ENQUIRY	Children are introduced to opportunities to explore and develop their initial knowledge and understanding about Oneness (finding times to be still, quiet, feeling connected with friends or family, being part of a team, experiencing community)	What would it be like to live on an island elsewhere in the world?	Where are the polar regions and how are they changing?	How did the Ancient Egyptians live in harmony with Nature?	What can we learn from the Indus Valley civilisation about the importance of place?	What can we learn about how the Ancient Greeks lived?	How can we learn to live in peace?
PROGRESSION: CONCEPT OF ONENESS		What would it be like to live on a small island?	Where are the polar regions and how are animals adapted to live there?	How did the Ancient Egyptians live in harmony with Nature?	How was a sense of place important to the people of the Indus Valley?	What was Ancient Greek life like?	What helps us to feel peaceful?
THINKING SUSTAINABLY		What does it mean to be part of one world?	What can we do to use less energy and cleaner energy?	How can the Ancient Egyptians help us to learn to live more sustainably?	Is having a sense of place important to me and why?	What is the legacy of the Ancient Greeks?	Why is peace important for a sustainable future?
THINKING SUSTAINABLY VOCABULARY		team quiet community belong	connected calm balance global community reduce	awareness integrated complex tradition culture harmony	transformative uplifting impact consequence reversible irreversible	fulfilment patterns proportions geometry golden ratio design order	peace spirituality contemplation religion social movement oneness unity

Animals, including humans
Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals

Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)

Working scientifically:
Identifying and classifying

Scientific enquiry type:
Identifying, classifying and grouping

Vocabulary relating to animals including humans, working scientifically and thinking sustainably is highlighted within the unit introduction.

The fact cards on Resource 1C, printed on card, cut up and placed around the edge of the learning space

Whiteboards and pens

Nature journals

Optional: A copy of *A Coral Reef Story* by Jane Burnard and Kendra Binney

Children requiring additional support may benefit from a guided reading session based around the fact cards prior to the lesson.

Challenge confident learners to think about what they already know about amphibians and why we haven't seen any in the coral reefs.

CLIMATE ACTION PLAN:
Biodiversity and Nature;
Climate education and green skills

What animals might we see on and around a coral reef?

What do we already know?

Begin the lesson by retrieving the children's prior **learning about Nature** with reference to animal groups, as explored in the learning enquiry *Where do we live and what makes it special?*

Display the images on Resource 1A of five animals they learned about in that enquiry. Establish that they are examples of mammals, birds, fish, reptiles and amphibians.

In pairs, the children choose two animals to focus on, then take it in turns to 'Speak like an expert' about the features that define the animals within each group.

Once they have repeated this for several pairs of animals, discuss their ideas as a class.

Address any misconceptions and draw out their understanding by asking questions such as: *What is the same about reptiles and birds?* (e.g. They have a backbone, they lay eggs, they breathe air) *What is different about fish and mammals?* (e.g. Fish can breathe underwater but mammals can't, many fish are covered in scales but mammals aren't, most fish lay eggs but most mammals have live young)

Remind the children that all the animals that belong to these groups have a spine/backbone so are called vertebrates.

What are we learning today?

Move the children's **learning about Nature** on by sharing the images of coral reefs on Resource 1B.

Invite them to share any knowledge they already have about coral reefs and any ideas they have linked to the images. You could guide this discussion by asking questions such as: *Where is the coral in this image? Does all the coral look the same? What is a reef? Is coral alive or dead?* (alive) *Is it an animal or plant?* (animal – it doesn't make its own food)

Explain to the children that the colourful corals in these images are, in fact, made up of tiny animals called polyps. A reef is a ridge just below or just above the surface of the sea, so a coral reef is a living ridge made up of coral. Coral reefs are mostly found where the sea is shallow and clear.

Watch the CBeebies *Our Planet* episode [Animals found living in and around a coral reef](#). While the children are watching the video, ask them to write down or draw five animals that they see.

Create a class list of the animals they saw (clownfish, anemone, crab, shrimp, cuttlefish, green turtle, shark, pufferfish, eel, octopus). Highlight the clownfish, green turtle, shark, pufferfish and eel on the list and ask: *Which animal groups do you think these animals belong to?* In pairs, the children discuss their ideas, giving reasons for their thinking, before feeding back to the class.

Establish that the clownfish, shark, pufferfish and eel are all fish (despite its name, the cuttlefish isn't!) and that the green turtle is a reptile.

The remaining animals from the clip don't have a backbone, so aren't vertebrates – this means they can't be classed in one of the five animal groups the children explored in the retrieval activity.

TEACHER TIP:
The section of the [Coral reef episode](#) from 9:25 to 10:20 from the BBC's *Blue Planet II* series could be used to show the class what coral polyps look like close up. Either in this lesson, or at another point in the school day, you could share with the children the book *A Coral Reef Story* by Jane Burnard and Kendra Binney, which works well to support this learning. You could ask the children to identify and classify the animals that appear in the story and give reasons for their thinking.

How are we learning today?

Take the children outdoors to **learn in Nature**, or into a large indoor space. Ask the children to imagine that they are on an island with a coral reef around it. The edge of the space they are learning in represents the shoreline of the island. In pairs, they explore the shoreline to find out facts about six animals that live on or around the coral reef (these are presented on the fact cards on Resource 1C). Each time they encounter a new animal, they should draw this new 'sighting' on its own page in their Nature journal, adding its name and facts about it as they find them.

The animals on the fact cards are:
blacktip reef shark, clownfish (fish)
green turtle (reptile)
humpback whale, spinner dolphin (mammals)
sooty tern (bird)

TEACHER TIP:

The children will need to leave enough room to add more information about these animals' diets in the next lesson.

TIME TO EXPLAIN:

Ask the children to choose their favourite from the animals they have journalled about. In pairs, ask the children to imagine they are a scientist working on the island or a visiting tourist. Working in pairs and using their journals, challenge the scientist to give a short talk about their favourite animal and allow the tourist to ask questions.

STEM SENTENCES:

A shark is a _____ (fish).
I know this because _____.
A clownfish is a _____ (fish).
I know this because _____.
A green turtle is a _____ (reptile).
I know this because _____.
A whale is a _____ (mammal).
I know this because _____.
A tern is a _____ (bird).
I know this because _____.
A dolphin is a _____ (mammal).
I know this because _____.

What have we learned today?

