

UBC is Entering the Metaverse: Gamifying Forestry

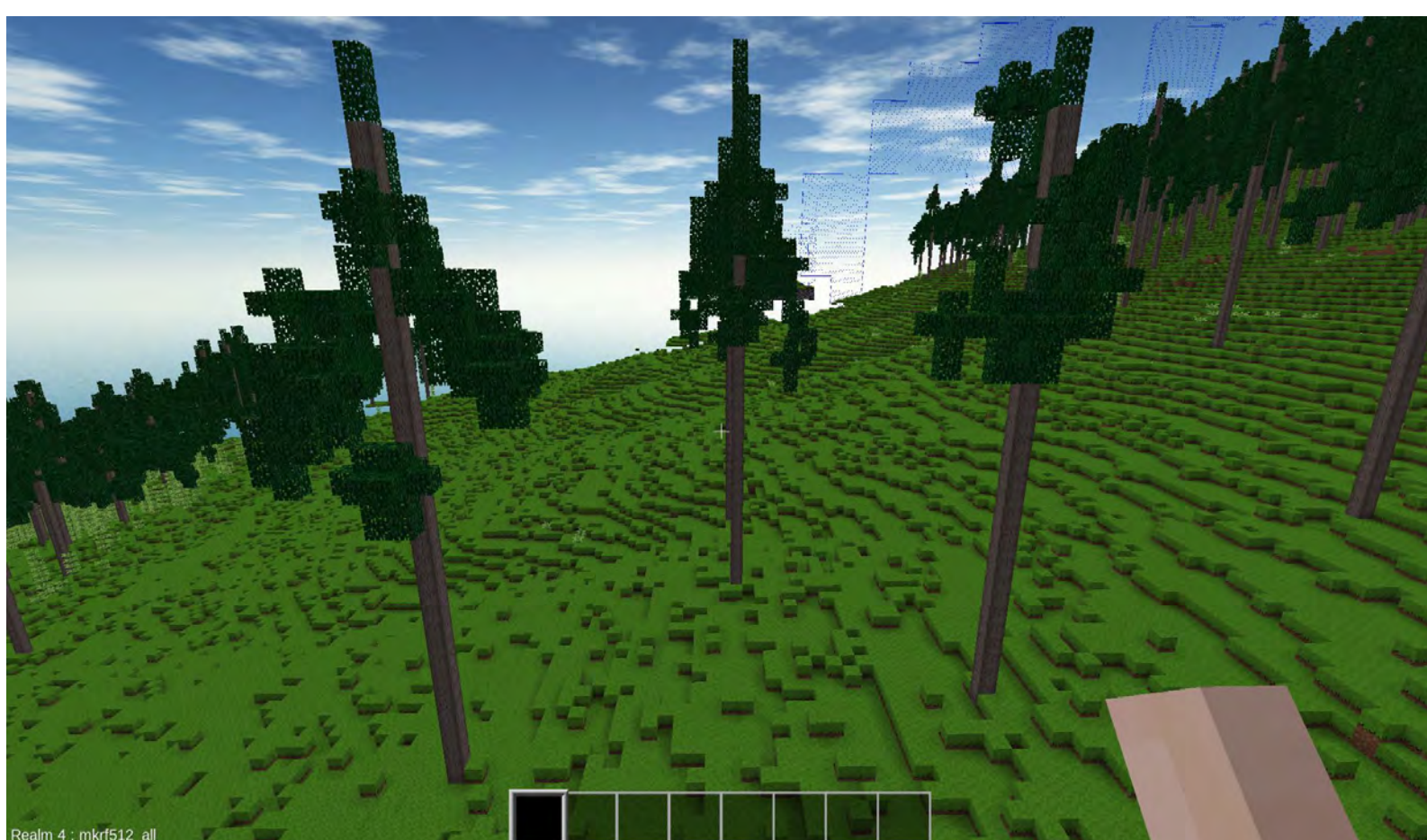
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Project Goals

Minetest is a Free and Open Source Software game engine similar to Minecraft. We wanted a purpose-built game that would allow us to create digital twin worlds and teach field skills in a multiplayer mode.

