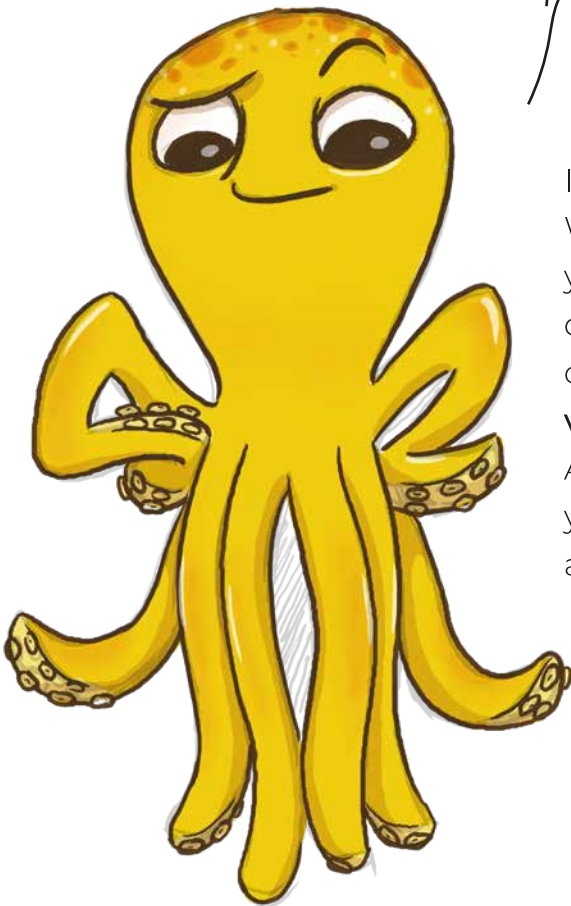




With **Okto** the octopus
& **Marjo** the researcher

Cycle 1 - 2024

Hi there ! My name's Okto



I'm a **deep-sea explorer**.

With **Marjo** the researcher, I'd like to invite you on an extraordinary journey through the deep ocean. Together, we will explore the ocean depths, particularly the **hydrothermal vents** !

And, most important of all, I will explain how you can help scientists by becoming a deep-sea spy yourself...

IDENTITY INFORMATION

Name : Okto
Group : Mollusca
Class : Cephalopoda
Order : Octopoda
Family : Octopodoidae

Distinguishing characteristics : 8 tentacles, 2 large eyes, a well-developed brain

Mission : Deep Sea Spy
Objectives : To introduce you to the mysteries of the deep ocean so that you can become a deep-sea spy

DEEP SEA EXPLORATION

Where to go to play ?

<https://ocean-spy.ifremer.fr/deep-sea-spy/>



Type the URL address

<https://ocean-spy.ifremer.fr/deep-sea-spy/>

in the navigation bar

or scan the QR code with your tablet



Connect with your username
and your teacher's password



Help Marjo to find
and identify the animals



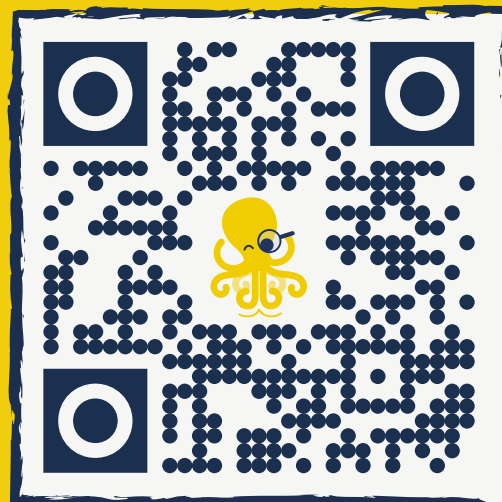
Move up the levels
and win virtual figurines