Reflect on the children's **learning about Nature** and assess their understanding by asking them: *What kinds of animals might we see on and around a coral reef? Which animal groups do they belong to? How do you know? Which animal group haven't we learned about today?* (amphibians)
Why? (Amphibians are generally found in freshwater habitats)

Begin to nurture the children's engagement with the **principle of Oneness** in their **learning from Nature**. Immerse them in the underwater world of coral reefs by watching some of the footage from the [Coral Reefs](#) episode in the BBC's *Blue Planet II* series. Remind them that these beautiful underwater habitats are a part of the world we all share.

TEACHER TIP:

There is an opportunity at the end of this lesson to support the children's developing sense of the **principle of Oneness** by referring to the learning wall from the previous learning enquiry *Where do we live and what makes it special?* Discuss with them that the same groups of animals are found in the children's local area and all around the world.

Resource 1A



brown trout



dog



common frog



robin



sand lizard

Resource 1B



Resource 1B



Resource 1C



I am a shark.

I can breathe underwater.



I am a shark.

I have fins and scales.



I am a shark.

I hunt for fish around the reef.



I am a clownfish.

I have fins and scales.



I am a clownfish.

I can breathe underwater.



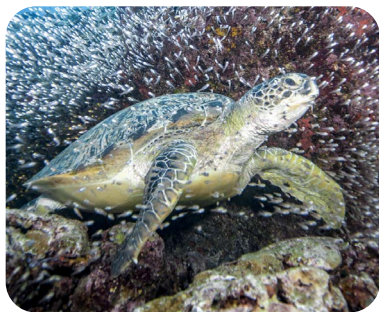
I am a clownfish.

I lay eggs.

Resource 1C



I am a clownfish.
I hide in the reef.



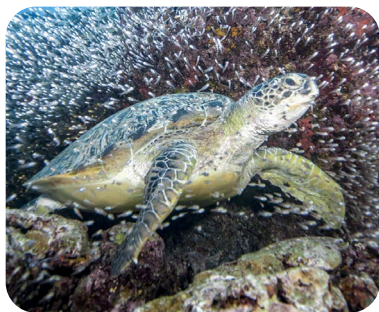
I am a turtle.
I breathe air.



I am a turtle.
My shell protects me. I have four flippers.



I am a turtle.
My skin is dry. I lay eggs.



I am a turtle.
I eat seagrass next to the reef.



I am a whale.
I breathe air.

Resource 1C



I am a whale.

I have two flippers. I have a tail.



I am a whale.

I have my babies near the reef.



I am a dolphin.

I breathe air.



I am a dolphin.

I rest and play near coral reef.



I am a dolphin.

I have two flippers. I have a tail.



I am a tern.

I have feathers.

Resource 1C



I am a tern.
I have two wings and two legs.



I am a tern.
I lay eggs.



I am a tern.
I hunt for fish around the reef.

Animals, including humans
Identify and name a variety
of common animals that are
carnivores, herbivores and
omnivores

Working scientifically:
Using their observations and
ideas to suggest answers to
questions

Scientific enquiry type:
Pattern seeking

Vocabulary relating to animals,
including humans, working
scientifically and thinking
sustainably is highlighted within
the unit introduction.

Image cards on Resource 2B,
printed on card and cut up

Fact cards on Resource 2C,
printed on card and cut up
(provide additional sets for
children requiring additional
support)

Fact cards on Resource 2D,
printed on card and cut up

Hula Hoops

Two whiteboards and pens

Optional: A copy of *A Coral
Reef Story* by Jane Burnard and
Kendra Binney

Provide copies of the cards
on Resource 2C for children
requiring additional support so
they can use these as a word
bank, or simply draw the food
next to the animal that eats it in
their Nature journal.

Challenge the children to
think about other animals
they have learned about in
their Nature journal and to use
stem sentences to justify their
thoughts on their diet.

CLIMATE ACTION PLAN:
Biodiversity and Nature;
Climate education and green skills

What do the animals on and around a coral reef eat?

What do we already know?

Begin the lesson by recapping the children’s prior **learning about Nature** by asking the children to tell you all that they know or can remember about the following words:

- herbivore
- carnivore
- omnivore

Make a class mind map that includes examples of herbivores, omnivores and carnivores.

To support this discussion, you could share the images on Resource 2A of some of the animals the children explored in the previous learning enquiry *Where do we live and what makes it special?*

Of these, the wood pigeon and tortoise are considered herbivores (wood pigeons may occasionally eat small invertebrates), the fox and robin are omnivores, and the cat and grass snake are carnivores.

What are we learning today?

The next part of the learning could take place outdoors, giving the children the opportunity to **learn in Nature**.

Move their **learning about Nature** on by displaying the images on the cards on Resource 2B and asking them: *Which of these animals can you name live on or around the coral reef?* (e.g. blacktip reef shark, clownfish, green turtle, spinner dolphin and sooty tern from Lesson 1) Establish that the moray eel and parrotfish are other fish that live on and around coral reefs.

Share the images on the cards on Resource 2C and establish that these are things that these animals eat.

Lay out two hoops and use whiteboards to label one ‘plants’ and the other ‘animals’. Hold up one of the food cards (Resource 2C) at a time. In pairs, the children discuss whether this should be placed in the ‘plants’ hoop or the ‘animals’ hoop, giving reasons for their thinking. Discuss their ideas as a class and place the cards in the correct hoops.

Remove the cards from the hoops and rearrange the hoops so that they overlap to form a Venn diagram. Amend the whiteboard labels so that they read ‘I eat plants’ and ‘I eat animals’.

This time, hold up the green turtle card on Resource 2D, share the fact about its diet and hold up the corresponding food card (seagrass) from Resource 2C. The children discuss in pairs whether the green turtle should be placed in the ‘I eat plants’ hoop or the ‘I eat animals’ hoop, giving reasons for their thinking.

Once the green turtle has been correctly placed in the ‘I eat plants’ hoop, elicit from the children through discussion that this means the green turtle is a herbivore.

Repeat for the eel, shark, tern and dolphin, establishing that these are carnivores.

When it comes to placing the clownfish and parrotfish on the diagram, draw the children’s attention to the fact that they eat both plants and animals. Discuss where they think they could place these fish on the diagram, guiding the discussion so that they are placed in the space where the hoops overlap. Establish that they are omnivores.

You may wish to discuss with the children that some other species of sea turtle eat plants (such as seaweed) as well as animals (such as crabs and jellyfish), so they are omnivores, too.

