

Lesson Plan

AR & VR LESSON PLAN

Virtual Cave Exploring

Learning Area	Geography	Kit	VR/AR Creation Kit
Year Level	Year 8	Duration	1x 45 - 60 minute Lesson

Introduction/Description

Caves are some of the most beautiful and mysterious landforms on Earth, however, the ability to visit one and study it in detail can be hindered by safety precautions and location. With Virtual Reality, students are able to explore caves safely from the classroom.

Learning Intentions

Students will explore the features of cave landforms and develop their understanding of how they are created.

Task Summary

Students are to create a field sketch with labels and an explanation on how caves are formed after viewing and engaging with the cave VR experiences.

Preparation

Students are expected to:

- Have some background knowledge on how to draw field sketches
- Have some background on using the HHVR headsets

Teachers should make sure that:

- Devices are charged.
- Students are able to access YouTube videos.
- Students are divided into pairs or groups depending on how many devices are available.
- Slide deck has been checked and the teacher has enabled the deck's accessibility so students can access them.
- A copy of the Student Digital Notebook has been distributed to students and they have downloaded/ made a copy for themselves.
- Ensure a copy of the Jamboard has been made for students to access.
- Ensure the *Sites in VR* app is updated before use.
- Ensure teachers are familiar with using <http://sketchpad.io>

Resources

- Hardware
 - Student laptops

- Handheld Virtual Reality (HHVR) Headsets
 - Mobile Device
- Websites
 - [Landforms Quiz Questions](#) (easier questions)
 - [Can You Name the Landforms From Their Definitions quiz](#) (harder questions)
 - [Sketchpad.io](#)
Free online drawing application for all ages. Create digital artwork to share online and export to popular image formats JPEG, PNG, SVG, and PDF.
- Videos:
 - [How caves are formed](#) (7:20)
A video by Atlas Pro on how caves are formed
- Apps:
 - [Sites in VR:](#)
An app that has a collection of Virtual 360 Tours of place all over the world

Students to Navigate to the following tours as per instructions on slide deck:
 - *Damlatash Cave*
 - *Dim Cave*
 - *Keloglan Cave*
 - *Zeus Cave*
 - *Kaklik Cave*
 - *Bulak Cave*
- Teaching Materials:
 - [What do we know about Caves? Google Jamboard](#)
 - [Cave Landforms: Teaching Deck](#)(slide deck)
 - [Cave Landforms Student Digital Notebook](#)

Other Learning Areas

- NA

Learning Sequence

1

Introduction
(10 mins)

- Recap with students how landforms are made and the different types by asking students to engage with this [Landforms Quiz Questions](#) (easier questions) or this [Can You Name the Landforms From Their Definitions quiz](#) (harder questions).
- Ask students to record what they know about caves on this [Google Jamboard](#)

2

Development
(30-40 mins)

- Direct students to the [Sites in VR](#) app on the student devices and then navigate to the *Nature* folder.
 - Ask students to view the following caves in VR and to complete a [See, Think, Wonder](#) thinking routine on the caves.
 - *Damlatash Cave*
 - *Dim Cave*
 - *Keloglan Cave*
 - *Zeus Cave*
 - *Kaklik Cave*
 - *Bulak Cave*
 - [See, Think, Wonder](#)
 - *See* - what do you see in the VR experience? Try to be descriptive and specific
 - *Think* - What does this make you think?
 - *Wonder* - what questions do you have?
 - As a class, watch the following video on [how caves are formed](#) (7:20). Students are to take notes in their [Student Digital Notebook](#).
 - Discuss the different features of a cave as a class using the images on the [Cave Landforms:Teaching Deck](#) slide deck.
 - Students choose a cave 'scene' from the VR experiences they viewed before and draw a field sketch of their chosen cave using [sketchpad.io](#). They need to label it with different features and include an explanation of how this particular cave perhaps was formed. Some research may be required for the labeling.
- They can then download a PDF of it, or take a screenshot and add it to their [Student Digital Notebook](#). They may work in pairs if the teacher desires.*

3

Conclusion
(5 mins)

- Ask students to share their field sketches with another person/ pair/ in groups. Compare the labels and the sketches for accuracy.

Additional Teaching Notes

This lesson is to be used with students who have been learning about landforms. It can be used as a separate stand alone lesson or in conjunction with learning about processes such as erosion.

Modifications

Adaptations

Students may view the experiences in 'gyro' mode on the mobile devices if they are unable to view in VR

Extension Ideas

Students may complete field sketches on more than one cave and compare the different and similar features of each one

Curriculum Connections

Australian Curriculum	NSW Curriculum	VIC Curriculum
<p>Year 8 - Geography</p> <p>Geomorphological processes that produce different landscapes and significant landforms</p> <p>(AC9HG8K01)</p>	<p>Stage 4 - Geography</p> <p>explains geographical processes and influences that form and transform places and environments GEE5-2</p>	<p>Levels 7 & 8 - Geography</p> <p>Geomorphic processes that produce landforms, including a case study of at least one landform (VCGGK117)</p>

Cross-Curriculum Priorities

- ☐ Aboriginal and Torres Strait Islander Histories and Cultures
- ☐ Asia and Australia's Engagement with Asia
- ☒ Sustainability

Capabilities

- ☐ Literacy
- ☐ Numeracy
- ☐ Digital Literacy
- ☒ Critical and Creative Thinking
- ☐ Personal & Social Capability
- ☐ Ethical Understanding
- ☐ Intercultural Understanding