

Chloroplasts

roots

FAREHAM

# SOLENT SEASCAPE

## DISCOVERY BOOK KIT

### KS-2

EXPLORE, RESTORE, MAKE IT YOURSELF!

OF WIGHT

Light Energy



# WELCOME TO THE SOLENT SEASCAPE

Now that you've started exploring, you know the Solent isn't just a stretch of the ocean - it's a seascape. That means it's made up of different habitats like seagrass meadows, saltmarshes, native oyster reefs and seabird nesting sites - all working together like a team.

These habitats keep the ocean healthy, help fight climate change and support both nature and people. But many of them are in danger and need our help!



Photo by Shaun Roster

That's where the Seascape Champions come in. They're young protectors just like you - and each one looks after a different habitat in the Solent. Can you remember which habitat each champion protects?

**Go back to your Solent Seascape frieze and check! Label them in the activity box on the next page.**

Once you've done that, it's time for you to create a Seascape Champion.  
What part of the Solent will your champion protect?  
Who will their eco-ally be?

# MEET OUR SEASCAPE CHAMPIONS

First, look at your seascape again and write the name of the habitat that each champion protects:



**MAYA:**



**SETH:**



**OLIVIA:**



**TABARI:**

Now, draw your own Seascape Champion in the frame below.  
Which of the four habitats do they protect?



**MY NAME IS:**

**I PROTECT:**

**MY ECO-ALLY IS:**

**MY SUPER SKILL IS:**



# OUR BLUE PLANET: WHAT IS GEOGRAPHY?

Geography helps us understand our world - and how everything connects.

There are **three types of geography**:

The Solent is a great place to explore all three: **Physical, Human and Environmental!**

Learning about these helps us protect places like the Solent - where people and nature live side by side.

**Physical geography** is about the natural world. Think sea, rivers, tides, weather, cliffs and coastlines.



Photo by Gavin Holder

**Human geography** is about what people build or do - like ports, harbours, roads and towns.



Photo by Shaun Roster

**Environmental geography** shows how nature and people affect each other - things like climate change, plastic pollution and habitat restoration.



Photo by Luke Helmer

**Physical:** salty sea, soft cliffs, seagrass beds.



Photo by Theo Vickers

**Human:** fishing boats, shipping ports, busy beaches.



Photo by Matt Jarvis

**Environmental:** cleaner water projects, rising sea levels, marine protection.



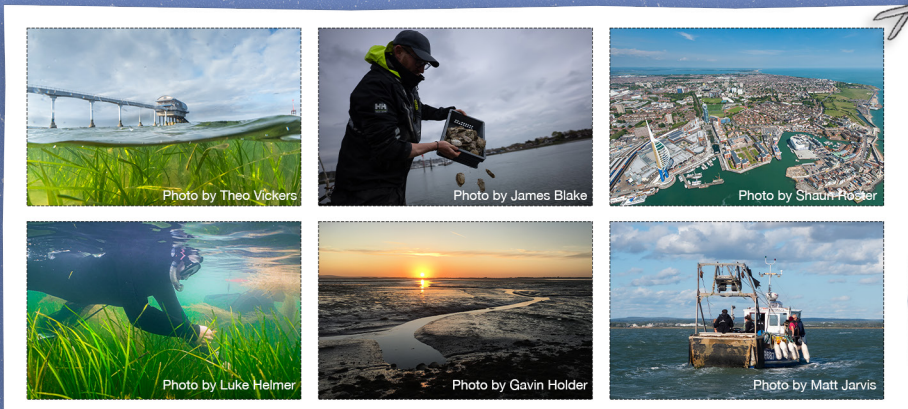
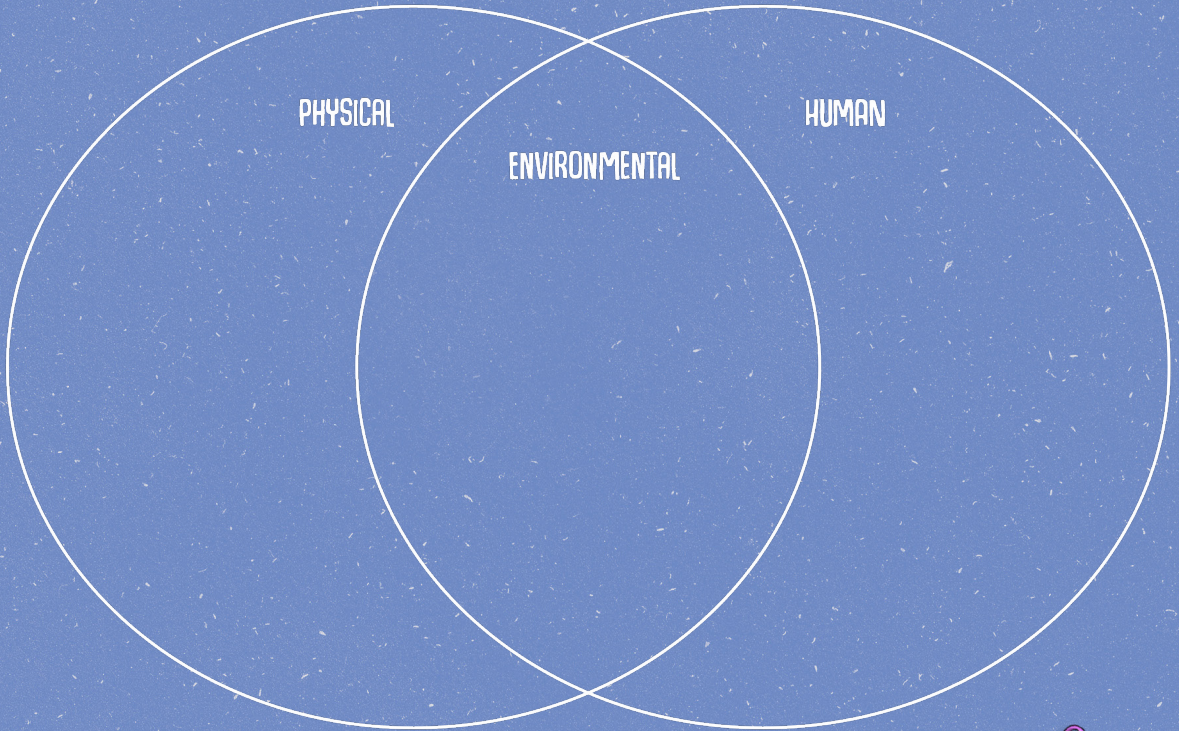
Photo by James Blake