TEACHER TIP:

If you used the book *A Coral Reef Story* by Jane Burnard and Kendra Binney to support the learning in Lesson 1, there is an opportunity here to revisit the page that begins: *‘Sun pours down through warm, shallow water...’* Introduce a new reef resident to the children: the parrotfish. Draw the children’s attention to the words *‘...they munch and scrape at the coral with strong beak-like teeth swallowing algae, polyps, stone and all’*. Ask the children: *If parrotfish eat algae (plants) and coral (animals), where should we place it on our diagram?*

How are we learning today?

The children use their **learning about Nature** to add information about the diet of these animals to the page they have already created about them in their Nature journal. They may want to create a new page for the parrotfish or the eel.

Back in the classroom, they use the stem sentences to help them rehearse or write a sentence about the diet of one or more of these animals.

TIME TO EXPLAIN:

Allow the children time to talk like an animal expert by reading their sentences to a partner.

STEM SENTENCES:

_____ is a herbivore because it eats

_____.

_____ is a carnivore because it eats

_____.

_____ is an omnivore because it eats

_____.

What have we learned today?

Encourage the children to reflect on their **learning about Nature** and assess their understanding by asking the learning question for the lesson: **What do different animals eat?** Use the cards from the start of the lesson, as necessary, to support this discussion about the diet of the animals they have learned about that live on or around a coral reef. Ask the children to identify whether these animals are herbivores, omnivores or carnivores.

Continue to nurture the children's engagement with the **principle of Oneness** by sharing the section of the [Coral reef episode](#) from 0:43 from the BBC's *Blue Planet II* series with the sound muted. Draw the children's attention to the diversity and abundance of living things that live on or around this reef and discuss how some of them are interacting. Discuss how these living things find everything they need to survive in this one habitat.

Resource 2A



cat



grass snake



robin



fox

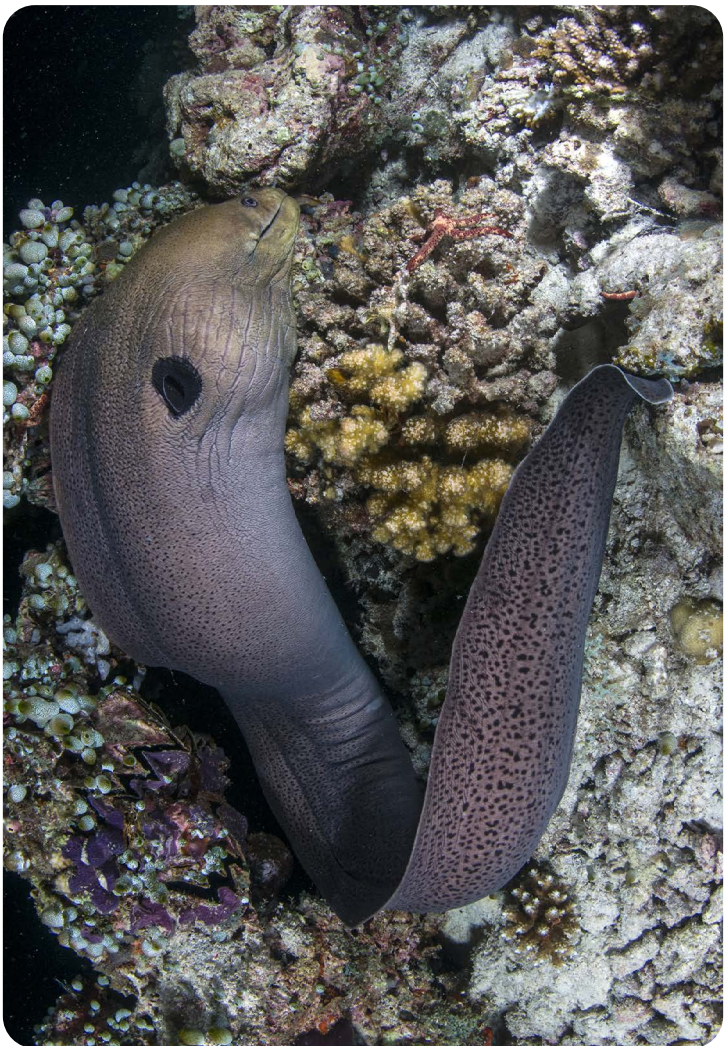
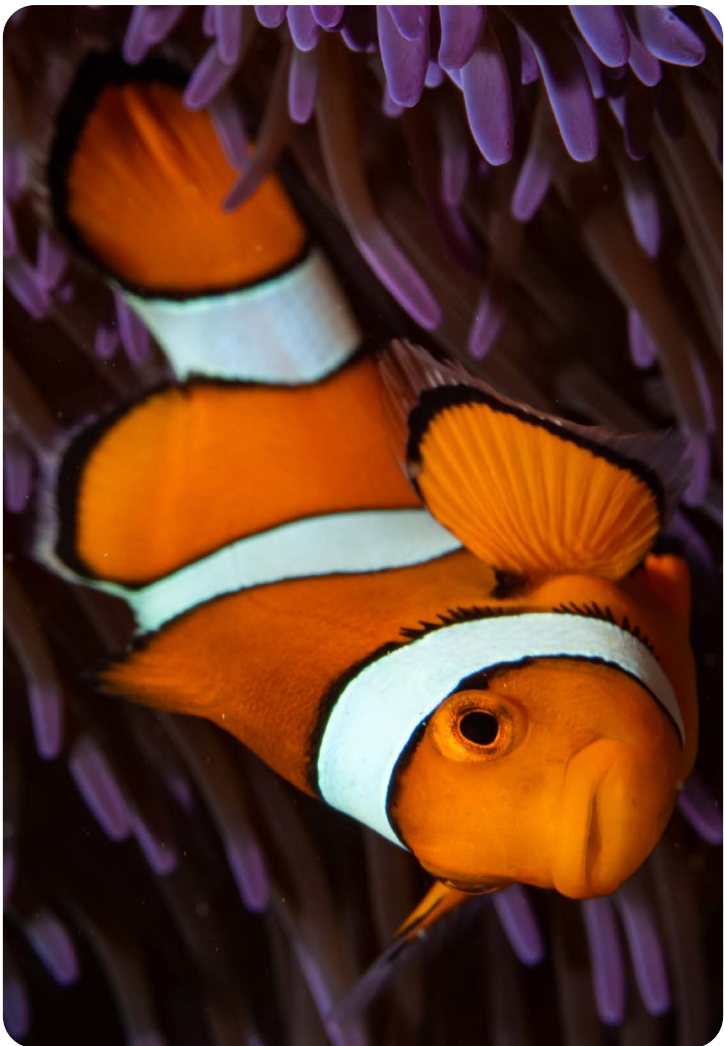


tortoise



wood pigeon

Resource 2B



Resource 2B



Resource 2C



fish



seagrass



algae



coral

Resource 2C



shrimp



octopus

Resource 2D



turtle
I eat seagrass.



tern
I eat fish.



clownfish
I eat algae and small shrimp.

