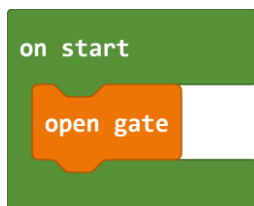


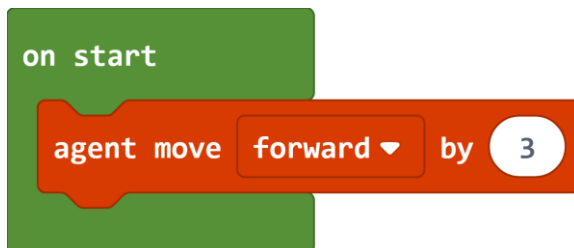
Solutions

Minecraft Hour of Code: AI for Good

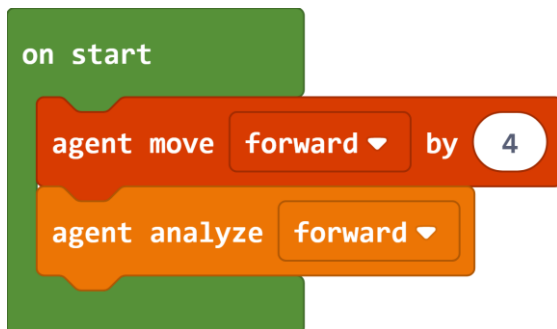
Activity 1: Open the Gate



Activity 2: Meet the Agent



Activity 3: Agent Move



Activity 4: Gather Data

Easy

```
on start
  agent move forward by 6
  agent move right by 2
  agent move forward by 2
  agent move left by 1
  agent move forward by 2
  agent analyze forward
```

Hard

```
on start
  agent move forward by 2
  agent move left by 4
  agent move forward by 2
  agent move right by 4
  agent move forward by 2
  agent move left by 2
  agent move forward by 2
  agent move right by 1
  agent move forward by 2
  agent analyze forward
```



Activity 5: Eliminate all Hazards

```
on start
  while hazards remain
  do
    if agent detect dry brush forward ▼ then
      agent destroy forward ▼
    +

```

Activity 6: Field Mission

```
on start
  while hazards remain
  do
    if agent detect dry brush forward ▼ then
      agent destroy forward ▼
    +
      agent move forward ▼ by 1

```



Activity 7: Save the Village!

```
on start
  while hazards remain
  do
    agent destroy forward
    agent move forward by 1
    if agent detect dry brush right then
      agent turn right
    +
```



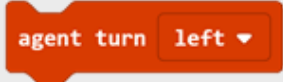




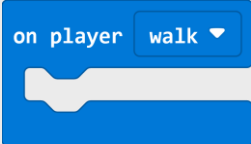
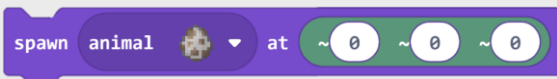

Activity 8: Reforestation!

Open-ended activity. This is one of the potential solutions.

```
on player walk
  place grass at ~0 ~-1 ~0
  spawn animal pig at ~0 ~0 ~0
```



CODING BLOCKS USED:

	<p>On start</p> <p>Runs the code when the student clicks the “Play” button.</p>
 	<p>Agent move</p> <p>Tells the Agent to move in a certain direction by a defined amount.</p> <p>Agent turn</p> <p>Tells the Agent to turn left or right.</p>
	<p>Agent destroy</p> <p>Tells the Agent to break a block in a defined direction.</p>
	<p>If then</p> <p>Runs code when a condition is met.</p>
	<p>While</p> <p>Repeats the code if a defined condition is met.</p>
	<p>Agent detect</p> <p>Detects if there is a block next to the Agent in a defined direction.</p>
	<p>On player walk</p> <p>Runs the code when a student walks.</p>
	<p>Spawn animal at</p> <p>Generates an animal into Minecraft at a defined position.</p>
	<p>Place block at</p> <p>Generates a block into Minecraft at a defined position.</p>



KEYWORDS

Agent - The Agent is a Minecraft mob that helps students learn coding by getting them to code the Agent's actions. The Agent can be coded to carry out tasks including moving, mining, building, planting and harvesting.

NPC Guide - Non-Player Characters that can be interacted with.

Spawn - The term used when a character, animal or mob is generated into Minecraft.

Mob - Mobs are living, moving, entities, such as animals and monsters.

Relative position - The position coordinates based on an east/west, up/down, south/north direction from the location of the character.

Reforestation is the process of establishing a new stand of trees on a previously forested site following a disturbance such as fire.

Natural regeneration is when you let nature handle the job of revegetating a site with trees, whereas artificial regeneration is when you bypass nature and seed or plant the site yourself.

