

1.

This screenshot shows the 'Challenge: Recipe Card' on Khan Academy. The left sidebar lists the course 'Computer programming' with 'UNIT 1: LESSON 16 Objects' selected. The main area displays a JavaScript code editor with the following code:

```
1 var recipe = {
2   title: "Chicken",
3   servings: 1,
4   ingredients: ["Chicken", "Seasoning"]
5 };
6
7 fill(26, 26, 26);
8 textSize(20);
9 text(recipe.title, 10, 23);
10 text("Serves: " + recipe.servings, 10, 55);
11 text("Ingredients: " + recipe.ingredients, 10, 85);
12 }
```

To the right of the code is a preview of the output, which shows a card titled 'Chicken' with 'Serves: 1' and 'Ingredients: Chicken, Seasoning'. A congratulatory message states 'Congratulations! You earned 1500 points!'. At the bottom, there are 'Undo' and 'Start over' buttons, a progress indicator for 'Step 3/3', and a 'Spin-off' button. A 'Up next: talkthrough' button is also visible.

2.

This screenshot shows the 'Challenge: Picture Painter' on Khan Academy. The left sidebar is the same as in the first screenshot. The main area contains instructions for creating a drawing using a brush and canvas. The instructions state: 'Now you'll actually make this program paint! Add a mouseMoved function that: - changes the paintBrush x and y properties based on the current mouseX and mouseY variables; - calls the painting function, paintCanvas;'. A tip suggests checking the documentation for the mouseMoved function.

The code editor shows the following code:

```
1 var paintBrush = {
2   x: 100,
3   y: 100,
4   img: getImage("avatars/leaf-red")
5 };
6
7 var paintCanvas = function() {
8   imageMode(CENTER);
9   image(paintBrush.img, paintBrush.x, paintBrush.y);
10 };
11
12 mouseMoved = function() {
13   paintBrush.x = mouseX;
14   paintBrush.y = mouseY;
15   paintCanvas();
16 };
17
18
19
```

To the right is a preview of the output, showing a red leaf-like shape drawn on a canvas. A congratulatory message states 'Congratulations! You earned 2100 points!'. At the bottom, there are 'Undo' and 'Start over' buttons, a progress indicator, and a 'Spin-off' button. A 'Up next: talkthrough' button is also visible.

3.

The ACTUAL | x | DVL Homepage | x | DVL Assignment | x | Games T | x | DVL Week 3 Co | x | Challenge: | x | CSC106 JTi | x | My Drive - | x | Inbox (329) | x | Inbox (45) | x | +

khanacademy.org/computing/computer-programming/programming/objects/pc/challenge-movie-reviews

Courses ▾ Search

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**Computer programming**

UNIT 1: LESSON 16  
Objects

- Intro to Objects
- Challenge: Recipe Card
- Modifying Objects
- Challenge: Picture Painter
- Arrays of Objects
- Challenge: Movie Reviews**
- Review: Objects
- Project: Bookshelf

the text commands for each movie. If you don't remember how to iterate through arrays, re-watch the previous talk-through and/or Looping through Arrays.

```

1 var movies = [
2   {
3     title: "Puff the Magic Dragon",
4     review: "Best movie ever!!"
5   },
6   {
7     title: "Home Alone",
8     review: "Good Christmas Movie"
9   }
10 ];
11
12 for(var i = 0; i < movies.length; i++) {
13   fill(84, 140, 209);
14   textAlign(CENTER, CENTER);
15   textSize(20);
16   text(movies[i].title, 200, i * 45 + 107);
17   textSize(15);
18   text(movies[i].review, 200, i * 45 + 130);
19 }
20

```

Puff the Magic Dragon  
Best movie ever!!  
Home Alone  
Good Christmas Movie

Congratulations!  
You earned  
2100 points!

Step 3/3 Spin-off

All changes saved.

Up next: article

4.