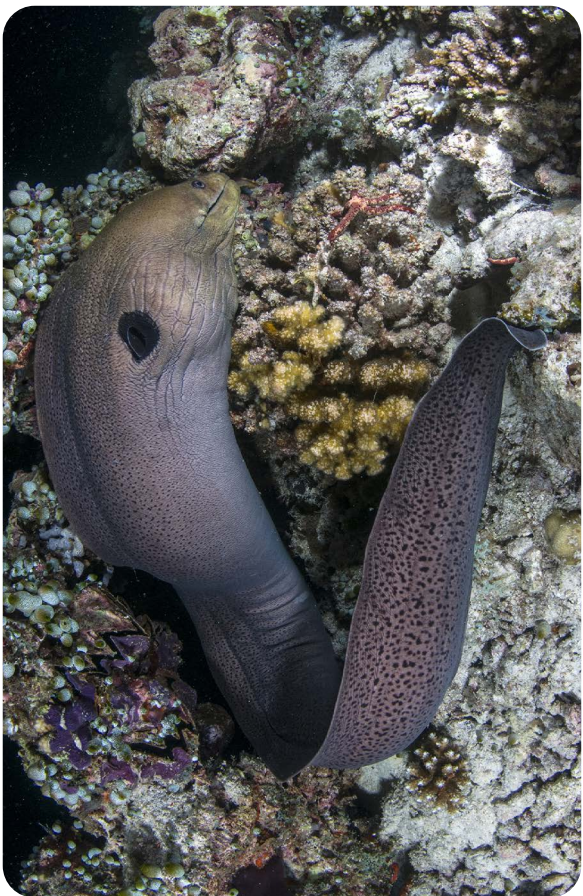


dolphin
I eat fish.

Resource 2D



shark
I eat fish.



eel
I eat fish and octopus.



parrotfish
I eat algae and coral.

Animals, including humans
Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals

Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)

Working scientifically:
Identifying and classifying

Scientific enquiry type:
Identifying, classifying and grouping

Vocabulary relating to animals including humans, working scientifically and thinking sustainably is highlighted within the unit introduction.

Copies of Resource 3A
(one per group)

Large piece of flipchart paper

Marker pens

Optional: A copy of *The Big Book Of The Blue* by Yuval Zommer

Children requiring additional support may benefit from being part of an adult-led guided group that contribute to and create a group Nature journal page, before creating their own.

Challenge more confident learners to justify their reasoning about sea turtles being reptiles in their Nature journals: *Why are they not amphibians?*

CLIMATE ACTION PLAN:
Biodiversity and Nature;
Climate education and green skills

How do we know that a sea turtle is a reptile, not an amphibian?

What do we already know?

Display the images on Resource 3A of one of the reptiles (sand lizard) and one of the amphibians (frog) that the children explored in the learning enquiry *Where do we live and what makes it special?*

In pairs, one takes on the role of the frog while the other takes on the role of the sand lizard. Ask: *Do you have a backbone?* They discuss how each animal would answer this before sharing their ideas with the class. Repeat for other questions, such as:

Do you breathe air? (both: yes)

Do you have four limbs? (both: yes)

Do you live in water and on land? (frog: yes; lizard: no)

Is your skin smooth or hard and scaly? (frog: smooth; lizard: hard and scaly)

Is your skin wet or dry? (frog: wet; lizard: dry)

Do you lay eggs? (both: yes)

Address any misconceptions and discuss why reptiles and amphibians are easily confused. Draw out the key difference that amphibians have moist skin that can't be allowed to dry out, whereas reptiles have dry, hard, scaly skin.

TEACHER TIP:

The BBC Teach film clips [Characteristics of amphibians](#) and [Characteristics of reptiles](#) can be used to consolidate the children's knowledge of the features of amphibians and reptiles, if necessary.

What are we learning today?

Move the children's **learning about Nature** on by sharing the images of turtles and tortoises on Resource 3B and establish which is which.

Working in pairs or small groups, the children use the images to discuss the similarities and differences between them, before sharing their ideas with the class. You could draw out the following points in the discussion:

Similarities: they both have a shell, have four limbs, lay eggs on land, breathe air, have hard, dry, scaly skin and are herbivores (as adults)

Differences: turtles spend most of their time in water but tortoises live on land; turtles have flippers to help them swim but tortoises have legs so they can walk; their shells are different shapes

Ask the children: *Do you think turtles and tortoises are reptiles or amphibians? Why?* Draw their attention to their hard, dry, scaly skin and establish that they are reptiles.

TEACHER TIP:

Either in this lesson, or at another point in the school day, you could share with the children the sea turtles section of *The Big Book Of The Blue* by Yuval Zommer, which works well to support this learning. Discuss with the children what evidence they can find in the text that turtles are reptiles.

How are we learning today?

Ask the children to share anything they have recorded about the sea turtle in their Nature journals so far. Use their suggestions to create a model Nature journal page on a large piece of flipchart paper by drawing a sea turtle and adding key information around it.

As a class, watch the WWF Wild Classroom short film [All About Sea Turtles](#), pausing it from time to time to discuss and add information to the class Nature journal page. For example, you might ask: *Where do you usually find sea turtles?* (shallow waters) *Which is the largest species of sea turtle?* (leatherback) *Why might people think a sea turtle is an amphibian?* (sometimes they come out of the water) *When do females come ashore?* (to lay eggs) *What are the threats to sea turtles?* (predators and plastic litter)

TIME TO EXPLAIN:

The children add some of the facts they have learned about sea turtles to the page they have started in their Nature journal – or start a new page about sea turtles. They rehearse and share a sentence (or sentences) about sea turtles, drawing on the stem sentences for support.

STEM SENTENCES:

A turtle is a reptile because _____
I know a turtle is not an amphibian because _____

What have we learned today?