Learning about these helps us protect places like the Solent - where people and nature live side by side.

# SORT IT OUT: PHYSICAL, HUMAN OR ENVIRONMENTAL

Look at the pictures below. Cut them out and place them in the correct part of the Venn diagram.

Cut along the dotted lines. Stick or place each picture in the right spot. Draw and label one of your own too.



# OUR BLUE PLANET: THE OCEANS THAT CONNECT US

The world's oceans are all connected - they cover over 70% of the Earth! Oceans move water, heat and life around the globe. They help shape the climate, support wildlife and give us oxygen to breathe.

There are **five oceans** on Earth:



## **PACIFIC OCEAN:**

the biggest ocean, full of whales and sea turtles, who swim almost everywhere.



## **ARCTIC OCEAN:**

the coldest ocean, home to polar bears and narwhals!



## **ATLANTIC OCEAN:**

between Europe, Africa and the Americas. Dolphins and jellyfish swim here on their way to all oceans.



## **SOUTHERN OCEAN:**

around Antarctica, where penguins and seals live.



## **INDIAN OCEAN:**

warm and deep, with coral reefs and dugongs.

Oceans help people by providing food, jobs and transport. But they're in danger from pollution, climate change and overfishing.

# LABEL IT: THE FIVE OCEANS

Complete the challenges below to show off your geography skills! Turn to page six to help.



Label the **Pacific, Atlantic, Indian, Arctic,** and **Southern Ocean.**

Find and **circle the turtle** in the **Pacific Ocean.**

Which animals lives in the **Arctic Ocean?** **Draw a fish** next to them.

**Spot the compass rose** - draw a star beside it.

Find the **Pacific Ocean** - is it the biggest? Tick this  if you think yes!

# OUR BLUE PLANET: THE SOLENT

The Solent is a special stretch of sea between the Isle of Wight and mainland England. It's part of the Atlantic Ocean and full of life - from seagrass beds and oyster reefs to busy ports and sailing routes.

## A Map of The Solent



All around the Solent, **physical geography** shapes the land and sea, while **human geography** shows how people live, work and travel across it. The rich mix of plants and animals - and how they all interact with humans - is part of its **environmental geography**.

All of these things together make the Solent a living **seascape**, and help us understand why it's such an important place to protect.



