

## Episode 2: Superheroes of the Caribbean Reef

### Key Terms from the broadcast

During today's broadcast, we explored three incredible coastal ecosystems. Scientists use specific vocabulary to describe how they work. How well were you listening?

Match each keyword with its correct definition.

Key Term
Mangrove
Coral polyp
Sediment
Blue carbon
Seagrass

Definition
A. type of tropical tree or shrub that grows (in brackish or salt water) in thick clusters and send out prop roots
B. carbon dioxide that is absorbed from the atmosphere and stored in ocean ecosystems
C. solid materials such as particles of soil, sand, or other material that can move across land or through water through erosion and settle in a new place
D. a grass-like flowering plant that lives in marine environments
E. a tiny animal related to sea anemones and jellies that builds the hard structures of coral reefs

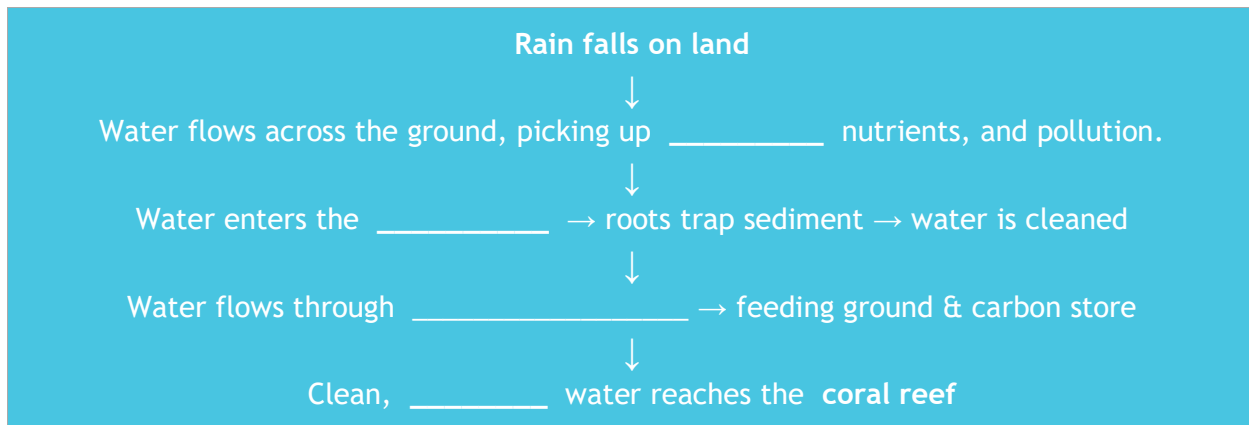


## The journey from Ridge to Reef

When rain falls on land, it travels all the way to the sea, passing through important ecosystems along the way.

Complete the flow diagram by filling in the missing words from the word bank below.

seagrass meadows | coral reef | mangroves | sediment | filtered



Answer the questions below.

1. In the broadcast, the host poured muddy water through a sponge. What did the sponge represent?
2. What would happen to the coral reef if all the mangroves were removed?



## Mangroves as filters

Mangroves are coastal trees that grow right on the edge of the land and sea. They have special adaptations that allow them to survive in saltwater and play a vital role in protecting our reefs.

Fill in the table by describing the role of each mangrove feature.

Mangrove feature	What function does each of these do?
Above-water roots (pneumatophores)	
Tangled root network	
Protected root habitat	

In the broadcast, the diver described mangroves as a 'nursery.' What did they mean by this? Why is it important?

## Seagrass meadows as underwater highways

Seagrass might look like seaweed, but it is actually a flowering plant (an angiosperm) with true roots, stems, and leaves. It plays multiple important roles in our ocean.

Seagrass does **THREE** important things. Use words from the broadcast to explain these roles.

1. Habitat and food <i>(the highway)</i>	2. Anchoring the seafloor <i>(the foundation)</i>	3. Storing carbon <i>(the carbon sink)</i>



Why is seagrass considered different from seaweed? Tick ALL that apply.

<input type="checkbox"/>	Seagrass has real roots, stems, and leaves
<input type="checkbox"/>	Seagrass is found only in tropical oceans
<input type="checkbox"/>	Seagrass is a flowering plant (angiosperm)
<input type="checkbox"/>	Seagrass stores carbon dioxide in the mud beneath its roots

## Coral reefs: the final destination

At the end of the Ridge to Reef journey, we reach the coral reef. Corals are not rocks or plants. They are animals!

