

Cookie Game

Learning Goals

- Practice reading and then modifying code that you didn't write
- Use variables to store and manipulate an object's position
- Use conditionals to control when actions can and cannot occur
- Use a form button

Cookie Game

Reading code you didn't write

Before downloading and running the code, let's take a look at the starter code that you will be given. **It is a skill to be able to read code you didn't write.** A skill that you will need to use as a developer as you are most frequently integrating or modifying other people's code, rarely creating everything from scratch all by yourself.

With your partner, read the code and answer questions 1-9.

```
1  var monster_img;
2  var cookie_img;
3  var points;
4  var monster_x, monster_y;
5  var cookie_x, cookie_y;
6
7  function preload() {
8    monster_img = loadImage("assets/cookie_monster.png");
9    cookie_img = loadImage("assets/cookie.png");
10 }
11
12 function setup() {
13   createCanvas(720, 400);
14   monster_x = 150;
15   monster_y = height-150;
16   cookie_x = 725;
17   cookie_y = random(350);
18   points = 0;
19 }
20
21 function draw() {
22   background(200);
23   displayPoints();
24
25   image(monster_img, monster_x, monster_y);
26   image(cookie_img, cookie_x, cookie_y);
27
28   moveCookie();
29   moveMonster();
30   checkForChomp();
31 }
```

Don't run the code yet! Just read it!

A look at the starter code

1. Lines 1-5: do you know what each of these variables will represent?
2. Lines 7-10: where can you find these images in your documents?
3. Lines 12-18: draw a loose sketch of that the setup of the canvas will look like.
4. Lines 21-31: explain in your own words what happens during each iteration of the **draw()** loop.

A look at the starter code

5. Lines 33-36: where do you expect to see the points displayed on the screen?
6. Lines 39-46: in which direction will the cookie move?
7. What happens when/if the cookie moves off screen? How does the program know the cookie has moved off screen?
8. Lines 48-53: How and when does the monster move?
9. Lines 55-62: When does a chomp occur? What happens when there's a chomp?

```
32
33 function displayPoints() {
34   fill(160);
35   textSize(150);
36   text(points,10,370);
37 }
38
39 function moveCookie() {
40   if(cookie_x < 0) {
41     cookie_x = 725;
42     cookie_y = random(350);
43   }
44   else
45     cookie_x -= 4;
46 }
47
48 function moveMonster() {
49   if(keyIsDown(UP_ARROW) && monster_y > 0)
50     monster_y -= 2;
51   if(keyIsDown(DOWN_ARROW) && monster_y < height-150)
52     monster_y += 2;
53 }
54
55 function checkForChomp() {
56   var d = dist(cookie_x, cookie_y, monster_x, monster_y);
57   if (d < 100) {
58     points += 1;
59     cookie_x = 725;
60     cookie_y = random(350);
61   }
62 }
```

Starter Files

OK, now that you have idea of what the starter code does, you can now grab the starter code and run it to see if you were correct.

Starter files: [game_starter.zip](#)

Modifying the code (with a pair!)

1. Track the number of cookies that are missed and end the game after 3 misses
 - Decide: how do you want to track misses? With a number or with a string?
 - Decide: do you want to display the number of misses on the screen? How?
 - Decide: how are you going to end the game? Place a big message blocking the screen?
2. Add a piece of pie and a piece of cake that randomly appear and move on the screen to be eaten.
 - Make it so that eating the pie or cake count as a miss.
 - Decide: what do you want the images to look like? Where do you need to save them? I have provided some files that you can use if you choose (and can find them :-)
 - Decide: how fast do you want the pie and cake move?
 - Decide: do you want it to be possible for all three items to appear at the same time? Or do you want them to appear one at a time?
 - Added Fun: how can you prevent the food items from overlapping each other?
3. Make the game be able to be restarted once it ends using a button.
 - Explore the Example: DOM --> InputButton for example

Extensions

...Come up with and add at least 3 of your own additions to the game!

Examples:

- Give Cookie Monster the ability to move in any direction, but not off the screen
- Make the cookies speed up every time you catch one
- Create a leaderboard where you track highest scores (optionally: figure out how to save and load these with a text file)
- Add sounds