Photo by Paul Adams



Photo by Louise MacCallum

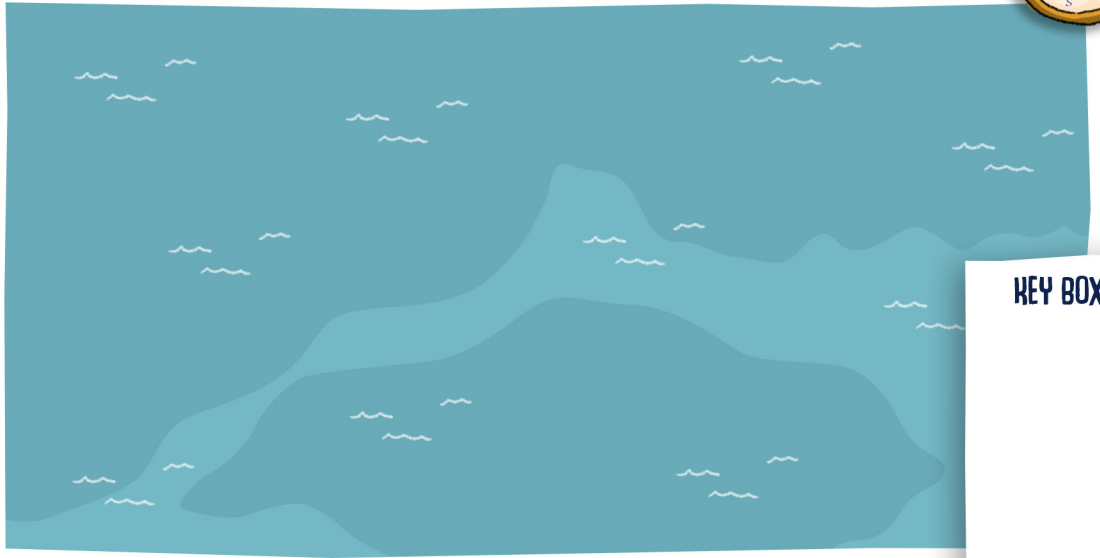


Photo by Paul Adams

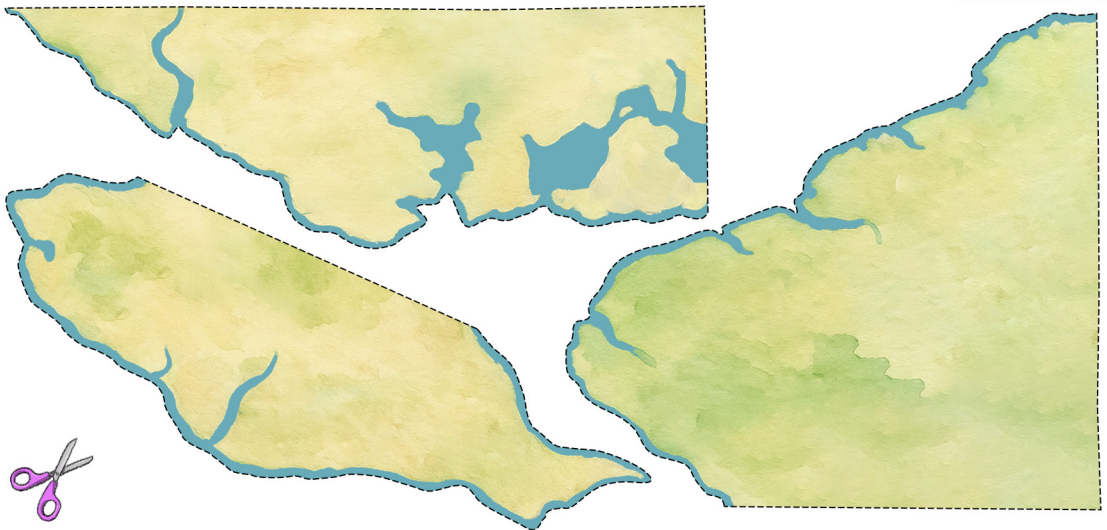
# BUILD IT: MAP OUT THE SOLENT

Caring for the Solent starts by knowing it - let's build a map to help.

1. Cut out the map pieces.
2. Place them on the blue square to build your own Solent Seascape.
3. Label the habitats and cities of the Solent on your map and give your map a title.
4. Draw a symbol for each feature and explain what it means in the key box.



KEY BOX



# INSIDE THE SALTMARSH: FOOD CHAINS

Saltmarshes are coastal wetlands that flood with salty water. At first glance, they may look like just mud and plants - but they're packed with life and full of young creatures growing up safely.



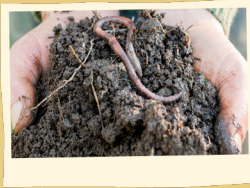
Tiny worms live in the mud and feed on plants. Crabs eat the worms. Young bass feed on small crabs. Redshanks (wading birds) eat the fish. This is called a food chain, and it helps keep the whole ecosystem working.



Photo by Paul Adams

## SALTMARSH PLANTS

Producers make their own food using sunlight.



## WORM

Consumers eat other living things.



## REDSHANKS

Top consumers are predators at the end of the chain.



Photo by Matt Jarvis

## SALTMARSH PLANTS

Safe shelter.



## CREEKS AND MUDFLATS

Full of creatures to eat.

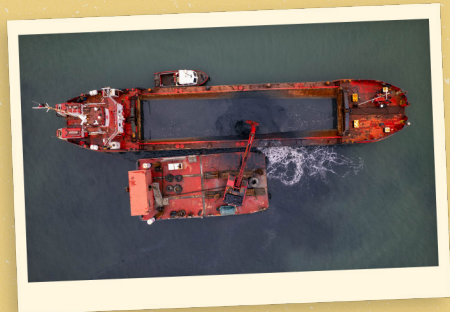


Photo by David Palfrey

## HIGH TIDE

Time for fish to hunt.

