Arrays

If you have a list of items (a list of car names, for example), storing the cars in single variables could look like this:

```
let car1 = "Saab";

let car2 = "Volvo";

let car3 = "BMW";
```

However, what if you want to loop through the cars and find a specific one? And what if you had not 3 cars, but 300?

The solution is an array!

An array can hold many values under a single name, and you can access the values by referring to an index number.

Creating an Array

Using an array literal is the easiest way to create a JavaScript Array.

Syntax:

```
const array_name = [item1, item2, ...];
```

JavaScript Array Methods

Basic Array Methods

Array length

Array toString()

Array at()

Array join()

Array pop()

Array push()

Array shift()

Array unshift()

Array delete()

Array concat()

See Also:

Search Methods

Sort Methods

Iteration Methods

Array Find and Search Methods

Array indexOf()
Array lastIndexOf()
Array includes()

Array find()
Array findIndex()
Array findLast()
Array findLastIndex()

See Also:

Basic Methods
Sort Methods
Iteration Methods

Array Sort Methods

Numeric Sort

Numeric Sort
Random Sort
Math.min()
Math.max()
Home made Min()
Home made Max()

Alpabetic Sort

Array sort()
Array reverse()
Array toSorted()
Array toReversed()
Sorting Objects

See Also:

- Basic Methods
- Search Methods
- Iteration Methods

Array Iteration Methods

Array iteration methods operate on every array item:

- Array forEach
- Array map()
- Array flatMap()
- Array filter()
- Array reduce()
- Array reduceRight()
- Array every()
- Array some()
- Array from()
- Array keys()
- Array entries()
- Array with()
- Array Spread (...)

See Also:

- Basic Array Methods
- Array Search Methods
- Array Sort Methods

The Math Object

Unlike other objects, the Math object has no constructor.

The Math object is static.

All methods and properties can be used without creating a Math object first.

Math Properties (Constants)

The syntax for any Math property is : `Math.property`.

Math.round()

`Math.round(x)` returns the nearest integer

Math.ceil()

`Math.ceil(x)` returns the value of x rounded up to its nearest integer

Math.floor()

`Math.floor(x)` returns the value of x rounded down to its nearest integer

Math.trunc()

`Math.trunc(x)` returns the integer part of x

Math.sign()

`Math.sign(x)` returns if x is negative, null or positive

Math.pow()

`Math.pow(x, y)` returns the value of x to the power of y

Math.sqrt()

`Math.sqrt(x)` returns the square root of x

Math.abs()

`Math.abs(x)` returns the absolute (positive) value of x

Math.sin()

`Math.sin(x)` returns the sine (a value between -1 and 1) of the angle x (given in radians).

If you want to use degrees instead of radians, you have to convert degrees to radians:

Angle in radians = Angle in degrees x PI / 180.

Math.cos()

`Math.cos(x)` returns the cosine (a value between -1 and 1) of the angle x (given in radians).

If you want to use degrees instead of radians, you have to convert degrees to radians:

Angle in radians = Angle in degrees x PI / 180.

Math.min() and Math.max()

`Math.min()` and `Math.max()` can be used to find the lowest or highest value in a list of arguments

The Math.log() Method

`Math.log(x)` returns the natural logarithm of x

JavaScript Math Methods

Method	Description
abs(x)	Returns the absolute value of x
acos(x)	Returns the arccosine of x, in radians
acosh(x)	Returns the hyperbolic arccosine of x
asin(x)	Returns the arcsine of x, in radians
asinh(x)	Returns the hyperbolic arcsine of x
atan(x)	Return the arctangent of x as a numeric value between -PI/2 and PI/2 radia
atan2(y, x)	Returns the arctangent of the quotient of its arguments
atanh(x)	Returns the hyperbolic arctangent of x
cbrt(x)	Returns the cubic root of x

ceil(x)	Returns x, rounded upwards to the nearest integer
cos(x)	Returns the cosine of x (x is in radians)
cosh(x)	Returns the hyperbolic cosine of x
exp(x)	Returns the value of E_x
floor(x)	Returns x, rounded downwards to the nearest integer
log(x)	Returns the natural logarithm (base E) of x
max(x, y, z, ..., n)	Returns the number with the highest value
min(x, y, z, ..., n)	Returns the number with the lowest value
pow(x, y)	Returns the value of x to the power of y
random()	Returns a random number between 0 and 1
round(x)	Rounds x to the nearest integer
sign(x)	Returns if x is negative, null or positive (-1, 0, 1)
sin(x)	Returns the sine of x (x is in radians)
sinh(x)	Returns the hyperbolic sine of x
sqrt(x)	Returns the square root of x
tan(x)	Returns the tangent of an angle

tanh(x)	Returns the hyperbolic tangent of a number
trunc(x)	Returns the integer part of a number (x)