WILDWORLD | Oceans & Rivers

Learning Age: **8-14**

OCEAN BIODIVERSITY

Variety in Ocean Ecosystems

Subject Links: Biology, Life Science, Animal Biology, Ecology, Natural Science

Learning Objectives

1. Know that biodiversity refers to the variety of living things in an ecosystem
2. Understand that biodiversity is a consequence of evolution
3. Understand the importance of biodiversity

VR Resources

These resources are all 360° videos and are approximately one minute long.

Coral Reef: Part 1

Manta Ray

Clown Fish

Snapper Fish

Ray (Mobula)

Jackfish (Caranx)

Australian Sea Lion

Common Octopus

Celestial Grouper

Please note: *Videos from our WildWorld subscription are high quality and some files may be large. Please allow ample time to download.*

Playlist Overview

This collection of short 360° videos is designed to help your students learn about biodiversity within marine habitats.

Submerge your students in underwater worlds to meet a wide array of marine animals, without ever leaving the classroom. Using these VR activities to enhance your core lessons, your students can dive with manta rays, bask with sea lions, and mingle with a diverse collection of marine creatures in vibrant reefs.

Keywords: Biodiversity, variation, evolution, offspring, ocean, genetic information

Tip: *While in the headset, encourage your students to look up and all around them!*

Before Your Experience

Before exploring the biodiversity within an ocean ecosystem with the VR resources, check your students' prior knowledge about marine organisms. The following questions can be discussed in a group or set as an individual task.

Ask your students:

- What types of animals can be found in an ocean ecosystem?
- What other types of living things can be found apart from animals in an ocean ecosystem?

Suggested Activities

Here are some activity ideas to get you started using these VR resources in your classroom. These differentiated activities can be adapted for different learning ages and abilities.

Core Knowledge

This activity aims to introduce the concept of biodiversity. Help your students identify the variety of marine life by classifying the different animals.

Students should watch the following 360° videos in the headsets and identify the type of organisms they can observe:

- **Coral Reef: Part 1**
- **Striped Bass**
- **Manta Ray**
- **Clown Fish**
- **Bull Shark**
- **Snapper Fish**
- **Ray**
- **Jackfish**
- **Sea Lion**
- **Common Octopus**

In pairs or small groups, students should then discuss the types and variety of organisms they have observed and attempt to group them into their specific types (class). This can be completed by drawing a table in their workbooks using the following headings: fish, coral, mammals and mollusks.

Tip: *The teacher should guide the discussions to highlight that ocean ecosystems have a variety of organisms, which shows biodiversity.*

The following questions can be used to guide students through the task:

- What animals can you identify in the videos?
- What class of animals are they?

Demonstrating Understanding

In this activity, help your students to describe that the ocean habitat is home to a diverse range of species, and explain how the variation is linked to genetic information.

Students should watch the following 360° videos and identify the organisms:

- **Coral Reef: Part 1**
- **Striped Bass**
- **Manta Ray**
- **Clown Fish**
- **Bull Shark**
- **Snapper Fish**
- **Ray**
- **Jackfish**
- **Sea Lion**
- **Common Octopus**

Students should use their workbooks to create a table with the headings: mammals, fish, mollusks and coral. They should then organize marine organisms by their class and highlight their key characteristics. In small groups, they can then discuss these features and how they are a result of genetic variations.

Tip: *Teachers should emphasize that living things inherit adaptations from their parents, driving diversity in ocean ecosystems. Over time, species have evolved and survived due to their marine adaptations, like fins in fish, flippers in mammals and shells in mollusks.*

Here are some questions to guide the VR experience:

- Can you identify the organisms within the videos?
- Can you describe the differences between the organisms?
- How did these organisms get their adaptations?
- What does this variation suggest about biodiversity?

Extended Learning

This activity is an extension to understanding biodiversity. Help your students to apply their understanding of biodiversity and challenge them to explain its importance in an ocean ecosystem.

Your students should watch the following videos and identify the role each organism plays within the ocean ecosystem:

- **Coral Reef: Part 1**
- **Striped Bass**
- **Manta Ray**
- **Clown Fish**
- **Bull Shark**
- **Snapper Fish**
- **Ray**
- **Jackfish**
- **Sea Lion**
- **Common Octopus**

Students should then create an infographic poster on ocean biodiversity, highlighting each animal's characteristics, adaptations to marine life and differences between them. They should also show each organism's role in the food chain. Students could use colored arrows for specific animals in a food chain if they are in more than one food chain. They can highlight their reliance on different food sources and illustrate how species depend on each other, emphasizing the importance of ocean biodiversity.

