**Some Extra On HTML**

HTML Iframes

[❮ Previous](https://www.w3schools.com/html/html_id.asp)[Next ❯](https://www.w3schools.com/html/html_scripts.asp)

An HTML iframe is used to display a web page within a web page.

HTML Iframe Syntax

The HTML <iframe> tag specifies an inline frame.

An inline frame is used to embed another document within the current HTML document.

Syntax

<iframe src="*url*" title="*description*"></iframe>

**Tip:** It is a good practice to always include a title attribute for the <iframe>. This is used by screen readers to read out what the content of the iframe is.

Iframe - Set Height and Width

Use the height and width attributes to specify the size of the iframe.

The height and width are specified in pixels by default:

Example

<iframe src="demo\_iframe.htm" height="200" width="300" title="Iframe Example"></iframe>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_iframe_height_width)

Or you can add the style attribute and use the CSS height and width properties:

Example

<iframe src="demo\_iframe.htm" style="height:200px;width:300px;" title="Iframe Example"></iframe>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_iframe_height_width_css)

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Iframe - Remove the Border

By default, an iframe has a border around it.

To remove the border, add the style attribute and use the CSS border property:

Example

<iframe src="demo\_iframe.htm" style="border:none;" title="Iframe Example"></iframe>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_iframe_frameborder)

With CSS, you can also change the size, style and color of the iframe's border:

Example

<iframe src="demo\_iframe.htm" style="border:2px solid red;" title="Iframe Example"></iframe>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_iframe_border2)

Iframe - Target for a Link

An iframe can be used as the target frame for a link.

The target attribute of the link must refer to the name attribute of the iframe:

Example

<iframe src="demo\_iframe.htm" name="iframe\_a" title="Iframe Example"></iframe>  
  
<p><a href="https://www.w3schools.com" target="iframe\_a">W3Schools.com</a></p>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_iframe_target)

Chapter Summary

* The HTML <iframe> tag specifies an inline frame
* The src attribute defines the URL of the page to embed
* Always include a title attribute (for screen readers)
* The height and width attributes specifies the size of the iframe
* Use border:none; to remove the border around the iframe

# HTML JavaScript

[❮ Previous](https://www.w3schools.com/html/html_iframe.asp)[Next ❯](https://www.w3schools.com/html/html_filepaths.asp)

JavaScript makes HTML pages more dynamic and interactive.

### Example

## My First JavaScript

Click me to display Date and Time

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_scripts_intro)

## The HTML <script> Tag

The HTML <script> tag is used to define a client-side script (JavaScript).

The <script> element either contains script statements, or it points to an external script file through the src attribute.

Common uses for JavaScript are image manipulation, form validation, and dynamic changes of content.

To select an HTML element, JavaScript most often uses the document.getElementById() method.

This JavaScript example writes "Hello JavaScript!" into an HTML element with id="demo":

### Example

<script>  
document.getElementById("demo").innerHTML = "Hello JavaScript!";  
</script>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_script)

**Tip:** You can learn much more about JavaScript in our [JavaScript Tutorial](https://www.w3schools.com/js/default.asp).

## A Taste of JavaScript

Here are some examples of what JavaScript can do:

### Example

JavaScript can change content:

document.getElementById("demo").innerHTML = "Hello JavaScript!";

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_script_html)

### Example

JavaScript can change styles:

document.getElementById("demo").style.fontSize = "25px";  
document.getElementById("demo").style.color = "red";  
document.getElementById("demo").style.backgroundColor = "yellow";

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_script_styles)

### Example

JavaScript can change attributes:

document.getElementById("image").src = "picture.gif";

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_script_attribute)

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## The HTML <noscript> Tag

The HTML <noscript> tag defines an alternate content to be displayed to users that have disabled scripts in their browser or have a browser that doesn't support scripts:

### Example

<script>  
document.getElementById("demo").innerHTML = "Hello JavaScript!";  
</script>  
<noscript>Sorry, your browser does not support JavaScript!</noscript>

HTML File Paths

[❮ Previous](https://www.w3schools.com/html/html_scripts.asp)[Next ❯](https://www.w3schools.com/html/html_head.asp)

A file path describes the location of a file in a web site's folder structure.