Reflect on the children's **learning about Nature** and assess their understanding by asking the learning question: *How do we know that a sea turtle is a reptile, not an amphibian?* and discussing their thinking.

To support a discussion about the **learning from Nature** linked to the **principle of Oneness**, watch the start of [this unnarrated film clip](#) as a class.

Ask the children: *What do you think the fish are doing?* (eating algae growing on the turtle's shell) Draw out in discussion the benefits for the fish (food) and for the turtle (clean, healthy shell), highlighting how both gain from this one action.

Resource 3A



common frog



sand lizard

Resource 3B

tortoise



Resource 3B

turtle



Animals, including humans
Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals

Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)

Working scientifically:
Using their observations and ideas to suggest answers to questions

Scientific enquiry type:
Identifying, classifying and grouping

Vocabulary relating to animals, including humans, working scientifically and thinking sustainably is highlighted within the unit introduction.

Copies of Resource 4B
(one per group)

Nature journals

Optional: a copy of *One Day On Our Blue Planet... In The Ocean* by Ella Bailey

Children requiring additional support may benefit from being part of an adult-led guided group that contribute to and create a group Nature journal page, before creating their own.

Challenge more confident learners to record on a whiteboard a simple drawing or explanation of why a dolphin is not a fish.

CLIMATE ACTION PLAN:
Biodiversity and Nature;
Climate education and green skills

Do dolphins have scales?

What do we already know?

Display the images on Resource 4A of one of the fish (brown trout) and one of the mammals (dog) that the children explored in the learning enquiry *Where do we live and what makes it special?*

In pairs, one takes on the role of the trout while the other takes on the role of the dog. Ask: *Do you have a backbone?* In their pairs, they discuss how each animal would answer this before sharing their ideas with the class. Address any misconceptions.

Repeat for other questions, such as:
Do you breathe air? (trout: no; dog: yes)
Do you have four limbs? (trout: no; dog: yes)
Do you have fins? (trout: yes; dog: no)
Do you live in water or on land? (trout: water; dog: land)
Is your skin scaly? (trout: yes; dog: no)
Do you lay eggs? (trout: yes; dog: no)

What are we learning today?

Move the children's **learning about Nature** on by sharing the images of dolphins and clownfish on Resource 4B and establish which is which.

Working in pairs or small groups, the children use the images to discuss the similarities and differences between them, before sharing their ideas with the class. You could draw out the following points in the discussion:

Similarities: neither have legs, they both live in the sea

Differences: dolphins breathe air but clownfish can breathe underwater (they have gills); dolphins have live babies but clownfish lay eggs; clownfish have fins but dolphins have flippers; clownfish have scales but dolphins have smooth skin

Ask the children: *Do you think dolphins are fish or mammals? Why?* Draw their attention to the fact that dolphins have smooth skin and cannot breathe

underwater and establish that they are mammals. Ask: *Why is it easy to mistake a dolphin for a fish?* Establish that many of the mammals we are most familiar with live on land, have four legs and have hair or fur. Challenge the children to name some mammals that match this description. It's easy to forget that some mammals, such as dolphins, live in the sea, don't have legs and don't have fur.

TEACHER TIP:

You may want to draw the children's attention to the fact that clownfish are often found hiding between the tentacles of anemones (there are anemones visible in two of the images on Resource 4B). The anemone's stinging tentacles protect the clownfish from fish that might eat it (a slimy coating on the body of the clownfish stops it being stung). The clownfish keeps the anemone clean. It's a wonderful example of the principles of Oneness and Interdependence in action!

How are we learning today?

Ask the children to share anything they have recorded about dolphins in their Nature journals so far. Use their suggestions to create a model Nature journal page on a large piece of flipchart paper by drawing a dolphin and adding key information around it.

Watch the CBeebies *Our Planet* episode [How dolphins live and play together](#), pausing it from time to time to discuss and add information to the class Nature journal page. For example, you might ask: *How do dolphins play together?* (e.g. they blow bubbles, play catch, surf) *Why do they rummage in the sand with their noses?* (to find food such as shrimps).

TIME TO EXPLAIN:

The children add some of the facts they have learned about dolphins to the page they have started in their Nature journal or start a new page about dolphins. They rehearse and share a sentence (or sentences) about dolphins, drawing on the stem sentences for support.

STEM SENTENCES:

A dolphin is a mammal because _____
I know a dolphin is not a fish because _____

TEACHER TIP:

Either in this lesson, or at another point in the school day, you could share with the children the book *One Day On Our Blue Planet... In The Ocean* by Ella Bailey, which works well to support this learning.

What have we learned today?

Reflect on the children's **learning about Nature** by asking the learning question: *Do dolphins have scales? Are they fish? What kind of animal is a dolphin? How do we know they are mammals?* Discuss the children's ideas, then ask: *What games did the dolphins in the film clip enjoy playing? What games do you enjoy playing?* Draw out the

link between this learning and the **principle of Oneness** by establishing that, just like us, dolphins enjoy playing.

