BLUE MARINE FOUNDATION

Journey to a Healthy Ocean

OCEAN CHAMPION GUIDE FOR AGES 8+

RAINFORESTS OF THE SEA

Media Campaign

#ProtectMaldivesSeagrass

The Maldives is a country in the Indian Ocean. It has 1192 islands! Tourists visit the Maldives for its beauty and marine life. The tiny country has 5% of the world's coral reefs. These reefs are home to thousands of species of fish, including manta rays and whale sharks.

Some resorts remove seagrass to make their lagoons look nicer for guests. Seagrass meadows are important for storing carbon and slowing climate change. They are also a habitat for animals like seahorses, and they provide food for animals like turtles.

In 2019, Blue Marine used social media to convince resorts to keep their seagrass meadows. **The campaign protected 830,000m² of seagrass (which is equal to 116 football pitches) in the first 3 months!**

What is a social platform? Try to think of 3 examples that you have used or heard about.

What is a social media campaign?

A social media campaign uses online social platforms, like Facebook, Instagram and Tik Tok, to share a message with people. Campaigns always have a goal that they want to achieve. They usually want people to do something. In this case, BLUE wanted to protect seagrass in the Maldives.

Campaign posts are made so that people remember them. A campaign is different from one social media post because it has many posts with the same goal.

Create your own blue carbon campaign!

STEP 1: Look at existing campaigns

First, look at these Instagram posts for #ProtectMaldivesSeagrass and #SaveOurSharks. Then, answer the questions. This will help you to create your own campaign!

maldivesunderwaterinitiative For third day of the #ProtectMaldivesSeagrass challenge we are combining it with our celebrations of #WorldWildlifeDay! We challenge you to explore your seagrass meadows and see what wildlife you can spot. Comment below or share what you spotted with us. .
Tag us, @maldivesresilientreefs and #ProtectMaldivesSeagrass in your post to be sure we see it and don't forget to challenge your friends to do the same! .
A single hectare of seagrass can house as many as 100,000 fish, they're also a vital food source for green turtles and a common feeding site for many species of rays- you never know what you will find!
.
We challenge all our #ProtectMaldivesSeagrass partner resorts to explore the wildlife in their meadows:
@gili.lankanfushi
@anantaraveli
@anantaradhigu
@naladhumaldives
@reethifaruresort
@discoversoneva
@discoversoneva
@kurumba_maldives

In this post, who is being asked the take action?

1) _____

_____

2) _____

_____

What are they being asked to do?

How do the images grab your attention?

Do you think these facts make people care about sharks? Why? (If you don't, what would you say differently?)

STEP 2: Design your own campaign

Now, plan your own campaign for blue carbon habitats

- What is the **goal** of your campaign?

Goal:

- What **message** would you like to share about blue carbon habitats?

Message:

- What human **behaviour** do you want to change?

Behaviour:

- Who is your **audience**? Who do you want to speak to?

Audience: _____

- What kind of pictures do you want to use? What will grab attention? Sketch or paste some examples below:

- What will you say?
  Write some example sentences here

STEP 3: Put it together!

CREATE a rough sketch of one post that you might create for your blue carbon habitats campaign. Include pictures and writing in the template below

PROTECTING THE UNDERWATER WORLD

Marine Protected Area (MPA) Survey

MPAs provide safe havens for marine life. This lets them recover from the damage of human activities.

How do we know they work? Scientists check the health of protected areas by collecting data. They use counting methods called quadrats and transects. This lets them see the change in the marine environment over time!

Would it be a fair test if the **quadrats** are put where there is the most marine life?