File Path Examples

|  |  |
| --- | --- |
| **Path** | **Description** |
| <img src="picture.jpg"> | The "picture.jpg" file is located in the same folder as the current page |
| <img src="images/picture.jpg"> | The "picture.jpg" file is located in the images folder in the current folder |
| <img src="/images/picture.jpg"> | The "picture.jpg" file is located in the images folder at the root of the current web |
| <img src="../picture.jpg"> | The "picture.jpg" file is located in the folder one level up from the current folder |

HTML File Paths

A file path describes the location of a file in a web site's folder structure.

File paths are used when linking to external files, like:

* Web pages
* Images
* Style sheets
* JavaScripts

Absolute File Paths

An absolute file path is the full URL to a file:

Example

<img src="https://www.w3schools.com/images/picture.jpg" alt="Mountain">

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_files_absoulute)

The <img> tag is explained in the chapter: [HTML Images](https://www.w3schools.com/html/html_images.asp).

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Relative File Paths

A relative file path points to a file relative to the current page.

In the following example, the file path points to a file in the images folder located at the root of the current web:

Example

<img src="/images/picture.jpg" alt="Mountain">

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_files_relative)

In the following example, the file path points to a file in the images folder located in the current folder:

Example

<img src="images/picture.jpg" alt="Mountain">

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_files_relative_1)

In the following example, the file path points to a file in the images folder located in the folder one level up from the current folder:

Example

<img src="../images/picture.jpg" alt="Mountain">

HTML Layout Elements and Techniques

[❮ Previous](https://www.w3schools.com/html/html_head.asp)[Next ❯](https://www.w3schools.com/html/html_responsive.asp)

Websites often display content in multiple columns (like a magazine or a newspaper).

Example

**Cities**

* [London](javascript:void(0))
* [Paris](javascript:void(0))
* [Tokyo](javascript:void(0))

London

London is the capital city of England. It is the most populous city in the United Kingdom, with a metropolitan area of over 13 million inhabitants.

Standing on the River Thames, London has been a major settlement for two millennia, its history going back to its founding by the Romans, who named it Londinium.

Footer

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_layout_float)

HTML Layout Elements

HTML has several semantic elements that define the different parts of a web page:

|  |  |
| --- | --- |
| HTML5 Semantic Elements | * <header> - Defines a header for a document or a section * <nav> - Defines a set of navigation links * <section> - Defines a section in a document * <article> - Defines an independent, self-contained content * <aside> - Defines content aside from the content (like a sidebar) * <footer> - Defines a footer for a document or a section * <details> - Defines additional details that the user can open and close on demand * <summary> - Defines a heading for the <details> element   You can read more about semantic elements in our [HTML Semantics](https://www.w3schools.com/html/html5_semantic_elements.asp) chapter. |

HTML Layout Techniques

There are four different techniques to create multicolumn layouts. Each technique has its pros and cons:

* CSS framework
* CSS float property
* CSS flexbox
* CSS grid

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CSS Frameworks

If you want to create your layout fast, you can use a CSS framework, like [W3.CSS](https://www.w3schools.com/w3css/default.asp) or [Bootstrap](https://www.w3schools.com/bootstrap/default.asp).

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*\* no credit card required*

CSS Float Layout

It is common to do entire web layouts using the CSS float property. Float is easy to learn - you just need to remember how the float and clear properties work. **Disadvantages:** Floating elements are tied to the document flow, which may harm the flexibility. Learn more about float in our [CSS Float and Clear](https://www.w3schools.com/css/css_float.asp) chapter.

Example

**Cities**

* [London](javascript:void(0))
* [Paris](javascript:void(0))
* [Tokyo](javascript:void(0))

London

London is the capital city of England. It is the most populous city in the United Kingdom, with a metropolitan area of over 13 million inhabitants.

