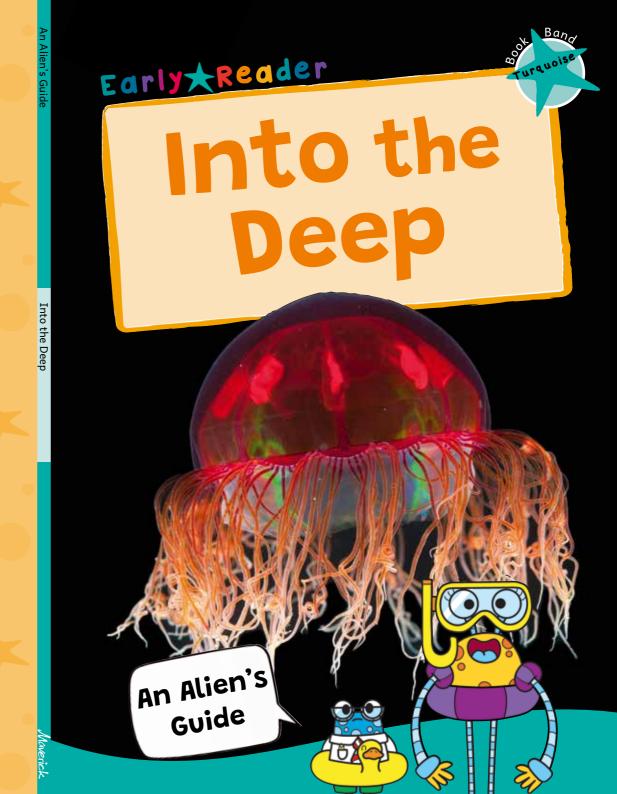
### Early Reader

## Into the Deep

Join Finn and Zeek, two alien tour guides, as they find out about the zones in the deep sea and the creatures that live there.



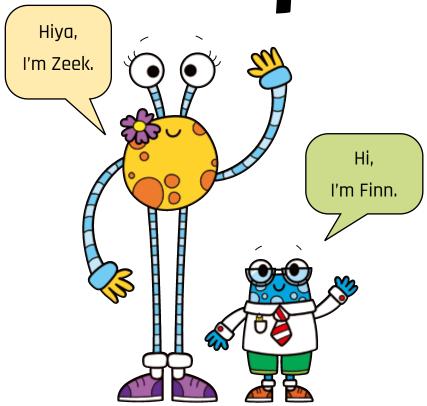
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Band Band



## Into the Deep



Calling all aliens!

Are you planning a holiday to planet Earth?

Finn and Zeek are here to help.

## 'Into the Deep' Published by MAVERICK ARTS PUBLISHING LTD

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This book is rated as: Turquoise Band (Guided Reading)

# Into the Deep

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## INCOMING MESSAGE







Hello fellow aliens!
What do you want to know about Planet Earth?

Dear Finn and Zeek,

I come from a water planet and we hear that the Earth's deep seas are beautiful.

I wonder if you could tell us a bit more about them?

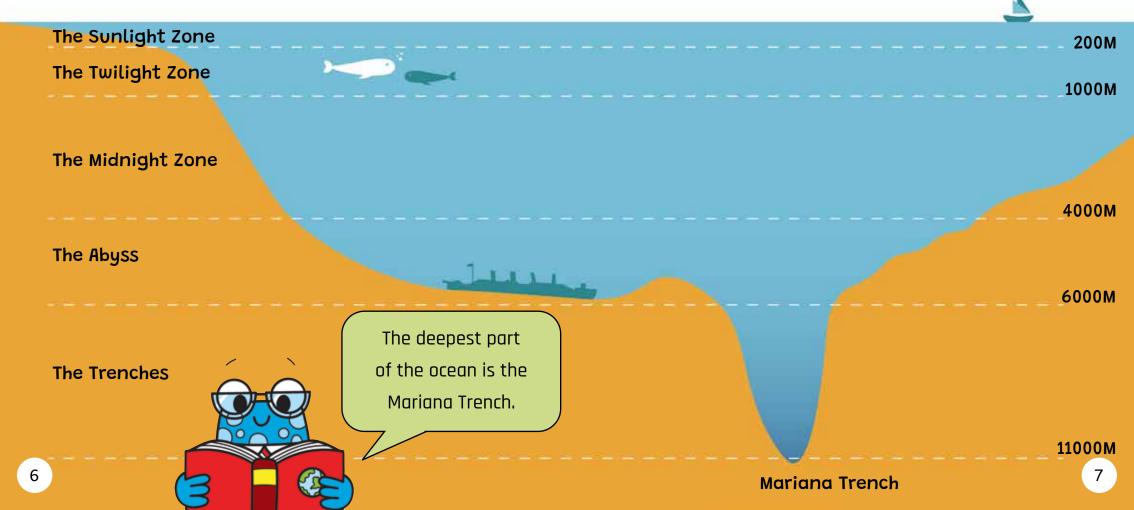
From, Osmo (Planet Aquata)