Digital Twins

Creating digital twin worlds requires real-world geospatial data like LiDAR (Light Detection and Ranging) point clouds that are converted to textured blocks in the game. Below is a portion of UBC's Malcolm Knapp Research Forest. Trees and terrain are true-to-scale with each block represents 1 m in the real world.



Buildings and roads can also be added in urban areas like the intersection of Robson and Homer streets in downtown Vancouver shown below. Any geospatial data can be represented in the game world.



Virtual Field School

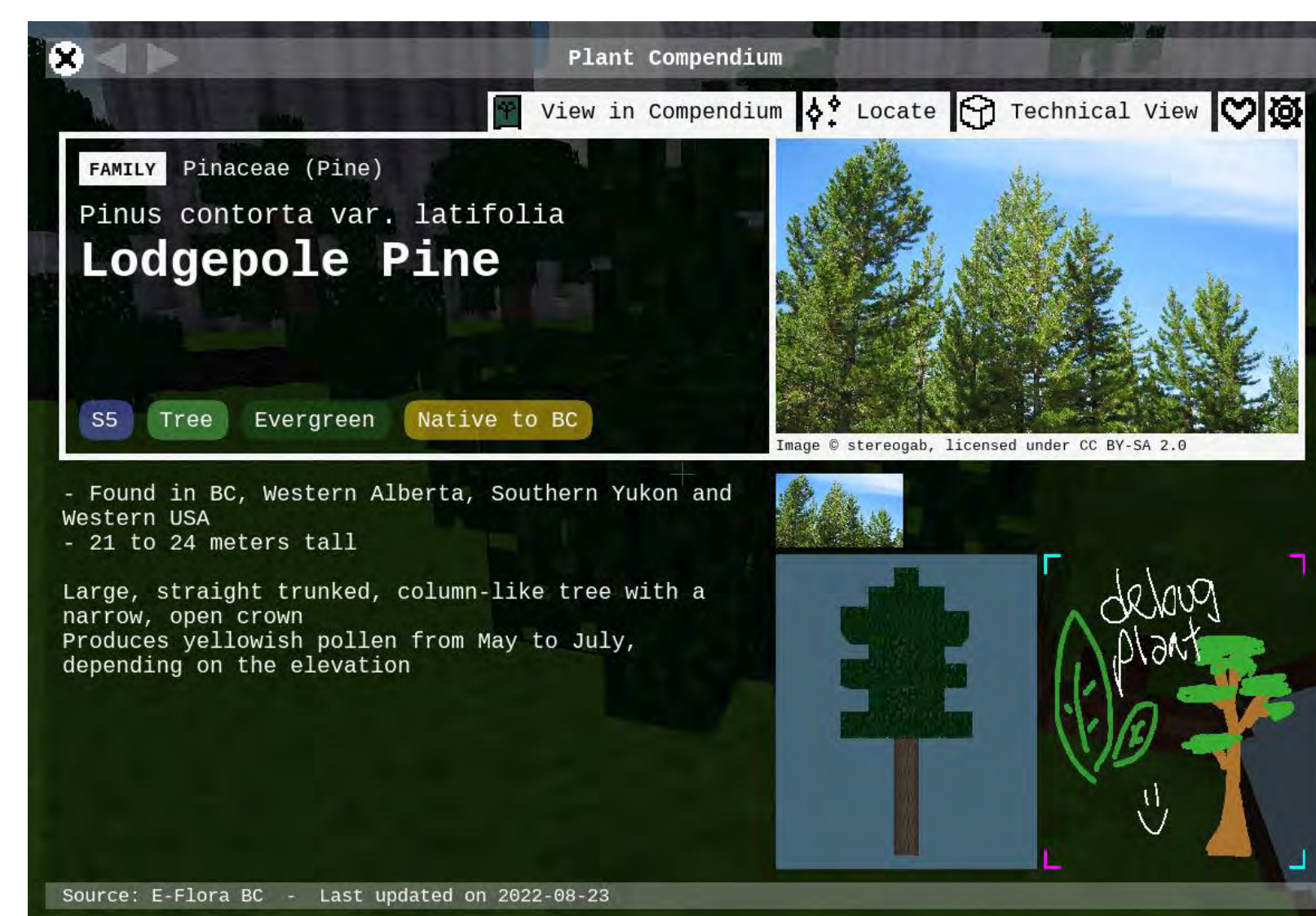
We created digital replicas of forestry tools that students learn to use in the real world at field school. Our **compass** works just like a real compass and when used in a digital twin, points to true geographic north.



