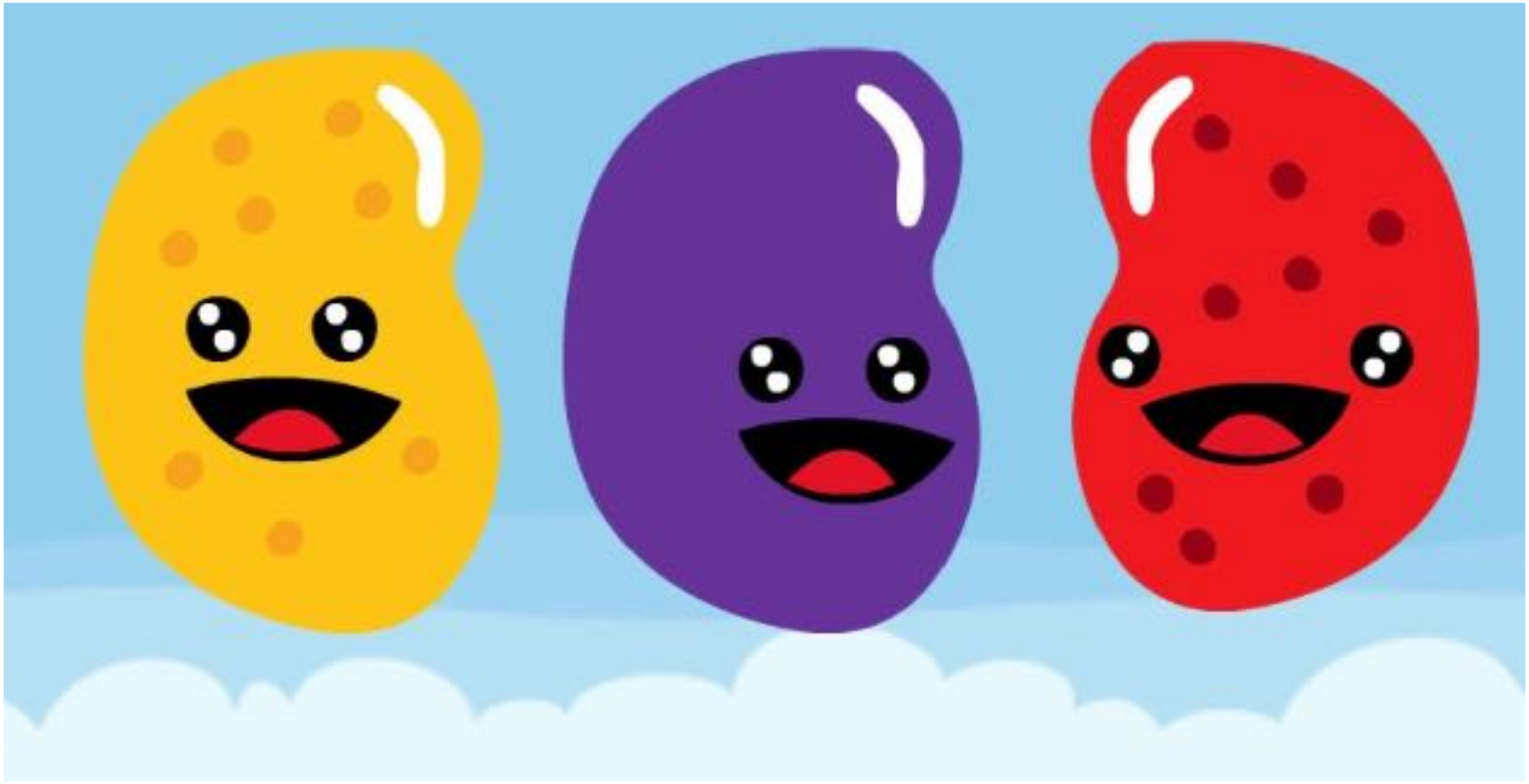
JavaScript Juggernauts

The Coding Bootcamp

This will soon be you…

JavaScript Juggernauts.

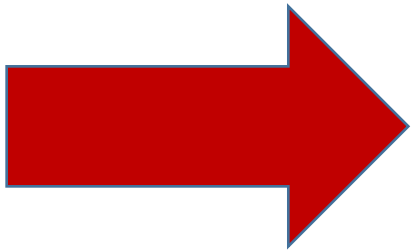
But right now…



Maybe feeling like

JavaScript Jellybeans.

Transformation to Come



HANG IN THERE!

Today's Class

Objectives

In today's class we'll be covering:

- JavaScript Functions
- JavaScript Objects
- Building Simple JavaScript Applications

Functions

Code Dissection: Array Building

- Run the program sent to you via slack.
- Then, with a partner, fill in the missing comments for each line of code.
- Make sure both of you can fully explain what each line means.
- Be prepared to share with the class.

Demo Time

Instructor: Demo

(SuperHeroLogging_NoFunctions.html | 2-SuperHeroLogging)

Mondo Repetitive…

```
// For Loop for Brands
for (var i = 0; i < brands.length; i++) {
  console.log(brands[i]);
}
console.log("---------");

// For Loop for Heroes
for (var i = 0; i < heroes.length; i++) {
  console.log(heroes[i]);
}
console.log("---------");

// For Loop for booksOnMyShelf
for (var i = 0; i < booksOnMyShelf.length; i++) {
  console.log(booksOnMyShelf[i]);
}
console.log("---------");

// For Loop for thingsInFrontOfMe
for (var i = 0; i < thingsInFrontOfMe.length; i++) {
  console.log(thingsInFrontOfMe[i]);
}
console.log("---------");

// For Loop for howIFeel
for (var i = 0; i < howIFeel.length; i++) {
  console.log(howIFeel[i]);
}
console.log("---------");
```

Who wants to maintain this??

