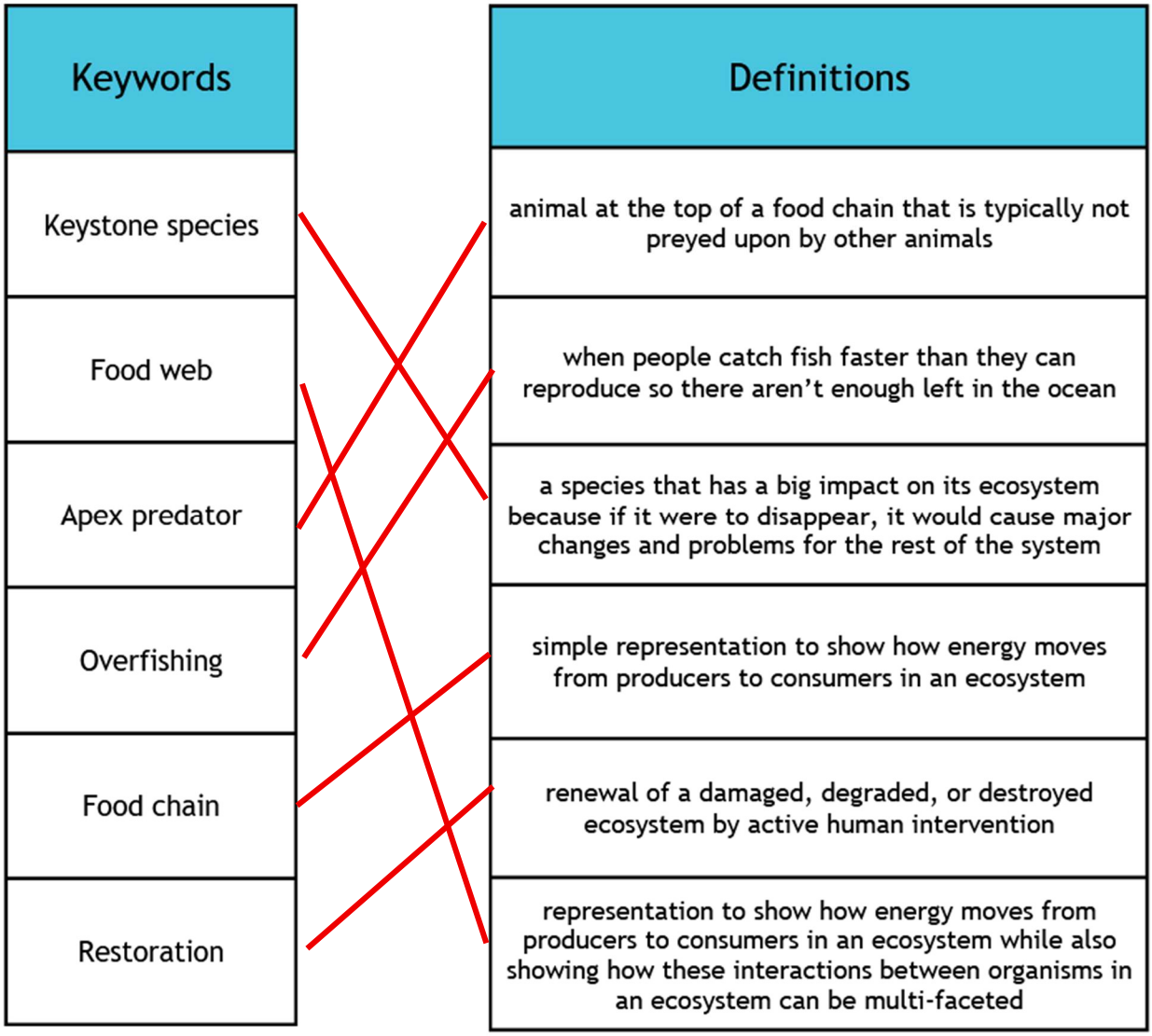
TEACHER VERSION

Episode 2: Superheroes of the Caribbean Reef

Key Terms from the broadcast

During today's broadcast, we explored how different reef organisms act like "superheroes", each serving an important role to keep the ecosystem healthy. Scientists use specific vocabulary to describe these roles and interactions.

Draw a line between each keyword and its correct definition.



Understanding roles

Using the clues below, match each organism to its role.

Clues:

A - “I eat other fish and keep populations balanced.”

B - “I swim in groups and eat algae all day.”

C - “I build the reef and provide homes for other animals.”

D - “I defend my small patch of reef and ‘farm’ algae.”