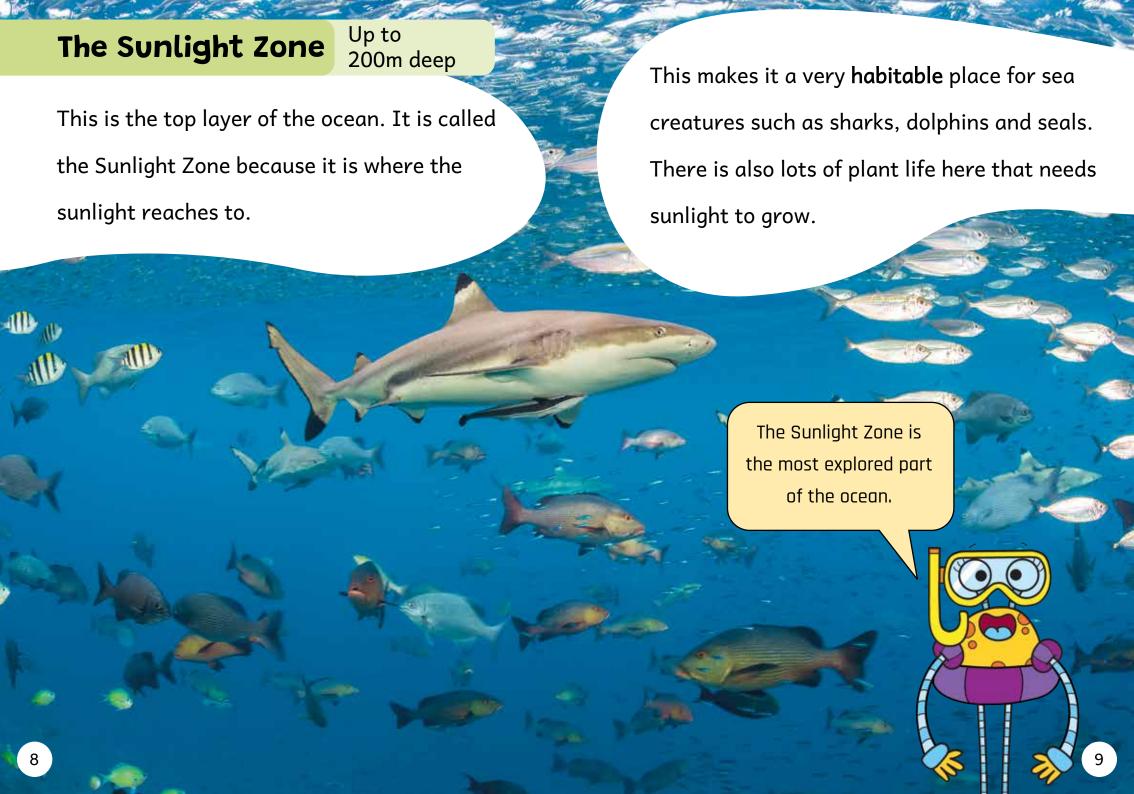




#### Introduction

The ocean is enormous! It takes up most of the Earth's surface: about 70%. The deepest part of the ocean has hardly been explored by humans. There are different layers to the ocean, with different parts of the ocean going down to different depths.





#### The Twilight Zone

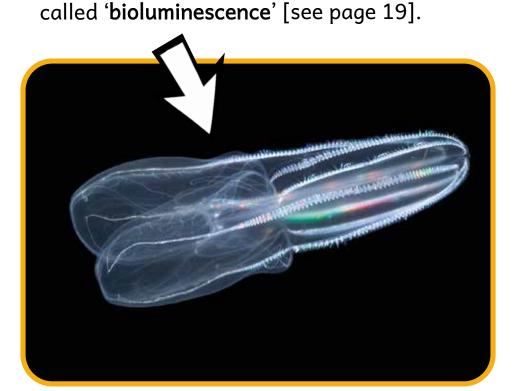
200 - 1000m deep

1000 - 4000m deep

#### The Midnight Zone

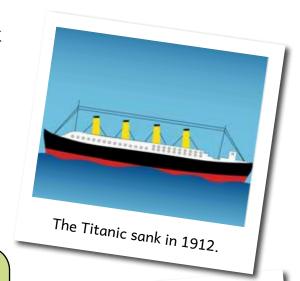
Unlike the Sunlight Zone, no plant life grows in the Twilight Zone as there is little or no light. However, there is still lots of animal life.

