

## Sample Lesson – Space Explorer App

**Grade Level:** High School (Grades 8-12)

**Duration:** 1-2 hours

**Group Size:** 3 students per group

### **Objectives:**

- To explore space virtually using the Oculus 2 headset and Space Explorers app.
- To conduct online research related to the space mission.
- To collaborate and communicate effectively within the group.
- To journal the mission experience through a blog or podcast.

### **Materials Needed:**

- 1 Oculus 2 headset per group
- 2 laptops per group (one connected to the headset via Bluetooth)
- Internet access
- Journaling tools (blog platform or podcast recording software)

### **Lesson Outline:**

#### **Introduction (10 minutes):**

1. **Briefing:** Explain the objectives and structure of the lesson. Discuss the roles of each student in the group.
2. **Safety and Usage:** Provide a quick tutorial on using the Oculus 2 headset and the Space Explorers app. Emphasize safety and proper handling of the equipment.

#### **Activity (60-80 minutes):**

##### **Part 1: Virtual Space Exploration (30-40 minutes)**

- **Student 1 (Navigator):** Uses the Oculus 2 headset to navigate the Space Explorers app, exploring different space missions and environments.
- **Student 2 (Observer):** Uses a laptop connected to the headset via Bluetooth to watch and interact with the Navigator. They can provide guidance, ask questions, and take notes on the mission.
- **Student 3 (Researcher):** Uses a laptop to conduct online research related to the mission being explored. They should look for information on the specific space mission, the celestial bodies involved, and any relevant scientific data.

## **Part 2: Group Discussion and Collaboration (15-20 minutes)**

- **Sharing Findings:** The Researcher shares their findings with the group. The Observer and Navigator discuss their experiences and observations.
- **Q&A Session:** Encourage students to ask questions and discuss the mission in detail. This helps in deepening their understanding and engagement.

## **Part 3: Journaling the Mission (15-20 minutes)**

- **Blog or Podcast Creation:** Each group creates a blog post or records a podcast episode detailing their mission experience. They should include:
  - A summary of the mission explored.
  - Key findings from the research.
  - Personal reflections and observations from the Navigator and Observer.
  - Any interesting facts or insights learned during the activity.

## **Conclusion (10 minutes):**

1. **Presentation:** Each group presents their blog or podcast to the class.
2. **Reflection:** Discuss what they learned from the activity and how it enhanced their understanding of space exploration.

## **BC Curriculum Connections:**

### **Grade 8-12:**

#### **Science:**

- **Big Ideas:**
  - Grade 8: The solar system is part of the Milky Way, which is one of billions of galaxies.
  - Grade 9: The electron arrangement of atoms impacts their chemical nature.
  - Grade 10: Energy is conserved, and its transformation can affect living things and the environment.
  - Grade 11: The formation of the universe can be explained by the Big Bang Theory.
  - Grade 12: The study of the universe reveals the structure, origin, and evolution of the cosmos.

## **Curricular Competencies:**

- **Questioning and Predicting:** Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal interest.

- **Planning and Conducting:** Collaboratively and individually plan, select, and use appropriate investigation methods, including fieldwork and lab experiments, to collect reliable data.
- **Processing and Analyzing Data and Information:** Experience and interpret the local environment.
- **Evaluating:** Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled.
- **Applying and Innovating:** Contribute to finding solutions to problems at a local and/or global level through inquiry.
- **Communicating:** Communicate scientific ideas, information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations.

**Applied Design, Skills, and Technologies (ADST):**

- **Big Ideas:**
  - Design can be responsive to identified needs.
  - Complex tasks require the acquisition of additional skills.
  - Tools and technologies can be adapted for specific purposes.
- **Curricular Competencies:**
  - **Empathize:** Identify potential users and relevant contextual factors.
  - **Define:** Identify and analyze potential problems and constraints.
  - **Ideate:** Generate potential ideas and add to others’ ideas.
  - **Prototype:** Identify and use sources of inspiration and information.
  - **Test:** Identify sources of feedback.
  - **Make:** Identify and use appropriate tools, technologies, and materials for production.
  - **Share:** Decide on how and with whom to share their product.

Criteria	Excellent (4)	Good (3)	Satisfactory (2)	Needs Improvement (1)
Participation	Actively engages in all activities and discussions.	Participates in most activities and discussions.	Participates in some activities and discussions.	Rarely participates in activities and discussions.

<b>Criteria</b>	<b>Excellent (4)</b>	<b>Good (3)</b>	<b>Satisfactory (2)</b>	<b>Needs Improvement (1)</b>
<b>Collaboration</b>	Works very well with group members, consistently supports and listens to others.	Works well with group members, usually supports and listens to others.	Works with group members, sometimes supports and listens to others.	Struggles to work with group members, rarely supports or listens to others.
<b>Research Quality</b>	Conducts thorough and insightful research, presents detailed findings.	Conducts good research, presents clear findings.	Conducts basic research, presents some findings.	Conducts minimal research, presents few findings.
<b>Use of Technology</b>	Effectively uses Oculus 2 and laptop, navigates app with ease.	Uses Oculus 2 and laptop with minor issues, navigates app adequately.	Uses Oculus 2 and laptop with some difficulty, navigates app with help.	Struggles to use Oculus 2 and laptop, needs significant help to navigate app.
<b>Journal/Presentation</b>	Creates a highly engaging and informative blog/podcast	Creates an engaging and informative blog/podcast, mostly	Creates a somewhat engaging blog/podcast, somewhat organized.	Creates a minimally engaging blog/podcast, lacks

<b>Criteria</b>	<b>Excellent (4)</b>	<b>Good (3)</b>	<b>Satisfactory (2)</b>	<b>Needs Improvement (1)</b>
	t, well-organized and creative.	organized and creative.		organization .
<b>Understanding of Content</b>	Demonstrates a deep understanding of space exploration concepts.	Demonstrates a good understanding of space exploration concepts.	Demonstrates a basic understanding of space exploration concepts.	Demonstrates a limited understanding of space exploration concepts.