Ocean Spy

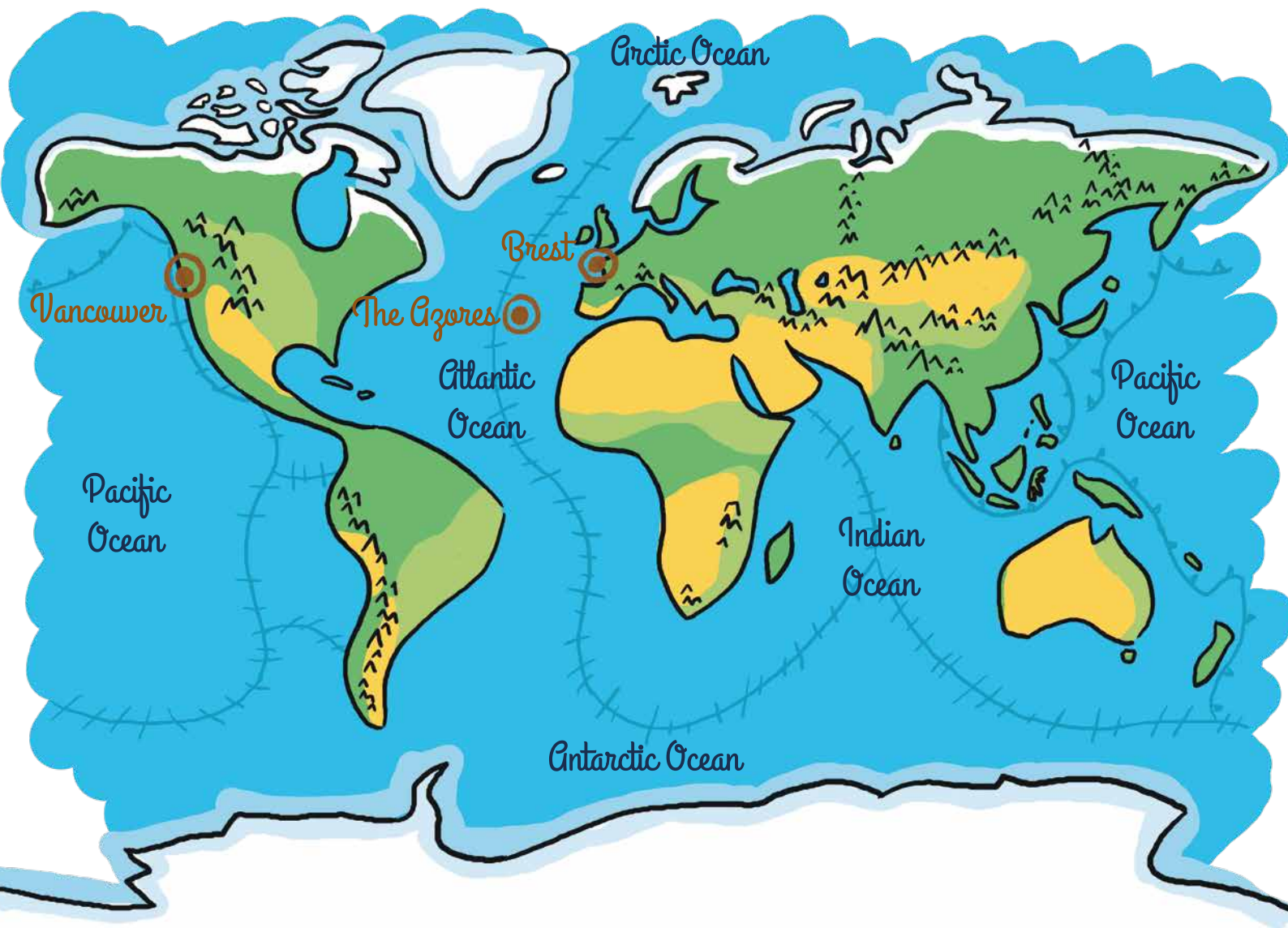
<https://ocean-spy.ifremer.fr/>

The **Deep Sea Spy** project is
part of the **Ocean Spy** family.

With the same username and password,
you'll be able to choose other
ecosystems and contribute
to advance science!



Find some of the answers at
www.deepseaspy.com



Additional information :

Brest and **Vancouver** are 7700 km apart. It takes 10 hours by plane to travel between the two.



Did you know ?

In the deep ocean
It's dark
It's cold
It's "deep"
It's "hungry"

Théodore Monod

THE GAME

<https://ocean-spy.ifremer.fr/deep-sea-spy/>

Marjo is a scientist who studies animals that live in the deep sea. **Her playground is the oceans, everything that's blue on the map !**

Marjo's studies enable her to understand who these animals are, where they live, and what they do. It's very important to understand this because each species plays a crucial role on the planet. Knowing them **better means better protection for them**, and thus protecting our home : Earth.

Come and help me observe them !