Tip: *Students should recognize that diverse ocean organisms, whether producers, predators or prey, rely on each other for food and shelter. Greater biodiversity provides more resources, reducing pressure on individual species and ensuring ecosystem stability.*

Guide your students with these questions:

- Why are these organisms able to survive in this ocean habitat?
- How do these organisms rely on each other?
- What would happen to populations if the variety of organisms were reduced?

Cross-Curricular Links

Geography
Ask your students to create a profile of the ocean as a biome. Students should describe the physical properties and climate of the ocean, which can be linked to how living things are adapted to survive.

English Language
Ask students to write a news article about the impact of humans overfishing the ocean. They should include details of the consequences of overfishing for fish populations and describe how this would lead to a loss of biodiversity, reduce the natural resources for that ecosystem, and cause other species populations to decline.

EDUVERSEAI | English

Learning Age: **5-14**

CREATIVE WRITING

Explore and create stories based on visually rich, immersive environments

Target Audience:

KS1: (Ages 5-7)	Young learners just beginning to explore creative writing and descriptive language.
KS2: (Ages 7-11)	Intermediate students developing their ability to write structured stories with clear settings, characters, and plots.
KS3: (Ages 11-14)	Older students who are refining their writing style, working on character development, and exploring complex narratives.

Learning Objectives

1. To encourage students to explore and create their own stories based on visually rich, immersive environments.
2. To help students understand how setting, mood, and detail influence creative writing.
3. To use 360° scenes as writing prompts that promote descriptive language and narrative development.

Overview

An English teacher working with Key Stage 1 (KS1), Key Stage 2 (KS2), and Key Stage 3 (KS3) students is looking to enhance creative writing lessons. By using AI to generate immersive 360° scenes, the teacher can inspire students to develop vivid, descriptive writing and storytelling skills. These scenes serve as dynamic visual prompts, stimulating creativity, fostering imagination, and providing students with a deep understanding of how setting and atmosphere shape a narrative.

Implementation

EduverseAI is used by the teacher to create detailed 360° environments that serve as the foundation for creative writing exercises. These scenes are projected in the classroom or accessed via individual devices, allowing students to fully explore and use them as inspiration for their own stories.

KS1 Example: Creative Writing Prompt Based on a 360° Scene

Text/Theme: Fairy Tale Adventure

Objective: Help KS1 students describe a magical setting and imagine a simple adventure story.

EduverseAI Prompt:

"Create a 360° scene of an enchanted forest with colorful, glowing flowers, giant mushrooms, a sparkling stream, and a small fairy house hidden among the trees."

Classroom Application: Students explore the scene and are asked to write a short story about a young child who discovers the fairy house. The teacher encourages them to describe what they see, hear, and feel in the magical forest, guiding them to use sensory language and creative adjectives in their writing.

KS2 Example: Creative Writing Prompt Based on a 360° Scene

Creative Writing Focus: Descriptive language, simple narrative structure (beginning, middle, end), and introduction to character and setting.

Text/Theme: Adventure on a Mysterious Island

Objective: Inspire KS2 students to write an adventure story that develops characters, plot, and a sense of danger or discovery.

EduverseAI Prompt:

"Create a 360° scene of a tropical island with a mysterious ancient temple, hidden caves, dense jungle, and a shipwrecked boat on the beach."

Classroom Application: Students are tasked with writing an adventure story about characters who are stranded on this island and must explore it to find a hidden treasure or escape a danger. The teacher encourages students to describe the environment in detail, think about how the setting affects the characters' decisions, and build tension as they move through the story.

Benefits

Engagement and Motivation: The immersive nature of 360° scenes captures students' attention and ignites their imagination, motivating them to write.

Descriptive Writing: Students learn to use descriptive language to make their writing vivid, as the visual prompts encourage detailed observation.

Creative Freedom: The vastness and diversity of 360° environments allow students to experiment with different storylines, settings, and tones.

Diverse Learning Styles: Visual learners benefit from having a clear image of the setting, while more creative or abstract thinkers can use the scene as a jumping-off point for imaginative storytelling.