Resource 4A



brown trout



dog

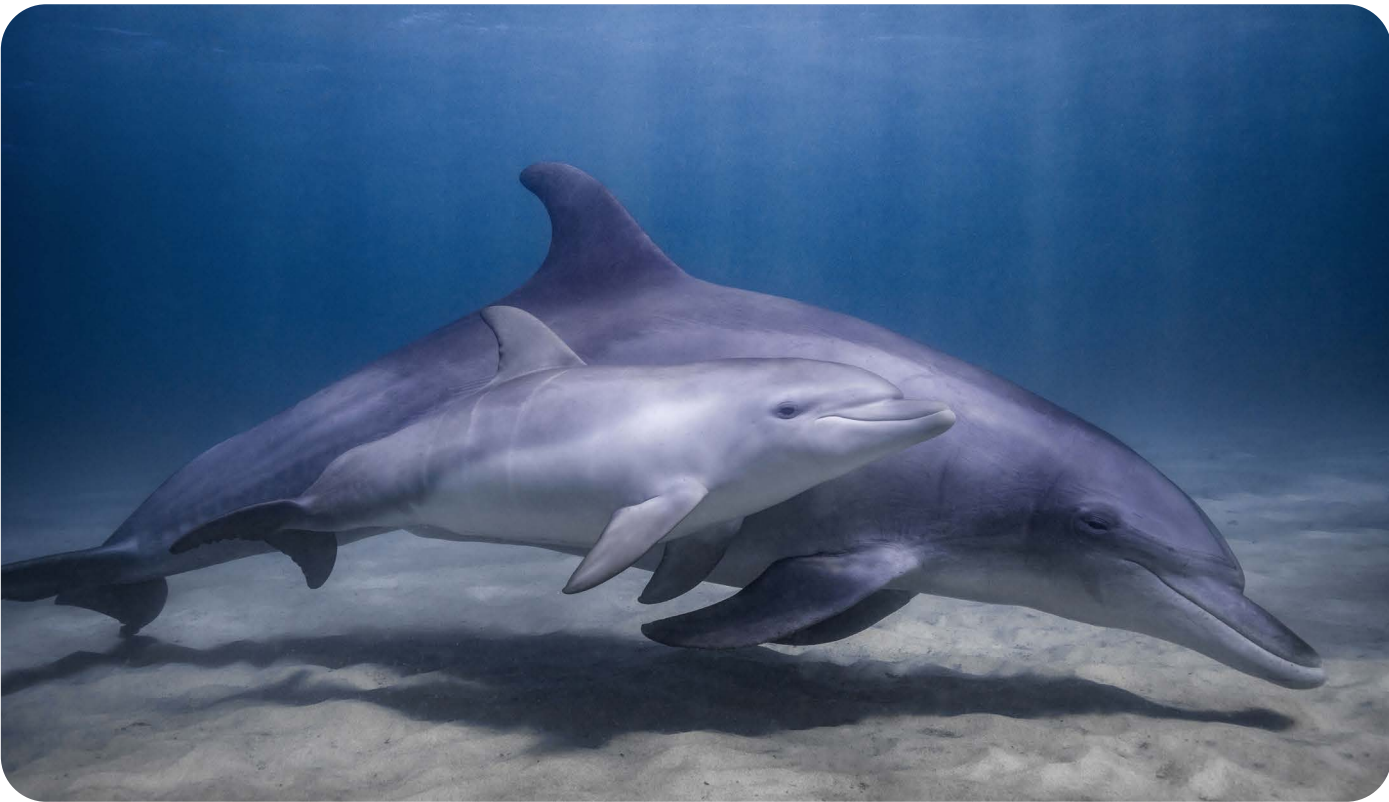
Resource 4B

clownfish



Resource 4B

spinner dolphin



Animals, including humans
Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals

Identify and name a variety of common animals that are carnivores, herbivores and omnivores

Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)

Working scientifically:
Using their observations and ideas to suggest answers to questions

Scientific enquiry type:
Pattern seeking

Vocabulary relating to animals, including humans, working scientifically and thinking sustainably is highlighted within the unit introduction.

Copies of Resource 5B (one per group)

Copies of Resource 5C (for children requiring additional support)

Nature journals

Children requiring additional support may benefit from being part of an adult-led guided group that contributes to and creates a group Nature journal page, before creating their own.

Challenge more confident learners to record three amazing facts that they have learned about parrotfish in their Nature journals.

CLIMATE ACTION PLAN:
Biodiversity and Nature;
Climate education and green skills

Where would we find a parrotfish?

What do we already know?

Begin the lesson by retrieving the children’s prior **learning about Nature** by displaying the images of fish on Resource 5A and playing a game of ‘True or False’ using statements such as:

Fish can breathe underwater. True (they have gills)
Fish have four legs. False (they have fins)

Fish have fur to keep them warm. False (they have scales)
Fish have a backbone. True
Fish lay eggs on land. False (most lay eggs in water)
Share the children’s responses and address any misconceptions.

What are we learning today?

Move the children’s **learning about Nature** on by sharing the images of fish that live on or around a coral reef on Resource 5B. Ask the children: **What do you see?** Invite them to close their eyes and ask them: **What can you remember about what you saw?** Discuss their observations as a class.

In pairs or small groups, the children use the images to discuss: **What’s the same and what’s different about these fish?** They use the word bank on Resource 5C to support their discussion. Invite them to share their ideas as a class, drawing out some key similarities and differences between these fish. For example:

Similarities: they all have fins; they all have a tail; they all have eyes and mouths (you might also draw out in the discussion the

fact that because we know they are fish, they must all have gills so they can breathe underwater, scales and a backbone); they all live on or around a coral reef

Differences: they are different sizes; they are different colours; some have patterns on them, but others don’t

Share the image of the parrotfish on Resource 5D. In pairs, the children discuss: **How do you know it’s a fish? Why do you think it is called a parrotfish?** Invite them to share their ideas and draw out that it has fins and scales, and that many parrotfish are brightly coloured like a parrot and have a beak-like mouth (this is visible in the image and is actually formed of fused teeth).

How are we learning today?

As a class, watch the beginning of the BBC Earth [Feeding Humphead Parrotfish](#) film clip from the *Blue Planet* series (to 00:51). Draw the children’s attention to what the parrotfish are eating in the clip: primarily algae but they also eat some coral as they graze – and even the rock the coral is attached to! Ask the children: **Do you think this is good or bad for the coral reef?** Discuss their ideas before explaining that by eating the algae, the parrotfish actually help to keep the coral on the reef healthy. By eating small pieces of coral and rock, they also clear spaces for new coral to grow.

Ask: **What do you think happens to the coral and rock that the parrotfish eat?** Discuss their ideas before watching the rest of the clip. Recap that the parrotfish can grind down the rock and coral into very fine sand, and that this creates new islands. Ask: **How does this help other living things?** Highlight the learning from the end of the film clip that plants start to grow on the new islands and that animals start to live there.

Although the parrotfish might seem to be destructive feeders, they do two important jobs: keeping the coral reef healthy and

creating new island habitats for other living things.

Ask the children to share anything they have recorded about parrotfish in their Nature journals so far. Use their suggestions to create a model Nature journal page on a large piece of flipchart paper by drawing a sea parrotfish and adding key information around it.

TIME TO EXPLAIN:
The children add some of the facts they have learned about parrotfish to the page they have started in their Nature journal or start a new page about parrotfish. They rehearse and share a sentence (or sentences) about them, drawing on the stem sentences for support.

STEM SENTENCES:
A parrotfish is a fish because _____
Parrotfish live _____

What have we learned today?

Reflect on the children's **learning about Nature** by asking the learning question: *Where would we find a parrotfish?* and discussing their thinking. Draw out in the discussion that parrotfish live on and around coral reefs and aren't found in the waters around the UK. Ask: *What other fish live where the parrotfish lives? How are they the same? How are they different? How do we know that they are all fish?*

Link the learning to the **principle of Oneness** by highlighting that although the fish they have explored might look very different, they all belong to the same animal group and have lots of things in common.