Measure distances and heights of any features in the game world using our **rangefinder**.



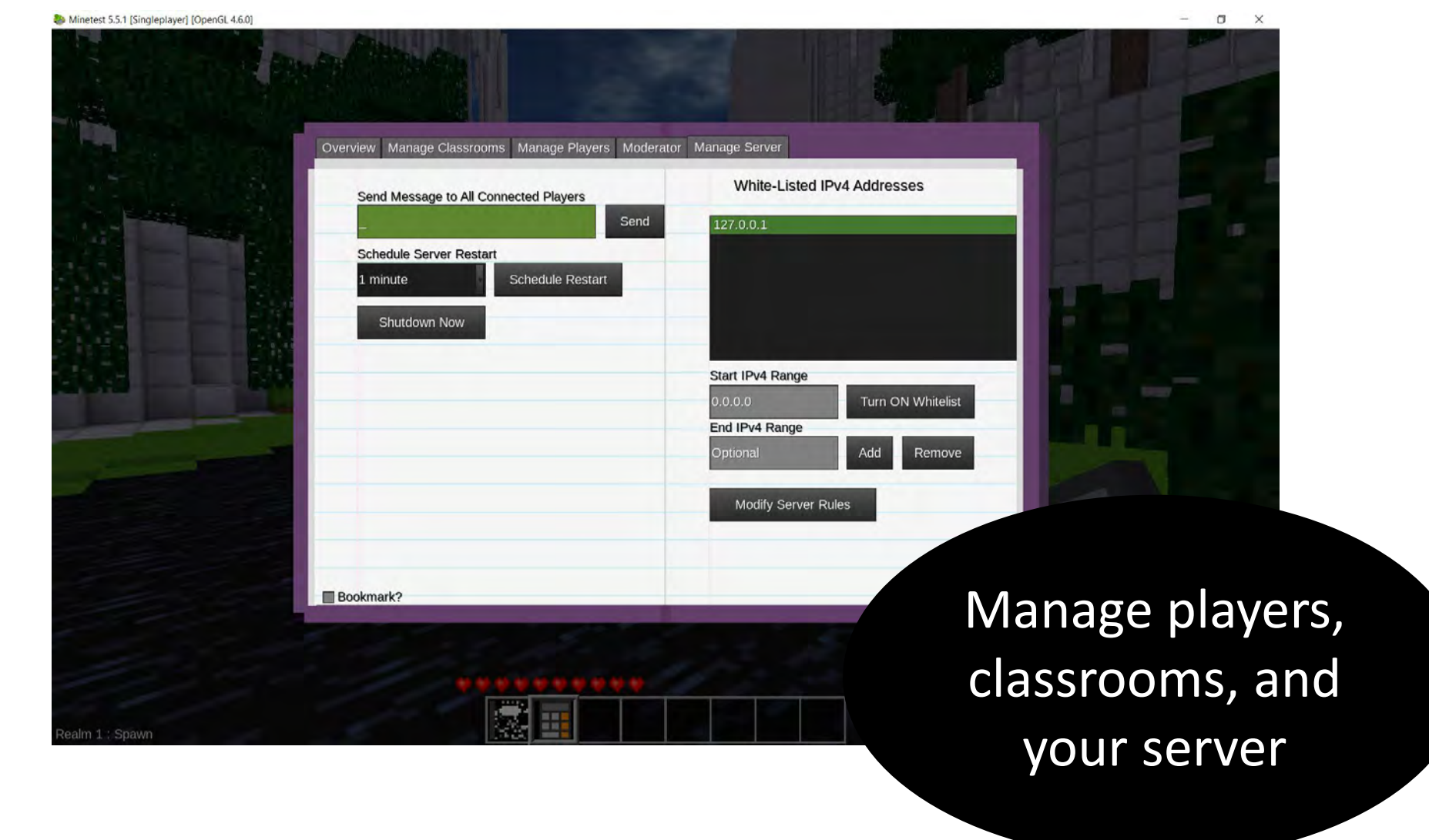
Walk around and click on plants to learn more about their taxonomy, form, and distribution using our **magnifying glass**.



