

How big and how deep is the ocean?



Age 7-11



60 minutes

Curriculum links

- Identify and name a number of living things in the wider environment
- Recognise that environments can change and that this can sometimes pose dangers to living things
- Ask relevant questions and use different types of scientific enquiries to answer them
- Make systematic and careful observations

Resources



Slideshow 1:
How big and how deep is the ocean?



Student Sheet 1a:
Deep-sea funnies

Student Sheet 1b:
What I would like to know



Video:
Nekton Mission II:
The Indian Ocean



Gallery:
Deep-sea creatures

Home learning

Students can visit www.encounteredu.com/discover/videos/nekton-mission-2-the-indian-ocean-full-length and watch the video. Think about what it would be like to experience deep sea exploration. How would it feel? Why is this type of exploration important?

Lesson overview

This lesson sets the scene for the whole deep-sea exploration unit. 71% of our blue planet is covered by ocean, with an average depth of 2.3 miles. At least 97% of our biosphere is in the ocean and it produces half the oxygen we breath. The oceans affect people's food, safety, livelihoods, transport and access to resources, yet we know very little about the deep ocean – we have better maps of the moon! This lesson explores the importance of the ocean and introduces students to some of the strange creatures which inhabit the deep sea.

Lesson steps

1. Brief and Assessment for Learning (10mins)

Students are introduced to the unit, lesson title and expected outcomes and discuss what they already know about oceans.

- Discuss prior knowledge of oceans

2. Oceans and us (15 mins)

Students are guided in discussion about the importance of deep-sea exploration, the scale of oceans and how they affect our lives.

- Understand the scale of oceans
- Describe how the oceans affect our lives

3. Deep-sea creatures (10 mins)

Students view the Deep-sea creatures gallery, make observations and ask questions about the features of living things.

- Observe and ask questions about the features of Deep-sea creatures

4. Deep-sea funnies game (15 mins)

Students demonstrate their learning by playing Deep-sea funnies though comparing size, depth, weird rating and predator level.

- Observe and ask questions about the features of Deep-sea creatures

5. Future learning (10 mins)

Students discuss what they are interested in finding out about during this unit and share ideas.

- Review learning and make suggestions for future learning

Step Guidance

Resources

1
10
mins



Step 1 introduces students to the unit outcomes and lesson objectives and asks students to share what they already know about oceans.

- Click on link on slide 1 to play Nekton Mission II: The Indian Ocean video.
- Use slides to introduce unit title and learning outcomes.
- Ask students to discuss in groups what they know about oceans.
- Take brief feedback from students on their prior knowledge.

Slideshow 1:
Slides 1-4

Video:
Nekton Mission II: The Indian Ocean

2
15
mins



Step 2 invites students to think about and discuss why deep ocean exploration is important.

- Using a globe (and maps) explain that it is sometimes referred to as a blue planet due to 71% of the planet being covered in water. Explain that the ocean produces half the oxygen we breath and captures 16 times the amount of carbon dioxide compared to land.
- Explain that we know more about the surface of the moon than we do about deep oceans because deep ocean exploration is so challenging. Ask students why this could be.
- Ask students to consider how we rely on the ocean for life on earth and share examples. Use slides to draw out answers focussing on food, safety, livelihoods and transport.
- Check learning during discussion to ensure students understand the importance of the oceans.

Slideshow 1:
Slides 5-8

3
10
mins



Step 3 introduces some of the strange creatures of the deep which are unlike many familiar sea creatures.

- Look at and read from Gallery: Deep-sea creatures. Encourage students to comment on their unusual features.

Slideshow 1:
Slide 9

Gallery:
Deep-sea creatures



Students can work in groups to access media, you can use laptops in the same way as you might view 360° video and photos via a digital projector. Tablets or smartphones that have an inbuilt gyroscope, eg iPads, iPhones and most recent Android devices, will enable students to move the device around and enjoy a virtual reality experience. Smartphones can also be used in conjunction with virtual reality headsets.

Step Guidance

Resources

4
15
mins



Step 4 involves students playing a game of Deep-sea funnies focussed on deep-sea creatures.

- Hand out Student Sheet 1a. To save time, you may wish to cut these out in advance.
- Students then play Deep-sea funnies at tables or in small groups.
- Cards are divided between children in small groups of up to six. Cards are placed face down on the table in front of each player.
- Player 1 lifts the top card and examines the creature and its features then chooses the category which they believe is the strongest. The player to the left then looks at the same category on their top card and whoever has the highest score in that category takes both cards, which go to the bottom of their pile.
- At this point players share the information with the rest of the group. The winning player then repeats the process with the top card from their pile towards the player on their left.
- The game winner has the most cards at the end of the specified time.
- Bring students back together and ask for feedback on the yuckiest, most surprising, funniest thing they learnt.

Student Sheet 1a:
Deep-sea funnies

5
10
mins



Step 5 asks students to think of questions that they would like to find out about during this unit.

- In groups students record questions on mini whiteboards.
- Take a question from each group so you have 6-8 and record them somewhere you will be able to reference with the class later in the unit.
- Hand out Student Sheet 1b. Students complete this independently. You may wish to differentiate this task through specifying the number or depth of questions.

Slideshow 1:
Slide 10

Student Sheet 1b:
What I would like to know

H/L
10
mins



Students can visit www.encounteredu.com/discover/videos/nekton-mission-2-the-indian-ocean-full-length and watch the video. Think about what it would be like to experience deep sea exploration. How would it feel? Why is this type of exploration important?