Cross-Curricular Connections: Teachers can incorporate elements from history, geography, or science into the scenes, offering interdisciplinary learning opportunities.

Differentiation: Teachers may need to adjust scenes or prompts for students with different abilities or interests. Some students may need simpler settings, while others may be ready for more complex, layered environments.

Balancing Imagination and Structure: Younger students may focus solely on imaginative details, so teachers should guide them toward structuring their stories and making their narratives coherent.

STEAM3D | Human Biology

THE HEART

How the Heart Works

Subject Links: Biology, Life Science, Human Biology, Animal Biology

Learning Age: **8-14**

Learning Objectives

1. Know that the heart is part of the human transport system
2. Recognize the structure of the heart
3. Understand how the heart pumps blood around the body

VR Resources

Heart

Heart Section

Heart Animation

Playlist Overview

This collection of interactive resources is designed to help your students learn about the structure and function of the heart.

Encourage your students to explore these interactive and animated 3D models that allow them to see the inner workings of a human heart. Using these VR activities to enhance your core lessons, your students can look inside the human body to explore the structure of the heart, see how the heart works, and better understand its role in the human transport system.

Keywords: Heart, pump, muscle, cardiac, valves, ventricles, atria, bicuspid, tricuspid, atrioventricular, semilunar, aorta, pulmonary vein, pulmonary artery, vena cava, artery, vein

Before Your Experience

Before exploring the heart with the VR resources, check your students' prior knowledge of the structure and function of this vital organ.

Ask students to draw a spider diagram with the heading "Human Heart" and annotate it with what they already know about its structure and function.

Ask your students:

- What is the heart?
- What does the heart do?

Suggested Activities

Here are some activity ideas to get you started using these VR resources in your classroom. These differentiated activities can be adapted for different learning ages and abilities.

Core Knowledge

In this activity, ask your students to explore and discuss the structure of the heart in pairs, and work together to label the parts of the heart using the worksheet.

Using the following interactive 3D models:

- **Heart**
- **Heart Section**

a) To start, students should explore the interactive 3D model of the human **Heart**. Using the model notes accessible via the menu bar, they should discuss and identify that the heart is made up of many different parts (*such as muscular chambers and blood vessels*).

b) Next, give students a copy of the human heart worksheet. Students should explore the 3D model of the **Heart Section** to label the structure of the heart (*left and right ventricle, left and right atrium, valves, aorta, pulmonary artery, pulmonary vein*).

Tip: *Discuss with your students that the heart has four chambers divided by valves and is connected to major blood vessels. As a muscle, it pumps blood around the body.*

Encourage your students to explore different parts of the model with these questions:

- How many chambers does the heart have?
- What blood vessels are connected to the heart?
- What divides the chambers within the heart?
- Identify the different parts of the heart.

Demonstrating Understanding

Challenge your students to identify the structure of the heart and describe its role in controlling blood flow as it pumps blood around the body.

a) Using the worksheet, students should be encouraged to explore these interactive 3D models:

- **Heart**
- **Heart Section**

Students should use the models to familiarize themselves with the structure of the heart. Then, to complete the activity, they should label the heart diagram correctly.

***Tip**: Labels should include left and right ventricle, left and right atrium, pulmonary/atrial/semilunar valve, aorta, pulmonary artery, pulmonary vein, vena cava, tricuspid valve, and mitral valve.*

b) Next, students should explore the interactive 3D model **Heart - Animation**. They can observe the animated arrows and valves to show how blood flows through the heart. Challenge your students to describe what the red and blue arrows are showing.

***Tip:** This animated 3D model shows the heart working as a muscular pump. When the ventricles contract, the atria relax, and vice versa, and as this happens, valves will either open or close. This ensures blood flows in one direction: entering through the veins, into the atria, through the valves, into the ventricles, through the semilunar valves, and out of the arteries.*

Ask students the following questions to stimulate a discussion:

- What are the structures of the heart?
- Can you describe how blood is pumped by the heart?
- Can you describe how blood flow is controlled?

Extended Learning

In this activity, students will identify the structure of the heart, describe how it controls blood flow, and explain how pressure changes force valves to open and close to ensure unidirectional blood flow.

Students should take time to explore the following interactive 3D models:

Heart Section

Heart – Animation

First, using the worksheet, students should correctly label the structure of the heart. Then, in their workbooks, students should describe the journey of the red and blue arrows illustrated in the **Heart – Animation** model. These arrows represent blood flow through the heart, entering via the veins and exiting via the arteries.