When saltmarshes are damaged by pollution or construction, these food chains are broken. That's why the Solent Seascape Project is helping by restoring saltmarshes and planting new saltmarsh plants.

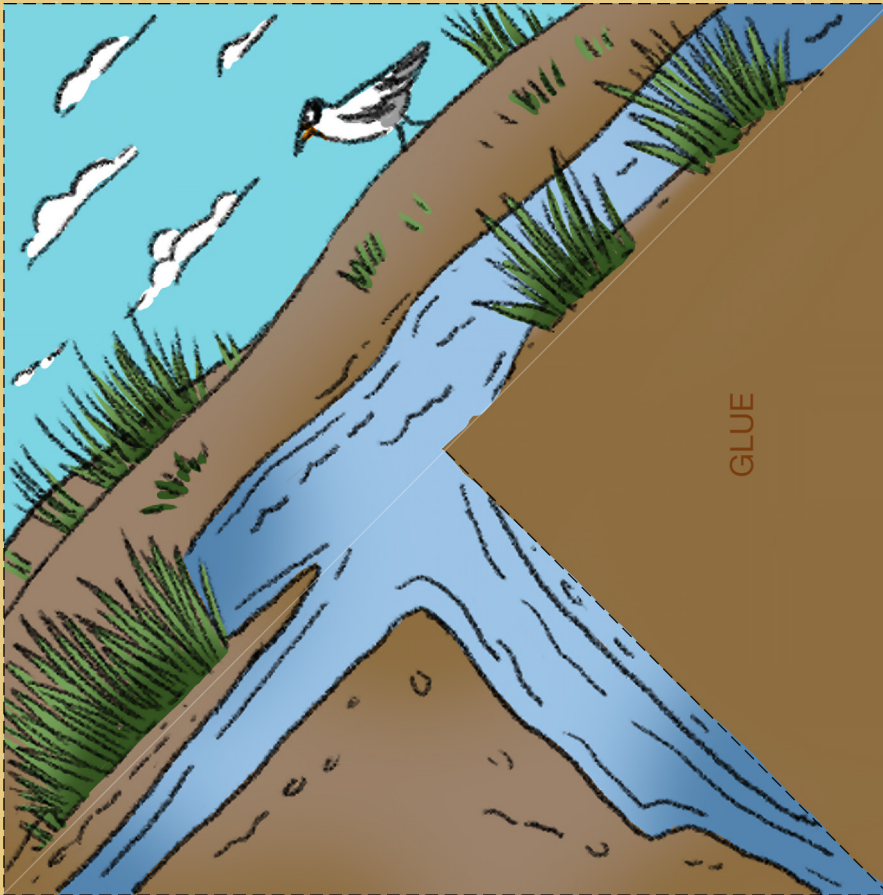


## Questions to talk about:

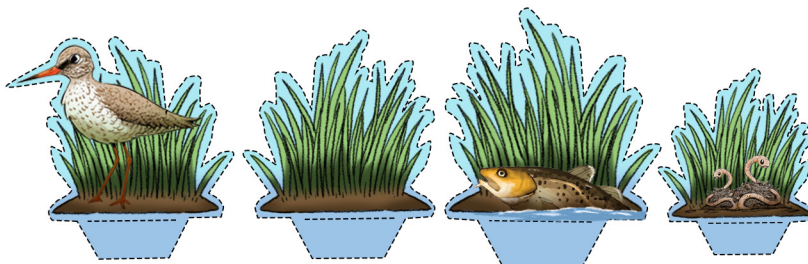
1. What would happen if there were no more worms in the saltmarsh?
2. Which part of the food chain depends on the plants the most?

# WHO EATS WHO?

1. Place each animal or plant in the correct part of the saltmarsh.
2. Add arrows to show who eats who.
3. Add the correct labels: producer or consumer.



Turn to the back page to find out how to make your mini habitat. You will find a sheet waiting for you to cut out and create in your Book Kit pocket!



**PRODUCER**  
**CONSUMER**  
**PRODUCER**  
**CONSUMER**



# INSIDE THE OYSTER REEFS: BIODIVERSITY

Oyster reefs form when oysters grow in clumps, stacking on top of each other to make an oyster reef. These reefs create safe hiding places, nursery zones and feeding grounds for hundreds of marine animals. This mix of life is called biodiversity and it helps keep the whole ocean healthy.

Each oyster is a filter feeder, cleaning the water by sucking in tiny particles, helping nearby animals live in clear, healthy seas. Oyster reefs also stop the seabed from being washed away.

