STEM from HOME

Seagrass

At CGI UK, we recognise our responsibility as a business to make a positive impact on the world around us. It's why we have a net-zero carbon emissions by 2026 commitment, why we are a founding partner of Get Nature Positive and why we are proud of our partnership with Project Seagrass and support for their essential marine restoration and preservation work.

PROJECT SEAGRASS

CGI has become a Platinum Sponsor of Project Seagrass. As part of this partnership, we will be adopting a patch of seagrass and planting 50 bags of seagrass seeds at a suitable habitat in Wales. We look forward to CGI volunteers getting involved in planting and other activities as our partnership grows.

What is Project Seagrass?

Project Seagrass is an environmental charity devoted to the conservation of seagrass ecosystems through education, influence, research and action. As a team of dedicated seagrass scientists, they support marine restoration, conservation and the protection of seagrass, recognising its importance in biodiversity, planetary life support and the climate crisis that affects us all.

In this pack, children can research seagrass, build their own Secchi disk, undertake the project seagrass word search and take on ocean coding challenges.

STEM@CGI
SCIENCE - TECHNOLOGY - ENGINEERING - MATHEMATICS

# Understanding Seagrass

What is Seagrass?

Seagrass isn't seaweed, but a group of flowering plants that live in shallow sheltered areas along our coastline. With bright green leaves and waterproof pollen, they form large dense green meadows under the sea hosting many animals of different shapes, colours and sizes. Because of where they grow, they are highly vulnerable to damage from humans and are now a protected species. In the 1930's we lost over 50% of seagrass to a wasting disease so protecting what's left is vital.

Why is Seagrass important?

Seagrass plays an important role for both humans and sea creatures. Seagrass:

- Can provide a natural sea defence by trapping sediment and slowing down currents and waves
- Provides a nursery ground for many commercial fish like Cod, Plaice and Pollack
- Absorbs and stores large amounts of the carbon dioxide we produce, vital in the fight against climate change
- Produces some of the oxygen we breathe
- Can encourage tourism in the local area
- Increases biodiversity by providing food and shelter for other important marine life
- Is home to many colourful and charismatic species, big and small like seahorse, pipefish, sea anemones, dogfish and more.
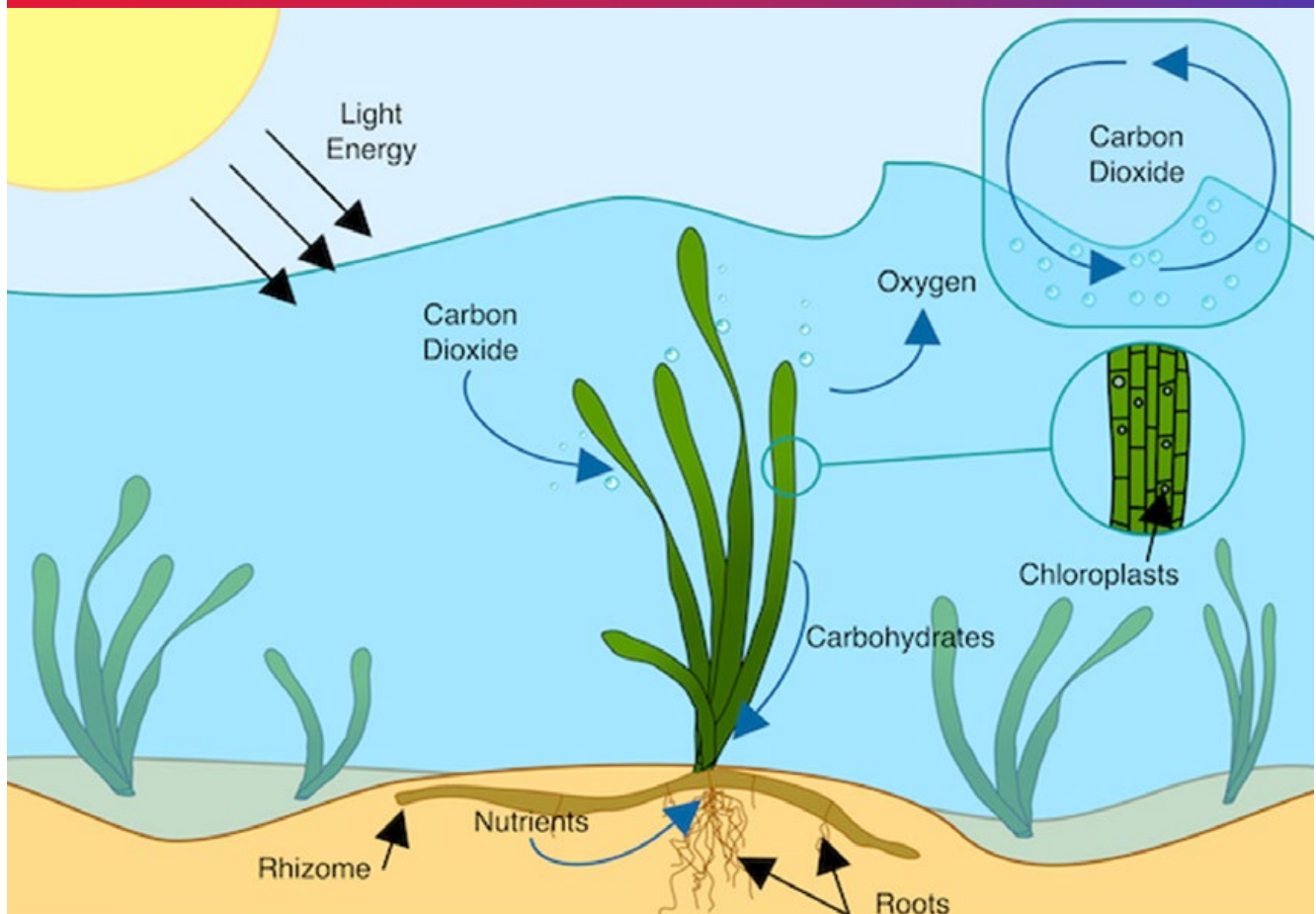
One Hectare (100 acres) of seagrass can:

