MINECRAFT
EDUCATION EDITION

## Facilitator Guide

60 minutes
Single Student

# WONDER WOMAN
# MUSEUM HEIST

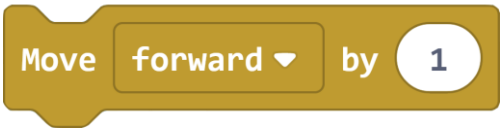
## THEME OVERVIEW

Lucky you! You've been invited to the opening of a special exhibit at the Museum. You'll get to be one of the first to see this beautiful work of art and science.

But something goes seriously wrong at the unveiling. A gang of thieves has made off with pieces of the exhibit. And who should show up but Wonder Woman! She knows you've got the skills to solve this. You've got to solve 5 tricky challenges. Once you've got them all solved, you'll have all the pieces of the exhibit, and you can not only put the exhibit back together, but you can help her apprehend the leader of this dastardly gang of goons.

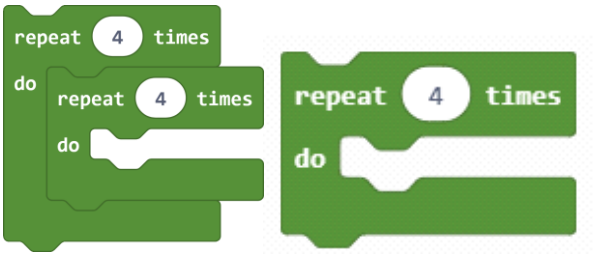
You've got your wits, your coding skills, and your trusty agent to figure out these challenges. Go forth and be awesome. We're counting on you!

## CODING BLOCKS




Wonder Woman moves forward/backward/left/right by how many blocks.

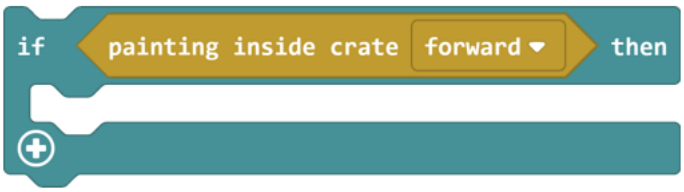

Wonder Woman sets stained glass down in a direction according to which way she is facing.




Repeat – repeats the code inside the repeat block a certain number of times. Please note that you can "nest" repeat loops, which means that you can make Wonder Woman do one thing, like move, a certain number of times, then return to the outer repeat block and then repeat that.


Wonder Woman turns left, right, from her current position. Careful, it's not left or right to YOU, but HER left or right.


If true, then - a conditional (see glossary) that only executes the code if the condition is true.
E.g. IF Wonder Woman detects a coal block in front of it, THEN break the block, so if she comes to a block that's not coal, she doesn't break it.




Checks to see if the painting piece is in a particular crate next to Wonder Woman.


Breaks the crate and retrieves the painting piece in block next to Wonder Woman.


Checks a direction next to Wonder Woman to see if the thief is there.

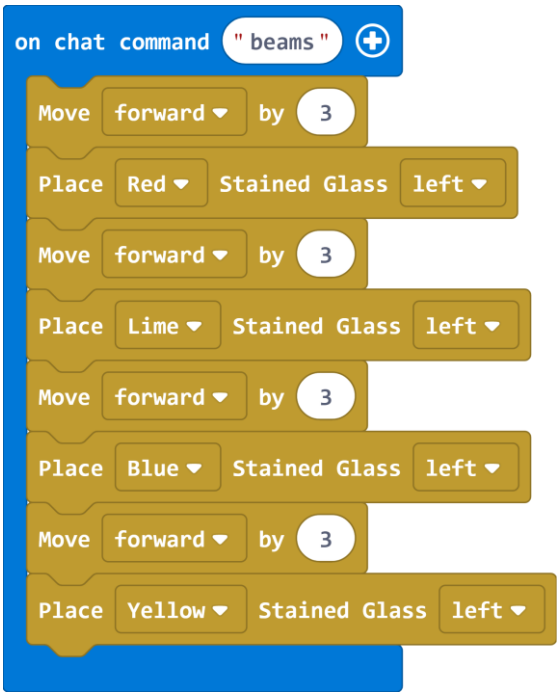

Grabs the criminal in a particular block next to Wonder Woman.


Lassos the thief in a particular direction from Wonder Woman.

## SOLUTIONS:

There are multiple possible solutions for these coding challenges. If it works and completes the challenge successfully, it's right!