Match each to the correct organism AND role:

Clue	Organism	Role
A	Reef Shark	Predator
B	Surgeonfish	Herbivore
C	Coral	Builder
D	Damselfish	Territorial grazer

Word bank:

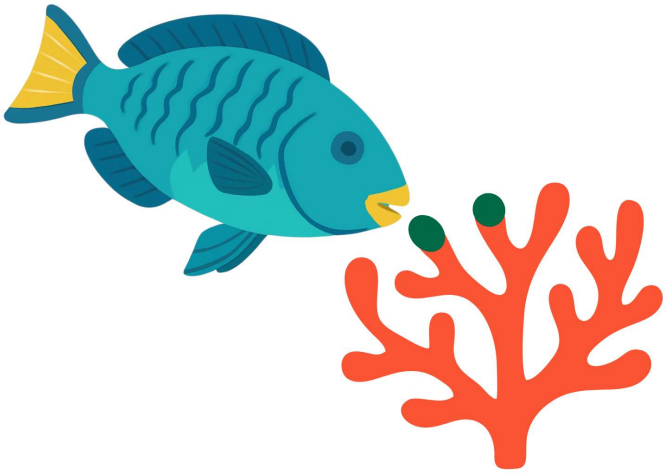
Coral • Surgeonfish • Damselfish • Reef shark • Builder • Herbivore • Territorial grazer • Predator

Extension:
Which TWO organisms above help control algae?

- Surgeonfish
- Damselfish

Processes on the Reef

Below is an image of a reef fish feeding on the reef surface.



What is the fish feeding on? Algae

The process is called: Grazing

Explain:

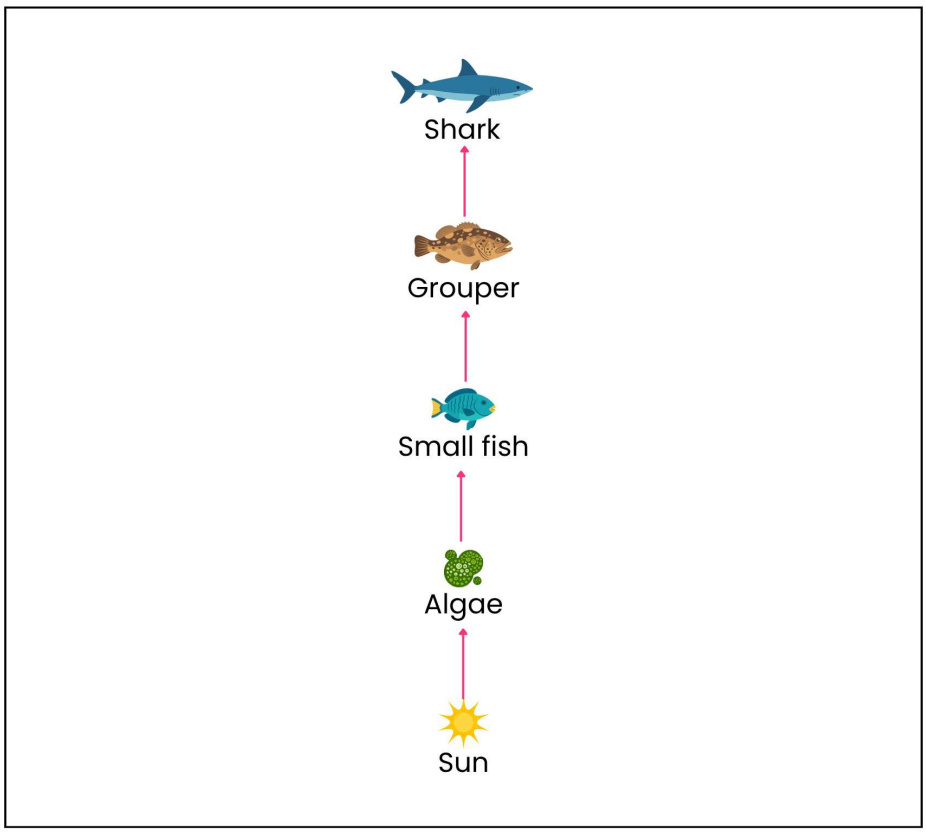
How does this behaviour help maintain a healthy reef?

Grazing removes algae from the reef, which stops it from taking over and allows coral to grow.

Food Web Thinking

Everything on the reef is connected through the food web.

In the diagram below draw arrows to show how energy moves through the reef.



Label:

- Producer: Algae
- Herbivore: Small fish
- Predator: Grouper / Shark

What might happen if predators disappeared?

- Small fish increase
- They eat more organisms lower in the food chain
- The reef becomes unbalanced
- This may lead to more algae and less healthy coral

Working Like a Scientist

Scientists at CCMI are working to understand and protect coral reefs.