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Footer

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_layout_float)

CSS Flexbox Layout

Use of flexbox ensures that elements behave predictably when the page layout must accommodate different screen sizes and different display devices.

Learn more about flexbox in our [CSS Flexbox](https://www.w3schools.com/css/css3_flexbox.asp) chapter.

Example

**Cities**

* [London](https://www.w3schools.com/html/html_layout.asp)
* [Paris](https://www.w3schools.com/html/html_layout.asp)
* [Tokyo](https://www.w3schools.com/html/html_layout.asp)

London

London is the capital city of England. It is the most populous city in the United Kingdom, with a metropolitan area of over 13 million inhabitants.

Standing on the River Thames, London has been a major settlement for two millennia, its history going back to its founding by the Romans, who named it Londinium.

Footer

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_layout_flexbox)

CSS Grid Layout

The CSS Grid Layout Module offers a grid-based layout system, with rows and columns, making it easier to design web pages without having to use floats and positioning.

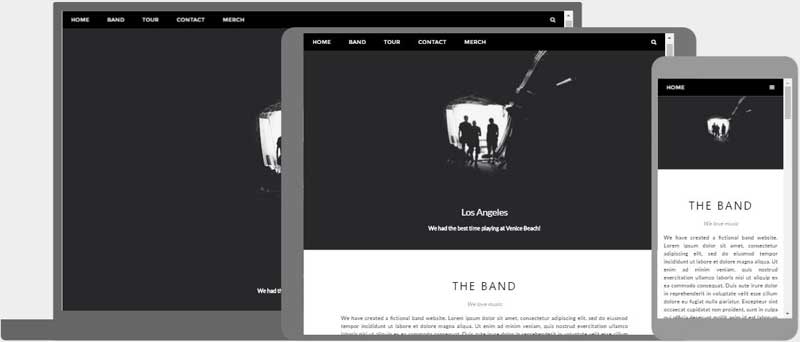
Learn more about CSS grids in our [CSS Grid Intro](https://www.w3schools.com/css/css_grid.asp) chapter.

# TML Responsive Web Design

[❮ Previous](https://www.w3schools.com/html/html_layout.asp)[Next ❯](https://www.w3schools.com/html/html_computercode_elements.asp)

Responsive web design is about creating web pages that look good on all devices!

A responsive web design will automatically adjust for different screen sizes and viewports.



## What is Responsive Web Design?

Responsive Web Design is about using HTML and CSS to automatically resize, hide, shrink, or enlarge, a website, to make it look good on all devices (desktops, tablets, and phones):

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_responsive_page)

## Setting The Viewport

To create a responsive website, add the following <meta> tag to all your web pages:

### Example

<meta name="viewport" content="width=device-width, initial-scale=1.0">

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_responsive_viewport)

This will set the viewport of your page, which will give the browser instructions on how to control the page's dimensions and scaling.

Here is an example of a web page without the viewport meta tag, and the same web page with the viewport meta tag:

Without the viewport meta tag:  
[](https://www.w3schools.com/html/example_withoutviewport.htm)

With the viewport meta tag:  
[](https://www.w3schools.com/html/example_withviewport.htm)

**Tip:** If you are browsing this page on a phone or a tablet, you can click on the two links above to see the difference.

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## Responsive Images

Responsive images are images that scale nicely to fit any browser size.

### Using the width Property

If the CSS width property is set to 100%, the image will be responsive and scale up and down:



### Example

<img src="img\_girl.jpg" **style="width:100%;"**>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_responsive_image)

Notice that in the example above, the image can be scaled up to be larger than its original size. A better solution, in many cases, will be to use the max-width property instead.

### Using the max-width Property

If the max-width property is set to 100%, the image will scale down if it has to, but never scale up to be larger than its original size:



### Example

<img src="img\_girl.jpg" style="**max-width:100%;**height:auto;">

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_responsive_image_maxwidth)

### Show Different Images Depending on Browser Width

The HTML <picture> element allows you to define different images for different browser window sizes.