***Tip:** Leaning on the core knowledge of how the heart works, students should associate that when blood fills the atria and they contract, the increased pressure forces the valves to open and blood to flow into the ventricles. When the atria relax and the ventricles contract, the higher pressure in the ventricles forces the valves near the atria to close and the semilunar valves at the base of the arteries to open, forcing blood to flow out of the heart.*

Ask your students:

- What are the structures of the heart?
- Can you describe how blood is pumped by the heart?
- Can you describe how blood flow is controlled?

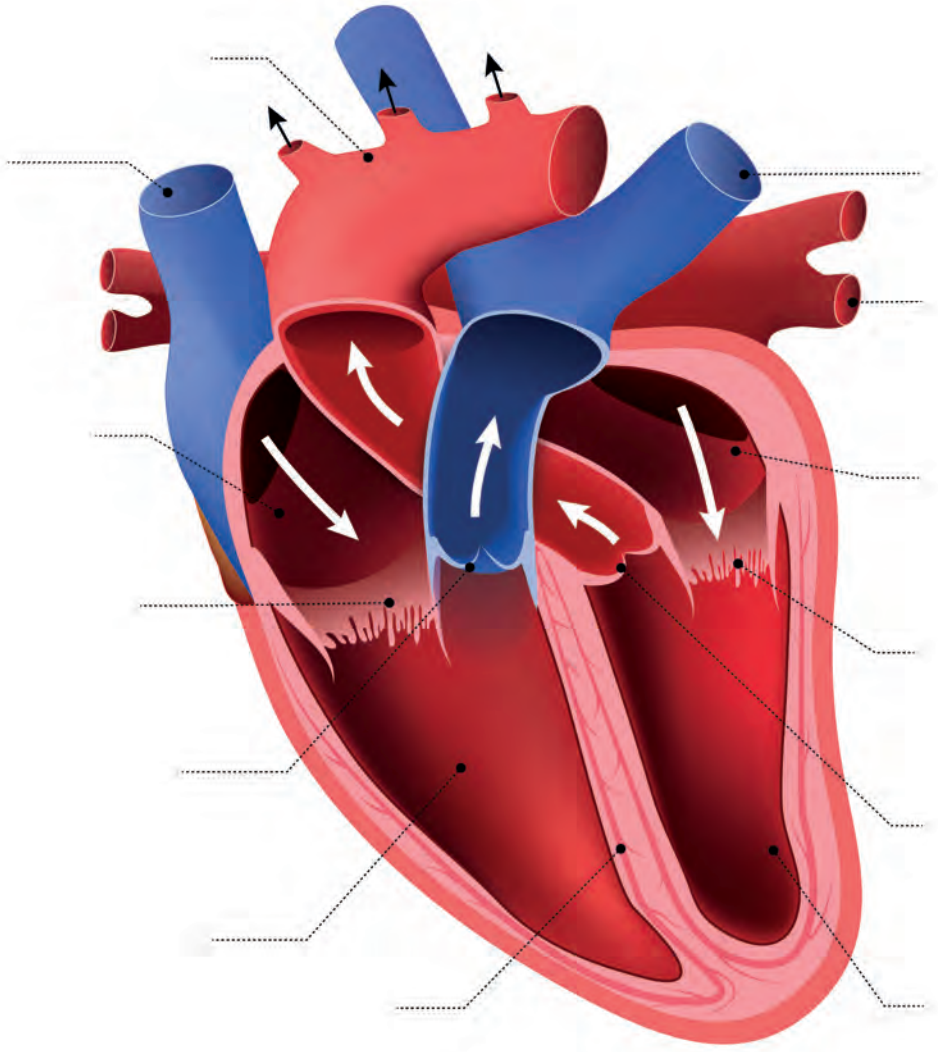
Cross-Curricular Links

Art & Design
Ask students to recreate the image of a human heart in the style of pop art.

English Language
Ask students to write a narrative of the journey through the heart from the perspective of a blood cell, describing the parts they pass through.

THE HEART

How the Heart Works



Aorta
Aortic Valve
Left Atrium
Left Ventricle
Mitral Valve
Pulmonary Artery
Pulmonary Valve
Pulmonary Vein
Right Atrium
Right Ventricle
Septum
Superior Vena Cava
Tricuspid Valve