You are studying herbivorous fish. What would you measure? (tick 2)

✔ Coral growth

☐ Number of sharks

✔ Amount of algae

☐ Water temperature

Look at the reefs:

What do you notice? (You may notice differences in number of herbivores, amount of algae, variety of coral, and more.)

Reef A has more fish, less algae, and more coral

Reef B has fewer fish, more algae, and less coral

Do herbivorous fish help coral reefs stay healthy? YES

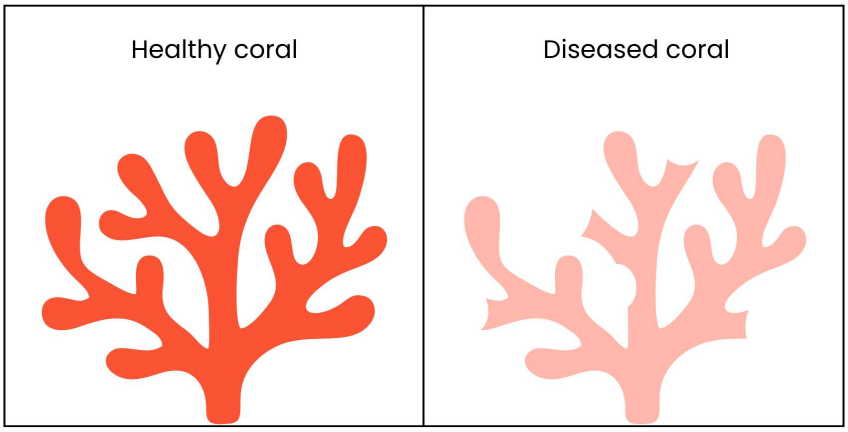
Scientists grow coral in nurseries and transplant it back onto reefs.

Why might this help reefs recover?

- Increases coral populations
- Rebuilds reef structure
- Provides habitats for marine life
- Helps reefs recover from damage

Coral Disease Investigation

Corals are the foundation of coral reefs. Like all living things, they may be affected or harmed by a disease. Scientists study diseases like Stony Coral Tissue Loss Disease (SCTLD) to understand how reefs are changing.



1. Label the diagrams with the correct descriptor below:

Living tissue Dead skeleton

- Living tissue → coloured coral
- Dead skeleton → white/pale areas

2. What differences can you see?

- Healthy coral is fully coloured
- Diseased coral has white patches
- Diseased coral has less living tissue

3. How can you tell the coral is unhealthy?

- Loss of colour
- Less living tissue

4. What happens next?

Coral dies → Fish lose habitat → Reef ecosystem becomes damaged

5. Why is this a serious threat?

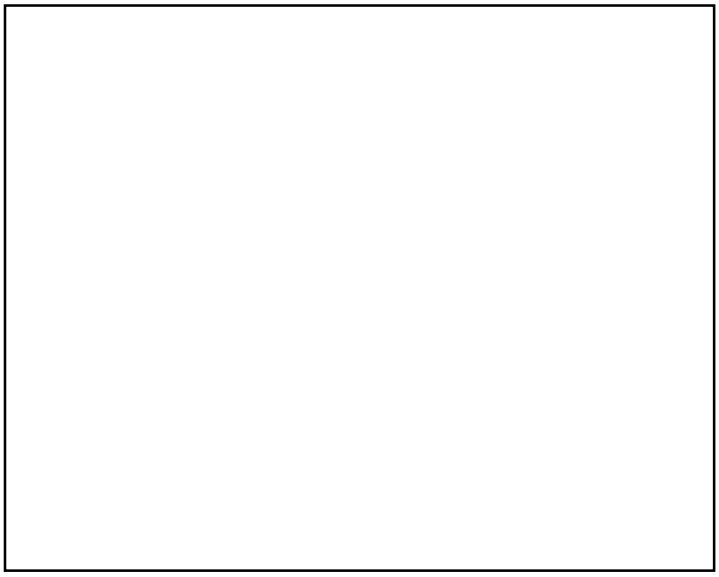
- Coral is the foundation of the reef
- Many species depend on coral
- Disease can spread quickly
- Loss of coral affects the whole ecosystem

Design a Reef Superhero

Create your own reef organism with a special “superpower”.

Examples:

- Sharp teeth for scraping algae
- Camouflage to hide from predators
- Strong jaws for eating coral



Label your design:

What does it eat? _____
What is its role? _____
What is its superpower? _____
How does it help the reef? _____

Open ended - range of acceptable answers but there should be:

- A clear role (e.g. herbivore, predator, cleaner)
- A realistic adaptation (e.g. teeth, camouflage, speed)
- Explanation of how it helps reef health

Example:

- Eats algae → prevents overgrowth
- Hunts weak fish → keeps populations balanced