Resize the browser window to see how the image below change depending on the width:



### Example

<picture>  
  <source srcset="img\_smallflower.jpg" media="(max-width: 600px)">  
  <source srcset="img\_flowers.jpg" media="(max-width: 1500px)">  
  <source srcset="flowers.jpg">  
  <img src="img\_smallflower.jpg" alt="Flowers">  
</picture>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_responsive_picture)

## Responsive Text Size

The text size can be set with a "vw" unit, which means the "viewport width".

That way the text size will follow the size of the browser window:

# Hello World

Resize the browser window to see how the text size scales.

### Example

<h1 style="**font-size:10vw**">Hello World</h1>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_responsive_text)

Viewport is the browser window size. 1vw = 1% of viewport width. If the viewport is 50cm wide, 1vw is 0.5cm.

## Media Queries

In addition to resize text and images, it is also common to use media queries in responsive web pages.

With media queries you can define completely different styles for different browser sizes.

Example: resize the browser window to see that the three div elements below will display horizontally on large screens and stacked vertically on small screens:

Left Menu

Main Content

Right Content

### Example

<style>  
.left, .right {  
  float: left;  
  width: 20%; /\* The width is 20%, by default \*/  
}  
  
.main {  
  float: left;  
  width: 60%; /\* The width is 60%, by default \*/  
}  
  
/\* Use a media query to add a breakpoint at 800px: \*/  
@media screen and (max-width: 800px) {  
  .left, .main, .right {  
    width: 100%; /\* The width is 100%, when the viewport is 800px or smaller \*/  
  }  
}  
</style>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_responsive_media_query)

**Tip:** To learn more about Media Queries and Responsive Web Design, read our [RWD Tutorial](https://www.w3schools.com/css/css_rwd_intro.asp).

## Responsive Web Page - Full Example

A responsive web page should look good on large desktop screens and on small mobile phones.

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_responsive_media_query3)

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\* no credit card required

## Responsive Web Design - Frameworks

All popular CSS Frameworks offer responsive design.

They are free, and easy to use.

## W3.CSS

W3.CSS is a modern CSS framework with support for desktop, tablet, and mobile design by default.

W3.CSS is smaller and faster than similar CSS frameworks.

W3.CSS is designed to be a high quality alternative to Bootstrap.

W3.CSS is designed to be independent of jQuery or any other JavaScript library.

# W3.CSS Demo

Resize the page to see the responsiveness!

## London

London is the capital city of England.

It is the most populous city in the United Kingdom, with a metropolitan area of over 13 million inhabitants.

## Paris

Paris is the capital of France.

The Paris area is one of the largest population centers in Europe, with more than 12 million inhabitants.

## Tokyo

Tokyo is the capital of Japan.

It is the center of the Greater Tokyo Area, and the most populous metropolitan area in the world.

### Example

<!DOCTYPE html>  
<html>  
<meta name="viewport" content="width=device-width, initial-scale=1">  
<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">  
<body>  
  
<div class="w3-container w3-green">  
  <h1>W3Schools Demo</h1>  
  <p>Resize this responsive page!</p>  
</div>  
  
<div class="w3-row-padding">  
  <div class="w3-third">  
    <h2>London</h2>  
    <p>London is the capital city of England.</p>  
    <p>It is the most populous city in the United Kingdom,  
    with a metropolitan area of over 13 million inhabitants.</p>  
  </div>  
  
  <div class="w3-third">  
    <h2>Paris</h2>  
    <p>Paris is the capital of France.</p>  
    <p>The Paris area is one of the largest population centers in Europe,  
    with more than 12 million inhabitants.</p>  
  </div>  
  
  <div class="w3-third">  
    <h2>Tokyo</h2>  
    <p>Tokyo is the capital of Japan.</p>  
    <p>It is the center of the Greater Tokyo Area,  
    and the most populous metropolitan area in the world.</p>  
  </div>  
</div>  
  
</body>  
</html>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_responsive_w3css)

To learn more about W3.CSS, read our [W3.CSS Tutorial](https://www.w3schools.com/w3css/default.asp).