PART 1: Collecting data using a quadrat

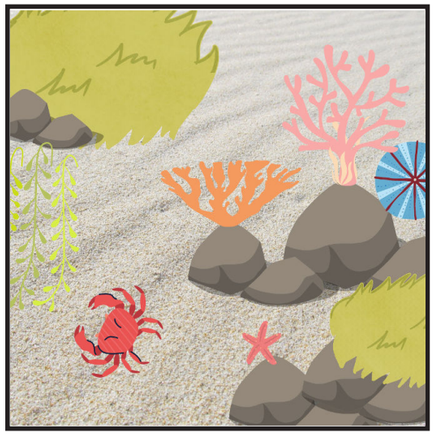
Scientists use **quadrats** to measure the plants and animals found on the seabed. We call these benthic organisms. Quadrats are usually 1x1m squares. If scientists use quadrats in deep water, they need to use scuba gear to collect the data.

Imagine you are a marine scientist that is checking the health of a Marine Protected Area. You want to know what species are on the seabed and how much there is of each species. This is called **percentage (%) cover**.

To do this, you have randomly dropped two quadrats. Estimate how much of the quadrat each organism takes up. Record your results in the table.

Quadrat #1

Quadrat #2



	Marine Protected Area (MPA)	
	Quadrat #1 (% cover)	Quadrat #2 (%cover)
Coral	%	%
Algae (seaweed, kelp)	%	%
Rock/sand	%	%
Invertebrates (e.g. crabs, starfish and urchins)	%	%
TOTAL	100%	100%

Imagine that you have also sampled two quadrats in an area outside the MPA. Compare the data that you collected in the MPA with the data from outside the MPA. What similarities or differences do you notice? Do you think the MPA has helped to protect marine life?

	Unprotected Area	
	Quadrat #1 (% cover)	Quadrat #2 (%cover)
Coral	4%	5%
Algae	20%	40%
Rock/sand	70%	45%
Invertebrates	6%	10%
TOTAL	100%	100%

PART 2: Collecting data using a transect

Tip: using a tally can be easier to add up at the end

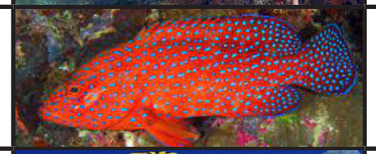
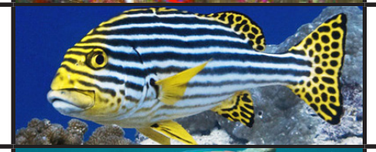
Marine scientists use **transects** to measure the amount of fish in an area. A transect is just a line. The scientist swims along this line and counts the type and number of fish that they see 10m to either side.

Revisit the RAINFORESTS OF THE SEA web experience.

This time, imagine that you are swimming along a transect line. Use the species ID on the next page to identify the fish species. In the data table, record how many you see of each species along the journey.

Compare your data with your class. Did you record the same numbers? If not, why do you think they were different?

RAINFORESTS OF THE SEA Transect Line Data Sheet

Species name	ID image	Tally	Total
Blackspot emperor			
Snapper			
Barracuda			
Coral grouper			
Oriental sweetlips			
Parrotfish			
Peacock grouper			
Blue tang			
Green turtle			
Black tipped reef shark			

THE OCEAN'S WEB OF LIFE

Manage a Fishery

Have you ever been fishing or seen someone fish? What did you/they use to catch the fish?

This is called "**gear type**".

Many different tools ("gear") can be used to catch fish.

Some fishers use **pole and line** or **rod and reel** to catch one fish at a time. If you've been fishing, you probably used a rod and reel.

Another type of fishing gear is **static pots**. These are traps with bait inside that are placed on the seabed to catch crustaceans like lobsters and crabs.

To catch more fish, boats might set **longlines** behind them. Longlines have many baited hooks hanging off them. Longline fisheries can often catch and kill animals like seabirds, turtles and sharks. This is called **bycatch**.

Trawling is when boats tow a net through the water behind them, or along the seabed below (**bottom trawling**). **Dredging** is when a heavy metal bar is dragged along the seafloor. Dredging is usually used to catch shellfish, such as scallops.

