

Educator Guide

Block 3 – Lesson 2
45 minutes
Single Student

Running Out of Time: Dinosaur Run

EDUCATION.MINECRAFT.NET

THEME OVERVIEW

Tell students:
Today, you will be investigating and becoming more familiar with Events. Remember, events are what causes things to happen. Knowing this, let's see how you will use events to handle these challenges.

CODING OBJECTIVES

By the end of Lesson 2, students should be comfortable with:

- Using different events
- Making the right coding choice depending on the circumstances
- Combining different events

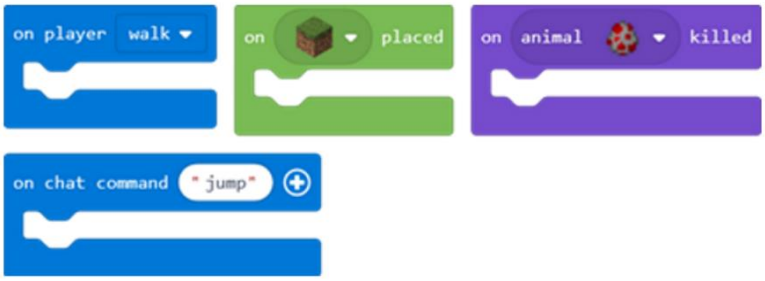
THINGS TO KEEP IN MIND

- Remind students that there may be more than one solution for each of the activities.
- Ask students to take a screenshot of their coding snippet and write an explanation of what the code does. (This can also be used as a homework assignment.)

LESSON ACTIVITIES

Concept Review (slide 1)

1. What is an event?
   Answer: An event in computer science is an action or occurrence that is detected by a computer. For example, when someone selects the button on their mouse, it generates a "mouse click event" for the computer.
2. What is a variable?
   Answer: Variable are a lot like lockers: variables are places in which computers keep things. Computers need containers in which they keep numbers, text, and other information so that they can use this information to make decisions later. The code tells the computer when to look in these lockers and what to look for.
3. What is an event handler? Name at least 2 event handlers.
   Answer: An event handler is a part of your program that runs when a specific event happens.
   Examples: On Player Walk/Swim/Fall/Swim Lava/Fly, etc.



Direct Instruction (Teacher-Led; "I Do")

Welcome back to Coding Fundamentals! Today's lesson is Dinosaur Run. (**slide 2**) This lesson is all about students learning to think for themselves and problem solve. They will utilize the skills they have accrued over the past two units to reach their objectives. In the previous lesson, we focused on events and variables. This lesson will focus on students becoming more comfortable with events. All these activities are student-validated. Once again, there are no right or wrong answers. Encourage students to solve the problem in the most efficient way.

For these activities, the code provided is just as suggestion and the students can use whatever method they would like to move past the obstacle. Students need to think creatively to successfully navigate all the challenges.

Review the lesson objectives. (**slide 3**)

Review the important vocabulary. (**slide 4**)

Tell students: (**slide 5**)
Oh no! We have landed in prehistoric times! We must have miscalibrated the flux capacitor. Luckily, we have detected the time gate near your position. You must find the time gate and get back to the base.

Guided Instruction (Teacher Modeling; "We Do")

At this time, have students log into Minecraft: Education Edition. When they spawn into the world, they will need to walk through the time portal. They will be greeted by Dr. Rubin's hologram **(slides 6-8).**

Activity 1: Dinosaur Sneak (Slides 9-12)

The students should use On User Sneak or On Chat Command with Enhancements to give themselves whatever enhancement they want to use to sneak past the dinosaur. They will need to use the sneak function from Minecraft to get by. You

enable sneak by holding down the shift key and “W” on the keyboard or using the sneak function on the in-game joystick for touch devices.
NOTE: If the dinosaur detects the student nearby, the student will be teleported back to the beginning.



Independent Work (Teacher Support; “You Do”)

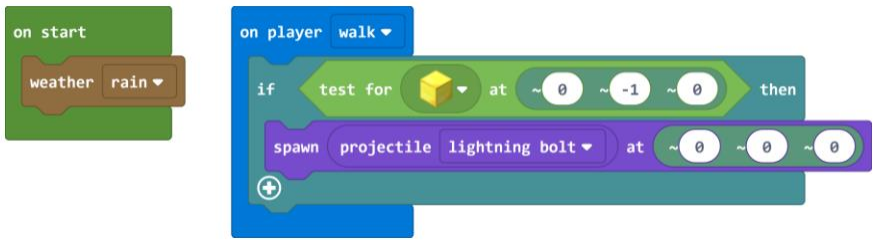
Activity 2-4: Navigating the Temple (Slides 13-20)

The student should use On User Walk or On Chat Command or On Start events to give themselves the necessary enhancements to navigate the 3 obstacles in the temple. Students will get creative is within the construct of the duration of the enhancements. The default timing on the duration is approximately 10 seconds. This is much shorter than what they may be accustomed to in the game with drinkable potions or splash potions. They will need to figure out how long those durations need to be for the enhancements to help them complete the obstacle.



Activity 5: Powering the Gate (Slides 21-26)

The TDD cannot be powered without some help. To make this happened, lightning is going to strike the gold blocks that are placed around. Students need to use the event On Player Walk. As soon as the player begins moving, lightning will strike. Once all gold blocks have been activated by lightning, the TDD will light up and the game will announce “Activity Complete”.



LESSON CONCLUSION

Ask students about the skills that they have learned during the lesson to reinforce the concepts learned. (**slides 27-28**)

1. What is an event?
   Answer: An event in computer science is an action or occurrence that is detected by a computer. For example, when someone selects the button on their mouse, it generates a “mouse click event” for the computer.
2. What do the purple blocks of code do?



   Answer: Enhancements allow students to have extra abilities for varying amounts of time and strengths.
3. On Player Walk is an example of what?
   Answer: Event trigger/event handler
4. What events did you use to solve the puzzles in this lesson?
   Answer: Answers may vary

These questions can also be used as a formative assessment. The formative assessment can also be found at the end of this document that can be printed out.

EDUCATIONAL STANDARDS

UNITED STATES: CSTA

- 1B-AP-09 Create programs that use variables to store and modify data.
- 1B-AP-08 Compare and refine multiple algorithms for the same task and determine which is the most appropriate.
- 1B-AP-10 Create programs that include sequences, events, loops, and conditionals.
- 1B-AP-15 Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.

UNITED STATES: ISTE

- 1.5b Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.
- 3D Students build knowledge by actively exploring real-world issues and problems, developing ides and theories, and pursuing answers and solutions.
- 5C Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

AUSTRALIA: DIGITAL TECHNOLOGIES (YEAR 3 AND 4)

- (ACTDIP016) Acquire, store and validate different types of data, and use a range of software to interpret and visualise data to create information
- (ACTDIP019) Following, modifying and describing the design of a game involving simple algorithms represented diagrammatically or in English
- (ACTDIP018) Experimenting with different ways of representing an instruction to make a repetition, for example loops in a flowchart diagram or using a 'REPEAT' statement
- (ACTDIP020) Planning and implementing a solution using a visual programming language, for example designing and creating a simple computer game involving decisions and repetitions, suitable for younger children, that requires user input to make selections, taking into account user responses

England: Computing (Key Stage 2)

- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- Use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

NAME: _____ **DATE:** _____

DINOSAUR RUN: FORMATIVE ASSESSMENT

What is an event?	
What do the purple blocks of code do? 	
On player walk is what type of coding concept?	
What events did you use to solve the puzzles in this lesson?	