Hint: No one.

Demo Time

Instructor: Demo

(SuperHeroLogging_WithFunctions.html | 2-SuperHeroLogging)

Much Better with Functions!

```
// Here we create a "Function" that allows us to "call" (run) the loop for any array we wish.
// We pass in an array as an "argument".
function consoleInside(arr) {

  // We then loop through the selected array.
  for (var i = 0; i < arr.length; i++) {

    // Each time we print the value inside the array.
    console.log(arr[i]);
  }
  console.log('---------');
}
```

Squeaky Clean Code.

Minimal repetition

Code Creation: Function Building

- Working in pairs and using the starter file sent to you via slack–fill in the missing **functions** and **function calls.**
- Note: Try to finish all four functions if you can, but don't be distressed if you only get 1 or 2. The important thing is that you get at least one function fully done.
- **HINT:** Look back to the previous example if you need help.

Objects

Demo Time

Instructor: Demo

(GoodArray.html | 4-GoodArray)

Demo Time

Instructor: Demo

(JoanOfArcArrays.html | 5-JoanOfArcArrays)

Associated Data ==/== Arrays

```
var joanOfArcInfoParts = ["Real Name", "Grew Up Where", "Known For", "Scars", "Symbolism"];


var joanOfArcInfoValues = ["Jehanne la Pucelle.", "Domremy, a village in northeastern France.",
  "Peasant girl, daughter of a farmer, who rose to become Commander of the French army.",
  "Took an arrow to the shoulder and a crossbow bolt to the thigh while trying to liberate Paris.",
  "Stands for French unity and nationalism."];
```

Relating two separate arrays is not fun.

Demo Time

Instructor: Demo

(gandalf-the-grey-objects.html | 30-GandalfTheGreyObjects)

Gandalf – The Object

```
var gandalf = {
  "real name": "Gandalf",
  "age (est)": 11000,
  "race": "Maia",
  "haveRetirementPlan": true,
  "aliases": [
    "Greyhame",
    "Stormcrow",
    "Mithrandir",
    "Gandalf the Grey",
    "Gandalf the White"
  ]
}

// Object properties can be accessed with "bracket notation"
alert("My name is " + gandalf["real name"]);

// Or with "dot notation" if the property has no spaces
if (gandalf.haveRetirementPlan) {

  // Or with a variable that matches the name of the property
  var ageProperty = "age (est)";
  var years = gandalf[ageProperty];
  alert("My 401k has been gathering interest for " + years + " years!");
}
```

Gandalf's "**properties**" and "**values**" are associated in object form, making it easy to recall specific data.

Objects Visualized

```
var gandalf = {
```

```
    "real name" : "Gandalf" ,
    "age (est)" : 11000 ,
    "race" : "Maia"
}
```

This is Gandalf. According to code… Gandalf is an **Object.**

Objects Visualized

```
var gandalf = {
    "real name" : "Gandalf",
    "age (est)" : 11000,
    "race" : "Maia"
}
```

These are Gandalf's **properties** (like descriptors).

Objects Visualized

```
var gandalf = {
    "real name" : "Gandalf" ,
    "age (est)" : 11000 ,
    "race" : "Maia"
}
```

These are the "**values**" of Gandalf's **properties.**

Objects Visualized

```
var gandalf = {
    "real name" : "Gandalf" ,
    "age (est)" : 11000 ,
    "race" : "Maia"
}
```

Thus: gandalf[“race”] = “Maia

Demo Time

Instructor: Repeat Demo

(gandalf-the-grey-objects.html | 30-GandalfTheGreyObjects)

> YOUR TURN!!

Activity: 7-MyFirstObject | **Suggested Time:** 15 min

Code Dissection / Creation: Basic Objects

- With a partner, spend the next few moments studying the code just slacked to you.
- Then, write code below each comment to log the relevant information about the provided car object.
- **Bonus:** If you finish early, create a brand new object of your own. Slack out a snippet of the code to the class when you are done. Be Creative!

Demo Time

Instructor: Demo in Browser

(carGame_Solved.html | 8-CarGame)

Code Creation: Run that Car!

- Using the code from the previous activity as a starting point, create a complete application such that:
  - Users can enter keyboard input (letters).
  - Each of the car's methods are assigned to a key.
  - When the user presses a key it calls the appropriate function.
  - These letters also trigger a global function called reWriteStats() that logs the car’s make, model, color, mileage, and isWorking status to the console.
  - **HINT:** You will need to use the document.onkeyup() function to collect input from the user's keyboard.

Everyone Do: Scope & Callbacks

Demo Time

TA: Demo

(Homework Videos!)

Extra Activity: Trivia Game

- With whatever class time remains, complete the following activity in pairs.
- Starting from a blank HTML file:
  - Create an object with 10 questions. The object should be structured like this:
    q1: [“QUESTION”, “ANSWER”]
    q2: [“QUESTION”, “ANSWER”]
  - Then create code that will ask the user questions, one by one. The user must answer by hitting t (for true) or f (for false).
  - Check the user’s answer against the correct answer, and provide them with an alert telling them if they are right or wrong.

Bonus: Keep track of the user’s score.

Hint: Don’t worry about having DRY code to start with. Just focus on getting working code first.

Questions