## Here's how different animals use the reef:



Photo by Matt Jarvis

**Oysters** live in tight clusters at the bottom, forming the reef.



Photo by Theo Vickers

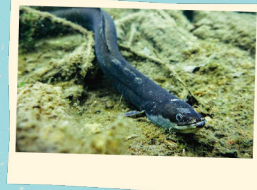
**Crabs** scuttle between shells, feeding on small creatures.



**Sea bass** swim through the reef to hunt smaller animals.



**Spiny seahorses** wrap their tails around oyster shells to hide.



**European eels** slip through gaps in the reef to rest or shelter.

Native oyster reefs are being damaged by overfishing and pollution, putting their rich biodiversity at risk. The Solent Seascape Project is helping by placing fully grown oysters in safe spots so they can release babies and build new reefs.



Photo by James Blake



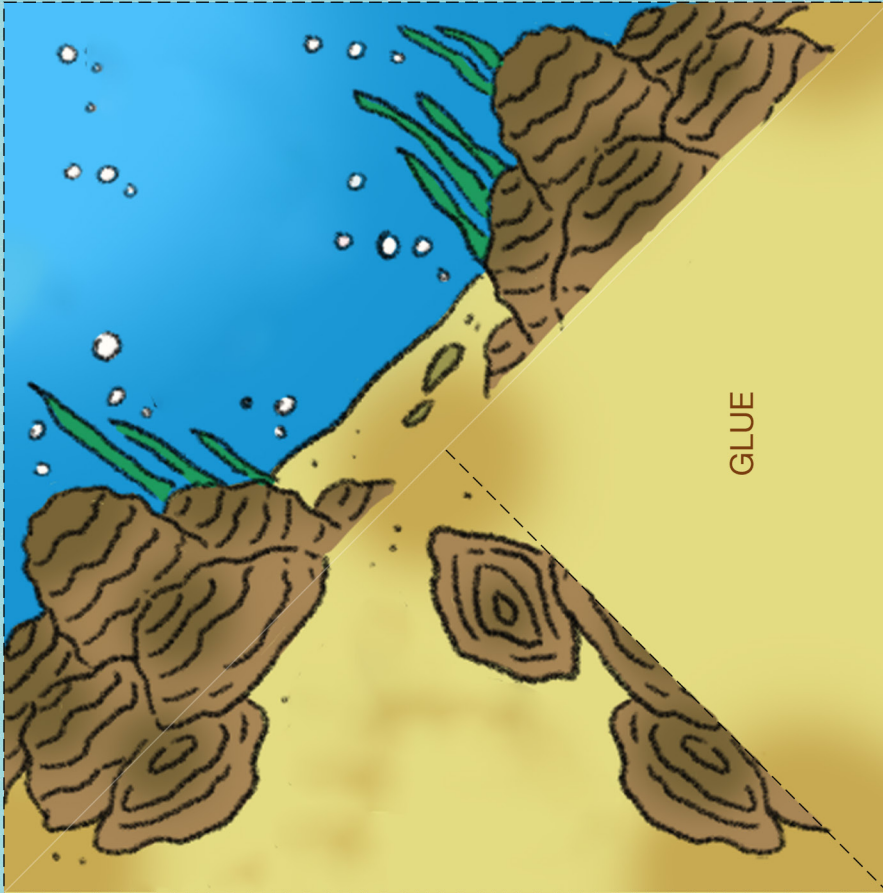
Photo by Molly Robinson

## Questions to talk about:

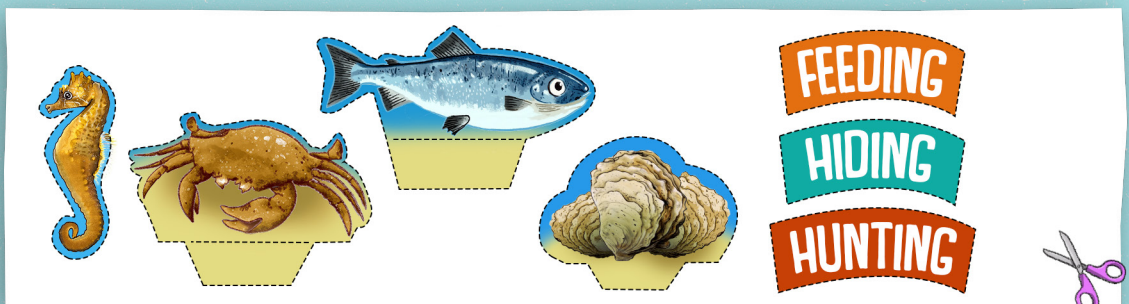
1. What would happen to the reef if there were no oysters?
2. Why is it important to have many different species living on the reef?

# WHO LIVES WHERE?

1. Place the oysters in clusters at the bottom - that's the reef!
2. Where would each animal go on the reef? Stick them in the correct place.
3. Use the label strip to add the right word next to each animal: feeding, hiding or hunting.