Extend their thinking by revisiting the feeding habits of the parrotfish and discussing the benefits for the parrotfish (food) and for the coral (eats algae to keep the coral healthy; creates space for new coral to grow). You could also remind the children that the sand the parrotfish produces creates new habitats for other living things. This highlights the important role that parrotfish play in supporting the whole ecosystem. You may want to draw a link between this example and the example of the fish and the sea turtle in Lesson 3.

Resource 5A



brown trout



sea bass



blenny



mackerel

Resource 5B



Resource 5B



Resource 5B



mouths fins tail eyes colours

 breathe coral reef

pattern small big

mouths fins tail eyes colours

 breathe coral reef

pattern small big

Resource 5D



Animals, including humans
Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals

Working scientifically:
Asking simple questions and recognising that they can be answered in different ways

Scientific enquiry type:
Research using secondary sources

Vocabulary relating to animals, including humans, working scientifically and thinking sustainably is highlighted within the unit introduction.

Copies of Resource 6B
(one per group)

Copies of Resource 6C
(one per group)

Children requiring additional support may benefit from an adult-led guided group for the story card sorting activity.

Challenge confident learners to think about the people that care for coral reefs and to imagine that they are one of them:

STEM SENTENCE:
I care for coral reefs because _____.

CLIMATE ACTION PLAN:
Biodiversity and Nature;
Climate education and green skills

Who is working to restore our coral reefs?

What do we already know?

Begin the lesson by recalling the children's prior **learning about Nature** by asking them: *What do you do to care for Nature? What other things do people do to care for Nature?* In pairs, the children discuss their ideas before sharing them with the class.

To support this discussion, you could remind the children of the bird feeders they made or installed in the school grounds as part of the learning enquiry *Where do we live and what makes it special?* or display the images on Resource 6A (beach clean/litter pick, leaving gaps in fences for hedgehogs, creating wildlife-friendly log piles and messy areas, feeding birds).

What are we learning today?

Move the children's **learning about Nature** on by displaying the images on Resource 6B (these show healthy coral and bleached coral). Ask them what they notice about the two images.

In small groups, the children think of questions they would like to ask about the coral in the images to find out more, before sharing them with the class. Create a class list, drawing out questions such as:
Why is the coral white?
Is the coral dead?
Where are all the animals?
How can people help?

As a class, watch the section of the [Coral Reefs](#) episode in the BBC's *Blue Planet II* series from 42:20 to 44:40, pausing to discuss and explain key points such as:
The white coral has become bleached. It has lost its colour.
Coral bleaching happens when the sea gets warmer.
Bleached coral isn't dead, but it is unhealthy and can die.
When corals are bleached, the animals that live on or around the reef lose their home.

Discuss which of the questions on the class list the children can now answer before drawing their attention to the question: *What are people doing to help?*

How are we learning today?

Share with the children the story cards on Resource 6C (out of order). Explain to them that these cards tell the story of what people are doing to help care for our coral reefs. In groups of four, they read the simple sentences and use these and the images to put the story cards into the correct order, before sharing their thinking with the class. Establish the correct order for the cards:

The sea gets hot. The coral goes white.
People can help. They grow new coral.
People put the new coral on frames.
More corals grow. They make a new coral reef.

TIME TO EXPLAIN:
In their groups, the children practise using the story cards to tell the story of how people are caring for our coral reefs before sharing their performances with another group or with the class. They could use gestures to bring the story to life or use the cards to give a presentation.

TEACHER TIP:
The facts on the story cards on Resource 6C draw on the work of organisations working to restore coral reefs around the world. The [Coral Restoration Foundation](#) has developed 'coral trees' like the ones shown in the second story card, when the cards are placed in order. Its coral nurseries cover 1.5 acres of ocean floor and currently contain 20 coral species. Elsewhere in the world, other organisations are attaching new corals to frames like the ones shown in the two final story cards and using these to establish new reefs. You can read about the work of one organisation taking this approach, MARS, on [its website](#). Of course, work still needs to be done to address the underlying causes of coral decline (water pollution, overfishing, climate change) to ensure that these new coral reefs survive.

What have we learned today?

Reflect on the children's **learning about Nature** and assess their understanding by revisiting the questions the class posed about the images of the coral reefs at the start of the lesson and discussing how they can now answer them: *Why is the coral white? Is the coral dead? Where are all the animals? How can people help?*

Ask the children: *How did we answer these questions?* (e.g. by watching and discussing the film clip, by using the facts on the story cards) *How could we answer any other questions we have about coral reefs?* (e.g. using websites or non-fiction books)

Draw out the link between this learning and the **principle of Oneness** by asking the children: *Why is it important to care for our coral reefs?* (e.g. coral reefs provide other living things with shelter and food). Elicit during the discussion that we can all help care for our planet and the animals we share it with.

TEACHER TIP:

[Primary Science Teaching Trust's A scientist just like me](#) resources raise awareness of a wide range of science-based careers using case studies of scientists working today. The resource showcasing the work of the marine biologist Jasmine Isa Qureshi aligns well with the learning in this lesson.

