# Experience ‘Okavango Delta’ in Southern Africa with VR

**Year level**: 8-10

Image courtesy: National Geographic channel

## Summary

In this lesson, students will virtually explore one of the wonders of nature called ‘Okavango Delta’ using immersive VR technology. The Okavango Delta which is located in Botswana is known as the largest wetland in Southern Africa and one of the most biodiverse places on Earth. The VR scientific expedition is built by National Geographic and Youtube.

Students start the lesson by researching geography topics related to river deltas suggested by the teacher. The whole class will then experience the four episodes with the ‘National Geographic’ VR app using the Lenovo Mirage Solo Daydream headset. This lesson can be undertaken by students in groups.

## Required Resources

1. Daydream VR headset
2. National Geographic app - https://play.google.com/store/apps/details?id=com.natgeo.xr.vusr_daydream (installed on VR headsets)
3. Student can also view 360 tour using a tablet device or smartphones but they would not experience immersive VR without VR headset - https://youtu.be/LS111RWqblk
4. Tablet or computer with internet to research the topic.
    a. Suggested websites: https://earth.app.goo.gl/CRHgvo and https://en.wikipedia.org/wiki/Okavango_Delta

## Suggested lesson sequence

The following are suggested steps for the learning activity.

1. Students research the geographic definition of ‘Delta’, how they are formed, types of deltas based on aspects like shape, names and locations of popular deltas (reference: https://en.wikipedia.org/wiki/River_delta)
2. Students conduct research about the Okavango delta and its importance. How old is Okavango delta? How much area is covered by Okavango Delta? What species and plants are native to Okavango Delta? Which ethnic groups consider Okavango Delta as their home? (reference: https://en.wikipedia.org/wiki/Okavango_Delta, https://earth.app.goo.gl/CRHgvo)

3. Students explore the first out of four episodes on Okavango Delta using the VR headsets. Wear the headset and open the National Geographic app. Select 'The Okavango Experience'. Watch the first episode - 'Arfica's Pristine Delta in 360 - Ep.1'. To enhance the immersive experience, switch on sounds and adjust volume appropriately and move your head around to view the surroundings.

4. After watching the first episode, students are invited to share their experience and observations of the environment with the class. What types of biodiversity have you observed? What is the difference between the VR experience and knowledge that you collected through reading and brainstorming? Did the former enhance your learning?

5. In groups, students discuss the Okavango Delta further and identify a topic that interests them most. Some suggested topics could include: wildlife (e.g. birds, mammals, reptiles, fish) species of plants or river ecosystems.

6. Students continue to watch the remaining episodes, taking notes in-between episodes and collecting more information related to their selected topic.

## Discussion

- What are strengths and weaknesses of presenting information with VR technology compared to learning from other resources such as websites, books, and from a teacher? How can weaknesses be addressed?
- What is the most impressive idea of this expedition and more broadly in VR technology? How can you include the idea to create awareness about a crucial topic around you in the local community or within Australia?

## Why is this relevant?

Virtual Reality can enhance learning by placing students in an immersive experience they would otherwise never experience. In this lesson, students are engaged in *using* digital technology but also thinking about how the technology has been designed to enhance their understanding and experience of the topic.

### Assessment

[We have suggested Assessments, however, you may choose to use your own or for further advice, examples and support around assessment please visit the Digital Technologies Hub at digitaltechnologieshub.edu.au/teachers/assessment]

Based on student experiences and gathered knowledge, students (in groups) create a digital project (e.g. video presentation) on a threat to the identified biodiversity topic (e.g. plants) in Okavango Delta and discuss how their VR experience enhances their understanding of the gravity of the problem (useful reference - https://www.nationalgeographic.org/projects/okavango/).

The following is a sample checklist of skills and knowledge that students could be asked to demonstrate through their digital project based on content descriptors.

| Objective | Yes / No / Partially | Comments |
|---|---|---|
| *Digital Technologies*<br><br>Justifies and explains their selection of digital technologies for their project and how it meets their goals.<br><br>Takes into account safety, social contexts and legal responsibilities in terms of using and sharing information in their project.<br><br>Plans and manages projects using an iterative and collaborative approach. | | |
| *Geography*<br><br>Provides an overview of the topic identified related to biodiversity.<br><br>Provides an overview and a critical analysis of the threats related to the topic identified.<br><br>Provides data and evidence that support the threats to biodiversity in Okavango delta<br><br>Uses primary resources and appropropriate referencing of materials and references used in the project. | | |

## Curriculum links

### Links with the Digital Technologies curriculum area

| Year band | **Strand** | **Content description** |
|---|---|---|
| **Years 9-10** | **Knowledge and Understanding** | Create interactive solutions for sharing ideas and information online, taking into account safety, social contexts and legal responsibilities (ACTDIP043)<br><br>Plan and manage projects using an iterative and collaborative approach, identifying risks and considering safety and sustainability (ACTDIP044) |

### ADD Links with other curriculum areas

| Year band | **Learning area** | **Content description** |
|---|---|---|
| **Years 8** | **Humanities and Social Sciences - Geography (Geographical Knowledge and Understanding)** | Different types of landscapes and their distinctive landform features (ACHGK048) |
| **Years 9** | **Humanities and Social Sciences - Geography (Geographical Inquiry Skills)** | Develop geographically significant questions and plan an inquiry that identifies and applied appropriate geographical methodologies and concepts (ACHGS063)<br><br>Human causes and effects of landscape degradation (ACHGK051)<br><br>Ways of protecting significant landscapes (ACHGK052) |
| **Years 10** | **Humanities and Social Sciences - Geography (Geographical Knowledge and Understanding)** | Human-induced environmental changes that challenge sustainability (ACHGS070) |