### BEAMS OF COLOR





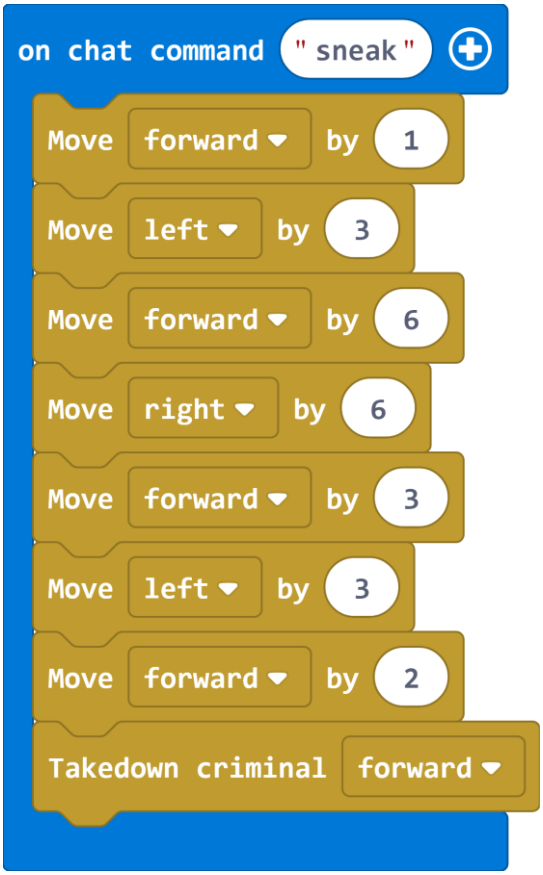

## SEARCH THE CRATES

```
on chat command " crate "
repeat 8 times
do
    Move forward by 1
    if painting inside crate right then
        Break crate right
Turn right
Move forward by 2
Turn right
repeat 8 times
do
    Move forward by 1
    if painting inside crate left then
        Break crate left
```

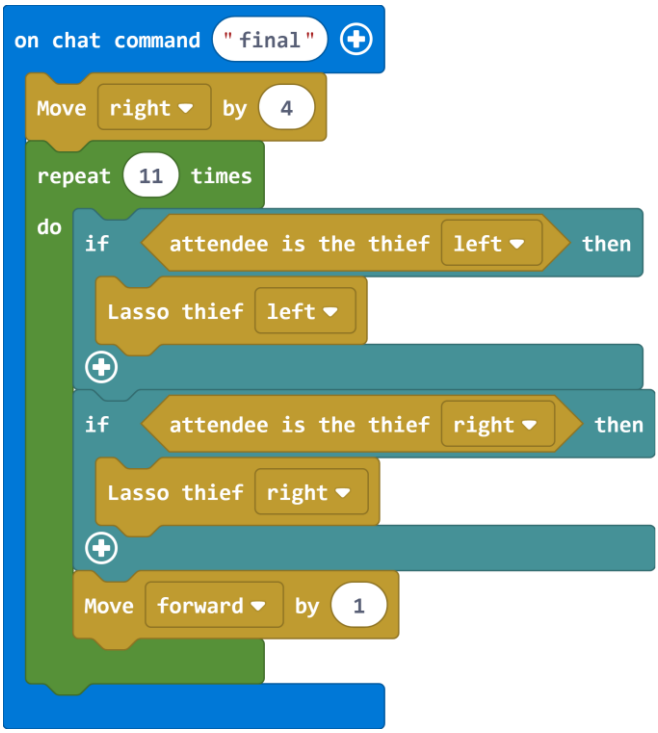
## DANCE FLOOR

```
on chat command " floor "
Move right by 4
Move forward by 12
Move right by 4
```

## STEALTH MISSION




## APPREHEND THE THIEF CHALLENGE



## GLOSSARY

**Conditional** - an event that only happens when a certain "condition" is met, usually in the form of an **IF/THEN statement**: IF it is raining outside, THEN I will take my umbrella. IF the score is 25, THEN the player levels up.

**Decompose** – break a complicated task down into smaller pieces. This makes coding complicated things much easier. We code all the simple little tasks, then put them together to run the big task.

**Event** – something that happens in the game or when some code is run

**Loop** – repeating the same instruction(s) over. Can be a certain number of times, forever, or until a certain condition is met.

**NPC** – Non-Player Character. Any character in the game that isn't you or the agent. You interact with them, sometimes getting items or information.

**Procedure** – a "recipe" for making something happen in code, consisting of several steps. Procedures are "called" by simply using the name of the procedure. For instance, we could make a procedure for fixing a peanut butter and jelly sandwich and call it "PB&J". The procedure would be made up of all the steps we would use to make the sandwich, in order: get 2 pieces of bread, put 2 spoons of peanut butter on one piece, put one spoon of jelly on the other, put 2 pieces together. Instead of writing all that out, anytime we wanted to run it, we just call the procedure: PB&J. Once we've defined the procedure once, we never have to write all those steps again. We just put "PB&J" in our code!



## EDUCATION STANDARDS - LESSON 4

| CSTA K-12 | |
|---|---|
| 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-11 | Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process. |
| 1B-AP-15 | Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended. |
| **ISTE** | |
| 5A | Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions. |
| 5C | Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving. |