

Lesson 12: Conditionals in Minecraft: Voyage Aquatic

60 minutes

Overview

In this **skill-building/context-setting** lesson, students will get the chance to practice content that they have learned up to this point, as well as getting a sneak peek at conditionals!

Purpose

This set of puzzles will work to solidify and build on the knowledge of loops, and introduce conditionals. By pairing these two concepts together, students will be able to explore the potential for creating fun and innovative programs in a new and exciting environment.

Standards

Full Course Alignment

CSTA K-12 Computer Science Standards (2017)

- ▶ AP - Algorithms & Programming

Agenda

Warm Up (15 minutes)

Introduction

Main Activity (30 minutes)

Conditionals in Minecraft: Voyage Aquatic

Wrap Up (15 minutes)

Reflection

Extended Learning

Objectives

Students will be able to:

- Define circumstances when certain parts of a program should run and when they shouldn't.
- Determine whether a conditional is met based on criteria.

Preparation

- Play through the puzzles associated with this lesson to find any potential problem areas for your class.
- Make sure every student has a reflection journal.

Links

Heads Up! Please make a copy of any documents you plan to share with students.

For the teachers

- **CSF - Course E - Slides 2022-2023** - Slides ([Download](#)) [▼ Make a Copy](#)

Vocabulary

- **Condition** - A statement that a program checks to see if it is true or false. If true, an action is taken. Otherwise, the action is ignored.
- **Conditionals** - Statements that only run under certain conditions.

Teaching Guide

Warm Up (15 minutes)

Introduction

 **Display:** Show "Reflect" slide

Reflect:

- *Sketch out a drawing you made last class in the Functions with Artist lesson.*
- *What code do you need to create your drawing?*

 **Display:** Show "Warm Up Activity" slide

Gather the class together and ask two volunteers to walk straight in some direction in the classroom. If they encounter a chair out of place, they must step over it. If they reach a wall, they must sit down.

Once all of the students are sitting down, ask how you would program a robot to respond to a wall or a chair. Remind students that you cannot simply say "Step over chair" unless you know there is a chair, and you will not always know there is a chair. It might be helpful to translate the task into instructions like:

- while there is a path ahead
 - walk forward
 - if there is a chair, step over it
- sit down

 **Display:** Show "Vocabulary" slide

Tell students they will be using conditionals during this lesson. Give the definition of:

- **Condition:** A statement that a program checks to see if it is true or false. If true, an action is taken. Otherwise, the action is ignored.
- **Conditionals:** Statements that only run under certain conditions.

Open up a discussion of when you might use a conditional in your code.

Main Activity (30 minutes)

Conditionals in Minecraft: Voyage Aquatic

Students are in for a real treat with this lesson. It's likely most of your students have heard of *Minecraft*, but give a brief introduction for those that may not know.

Minecraft is a game of cubes. You can play as Alex or Steve as you work through mazes. You'll need to pick up items, and explore in a world made up of cubes of things.

Demonstrate one of the puzzles to the class. Once all questions have been addressed, transition students to computers and let them start pair programming.

 **Display:** Show the "Minecraft: Voyage Aquatic Introduction" video



Video: Minecraft: Voyage Aquatic Introduction

 **Display:** Show the "Level 2-4 - Skill Building" slide



2-4

Skill Building

2

3

4

Display: Show the "Minecraft: Voyage Aquatic Repeat Until" video



5

Video: Minecraft: Voyage Aquatic Repeat Until

Display: Show the "Level 6-8 - Skill Building" slide



6-8

Skill Building

6

7

8

Display: Show the "Minecraft: Voyage Aquatic Conditionals" video



9

Video: Minecraft: Voyage Aquatic Conditionals

Display: Show the "Level 10-14 - Skill Building" slide



10-14

Skill Building

10

11

12

13

14

Display: Show the "Minecraft: Voyage Aquatic Congratulations" video



15

Video: Minecraft: Voyage Aquatic Congratulations

Display: Show the "Level 16 - Free Play" slide



16

Free Play

Wrap Up (15 minutes)

Reflection

Display: Show the "Reflect" slide

Reflect: *Can you draw a scene where someone is using a conditional?*

Extended Learning

Use these activities to enhance student learning. They can be used as outside of class activities or other enrichment.

More Minecraft

If you find that your class really enjoys the *Minecraft* environment, **here are some links to other *Minecraft* games they can play online**. These games will also teach basic coding skills.



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