



## Coding Cups & Balls

### Introduction

In this project children make a Web version of the old<sup>1</sup> *Cups and balls* game.

**Three cups and one ball**, can you find under which cup the ball is hidden?

Moreover, can you use your **coding wizardry** to shuffle the ball under one cup?

### Resources

Files included in this project's **Resources** folder

- *jquery.js*
- *underscore.js*

Software required

- A code editor. We recommend [Sublime Text 2](#)
- A browser with Developer Tools enabled. We recommend [Google Chrome](#)

### Learning Objectives

1. Use a **code editor** to write code, and the **browser** to debug it
2. **DRY** (don't repeat yourself): write shared code in one place only
3. Use **code libraries** instead of "re-inventing the wheel"
4. Use **variables** to store and collect values
5. Use **arguments** to "ask specific questions" to a function
6. Read and explain the **structure of code**
7. Add code **comments** for clarification and attribution
8. **HTML**
  1. Element introduced: **div**
  2. Use multiple **class** names on the same element
9. **CSS**
  1. Class **.shortcut**
  2. **border-radius**
  3. **float**
  4. Offsets: **left**, **top** and **bottom**
  5. **:active** pseudo-class
  6. Understand the difference between property *name* and *value*
10. **JavaScript**
  1. Use the *Console* as a "chat with your browser"
  2. *Data types*: **string**, **number** and **list** (array)
  3. *Functions*: **alert()**
  4. Familiarise with code libraries: [Underscore](#) and [jQuery](#)
  5. Use *Underscore* to pick a random element from an array
  6. Use *jQuery* to select and manipulate existing HTML elements
  7. Use *comments* to annotate and "switch off" code

### Challenges

1. Use **border-radius** to turn blocks into circles
2. Use **border-bottom**, **border-left** and **border-right** to shape blocks into trapeziums
3. Use **float** to control the document flow
4. Use offsets to move elements within the document

5. Use `:active` to control the behaviour of elements when clicked
6. Piece together separate lines of code in the appropriate sequence

## Frequently asked questions

1. *Why is there a `.` before `ball` ? (or any other `class` name)*
2. *How can an empty block have fat borders?*
3. *Why is the ball **under** the cups? It's **above** the cups in my HTML document...*
4. *I copied the X file into here but the Console says it doesn't find it.*
5. *My code makes the Console complain.*

Check for *syntax errors* in their code: unnecessary spaces, closing tags are missing, brackets are missing, quotation marks are missing, etc

6. *I don't understand this jQuery code...*

You may have to explain the jQuery syntax `selector.function(argument,argument,...)`

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1. How old? More than 4000 years old! According to [Wikipedia](#).↩

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