**MARJOLAINE MATABOS
RESEARCHER IN ECOLOGY
OF DEEP SEA ENVIRONMENTS**

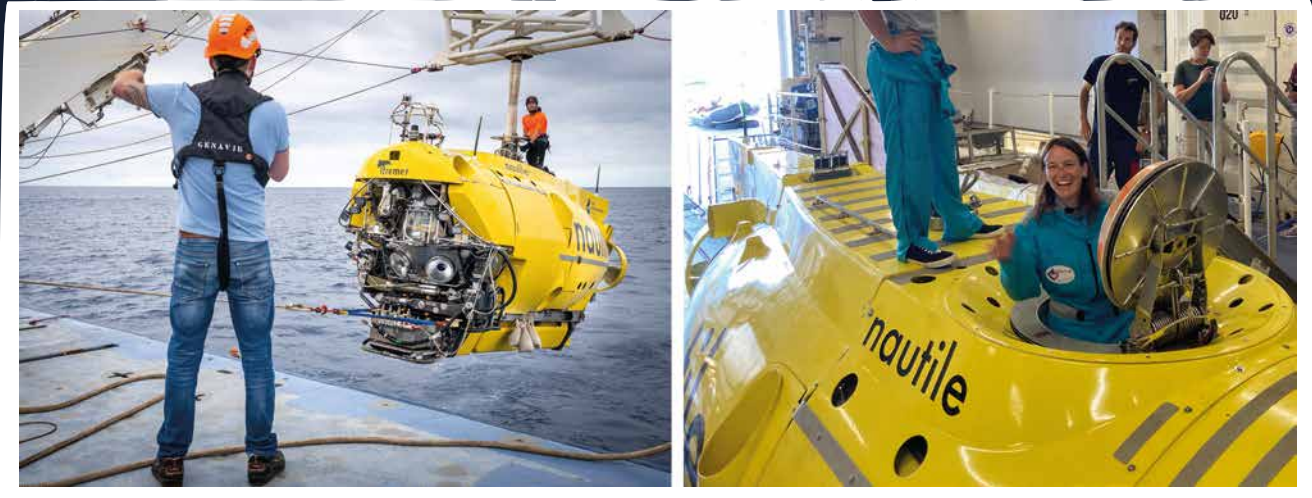
IDENTITY INFORMATION

Community : Scientific
Institute : Ifremer
Sub-group : Deep Sea Lab

Mission : Understanding the biodiversity of the deep sea

AN OCEANOGRAPHIC CRUISE

Marjo dives in a yellow submarine to explore and discover the animals that live at the bottom of the oceans. During a dive, she spends **eight hours in a small sphere** made of titanium (a metal) with a pilot and co-pilot onboard.



Submersibles are lowered in the water from a ship.



AN OCEANOGRAPHIC CRUISE

At sea, the **chief scientist** works with the captain to organise the cruise. The crew is composed of many jobs. The **officers** are responsible for navigation, the **deckhands** maintain the ship and deploy the scientific equipment, the **mechanics** look after the engines and the **kitchen crew** cook for everyone. The **submarine team** ensures the good functioning and piloting of the submarine for scientific work.

Match each job with its photo.

- Cook
- Scientist
- Diver
- Mechanic
- Captain
- Deckhands



THE CREW

An oceanographic cruise can last up to 50 days on a research vessel like the "Pourquoi Pas?" or the "Atalante". Between 55 and 75 people live onboard. For a successful mission, Marjo and Okto need a lot of friends.

Tick the boxes of the jobs that make up the ship crew.



