



# Earth Lit Up:

## Exploring Earth's Nightscapes

**Learning Area**

Science

**Year Level**

Year 5

### Introduction

In this lesson, students will go on a virtual journey to explore the impact of light pollution on Earth's nightscapes. Through immersive experiences in virtual reality and engaging videos, they will uncover the effects of city lights on our view of space. This lesson integrates science and technology, providing students with a unique perspective on the interconnectedness of human activities and the environment.

### Application

#### [Google Earth VR](#)

Google Earth VR lets you explore the world from totally new perspectives in virtual reality. Stroll the streets of Tokyo, soar over the Grand Canyon, or walk around the Eiffel Tower.



### Lesson Overview

#### Lesson Objectives

- Understand the concept of light pollution and its impacts on astronomy and the environment.
- Reflect on the interconnectedness of human activities, technologies, and the natural world.

#### VR/AR Resources

- ▶ [Escape Light Pollution to See the Milky ...](#)
- ▶ [How City Lights Block Our View of Space \(...\)](#)
- ▶ [Experience the Overview Effect with an as...](#)



### Lesson outline



#### Before the Immersive Learning Journey




- Teachers and students should familiarise themselves with the IMVR experience using the [Google Earth VR Essential Guide](#).
- Teachers should preview the VR videos and ensure they meet the needs of their students and context.
- Students should have a basic concept of light pollution and its effects on the environment. Students should be introduced to key vocabulary, and be scaffolded in thinking critically about the consequence of excessive artificial lighting.
- Teachers are encouraged to provide reflective questions to accompany the VR videos in the HHVR station.



#### During the Immersive Learning Journey

**IMVR Station:** Students will use Google Earth VR to visit cities with high populations at night, and compare various locations.

**HHVR Stations:** Students rotate between different 360° videos to understand how light pollution is affecting our view of celestial bodies.

-  Escape Light Pollution to See the Milky Way Galaxy on Earth
-  How City Lights Block Our View of Space (360 Video)
-  Experience the Overview Effect with an astronaut [VR/360]

**Research Station:** Students follow the guided [Google Earth Voyager - Earth at Night](#) to learn about NASA's Black Marble project and explore the brightest places on Earth.

**Creation Station:** Students create multimedia presentations or digital posters highlighting the effects of light pollution and proposing solutions.



#### After the Immersive Learning Journey

Facilitate a discussion with students on their findings using the following questions as inspiration:

- How does light pollution impact the visibility of celestial objects from urban areas?
- Have you ever travelled away from the main cities, camping etc., and see a difference in the night sky?
- What are some potential consequences of excessive artificial lighting on ecosystems and human health?
- Do you have any suggestions to minimise our light pollution?