Student Notebook



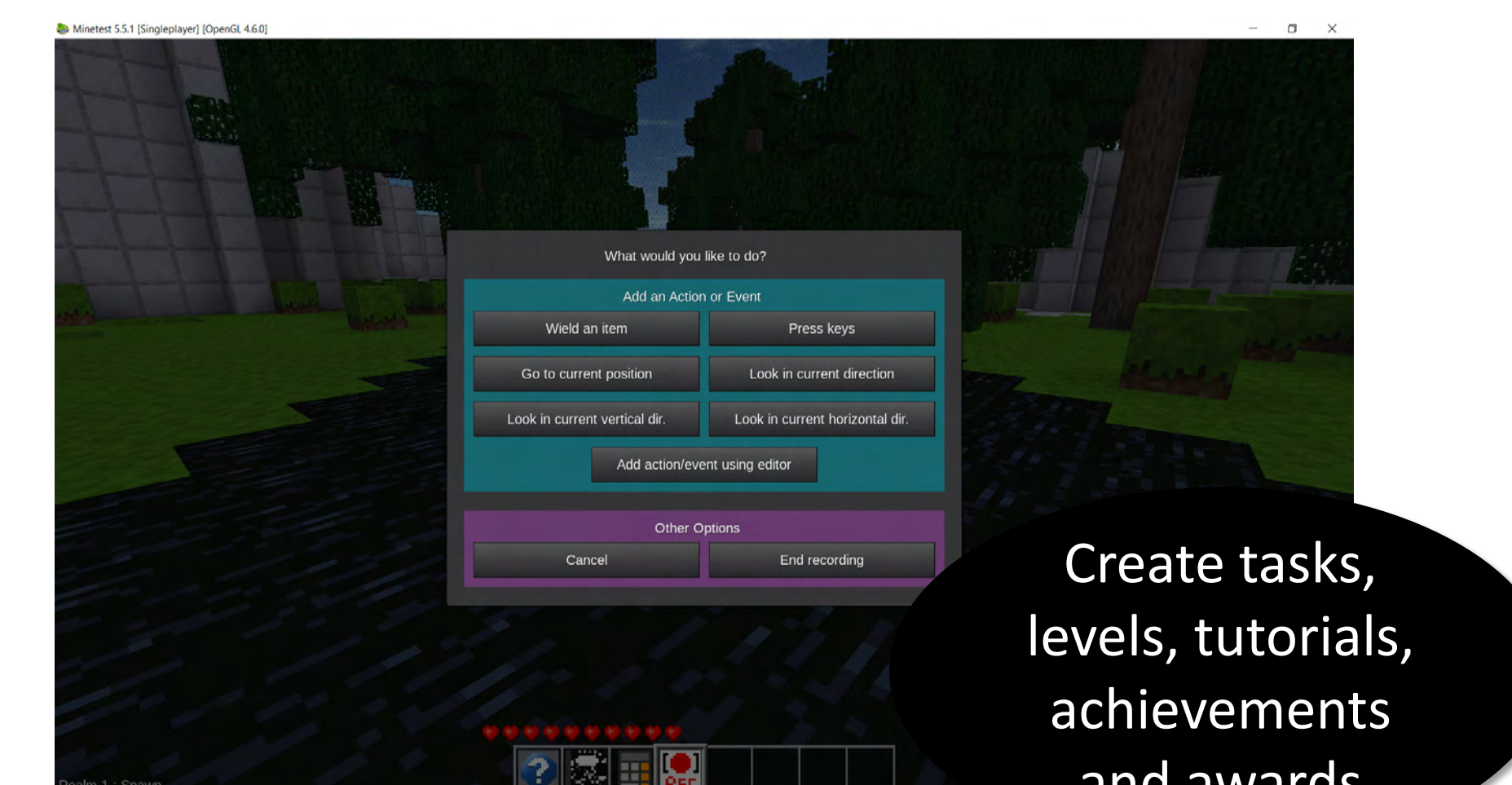
Teacher Controller



Classroom Generation



Record Tutorials



Get Involved!