GETTING AROUND UNDER WATER

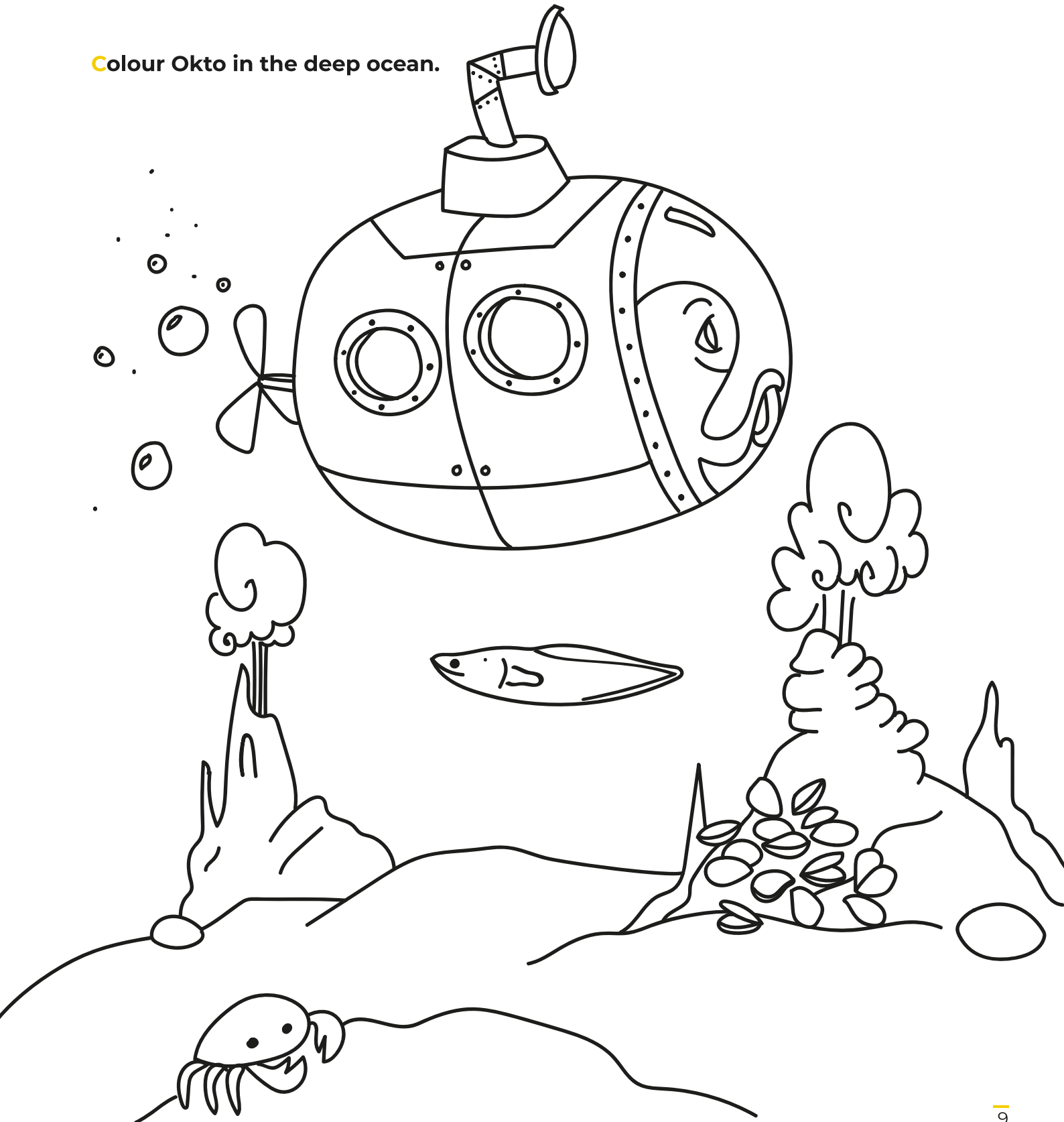
Help Okto to get around in the deep ocean by finding the right transport.

Colour in the circle next to the form of transport Okto can use to explore the deep ocean.



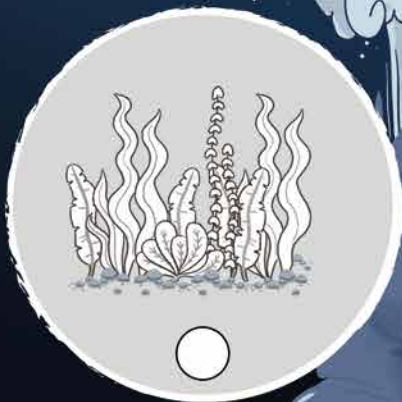
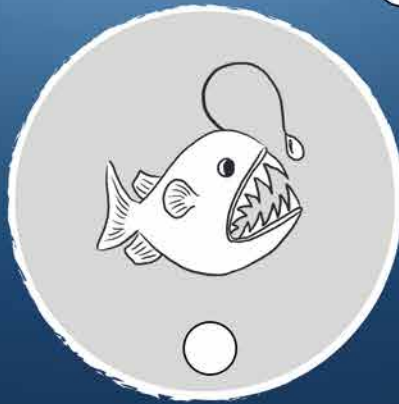
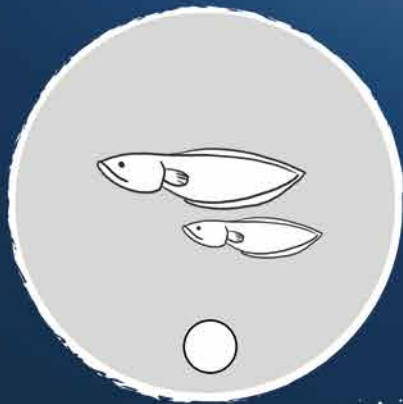
EXPLORING THE DEEP OCEAN

Colour Okto in the deep ocean.