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# SEAGRASS MEADOWS: PHOTOSYNTHESIS

Seagrass is a marine plant that is found in many places around the world. It grows in shallow parts of the Solent - it's the only marine flowering plant! What makes it special is the way it uses photosynthesis.

**Photosynthesis** is a process where seagrass takes in **carbon dioxide** ( $\text{CO}_2$ ) from the water and energy from the sun. (**Chloroplasts** are tiny parts of plant cells that help do this work.)

Then it turns them into **oxygen** ( $\text{O}_2$ ) and **sugars**. That oxygen goes back into the water - where animals and other fish can use it to breathe.

**But there's another superpower!**

As seagrass grows, it traps carbon in the muddy seabed with its roots. This helps fight climate change - because too much carbon in the atmosphere warms the planet.

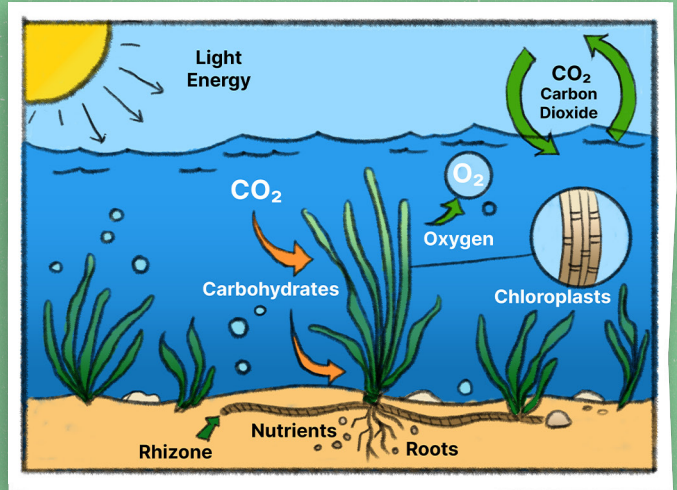


Photo by Theo Vickers

The healthier the seagrass, the more carbon we can store - and the more oxygen we get. That's good news for sea creatures... and for us!

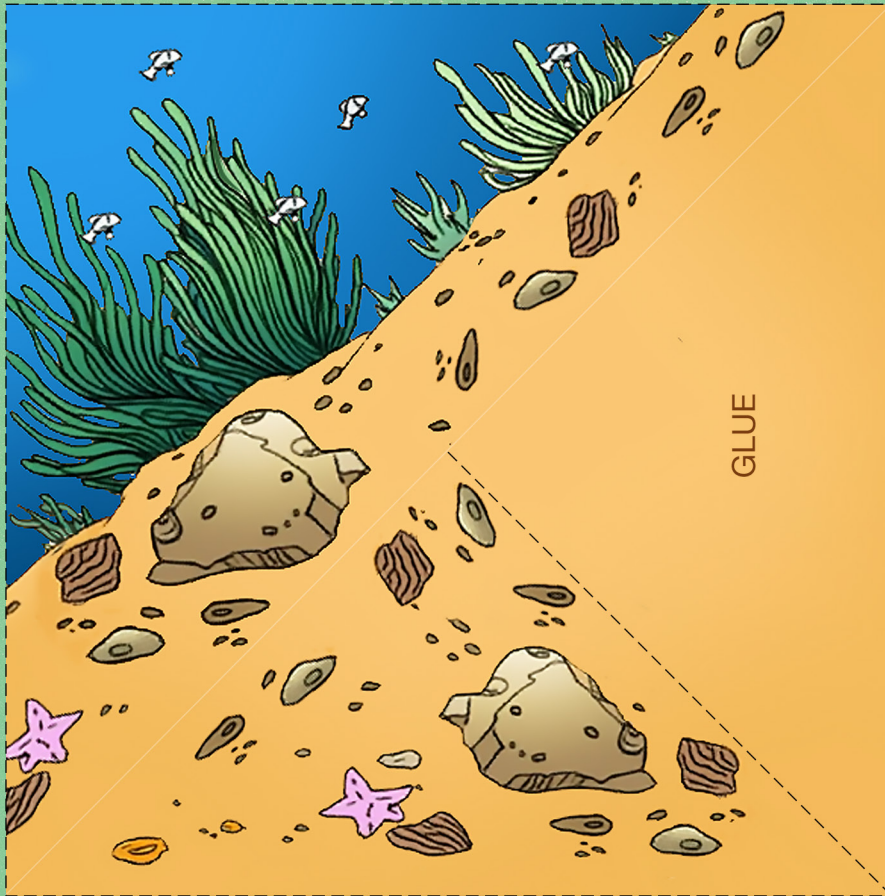
That's why the Solent Seascape Project is working to protect and plant more seagrass in the Solent - so this underwater plant can keep doing its powerful, invisible work.