Some fish that live here make their own light

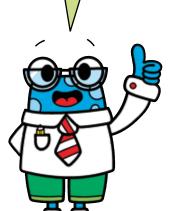


This zone has no light at all!

The Titanic sank to this zone (3800m deep).



Sperm whales have been known to dive this deep!





4000 - 6000m deep

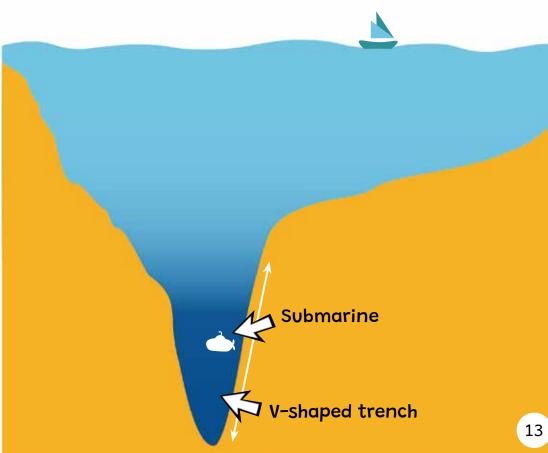
6000 - 11000m+ deep

It's not easy for things to live in this part of the sea. It is very dark and cold.



The creatures that live here are usually invertebrates. This means they have no backbone. Many of the fish down here live on or close to the seabed.

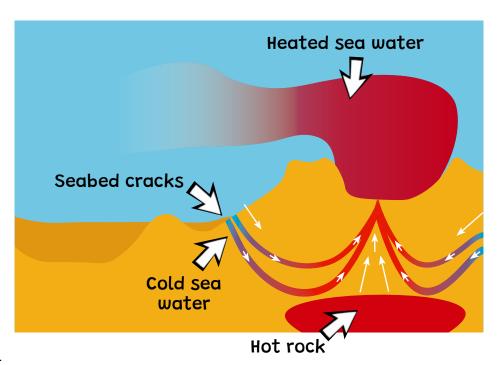
On the ocean floor, there are some narrow v-shaped holes that go even deeper! These are called trenches. Very few things live at this depth.



#### **Extreme Places**

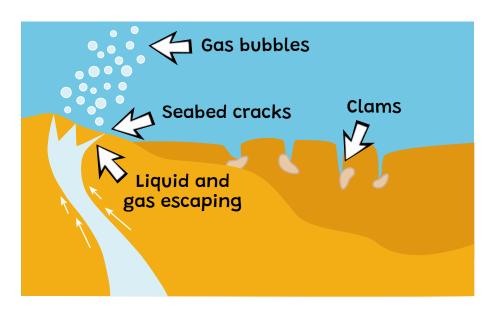
#### **Hydrothermal Vents**

Hydrothermal vents look like underwater volcanoes but release hot water, not lava. When cold sea water gets into deep cracks in the seabed, hot rock underground heats up the sea water and pushes it back out in a jet.



#### **Cold Seeps**

Cold seeps are pools of liquid and gas which form near cracks in the seabed. They can be hundreds of meters wide. They are full of chemicals which help creatures in the deep sea to live.



Hydrothermal vents and cold seeps are home to many different creatures. They are important to the ocean's **ecosystem**.

#### **Deep Sea Creatures**



#### Anglerfish

Named after the 'fishing pole' on its head that attracts prey into its mouth.



A type of sea snail.

It is an important food for other creatures.





#### Whitemargin stargazer

Buries itself in sand and then surprises its prey with an electric shock!

#### Cock-eyed squid

This squid has a normal size right eye, but its left eye is double the size!



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#### Adapting to the Deep Sea

Deep sea creatures have to adapt to the cold and dark.



Glass squid

#### **Changing Colour**

In the deep sea, most creatures are black, red or transparent to blend in.