THE ANIMALS IN THEIR ENVIRONMENTS

Colour the different animals and put them in their environments by colouring the pairs of small circles with the same colour.



THE ANIMAL COMMUNITY

Deep sea animals



SEGOZACIA CRAB



POLYNOID SCALE WORM



MIROCARIS SHRIMP



BUCCINID SNAIL



ZOARCID FISH

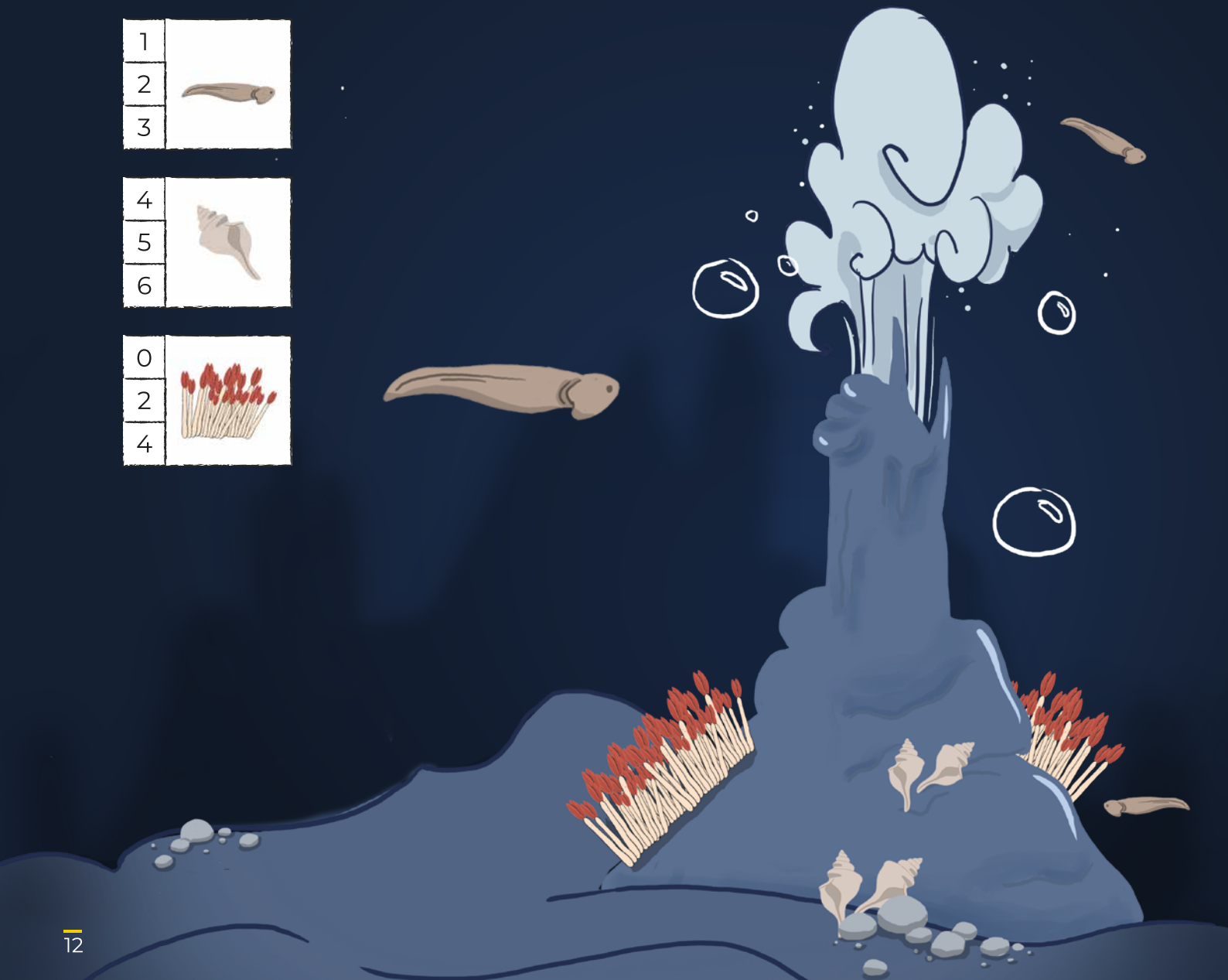
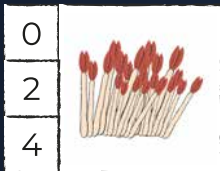
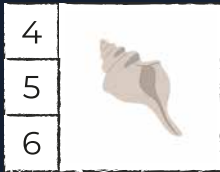


RIDGEIA TUBE WORM

THE ANIMAL COMMUNITY

Count and circle the correct answer.