## Questions to talk about:

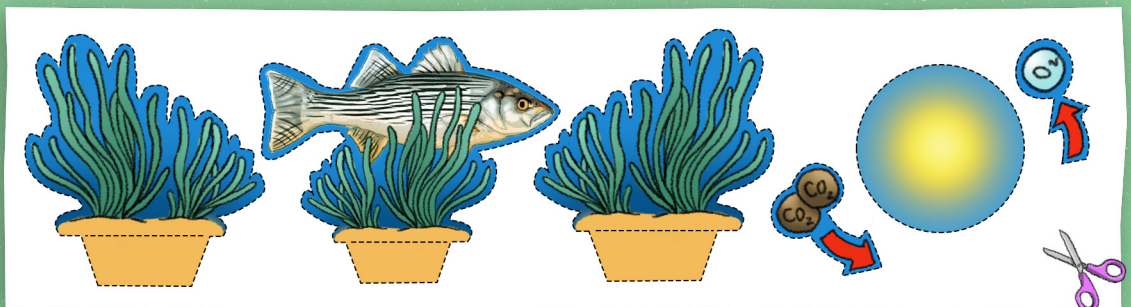
1. Why do tiny animals choose seagrass meadows instead of open water?
2. How does photosynthesis in the ocean help humans on land?

# WE ALL NEED OXYGEN

1. Cut out the sunlight shining through the water, the CO<sub>2</sub>, the O<sub>2</sub> and the seagrass.
2. Look at the arrows - where does each piece belong?
3. Using the help of the diagram on page 14, stick the pieces into the scene to show how CO<sub>2</sub> is trapped and O<sub>2</sub> produced.



Turn to the back page to find out how to make your mini habitat. You will find a sheet waiting for you to cut out and create in your Book Kit pocket!



# INSIDE THE SEABIRD NESTING SITES: LIFE CYCLES

Every spring, Little Tern, Common Tern and Sandwich Tern return to the Solent to raise their young. They nest on open ground, usually on low-lying gravel close to the sea. But their early life cycle is full of risks.

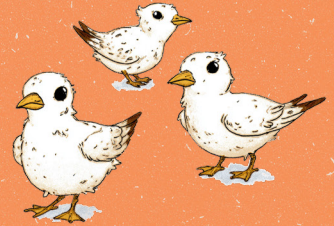
**Let's follow their journey:**



**Eggs** are laid in small, shallow nests called scrapes, made right on the gravel or sand. They need to be kept dry and safe from trampling or high tides.



**Chicks** hatch into fluffy, ground-nesting babies. They can't fly and need space to move, hide and feed. If disturbed by people, predators or dogs they might get cold, lost or go hungry.



**Fledglings** grow bigger and start to stretch their wings. They need quiet feeding time and a safe place near the water to practise flying and fishing.

**The Solent Seascape Project is helping protect these life stages by:**



Photo by Holly Hill

Building raised gravel and artificial nesting islands that stay dry during high tides.



Photo by Holly Hill

Creating safer zones to keep people and dogs away during nesting season.



Photo by Holly Hill

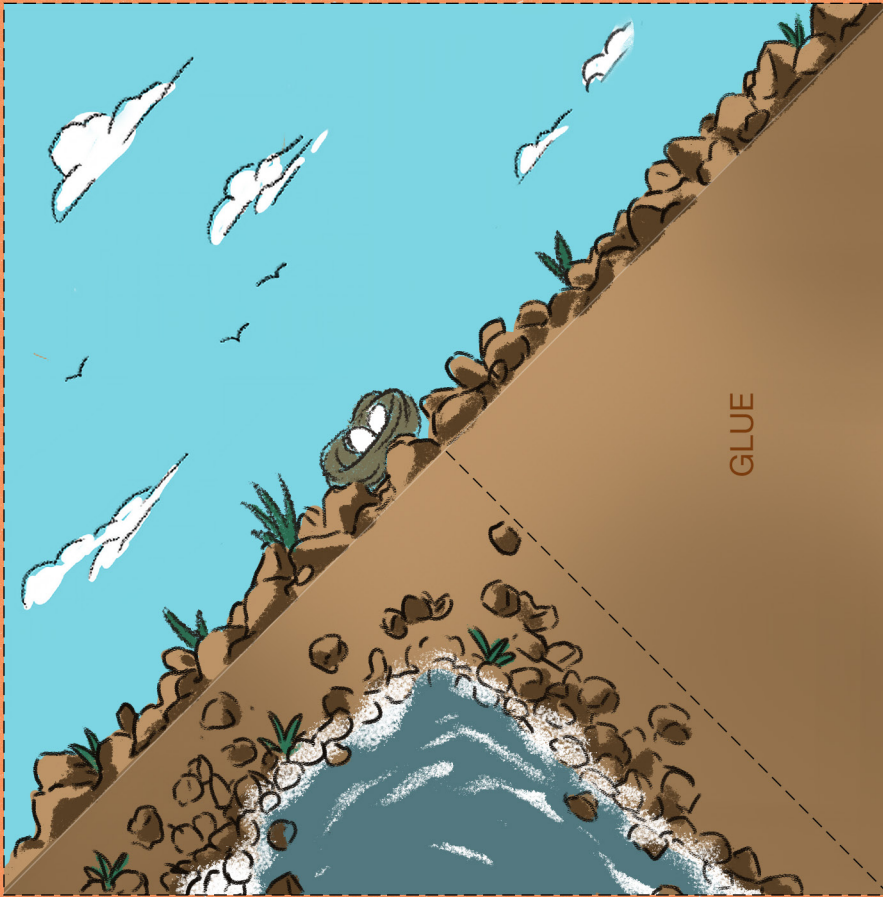
Working with scientists to monitor chicks and restore safe breeding spots.