Produce up to **100,000 litres** of oxygen per day, enough for nearly **200 people**

Store carbon **35 times more efficiently** than the Amazon rainforest

Support up to **80,000 fish**

Now time for you to research:

What are the biggest threats facing seagrass?	What can we do to help?
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•	•
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Make your own Secchi disk

The Secchi disk was created in 1865 by Pietro Aneglo Secchi. The device is used to measure water transparency in open bodies of water such as the ocean, lakes and rivers. The secchi disk is lowered into water, the depth at which the black and white pattern becomes no longer visible is the point of which the measurement is taken. This measurement is known as the Secchi depth.

But why do we need to measure water transparency?

The transparency of water relates to the depth that light will penetrate the water. The transmission of light into water is extremely important as it allows photosynthesis to take place, a process that produces oxygen and food for consumers. This is a key process in allowing ocean life to grow and thrive.

Check out our video below to make your own Secchi disk. Remember, you should always be supervised by a responsible adult when building and testing your Secchi disk.

Make your own Secchi disk

CGI
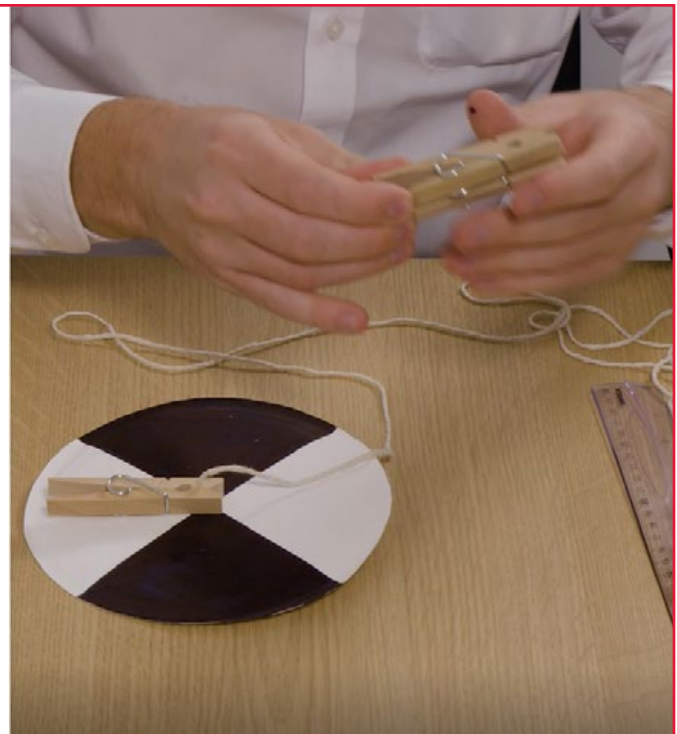
Seagrass Worsearch

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N N R I O K L E D C R D Z X F
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N C E M Z U T B B A V J B R R
T H S Q E S S A R W C B D W P
F U Y R E W U X W O P K Z O A
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ANEMONE
COD
CRAB
CUTTLEFISH
DOGFISH
HERRING
PIPEFISH
PLAICE
POLLACK
SEAHORSE
SNAIL
STICKLEBACK
WRASSE

Ocean coding

Turtle tracker

It's important to understand the movements of endangered creatures so that they can be protected. In this project, you will use the Pen extension blocks and x and y coordinates in Scratch to draw the locations visited by green sea turtles during their nesting time.
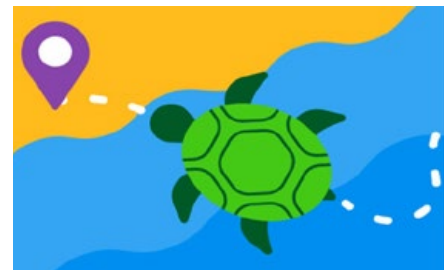
Save the shark

Use Scratch to create a game and save the shark! Explore sharks' favourite food source (fish, not humans!), as well as the impact of plastic in the water harming sharks in their natural ocean habitat.

Ask your parent/guardian to upload pictures of your STEM creations to **Twitter**, **LinkedIn** or **Facebook** using **#STEMfromHome** and **#ExperienceCGI**, remember to tag us!

For more information or additional support with STEM activities when working remotely, contact **enquiry.uk@cgi.com**