

JavaScript Beginner Crash Course

Duration: 1 Hour

1. What is JavaScript?

JavaScript is the language of the web. It makes websites interactive.

You can use it:

- In the browser (React for UI)
- On the server (Node.js + Express)

2. Variables & Data Types

Variables are containers for data.

Use 'let' or 'const' to declare:

```
let name = "John";    // String
const age = 25;       // Number
let isStudent = true; // Boolean
let hobbies = ["read", "code"]; // Array
```

3. Functions (Very Important!)

Functions let you group code that can be reused.

Basic function:

```
function greet(name) {
  return "Hello, " + name;
}
console.log(greet("Alice")); // "Hello, Alice"
```

Arrow functions (shorter syntax):

```
const square = (n) => n * n;
console.log(square(5)); // 25
```

Function with conditions:

You can use 'if', 'else if', and 'else' inside functions to control flow.

Example:

```
function checkNumber(n) {
  if (n > 0) {
    return "Positive";
  } else if (n < 0) {
    return "Negative";
  } else {
    return "Zero";
  }
}
```

```
    return "Zero";  
  }  
}
```

```
console.log(checkNumber(5)); // "Positive"  
console.log(checkNumber(0)); // "Zero"
```

Why functions matter:

- In React, components are functions
- In Node, endpoints are functions
- You build logic using many small functions

4. Objects (Very Important!)

Objects hold data as key-value pairs. They're used **everywhere** in JS.

Create an object:

```
let person = {  
  name: "Alice",  
  age: 30,  
  isStudent: false,  
  greet: function() {  
    return "Hi, I'm " + this.name;  
  }  
};
```

Accessing values:

```
console.log(person.name); // "Alice"  
console.log(person["age"]); // 30
```

Calling a method (function inside object):

```
console.log(person.greet()); // "Hi, I'm Alice"
```

Why objects matter:

- React components use props (which are objects)
- In Node.js, request and response are objects
- JSON (data format) is based on JS objects

5. Arrays and Loops

Arrays store multiple values.

```
let nums = [1, 2, 3];
```

Loop through arrays:

```
nums.forEach(function(n) {  
  console.log(n);  
});
```

```
});
```

Transform arrays:

```
-----  
let doubled = nums.map(n => n * 2);  
console.log(doubled); // [2, 4, 6]
```

----- 6. Optional: Basic DOM

Access and change HTML with JavaScript.

Example:

```
-----  
document.getElementById("btn").addEventListener("click", function() {  
  alert("Button clicked!");  
});
```

----- 7. Wrap-Up & What's Next

You learned:

- Variables and data types
- Functions (very important!)
- Objects (super important!)
- Arrays and loops

Next:

- ```

```
- Try writing your own functions
  - Play with objects and access their properties
  - Explore how React uses functions and objects
  - Learn about events and DOM (for frontend)
  - Move into Node.js (server-side JS)

Keep practicing - this foundation is your superpower!