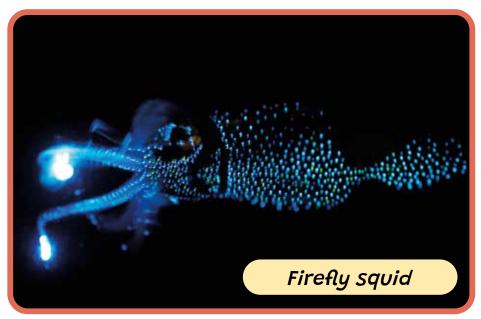
Greenland shark

#### Slow and Steady

Life moves slowly in the deep. The Greenland shark can take over 100 years to fully grow up!

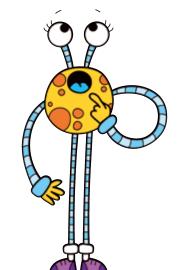
#### **Bioluminescence**

In the dark, some creatures of the deep use a **chemical reaction** to create their own light.



They may do this to...

- Find food
- Attract a mate
- Attract prey to them



#### **Humans in the Deep**

Exploration

Humans use vehicles to explore the deep sea.





## ROV (Remote Operated Vehicle)

These vehicles are controlled by computers on the ocean surface. ROVs take photos and collect samples from the deep.

## HOV (Human Operated Vehicle)

These vehicles allow humans to visit the deep sea. They have to be very strong or the pressure would crush them.

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#### **Humans in the Deep**

Destruction

**Deep sea fishing** is a danger to many types of sea creatures. It can remove too many creatures and damage the ecosystem.

**Rubbish** has been found in the deepest part of the ocean. Over time, plastic breaks down into tiny, harmful pieces that can be eaten by fish.



**Deep sea rigs** are used to **mine** oil and gas.

This disturbs the ocean bed and causes a lot of **pollution**.



In 2010, there was a huge oil spill at a rig called Deepwater Horizon, near Mexico.

The spill killed a lot of sea life.

#### **Humans in the Deep**

Protection

There are many things humans can do to help protect the deep sea.

Respect nature and don't litter!

Help with beach clean-ups.

Learn more about the deep sea.

Try to use less energy.

Reduce rubbish by reusing and recycling.

Use **clean energy**, instead of oil and gas.

### **MESSAGE SENT**







Dear Osmo,

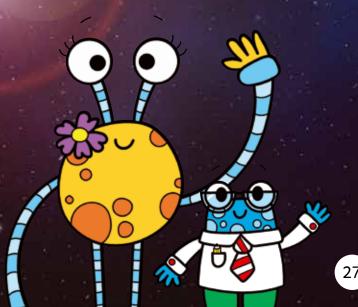
The deep sea has lots of zones to explore. However, it would be best to check that you are able to cope with the cold and dark before journeying down there.

From, Finn and Zeek:)



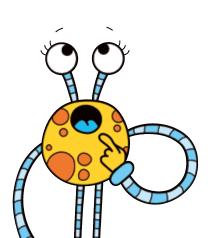






#### Quiz

- 1. The ocean makes up roughly how much of the Earth's surface?
- a) 50%
- b) 70%
- c) 90%
- 2. What is the top layer of the ocean called?
- a) The Twilight Zone
- b) The Bright Zone
- c) The Sunlight Zone
- 3. What are the v-shaped holes on the ocean floor called?
- a) Trenches
- b) Deep Zones
- c) Mariana Dips



- 4. What fish has a 'fishing pole' on its head?
- a) A fishing fish
- b) A hook shark
- c) An anglerfish
- 5. What does HOV stand for?
- a) Happy Operated Vehicle
- b) Hopping On Vehicles
- c) Human Operated Vehicle
- 6. What are deep sea rigs used for?
- a) Mining
- b) Exploring
- c) Research

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#### Index/Glossary

#### Bioluminescence pg 10, 19

When a living creature creates its own light with a chemical reaction.

#### Chemical reaction pg 19

When a substance reacts with another to create something new or different than before.

#### Clean energy pg 25

Energy which is made from resources that nature will replace, like wind, water and sunshine. It makes little to no pollution.

#### Ecosystem pg 15, 22

A natural environment and everything that lives in it.

#### Habitable pg 9

Somewhere that is capable of being lived in.

#### Invertebrates pg 12

Creatures without a backbone in their body.

#### Mine (mining) pg 23

The process of removing things from the ground.

#### Pollution pg 23

When harmful materials are released into the environment.

#### Recycling pg 24

Turning rubbish into something new.

#### The Titanic pg 11

This ship was built in 1912. At the time it was the largest ship in the world. It sank when it crashed into an iceberg.



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