Find the right number of friends Okto has in this picture.



DEEP SEA SPY

DEEP SEA SPECIES

The crab *Segonzacia mesatlantica*

Help the crab to find his way home.

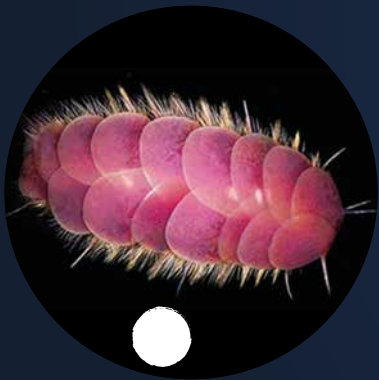
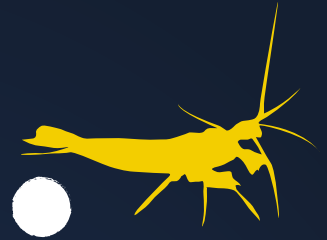


DEEP SEA ANIMALS

Segonzacia Crab, *Mirocaris* shrimp, zoarcid fish, polynoid scale worm, buccinid snail, *Ridgeia* tube worm

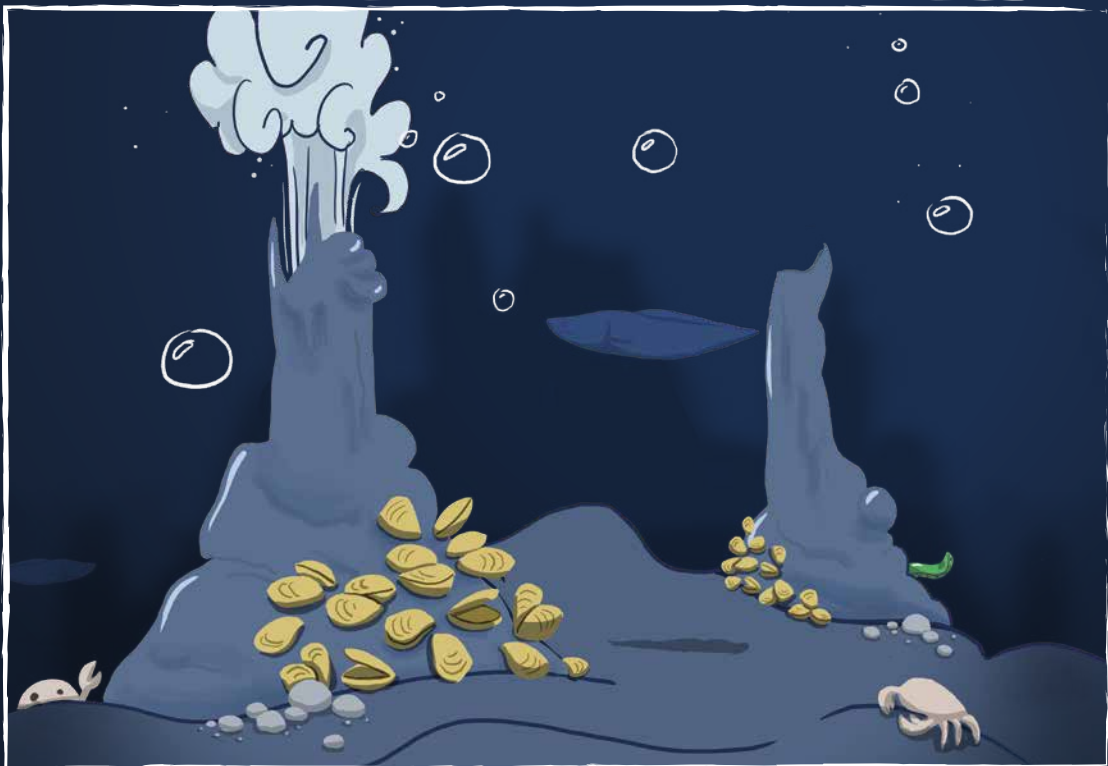
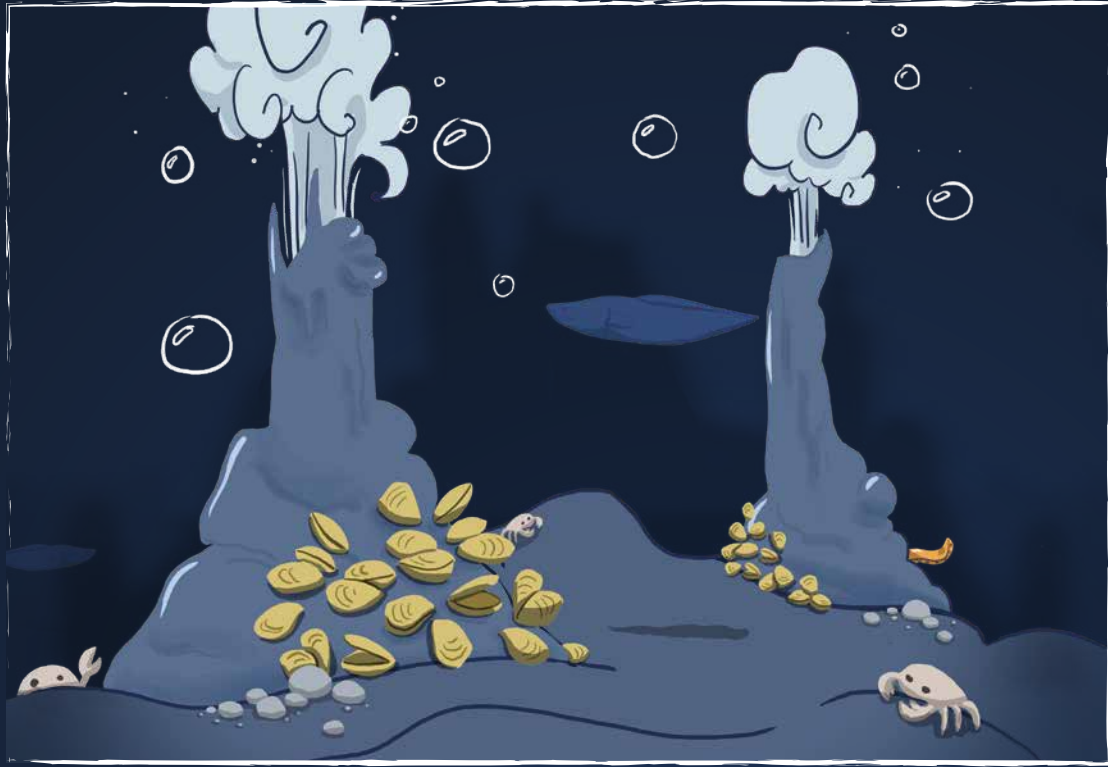
Help our scientist, Okto, identify these animals.