**Questions to talk about:**

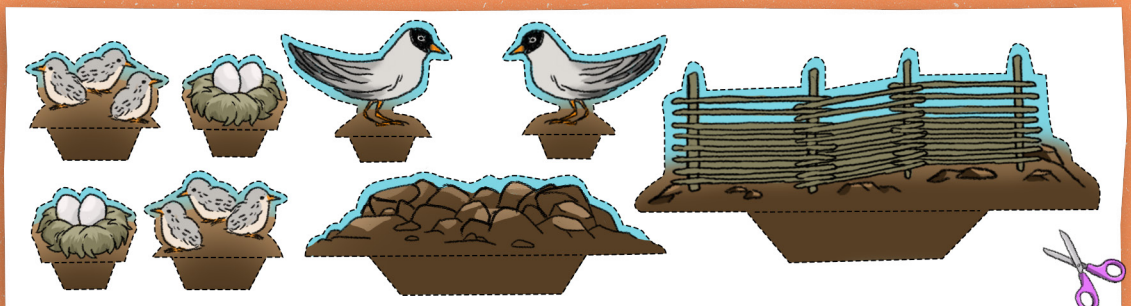
1. What might happen if people walk through the nesting area?
2. Why is important to protect all stages of the tern's life cycle?

# LET'S PROTECT THE TERNS

1. Look at the information on the left to remind yourself where each stage belongs.
2. Stick the life stages where they should go: eggs in scrapes, chicks on the ground, fledglings near the water.
3. Add protections like raised islands or fences where they're needed to keep the terns safe.



Turn to the back page to find out how to make your mini habitat. You will find a sheet waiting for you to cut out and create in your Book Kit pocket!



# CHECK IT!

Use the four habitats you have made to help answer these questions.

1. What does seagrass release during photosynthesis? Circle the correct answer.

Carbon dioxide

Saltwater

Oxygen

Mud

2. Match the statement to the habitat:

Tern Nesting Site

Traps carbon dioxide and makes oxygen

Oyster Reef

A safe place for chicks to hatch

Saltmarsh

Filters water and gives shelter to animals

Seagrass Meadow

A wet marshy area full of hidden creatures

3. Tick the true statements.

Producers are not important to the life cycle.

Oyster reefs form when oysters grow in clumps.

Building gravel islands will help protect young terns.

Humans would be fine without the oxygen made by ocean plants.

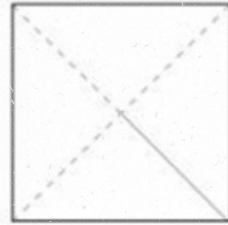
4. Explain in writing.

Look at your saltmarsh and tern nesting site habitats. Why is it important to protect animals when they are young?

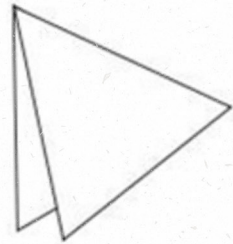
# MAKE YOUR OWN MINI SOLENT HABITAT!

You will need: glue and scissors

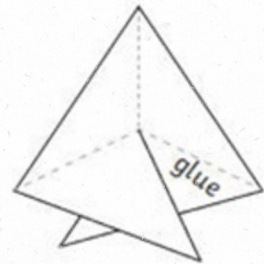
1. Cut out the big square.



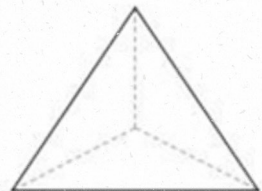
2. Fold the square in half from corner to corner - do this both ways.



3. Cut along the dotted line to centre of the square, fold the printed triangle section over the plain triangle marked 'glue' and glue down.



4. Cut out and stick in the creatures and features from your sheet where you think they should go.



That's it - you have made your own mini habitat!



PLANETARI



**BLUE MARINE  
MAX STENBECK**  
LEGACY PROGRAMME