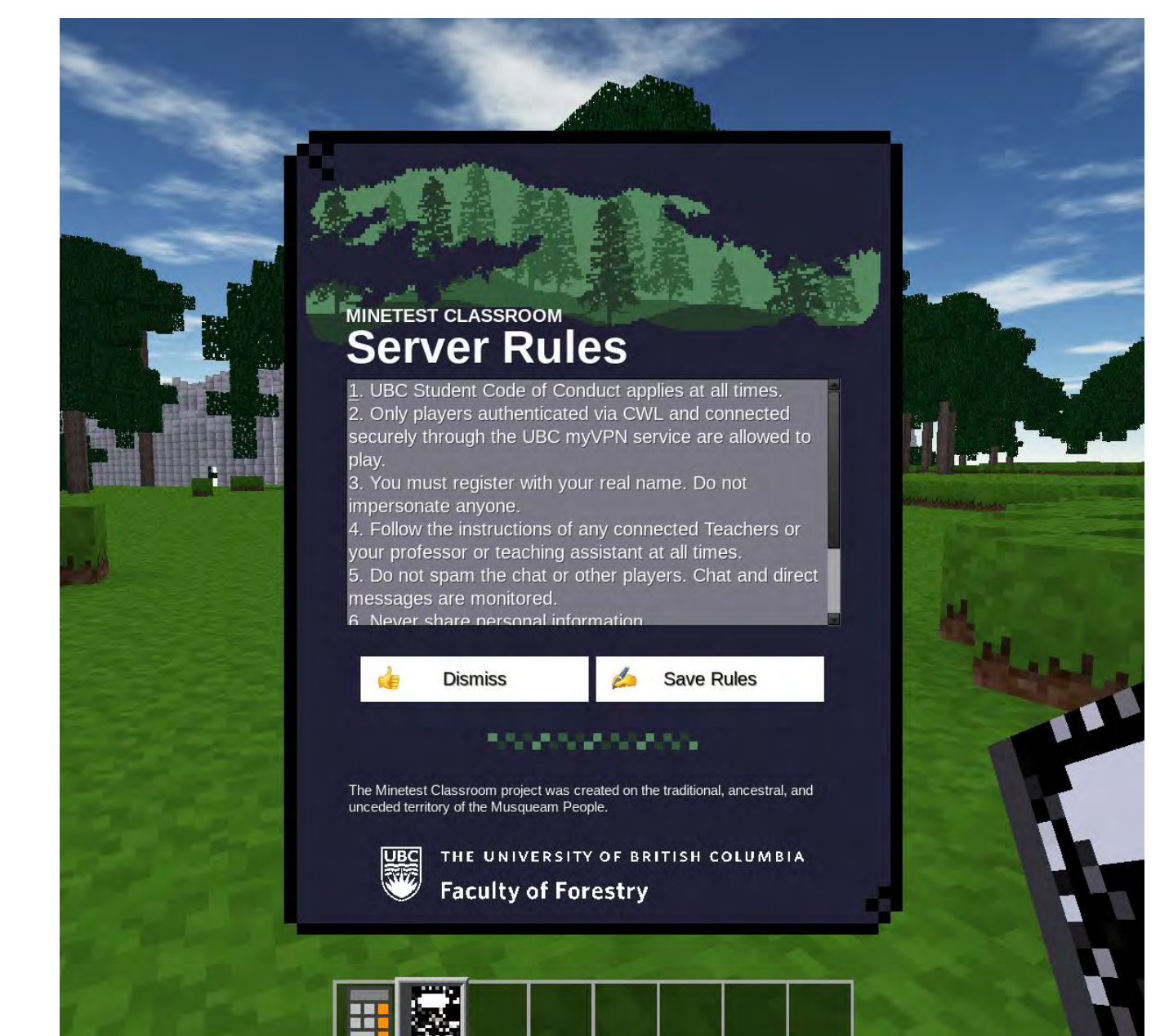
Fork [our repo on GitHub](#), contribute new features, test the latest build, and deploy your own Minetest Classroom server.

Watch the Demo



Play the UBC Server!

Download [Minetest](#) then enter the following coordinates to join our live multiplayer server:
Address: 206-12-122-94.cloud.computecanada.ca
Port: 30000



Acknowledgements

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