The ACTUAL | x | DVL Homepage - C | x | DVL Assignment V | x | Games T - Go | x | DVL Week 3 Cour | x | Challenge: Do | x | CSC106 JTer | x | My Drive - Go | x | DVL Grades - CSC | x | +

khanacademy.org/computing/computer-programming/programming/object-oriented/pc/challenge-double-rainbow

Courses ▾ Search

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**Computer programming**

UNIT 1: LESSON 17  
Object-Oriented Design

- Object Types
- Challenge: Double Rainbow**
- Object Methods
- Challenge: SmileyFace
- Object Inheritance
- Challenge: Flower Grower
- Review: Object-Oriented Design

Double Rainbow!

Now it's easy to make new Rainbows! Now make another rainbow with different properties.

Hint What's this?

```

var  = new Rainbow( , , , );
drawRainbow( );

```

```

11 var drawRainbow = function(rainbow) {
12   noFill();
13   strokeWeight(5);
14   stroke(255, 0, 0);
15   arc(rainbow.x, rainbow.y, rainbow.radius,
16   rainbow.radius, 180, 360);
17   stroke(250, 200, 0);
18   arc(rainbow.x, rainbow.y, rainbow.radius-10,
19   rainbow.radius-10, 180, 360);
20   stroke(240, 255, 102);
21   arc(rainbow.x, rainbow.y, rainbow.radius-20,
22   rainbow.radius-20, 180, 360);
23   stroke(29, 255, 13);
24   arc(rainbow.x, rainbow.y, rainbow.radius-30,
25   rainbow.radius-30, 180, 360);
26   stroke(122, 155, 255);
27   arc(rainbow.x, rainbow.y, rainbow.radius-40,
28   rainbow.radius-40, 180, 360);
29 };
30
31 drawRainbow(smallRainbow);
32 drawRainbow(bigRainbow);
33

```

Congratulations!  
You earned  
2100 points!

Step 3/3 Spin-off

All changes saved.

About Documentation

Up next: talkthrough

5.

Computer programming

UNIT 1: LESSON 17  
Object-Oriented Design

- Object Types
- Challenge: Double Rainbow
- Object Methods
- Challenge: SmileyFace**
- Object Inheritance
- Challenge: Flower Grower
- Review: Object-Oriented Design

Computing > Computer programming > Intro to JS: Drawing & Animation > Object-

Now, make more smileys using your SmileyFace object, at different locations with different messages.

```

11 ellipse(this.centerX+30, this.centerY-30, 20,
12 20);
13 noFill();
14 strokeWeight(3);
15 arc(this.centerX, this.centerY+10, 64, 40, 0,
16 180);
17 };
18 SmileyFace.prototype.speak = function(speech) {
19   text(speech, this.centerX, this.centerY);
20 };
21 var face = new SmileyFace(200, 300);
22 face.draw();
23
24 var drawSmile = new SmileyFace(200, 200);
25
26 face.speak("hello");
27
28 var face2 = new SmileyFace(100, 200);
29 face2.draw();
30 face.speak("hi");

```

Undo Start over Restart Step 5/5 Spin-off

All changes saved.

About Documentation

Create a SmileyFace object with its own methods.

Up next: talkthrough

6.

Computer programming

UNIT 4: LESSON 2  
Scene management

- What are scenes?
- Simple scene changes
- Challenge: Story teller**
- Animated scenes
- Interactive scenes
- Button-controlled scene changes

Computing > Computer programming > Advanced JS: Games & Visualizations > Scene management

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drawScene1();

```

50
51 mouseClicked = function() {
52   if(currentScene === 1) {
53     drawScene2();
54   }
55   else if(currentScene === 2) {
56     drawScene3();
57   }
58   else if(currentScene === 3) {
59     drawScene4();
60   }
61   else if(currentScene === 4) {
62     drawScene5();
63   }
64   else if(currentScene === 5) {
65     drawScene1();
66   }
67 };
68
69
70

