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# JavaScript Guide

The JavaScript Guide shows you how to use JavaScript and gives an overview of the language. If you need exhaustive information about a language feature, have a look at the JavaScript reference.

This Guide is divided into the following chapters.

## Introduction

Overview: Introduction

- About this guide
- About JavaScript
- JavaScript and Java
- ECMAScript
- Tools
- What's next

## Grammar and types

Overview: Grammar and types

- Basic syntax & comments
- Declarations
- Variable scope
- Variable hoisting
- Data structures and types
- Literals

## Control flow and error handling

Overview: Control flow and error handling

- `if...else`
- `switch`
- `try` / `catch` / `throw`
- Error objects

## Loops and iteration

Overview: Loops and iteration

- `for`
- `while`
- `do...while`
- `continue`
- `break`
- `for...in`
- `for...of`

## Functions

Overview: Functions

- Defining functions
- Calling functions
- Function scopes and closures
- Arguments & parameters
- Arrow functions

## Expressions and operators

Overview: Expressions and operators

- Assignment & Comparisons
- Arithmetic operators
- Bitwise & logical operators
- Conditional (ternary) operator

## Numbers and strings

Overview: Numbers and strings

- Numbers
- `Number` object
- `Math` object
- Strings
- `String` object
- Template literals

## Representing dates & times

Overview: Representing dates & times

- `Date` object

## Regular expressions

Overview: Regular expressions

- Creating a regular expression
- Writing a regular expression pattern
  - Assertions
  - Character classes
  - Groups and backreferences
  - Quantifiers

## Indexed collections

Overview: Indexed collections

## Keyed collections

Overview: Keyed collections

- `Map`
- `WeakMap`
- `Set`
- `WeakSet`

## Working with objects

Overview: Working with objects

- Objects and properties
- Creating objects
- Defining methods
- Getter and setter

## Using classes

Overview: Using classes

- Declaring a class
- Various class features
- Extends and inheritance
- Why classes?

## Promises

Overview: Promises

- Guarantees
- Chaining
- Error handling

- Composition
- Timing

## Typed arrays

Overview: Typed arrays

## Iterators and generators

Overview: Iterators and generators

- Iterators
- Iterables
- Generators

## Internationalization

Overview: Internationalization

- Date and time formatting
- Number formatting
- Collation

## JavaScript modules

Overview: JavaScript modules

- Exporting
- Importing
- Default exports
- Renaming features
- Aggregating modules
- Dynamic module loading

## Advanced topics

After you have learned all fundamental features of JavaScript, you can explore some more niche features, or dive deeper into the language's mechanisms and concepts.

- Language overview
- Data structures
- Enumerability and ownership of properties
- Inheritance and the prototype chain
- Equality comparisons and sameness
- Closures
- Meta programming

- Memory management

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