Match each animal with its silhouette by colouring in the pairs of squares with the same colour.



HYDROTHERMAL VENTS

Find the 6 differences between the two mussel beds.

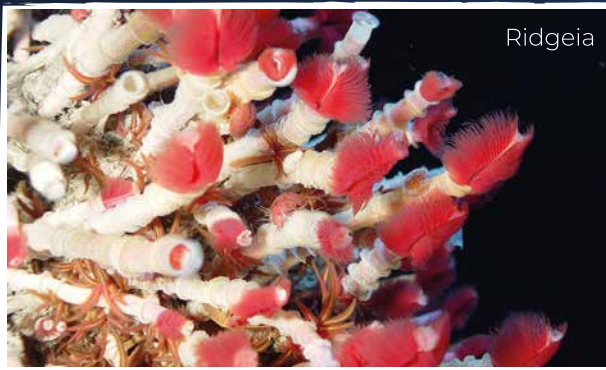


A FEW STORIES TO KNOW ABOUT ANIMALS

This octopus, also known as Dumbo, is called *Grimpoteuthis*. This abyssal octopus lives in all oceans between 500 and 4000 m deep. Encounters are rare but always magical!



The *Ridgeia piscesae* worm lives in a protective tube. It has no mouth, digestive tract or anus. Its body is like a large sack in which bacteria live and feed it.



Ridgeia



Pycnogonide

The pycnogonid, a close relative of our spiders, lives in groups in the *bushes of Ridgeia* worms.

Did you know ?



It's the male pycnogonids who take care of the little ones !

