

Virtual Lab Masters:

Exploring Science Lab Equipment

Learning Area(s)

Science

Year Level

Year 7

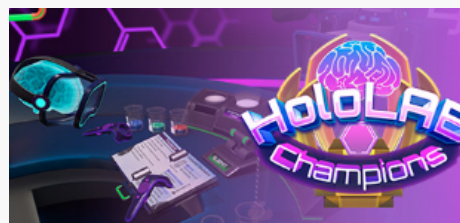
Introduction

In this lesson, students will explore the fundamentals of science lab equipment through immersive virtual reality experiences. Utilising HoloLAB Champions and a 360 VR video tour, students will interact with virtual lab environments to understand the use and importance of various lab tools. Additionally, students will create 3D models of lab equipment using Sloyd.ai and assemble a virtual lab in CoSpaces. This engaging approach helps solidify their knowledge of lab equipment and safety practices in a fun and interactive way.

Application

HoloLAB Champions VR

A virtual reality chemistry game show where students complete lab experiments to become champions of lab practice. Guided by holographic hosts, students must finish experiments safely and accurately to earn points.




Lesson Overview

Lesson Objectives

- Understand and identify different science lab equipment.
- Demonstrate safe and accurate lab practices.
- Create 3D models of lab equipment.
- Assemble a virtual lab environment.

Resources

- [HoloLAB Champions Essentials Guide](#)
-  [Chemistry Laboratory | Virtual Tour \(3...](#) (2:31) - VR video
- [HoloLab Champions: Guide for Teachers \(External\) \(PDF\)](#)
- [Sloyd.ai](#) - Generative AI app
- [CoSpaces](#) (Pro Version with Merge Cube add-on) - AR creation tool.



- [Tinkercad](#) – 3D modelling software (alternative to Sloyd and CoSpaces)

Lesson Outline



Before the Immersive Learning Journey

- Teachers should familiarise themselves with the VR experience using [HoloLAB Champions Essentials Guide](#) and ensure that all necessary equipment is set up and functioning properly.
- Ensure all VR equipment and software are set up and tested.
- Brief students on the importance of lab safety and the use of lab equipment.
- Introduce the HoloLAB Champions app and 360 VR video, explaining their purposes.



During the Immersive Learning Journey

IMVR station: Students will engage with a variety of Mini-labs (student choice). They will interact with digital lab equipment, performing tasks such as measuring, mixing, and heating substances. The student observing the experience will attempt to describe different lab equipment and the student in the IMVR experience must locate it. E.g. "I'm a tall, narrow tube with precise markings for measuring volumes of liquids with high accuracy, essential for quantitative experiments." (graduated cylinder).

A list of lab equipment involved in the experience can be found on page 46–50 of the [HoloLab Champions: Guide for Teachers](#) (*External*).

HHVR station: Students will watch the VR video, [Chemistry Laboratory | Virtual Tour \(360 VR Video\)](#) (2:31), taking a virtual tour of a real-life chemistry lab. They will observe different pieces of lab equipment in action, gaining a visual understanding of how these tools are used in a real-world setting. This will enhance their contextual knowledge and appreciation of lab environments. They attempt to identify as much lab equipment as possible and draw a scientific diagram.

Creation station: Using [Sloyd.ai](#), students will generate 3D models of various lab equipment. They will export their models as OBJ files and



upload them into [CoSpaces](#) (Pro Version with Merge Cube add-on). From there, students will create their own clues (similar to the IMVR station) for each face of the Merge Cube. Alternatively, students can create and design their own lab equipment models using [Tinkercad](#).



After the Immersive Learning Journey

Give students an opportunity to share their Merge Cubes with their peers.

Use the following questions to facilitate a discussion or reflection responses. This may be completed either as a class discussion or in student notebooks or forms (digital or paper).

1. What challenges did you encounter while using the virtual lab equipment?
2. How can the skills learned in the virtual lab apply to a real-world lab setting?
3. What safety practices are most important when working in a lab?