

## Project: Spy vs Spy vs Stealth Difficulty: Level 2



Time: Five 45 minute labs

**Challenge:** Create a multiplayer game with two input sources: keyboard and joystick. Design the game to misdirect a players' attention from how scoring accrues. The project should include: how to play information in a flap or one the main screen, a timer, score and reset scripts. It's a game with many decisions required from the author and many challenges for the player.

### Programming:

Basic script tiles, conditional statements, variables, constructed tiles, random number tiles, scripts that are ticking, paused, and normal, scripting tiles that start and stop other scripts.

This project is not difficult programming but requires time and careful planning to construct many scripts.

NB: There are useful commands in the Halo's white menu to keep objects in the correct layers: bring to front, send to back, resist being deleted, resist being picked up, and be locked.

This project makes use of the Scripting Category of tiles to start, pause, and stop scripts based on events while the project is running. There are no Quick Guides for scripting tiles. There *are* Help balloons that are useful.

### **Things you'll need to know:**

#### Quick Guides

- Paint Tools/ All
- Halo Handles/All
- Supplies: Object Catalog, Text, All Scripts, Joystick Control, Players Tool, Add a New Flap
- Object Catalog: Polygon
- Script Tiles: Forward by, Turn by, X and Y Tiles, Heading, Scale Factor, Hide and Show, World Input, Overlaps Dot, Random Numbers, Exact Location, Tests Category
- Menus: Normal Ticking, Viewer Icons Set, Scriptor Icons Set, Button Fires a Script, Grab me Reveal Me, Watchers, Bring to Front, Drop Shadow,

### **Things to think about:**

- Why does this example project work on two layers of observation and awareness?
- How does the example project misdirect the players?
- Do the players need to cooperate? Does cooperation make the game easier or harder?

### **Extensions:**

- The example game has one level of play. Create second and third levels, each making it more difficult to score.

### **NETS for Students:**

<http://www.iste.org/standards/nets-for-students/nets-student-standards-2007.aspx>

1. Creativity and Innovation: a, b, c, d
2. Communication and Collaboration: b
3. Research and Information Fluency: a, b
4. Critical Thinking, Problem Solving, and Decision Making: a, b, c, d
5. Digital Citizenship: a, b, c, d
6. Technology Operations and Concepts: a, b, d

### **CSTA:**

CSTA Level II: Objectives and Outline

<http://csta.acm.org/Curriculum/sub/CurrFiles/L2-Objectives-and-Outlines.pdf>

Level II objectives for middle school students are furthered through studying a programming language well enough that the student is proficient with it. Whether the language is Etoys, StarLogo TNG, or Scratch, it is the ability to use the language to express ideas that is valuable. A student skillful enough to use *any* programming language to express ideas, solve problems, model behaviors, simulate data, or to educate or entertain is an entitled person in today's society.

Topics of particular note are:

Topic 2: Problem Solving

Topic 6: Connections between Mathematics and Computer Science

Topic 11: Programming Languages

Topic 13: Multimedia

### **Common Core Standards Mathematics:**

<http://www.corestandards.org/the-standards/mathematics>

6. NS.5, 6, 7, 8

6. EE.6, 9

### **Teacher Notes:**

Materials: Give students time to read current newspaper articles about security breaches such as credit card numbers at Amazon and Face book. There is interesting information about cyber security careers at [www.dhs.org](http://www.dhs.org) . The information they read should help them imagine a scenario and be incorporated

into the game. Close alignment with the world events will add urgency and realism to the project.

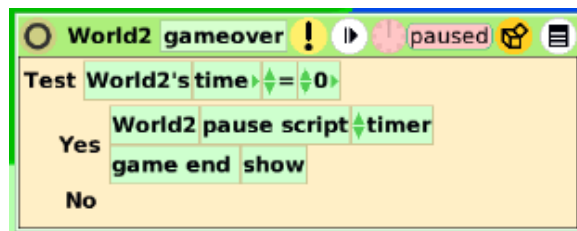
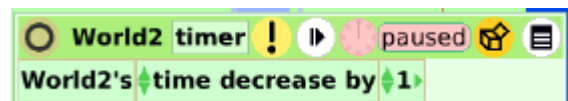
Comments: The topic should be of interest to students given the implications of it in their life. A class discussion about what the future will hold for them and what controls they should have over personal information and who will decide who guards those who guard. Cyber security is a career that will need many more professionals both in business, industry and government settings. There is a growing demand for more people who can defend, defeat and craft secure information handling software.

### Objects - Scripts – Decisions

A script for one of the text data leaks can be used again and again by copying the text itself and modifying the script that follows with the copy. Using random values keeps the action from being the same for each. More variety can be included by changing the tick per second in a script and by changing the value in the y decrease tile.

Fast, slow, many, few, visible at the start of the game or hidden, how much time on the timer; each decision takes time and each student's game will play differently depending on their choices. Give them to try other student's projects.

### Example Scripts:



```

address move
address's y decrease by 4

Test address's obtrudes
Yes
  address's x ← 100 + random(1000)
  address's y ← 700 + random(500)
No

Test address's is under mouse
  Test World2's time > 0
    Yes World2's score increase by 1
    No
  Yes
    address's x ← 100
    address's y ← -100
    address pause all move
  No World2's score increase by 0
    
```

```

whiteleft kybdcontrol
Test whiteleft's last keystroke = a
Yes
  whiteleft's x decrease by 8
  whiteleft's heading ← -90
No

Test whiteleft's last keystroke = s
Yes
  whiteleft's y decrease by 8
  whiteleft's heading ← 180
No

Test whiteleft's last keystroke = d
Yes
  whiteleft's x increase by 8
  whiteleft's heading ← 90
No

Test whiteleft's last keystroke = w
Yes
  whiteleft's y increase by 8
  whiteleft's heading ← 0
No
    
```

```

World2 reset
World2's score ← 0
World2's time ← 30
game end hide
whiteleft's x ← 111
whiteleft's y ← 128
spysat3's x ← 20
spysat3's y ← 94
blkspy's x ← 685
blkspy's y ← 209
spysat2's x ← 779
spysat2's y ← 176
    
```

**Student Notes:**  
 None provided.