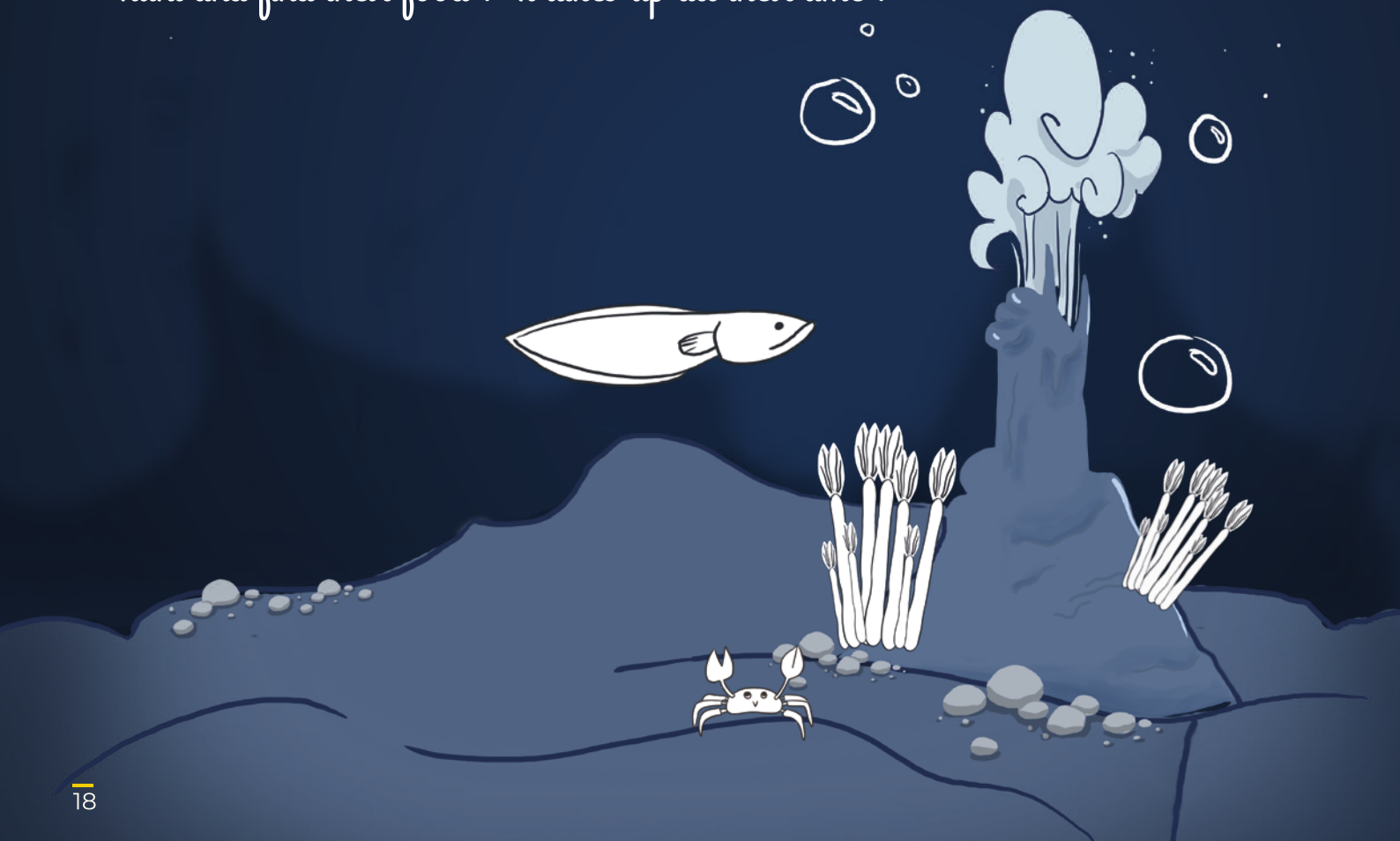
ZOZO, THE ZOARCID, GOES LOOKING FOR FOOD

Colour in the animals that appear in the story.

Zozo the zoarcid fish lives at the bottom of the ocean, close to the hydrothermal vents. It's cold all around, so he stays here because his home is kept warm by a little current of warm water coming up through the rock. It's very comfortable. It's good living here in his little clump of Ridgeia worms. He has plenty of neighbours here while, all around, the deep ocean is almost a desert.



One morning, he goes out to find something to eat. ZoZo meets his friend the buccinid snail. He's going to the market too. Further on, he asks Riri the worm if he has any ideas about what to have for dinner. But the worm doesn't need to go out to collect his food, which is handy because he can't move from the rock he's attached to. "I've got bacteria inside my body that do the work for me! I give them energy and oxygen and they make my dinner! A real little kitchen!" How lucky! While all the other inhabitants, including the zoarcid fish, have to hunt and find their food! It takes up all their time!





www.deepseaspy.com