# Worksheet 5: Sensors

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| **Learning Intentions**: We are learning to be able to … |
| Make sprites interact with other objects on the stage. |
| *Why are we learning this?* |
| Interaction between objects formulates the basis for collision triggers. |
| **Success Criteria**: I will be successful if I can … |
| Detect another sprites:* Collision
* Movement and direction
* Current state
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## Instructions:

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| Acquire and integrate knowledge: |
| Zoom into the stage on a new sprite (with nothing drawn) to find the **rotation point** (aka *pivot point*, *origin*, or *costume centre point*):Add a sprite that is a picture of a ball, with the *costume centre* in the middle centre of the ball:Run the following script **on the cat**:1. If I change the above *movement* block to “move 5 steps” (instead of 1) the script will likely never stop running. Why not?

Click here to enter text.1. Here is the same script with a slightly different *condition* block. The previous *condition* block checked if “distance to ball > 1”, whereas the following *condition* block checks if “not touching ball”:

What are the two different results I get when I run each of these *condition* blocks separately (from question 1 and 2)?Click here to enter text.1. Now I want to move my cat to the ball and stop, but only when I’m pressing space bar:

The “key space pressed?” condition in this circumstance is also part of a “*nested” if-statement*. Why do you think it is called “**nested**”?Click here to enter text.1. Which condition would I change in the previous condition to make the cat move only when my mouse button was down? Also what would the new condition be?

Click here to enter text. |
| Extend and refine knowledge: |
| Draw a red line on the background of the stage that you do not want your cat to cross:Add the following script. If your cat crosses the red line, it should bounce straight back:1. Explain, in your own words, how the above script works.

Click here to enter text.1. Why wouldn’t this work as the script in question 5 intended? What goes wrong?

Click here to enter text. |
| Use knowledge meaningfully: |
| Have a go at creating a **simple maze game** (the following excerpt taken from <http://scratched.gse.harvard.edu/guide/download.html>):

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| **Algorithm for moving explorer** | **Code** |
| when the flag is clicked repeat forever if right arrow key is pressed point right move 5 steps if left arrow key is pressed point left move 5 steps if up arrow key is pressed point up move 5 steps if down arrow key is pressed point down move 5 stepsif explorer touches the same colour as the maze wall go back to starting position |  |

1. Can you add some on-going background music, as well as different costumes for the different directions faced?

Paste screen shot of your completed script here.1. Can you add an enemy, that when I touch it, it sends me back to the start of the maze?

Paste screen shot of your completed script here.1. Can you make it a two-player game?

Paste screen shot of your completed script here. |