Use the words in the word bank below to complete the paragraph about coral reefs.

polyps | calcium carbonate | algae | sunlight | architects | limestone

Coral reefs are built by thousands of tiny animals called \_\_\_\_\_. Each one is like a tiny mouth surrounded by stinging tentacles. They take \_\_\_\_\_ directly from the seawater and use it to build hard \_\_\_\_\_ structures, making them the primary \_\_\_\_\_ of the Cayman Islands.

For corals to survive, they need the water to be crystal clear so that \_\_\_\_\_ can reach them. If too many nutrients wash off the land, they act like fertiliser and cause \_\_\_\_\_ to grow out of control. This can smother the coral and stop it from building.

### Team Algae vs Team Coral!

In the broadcast, the host asked: 'In a fight for sunlight, who wins if the water is full of nutrients?' Circle your answer below, then explain why.

TEAM ALGAE	TEAM CORAL

Explain why:



## CCMI's Blue Carbon Project

CCMI scientists have been studying how these ecosystems work together through the Blue Carbon Offset and Biodiversity Programme. Our 2025 findings made a surprising discovery!

Answer the questions about CCMI's research.

1. What is 'Blue Carbon' and why does it matter?
2. CCMI found that the seagrass in Little Cayman can withstand temperatures up to \_\_\_\_\_ °C before it struggles to photosynthesise. What word used describes the ability to withstand high temperatures.
3. What was the most exciting discovery from the 2025 study? Complete the sentence:

When coral reefs are restored near seagrass meadows, the coral acts like a \_\_\_\_\_ for the water. This slows currents so that more \_\_\_\_\_ gets trapped in the seagrass roots, storing even more \_\_\_\_\_ underground.

If you could only save one habitat to fight climate change, which would you pick? Circle one, then explain your thinking.

MANGROVES	SEAGRASS	CORAL REEF



## Investigating the 'Ridge to Reef' connection

CCMI scientists monitored two reef sites near Little Cayman. They recorded the health of the connected coastal ecosystems and the recovery of coral cover over time.

Study the data table and answer the questions below.

Feature	Site A	Site B
Mangroves present nearby?	Yes	No
Seagrass meadow present?	Yes	No
Water clarity (Score 1-5, where 5 = clearest)	4	2
Coral cover 2024	14%	12%
Coral cover 2025	21%	13%
What is the percentage increase in coral cover?		

1. Which site recovered more strongly? Why do you think this is?
2. How does having mangroves nearby affect the water quality at the reef?
3. CCMI's 2025 research showed that restoring coral near seagrass makes the seagrass store MORE carbon. Explain how this works in your own words.

## What can YOU do to help?

We were reminded that the Ridge to Reef connection means what we do on land affects the reef. Here are some actions that help, but some are WRONG!



Tick the actions that HELP protect the Ridge to Reef system. Put an 'X' next to actions that HARM it.

<input type="checkbox"/>	Avoid anchoring boats in seagrass meadows
<input type="checkbox"/>	Remove mangroves to build a new dock
<input type="checkbox"/>	Reduce your carbon footprint to slow sea-level rise
<input type="checkbox"/>	Pour chemicals or waste water directly onto the ground near the coast
<input type="checkbox"/>	Choose sustainable seafood to reduce pressure on reef fish populations
<input type="checkbox"/>	Support reef restoration projects like CCMI's Blue Carbon programme
<input type="checkbox"/>	Use excessive fertiliser on gardens near the coast

### Your pledge:

Write ONE thing you will do differently after watching this broadcast to help protect the Ridge to Reef system.

I will \_\_\_\_\_



## Stronger together!

Let's see your creative skills! Draw the full journey from 'Ridge to Reef' in the box below. Include all the steps that messy rainwater has to go through in order to keep the water of the reefs crystal clear for corals to be able to survive and grow, including:

- The start of the water cycle as rainwater
- The journey water takes across land to sea
- Coastal mangroves
- Seagrass meadows
- And finally, coral reefs.

Label the role(s) of each ecosystem.

A large, empty rectangular box with a black border, intended for a student to draw the 'Ridge to Reef' water cycle and label the ecosystems.