```

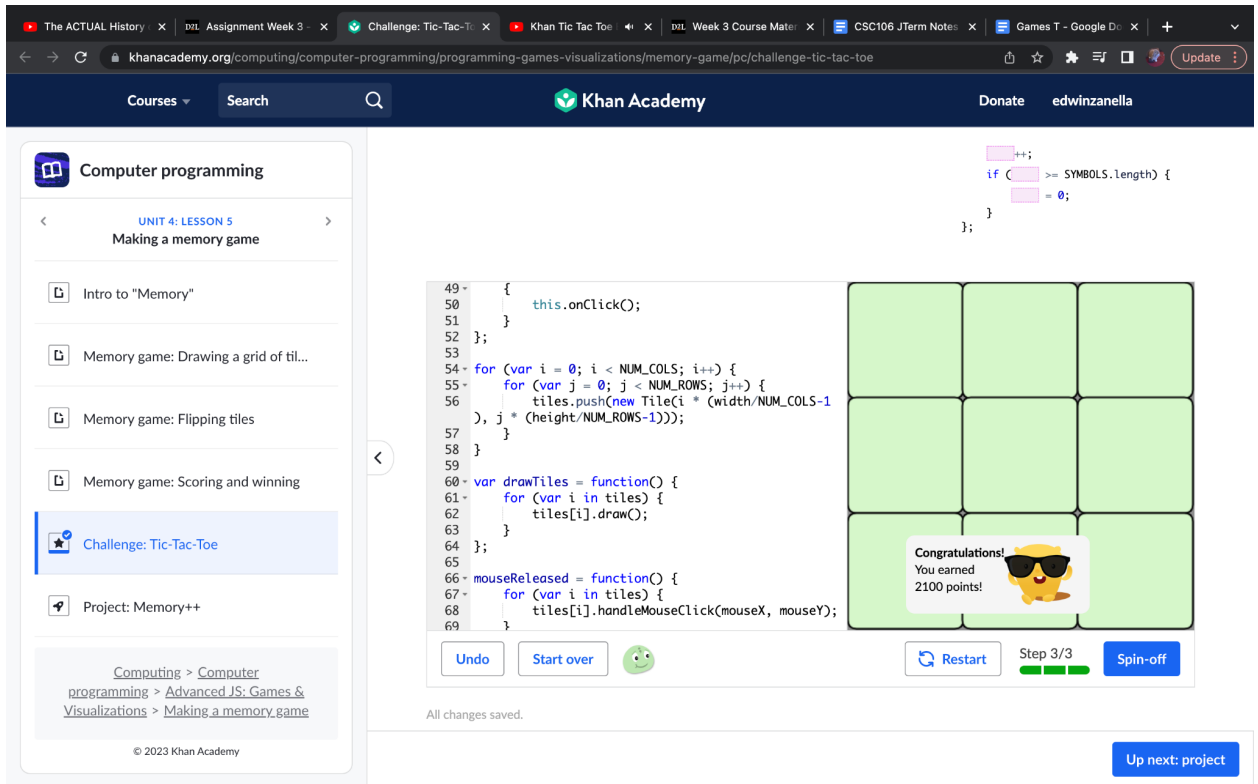
Undo Start over Restart Step 3/3 Spin-off

All changes saved.