To target schooling fish in the open ocean, large commercial boats will use **purse seines**. These nets surround and enclose the entire school of fish, like a drawstring on a purse.

What do you think bottom trawling and dredging do to animals that live on the seafloor?

In this activity, you will use different gear types to catch "fish". How do they impact the sustainability of your fishery? Tip: Sustainability means ensuring there is enough for people in the future

MATERIALS:

- Medium-sized bowl (one per group)
- 10 x 4 colours of Froot Loops (or other coloured breakfast rings - you will need at least blue, green and yellow) per group
- 20 Cheerios (or other plain breakfast rings) per group
- Paperclip (one per student)
- Fork (one per student)
- Spoon (one per student)
- Timer

SETUP

1. **Form a group of 2-4 students**. You will be competing to catch fish in the same fishery

2. **Create your fishery**. In a bowl, add :
- 10 Froot Loops x 4 different colours (40 total) - these will represent your target fish stock
- 20 Cheerios - these will represent other marine animals that you do not want to catch (bycatch)

3. **Get your gear ready**. Each student will need a paperclip, fork and spoon.

PART 1

You will do 5 "seasons" of fishing.
During each season, you can fish for 15 seconds.

4. Check the gear type to use for each season in Data Log 1. For Season 1, you will use a paperclip.

5. When the 15-second timer begins, catch as many coloured Froot Loops as you can!

6. At the end of each season, record your catch in Data Log 1.

7. Between fishing seasons, your Froot Loops reproduce! Double the remaining fish stock (coloured Froot Loops) for the start of the next season.

Season (15 sec of fishing each)	**Gear type**	**Starting stock size** (double last year's **remaining stock size**)	**Your catch** (number)	**Remaining stock size**	**Bycatch** (# of plain breakfast rings caught)
1	Paperclip	N/A			
2	Fork				
3	Fork and spoon				
4	Fork and spoon				
5	Fork and spoon				

Ocean temperatures increase due to climate change!
Only blue and green fish survive

Reflect:

- Did your fishery survive all 5 years? Why or why not?

_____

_____

- What happened to the fish stock as your fishing gear became more efficient (when you started using forks and spoons?)

_____

_____

- Which gear type caught the most bycatch (Cheerios?)

_____

_____

- What effect did temperature increase have on the fish stock?

_____

_____

- Challenge question : Why do you think only some of the fish survived the climate event? (Hint: adaptation is where animal populations change to suit their surroundings)

_____

_____

How could these techniques help you manage your fishery to make it more sustainable, so that more fish survive to the end of the 5 years?

- Choice of gear types:

_____

- Add a Marine Protected Area .

_____

- Closed seasons (skip a season):

_____

Glossary

Key Terms

Blue carbon - the carbon that is captured and locked away by ocean habitats such as mangroves, coastal salt marshes and seagrass meadows

Carbon cycle - the process of carbon travelling between the atmosphere and Earth

Climate change - the long-term shift of the Earth's temperature and weather patterns

Gear type - The tools used to catch fish; include pole and line, longline, trawling, bottom trawling, and purse seine

Greenhouse gas - gases in the Earth's atmosphere that trap heat; they include water vapor, carbon dioxide, methane, oxone, nitrous oxide, and chlorofluorocarbons

Marine Protected Area (MPA) - a geographic area of the ocean that limit human activities in order to protect marine ecosystems

Overfishing - when fish are caught faster than they can be replaced by reproduction

Quadrat sampling - a method of estimating the abundance of slow moving or non-moving organisms by taking square metre samples (quadrats)

Transect survey - a method of estimating the abundance of organisms by surveying along a line that is laid through the habitat

Educational resources designed by
Jessica Daicos

3rd Floor South Building,
Somerset House, Strand, London,
WC2R 1LA

+44 0207 845 5850
info@bluemarinefoundation.com
www.bluemarinefoundation.com

BLUE MARINE FOUNDATION