



BIOZONE

Virtual Science Lab: Orientation



Teacher Notes:

Overview: Designed to introduce high school students to a well set up science laboratory and provide a fun orientation. The lab features a lot of equipment that would appear in chemistry lab, with other materials added for biology and earth sciences. There are also extra items of scientific apparatus that would normally only be found in a research lab or college lab (centrifuge, bioreactor, PCR thermal cycler machine).

Objectives: The game requires that the students become familiar with **health** and **safety hazards** and equipment. This requires them to do an “audit” to **identify risks** and become familiar with **safety equipment**, by discovering items in both categories. They will also learn the names of some of the more common (and exotic) lab equipment.

Student Instructions:

Welcome to the BIOZONE Science Lab orientation! This is an early look at an exciting project we are working on. Right now your interaction is limited to moving around and looking at things. In the future, we will allow you to have useful interactions with the equipment.

In this simulation, you can move around and look at the equipment and features of a modern school science lab. The lab features a lot of equipment that would appear in chemistry lab, with other materials added for biology and earth sciences. There are also extra items of scientific apparatus that would only be found in a research lab or college lab (bioreactor, PCR machine).

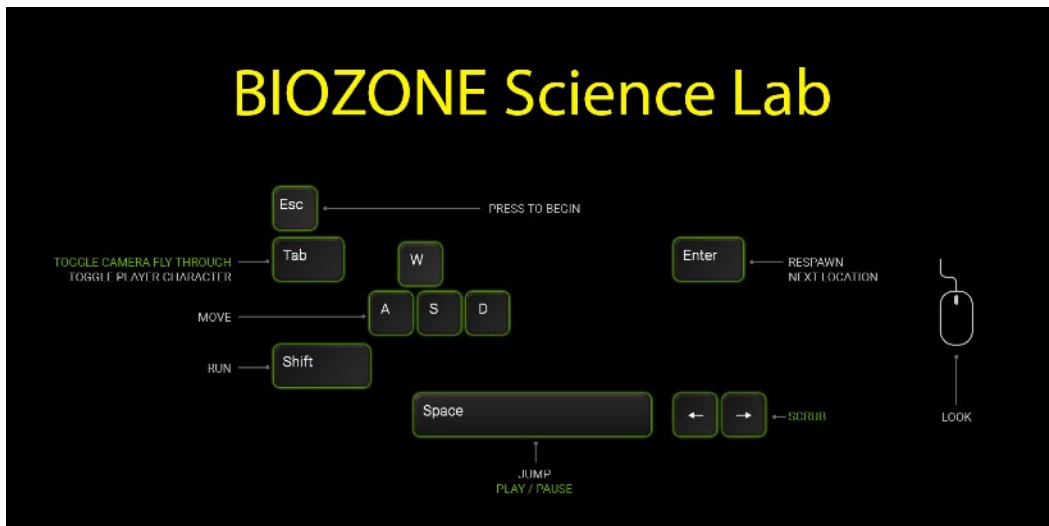
- Read the **Lab Rules** on the notice board in the Lab (next to the teacher’s front bench)
- Can you spot **8 lab safety rules** being broken (HINT: look on bench tops as well as the floor)?
- Can you find up to 12 items of **safety equipment** that reduce or respond to hazards in the lab (HINT: look on bench tops, walls, ceiling, as well as the floor)?

NOTE: Please be patient while the simulation loads - it may take a few minutes (depending on the speed of your internet connection).

To experience the best graphics, speed and interaction, try downloading one of the App versions of the simulation for **Windows** or **Mac OS**:



BIOZONE SciLab VR 2023 - MacOSX	482MB
BIOZONE SciLab VR 2022 - Windows	332MB



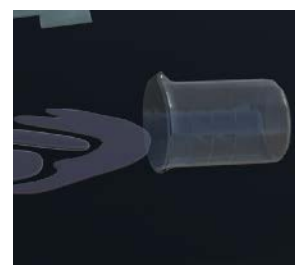
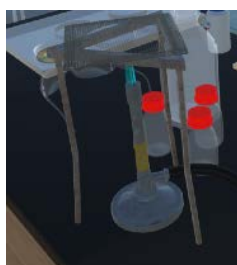
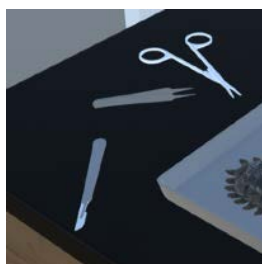
Use the **arrow keys** or (**WASD**) to move and use the **mouse** to look around (look in different directions).

1. The player must carry out a **Health & Safety audit**:

(a) Read the **Lab Rules** on the notice board in the Lab (next to the teacher's front bench).

(b) Identify and record (inventory) up the 8 health and safety **hazards** in the lab:

1. Broken glass
2. Spilled chemical on bench
3. Water on the floor
4. Scalpel blade near the edge of the bench
5. Drink in the lab
6. Food in the lab
7. Bunsen burner too near the edge of the bench
8. Petri dishes exposed with bacterial colonies



(c) Identify and record (inventory) on the 12 **mitigations** that ensure safety:

1. Fire extinguisher
2. Fire alarm
3. Fire blanket
4. First aid kit on the wall
5. Emergency EXIT sign
6. Safety glasses
7. Biohazard Waste bin
8. Fume cupboard for dangerous experiments that give off noxious gases
9. Safety tongs for handling hot test tubes
10. Smoke detector (ceiling)
11. Fire sprinkler system
12. Extractor fan duct over benches