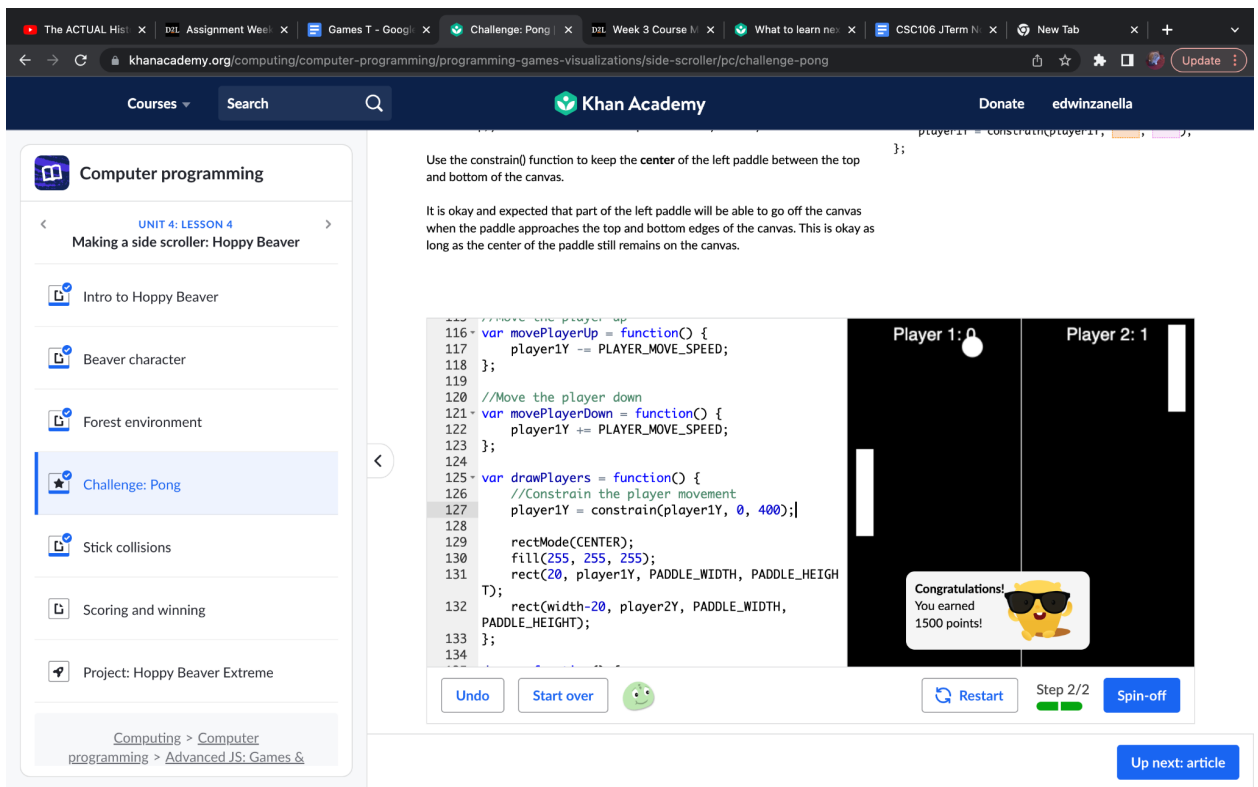
About Documentation

Created by jdsutton.

Up next: article

7. 

The screenshot shows the Khan Academy interface for the 'Tic-Tac-Toe' challenge. The left sidebar lists the course structure, including 'Unit 4: Lesson 5: Making a memory game' and 'Challenge: Tic-Tac-Toe'. The main area displays a code editor with JavaScript code for a Tic-Tac-Toe game, including functions for drawing tiles and handling clicks. To the right of the code is a 3x3 grid representing the game board. A congratulatory message 'Congratulations! You earned 2100 points!' is shown over the grid. The bottom of the interface includes buttons for 'Undo', 'Start over', 'Restart', and 'Spin-off', along with a progress indicator 'Step 3/3'.

8. 

The screenshot shows the Khan Academy interface for the 'Pong' challenge. The left sidebar lists the course structure, including 'Unit 4: Lesson 4: Making a side scroller: Hoppy Beaver' and 'Challenge: Pong'. The main area displays a code editor with JavaScript code for a Pong game, including functions for moving players and drawing them. To the right of the code is a Pong game interface showing two paddles and a ball. A congratulatory message 'Congratulations! You earned 1500 points!' is shown over the game. The bottom of the interface includes buttons for 'Undo', 'Start over', 'Restart', and 'Spin-off', along with a progress indicator 'Step 2/2'.

9. <https://www.khanacademy.org/computer-programming/spin-off-of-hoppy-beaver-with-win-state/a4523622438060032>

10. <https://youtu.be/sp2cDMiV2Fg>
11. <https://docs.google.com/document/d/1hbFmhHixLGEEooj-l4qgJnQ-Pce19zezxy4FucUHMT4/edit>