

# Dig into Geology with Minecraft: Education Edition

## About the Crate

This Cobblestone Crate, designed for Grades 4-8, will help you integrate Minecraft: Education Edition activities to supplement cross curricular activities for Science units on geology and social studies units on geography to understand how rocks and landforms are formed over time. The unit will have students also make 3d topographical maps to help understand how they are used for geographic mapping and geographic planning. Our team of Cobblestone educators will help guide you and your students through each of the activities, providing options for student reflection and sharing, leaving room for you to determine your own assessment techniques. Although this set of activities is designed for Grade 4 to 8 classes, it can be adapted for other grade levels by modifying the level of difficulty of the tasks

## The 5 Activities included are:

- Rocks! Rocks! Rocks!
- Landforms Before Time
- Badlands Biome Scavenger Hunt
- Topographical View of the Land
- Why is Soil Important?

## Guide for Implementation

Plan to begin geology or geography units the way you always have and then when the timing is right for you, add a dash of Cobblestone Crate to your lesson plan. You may choose to sprinkle the activities throughout the unit, or save them all until the end. That's totally up to you.

It is recommended, however, that the activities are completed in order as they build upon each other, but if you don't have time for all 5, no problem! Perhaps consider using the later activities as Extensions, even after the original unit has been completed.

Refer to the following pages for a detailed description of each activity.



## Introduction

*Video Length: 5m | Suggested Additional Class Time required: none*

*Suggested Materials (in addition to M:EE): none*

In this video students will meet the team of co-teachers that will be working with them throughout the novel study project and be introduced to the submission form that will allow them to share their thinking. Students will also learn more about each of the 5 activities that will be covered.

## Activity 1 - Rocks! Rocks! Rocks!

*Video Length: 26:m | Suggested Additional Class Time required: 60mins*

*Suggested Materials (in addition to M:EE): Textbook, readings, or document with suggested websites to find their information. A folder or assignment in your LMS system to upload student portfolio pictures.*

In this video, students will research and learn about igneous, metamorphic, and sedimentary rocks and how they are formed over time because of different pressures and force. Students will share their learning and knowledge of the rock cycle by creating a museum exhibit on the 3 categories of rocks. Students will further document and be able to share their museum exhibits using the camera and portfolio.

## Activity 2 - Landforms Before Time

*Video Length: 32:m | Suggested Additional Class Time required: 60mins*

*Suggested Materials (in addition to M:EE): Textbook, readings, or document with suggested websites to find their information. A folder or assignment in your LMS system to upload student portfolio pictures.*

Before this activity, students will research important/famous landforms around the world. In this video, an example landform from Yosemite park is created, alongside with specific labels to demonstrate how different rocks are formed. Students will use their math skills to plug in coordinates to build large areas of Minecraft using the fill command. Students will use the camera and portfolio to record important characteristics of the landform, along with slates to continue to explain their knowledge. Students will be encouraged to share their worlds in front of their class and give a 3-5 minute presentation on their world.

## Activity 3 - Badlands Biome Scavenger Hunt

*Video Length: 26:m | Suggested Additional Class Time required: 40-60mins*

*Suggested Materials (in addition to M:EE): Textbook, readings, or document with suggested websites to find their information. A folder or assignment in your LMS system to upload student portfolio pictures.*

In this activity, students will complete a rocks and minerals scavenger hunt in Minecraft Education Edition's Badlands Biome. Students will create a Geology board to track which rocks and minerals they have managed to find around the biome world. Students will document their findings using the book and quill to explain what they found, where they found it, and what it is used for. The Book & Quill allows students to share their knowledge, and to post pictures of where they located the island in the biome as well. Students can export their book and quill at the end of the lesson if desired, to be shared on the Learning Management System of the school board's choice.

## Activity 4 - Topographical View of the Land

*Video Length: 28:m | Suggested Additional Class Time required: 40-60mins*

*Suggested Materials (in addition to M:EE): Textbook, readings, or document with suggested websites to find their information. A folder or assignment in your LMS system to upload student portfolio pictures. Template world: <https://education.minecraft.net/en-us/lessons/exploring-contour-maps> for the entire lesson plan, or direct world download link: [World Download](#). The teacher may want to download the world themselves and host and distribute it directly to students to avoid any student account issues.*

To understand how natural rock formations are mapped, students will build a topographical map in Minecraft using the template world provided by the Minecraft Education Community. Students will build a map based on the landform provided in the world, and map it out using color codes to represent the height, and to also highlight the quickest path to scale the mountain. Students will use their photo to document how their topographical map matches up with the physical mountain, and will be encouraged to reflect on how topographical maps can be useful.

## Activity 5 - Why is Soil Important?

*Video Length: 28:m 32:s | Suggested Additional Class Time required: 60mins*

*Suggested Materials (in addition to M:EE): Textbook, readings, or document with suggested websites to find their information. A folder or assignment in your LMS system to upload student portfolio pictures.*

Building on the topography activity, students will be asked to create a cross section view of the soil that includes the interactions between environment, rock types and organisms. Students will understand the location of the surface in relation to the crust, learn about fossilization, and other processes and rock formations that would be forming between the surface and the crust. The activity will also highlight how sedimentary and igneous rocks work together to support life on earth by providing trees with the necessary room to grow, and being able to collect water from the surface of harder rock forms. The activity will culminate with students exploring and learning about Non-Player Characters (NPCs) and using the NPC to share a web resource to share their learning.