Resource 6A



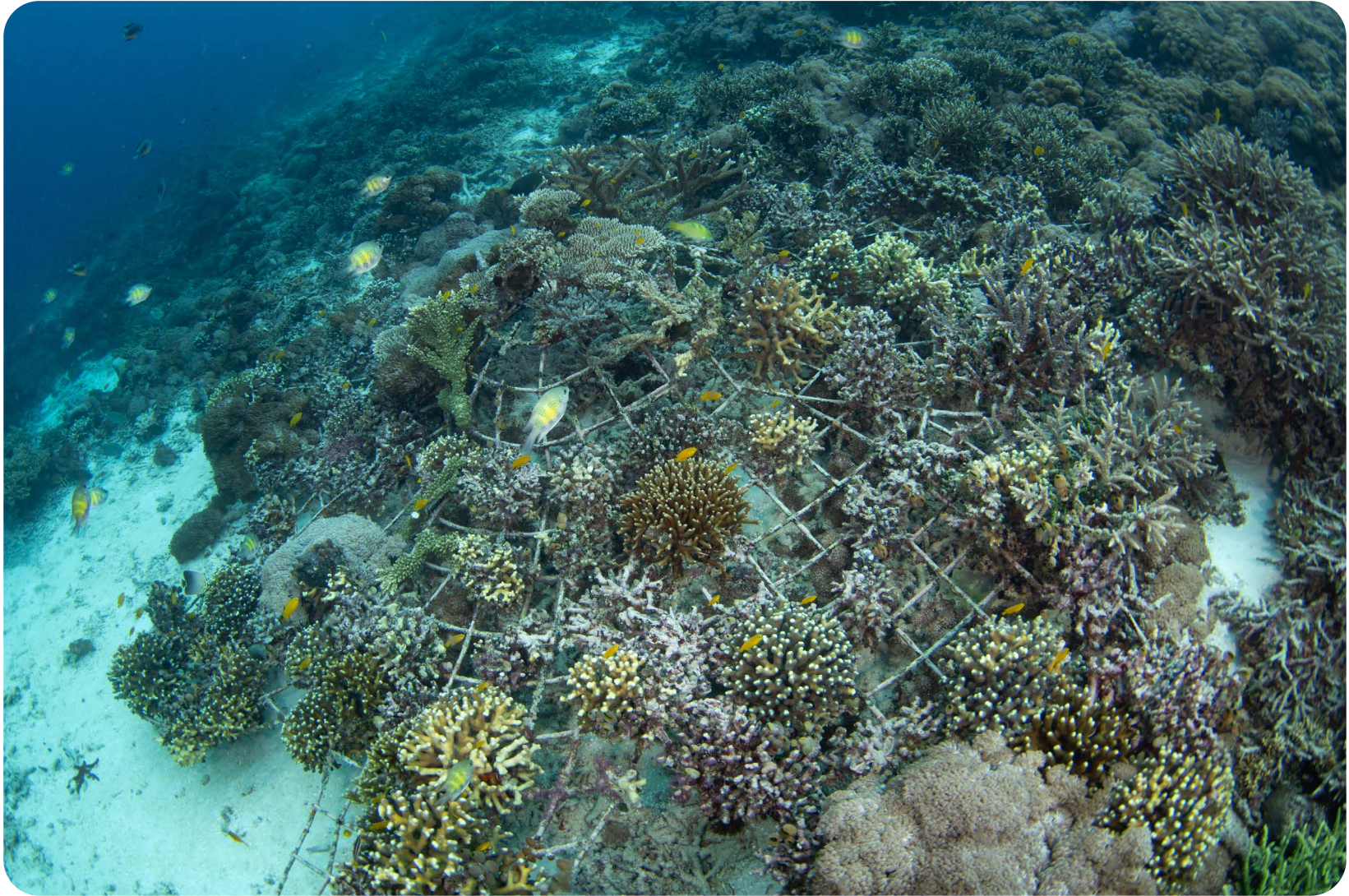
Resource 6A



Resource 6B



Resource 6C



More corals grow. They make a new coral reef.



The sea gets hot. The coral goes white.

Resource 6C



People put the new coral on frames.



People can help. They grow new coral.

Additional image credits

Resource 1A <i>Common frog</i> by Richard Bartz © 2008 Richard Bartz, licensed under CC BY-SA 2.5 (creativecommons.org/licenses/by-sa/2.5/) <i>Female sand lizard</i> by Ian Kirk © 2013 Ian Kirk, licensed under CC BY-SA 2.0 (creativecommons.org/licenses/by-sa/2.0/) <i>European robin</i> by Alexis Lours © 2024 Alexis Lours, licensed under CC BY-SA 4.0 (creativecommons.org/licenses/by-sa/4.0/)
Resource 1C <i>Tern</i> by Charles J. Sharp © 2023 Sharp Photography/ Charles J. Sharp, licensed under CC BY-SA 4.0 (creativecommons.org/licenses/by-sa/4.0/)
Resource 2A <i>Cat</i> by Hisashi © 2009 Hisashi, licensed under CC BY-SA 2.0 (creativecommons.org/licenses/by-sa/2.0/) <i>European robin</i> by Alexis Lours © 2024 Alexis Lours, licensed under CC BY-SA 4.0 (creativecommons.org/licenses/by-sa/4.0/) <i>Tortoise</i> by Ryan Van Huyssteen © 2018 Ryan Van Huyssteen, licensed under CC BY-SA 4.0 (creativecommons.org/licenses/by-sa/4.0/) <i>Wood pigeon</i> by Stephan Sprinz © 2024 Stephan Sprinz, licensed under CC BY-SA 4.0 (creativecommons.org/licenses/by-sa/4.0/)
Resource 2B & 2D <i>Tern</i> by Charles J. Sharp © 2023 Sharp Photography/ Charles J. Sharp, licensed under CC BY-SA 4.0 (creativecommons.org/licenses/by-sa/4.0/)
Resource 3A <i>Common frog</i> by Richard Bartz © 2008 Richard Bartz, licensed under CC BY-SA 2.5 (creativecommons.org/licenses/by-sa/2.5/) <i>Female sand lizard</i> by Ian Kirk © 2013 Ian Kirk, licensed under CC BY-SA 2.0 (creativecommons.org/licenses/by-sa/2.0/)
Resource 3B <i>Tortoise</i> by Ryan Van Huyssteen © 2018 Ryan Van Huyssteen, licensed under CC BY-SA 4.0 (creativecommons.org/licenses/by-sa/4.0/) <i>Tortoise laying eggs</i> by Louisvdw © 2017 Louisvdw, licensed under CC BY-SA 4.0 (creativecommons.org/licenses/by-sa/4.0/) <i>Turtle laying eggs</i> by Francesco Veronesi © 2016 Francesco Veronesi, licensed under CC BY-SA 2.0 (creativecommons.org/licenses/by-sa/2.0/) <i>Turtle grazing</i> by P.Lindgren © 2013 P.Lindgren, licensed under CC BY-SA 3.0 (creativecommons.org/licenses/by-sa/3.0/) <i>Sea turtle</i> by Seasidesaltlife © 2020 Seasidesaltlife, licensed under CC BY-SA 4.0 (creativecommons.org/licenses/by-sa/4.0/)
Resource 5A <i>Blenny</i> by Roberto Pillon © 2011 Roberto Pillon, licensed under CC BY-SA 3.0 (creativecommons.org/licenses/by-sa/3.0/)
Resource 6A <i>Siskins feeder</i> by Mike Pennington © 2014 Mike Pennington, licensed under CC BY-SA 2.0 (creativecommons.org/licenses/by-sa/2.0/)