

JavaScript

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JavaScript Variables

Variables are containers for storing data values

Example:

```
var x = 5;
```

```
var y = 6;
```

The word **var** declares a variable, it is followed by the name of the variable

- The variable may then be used, variables must be declared before using them

Variable **names** (identifiers) should be descriptive, and in camelCase

- Can contain letters and digits, are case sensitive
- Must begin with a letter, must not be a keyword

```
var numberOfCats = 8;
```

JavaScript Operators

The = sign is an **assignment** operator

```
x = 5;
```

Assigns the value of 5 to the variable x

Other operators include +, -, *, /

- Same as in math

```
x = x + y + 5;
```

Evaluates what the value of `x + y + 5` is, and assigns it to the variable x

If the variable is a string (“something in double quotes”), the + operator will add them together (concatenation)

Example

Create some variables

Assign variables values

Do operations on the variables

Output the values

Variable Types

JavaScript variables can be many data types:

- Number (3, 4.5, 6, etc.)
- String ('hi', 'derp', 'etc')
- Array (will be covered later)
- Object (will be covered later)

A number can be an **integer** (whole number) or a **decimal** (real number).

- All operators work as expected on strings

A string is a sequence of characters in 'single quotes'

- Only the + operator works on strings
- Adding a number to a string will convert the number to a string

Advanced Operators

All operators take 2 inputs: $a + b$

Two operators only need one input:

- $a++$, add one to a
- $a--$, subtract one from a

Special operator: $a \% b$, get the remainder when a is divided by b (**modulus**)

Forms

Forms can be handled via JavaScript by setting `onsubmit` to a JavaScript function

Form elements can be identified by their **name**, **id**, or **class**.

We will be using `document.getElementById('name')`

Example time!

Practice

Make a simple calculator using buttons and JavaScript, it should be able to

- Add 2 numbers
- Subtract a number from another number
- Multiply 2 numbers
- Divide a number by another number