

# JavaScript BASICS: A Beginner's Guide

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## 1. What is JavaScript?

JavaScript is a powerful programming language that adds interactivity and dynamic behavior to web pages. It runs in the browser and can respond to user actions, update the DOM, and communicate with servers.

## 2. How JavaScript Works

JavaScript code runs in the browser's JavaScript engine. It can manipulate HTML and CSS through the DOM (Document Object Model).

## 3. Linking JavaScript to HTML

Inline:

```
<button onclick="alert('Hello!')">Click Me</button>
```

Internal:

```
<script>  
  alert('Hello World');  
</script>
```

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External (Best Practice):

```
<script src="script.js"></script>
```

## 4. Variables and Data Types

Variables:

```
let name = "Alice";
```

```
const age = 25;
```

```
var city = "Lagos";
```

Data Types: String, Number, Boolean, Array, Object, Null, Undefined.

## 5. Operators

Arithmetic: + - \* / %

Assignment: = += -=

Comparison: == === != !== > < >= <=

Logical: && || !

## 6. Functions

Reusable blocks of code:

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

Arrow function:

```
const add = (a, b) => a + b;
```

## 7. Conditionals

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```
if (age >= 18) {  
  console.log("Adult");  
} else {  
  console.log("Minor");  
}
```

Switch:

```
switch (fruit) {  
  case 'apple':  
    console.log("It's an apple");  
    break;  
  default:  
    console.log("Unknown fruit");  
}
```

## 8. Loops

For Loop:

```
for (let i = 0; i < 5; i++) {  
  console.log(i);  
}
```

While Loop:

```
let i = 0;  
while (i < 5) {  
  console.log(i);  
  i++;  
}
```

ForEach:

```
[1, 2, 3].forEach(num => console.log(num));
```

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## 9. Events

Example:

```
<button id="myBtn">Click</button>
```

```
document.getElementById("myBtn").addEventListener("click", function() {  
    alert("Button Clicked!");  
});
```

## 10. Best Practices

- Use let and const instead of var.
- Keep code DRY (Don't Repeat Yourself).
- Comment your code.
- Use meaningful variable names.
- Test in the browser console.

## 11. Helpful Resources

MDN JavaScript: <https://developer.mozilla.org/en-US/docs/Web/JavaScript>

W3Schools JavaScript: <https://www.w3schools.com/js/>

FreeCodeCamp JavaScript: <https://www.freecodecamp.org/learn/>