## Bootstrap

Another popular CSS framework is Bootstrap. Bootstrap uses HTML, CSS and jQuery to make responsive web pages.

### Example

<!DOCTYPE html>  
<html lang="en">  
<head>  
<title>Bootstrap Example</title>  
<meta charset="utf-8">  
<meta name="viewport" content="width=device-width, initial-scale=1">  
<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">  
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>  
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>  
</head>  
<body>  
  
<div class="container">  
  <div class="jumbotron">  
    <h1>My First Bootstrap Page</h1>  
  </div>  
  <div class="row">  
    <div class="col-sm-4">  
      ...  
    </div>  
    <div class="col-sm-4">  
      ...  
    </div>  
    <div class="col-sm-4">  
    ...  
    </div>  
  </div>  
</div>  
  
</body>  
</html>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_responsive_bootstrap)

HTML Computer Code Elements

[❮ Previous](https://www.w3schools.com/html/html_responsive.asp)[Next ❯](https://www.w3schools.com/html/html5_semantic_elements.asp)

HTML contains several elements for defining user input and computer code.

Example

<code>  
x = 5;  
y = 6;  
z = x + y;  
</code>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_formatting_intro3)

HTML <kbd> For Keyboard Input

The HTML <kbd> element is used to define keyboard input. The content inside is displayed in the browser's default monospace font.

Example

Define some text as keyboard input in a document:

<p>Save the document by pressing <kbd>Ctrl + S</kbd></p>

Result:

Save the document by pressing Ctrl + S

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_formatting_kbd)

HTML <samp> For Program Output

The HTML <samp> element is used to define sample output from a computer program. The content inside is displayed in the browser's default monospace font.

Example

Define some text as sample output from a computer program in a document:

<p>Message from my computer:</p>  
<p><samp>File not found.<br>Press F1 to continue</samp></p>

Result:

Message from my computer:

File not found.  
Press F1 to continue

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_formatting_samp)

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HTML <code> For Computer Code

The HTML <code> element  is used to define a piece of computer code. The content inside is displayed in the browser's default monospace font.

Example

Define some text as computer code in a document:

<code>  
x = 5;  
y = 6;  
z = x + y;  
</code>

Result:

x = 5; y = 6; z = x + y;

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_formatting_code)

Notice that the <code> element does not preserve extra whitespace and line-breaks.

To fix this, you can put the <code> element inside a <pre> element:

Example

<pre>  
<code>  
x = 5;  
y = 6;  
z = x + y;  
</code>  
</pre>

Result:

x = 5;  
y = 6;  
z = x + y;

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_formatting_codepre)

HTML <var> For Variables

The HTML <var> element  is used to define a variable in programming or in a mathematical expression. The content inside is typically displayed in italic.

Example

Define some text as variables in a document:

<p>The area of a triangle is: 1/2 x <var>b</var> x <var>h</var>, where <var>b</var> is the base, and <var>h</var> is the vertical height.</p>

Result:

The area of a triangle is: 1/2 x *b* x *h*, where *b* is the base, and *h* is the vertical height.

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_formatting_var)

Chapter Summary

* The <kbd> element defines keyboard input
* The <samp> element defines sample output from a computer program
* The <code> element defines a piece of computer code
* The <var> element defines a variable in programming or in a mathematical expression
* The <pre> element defines preformatted text

HTML Exercises

Top of Form

Test Yourself With Exercises

Exercise:

Define the text "var person;" as programming code.

<p>Code example: var person;</p>

Submit Answer »

[Start the Exercise](https://www.w3schools.com/html/exercise.asp?filename=exercise_html_computercode_elements1)

Bottom of Form

HTML Computer Code Elements

|  |  |
| --- | --- |
| **Tag** | **Description** |
| [<code>](https://www.w3schools.com/tags/tag_code.asp) | Defines programming code |
| [<kbd>](https://www.w3schools.com/tags/tag_kbd.asp) | Defines keyboard input |
| [<samp>](https://www.w3schools.com/tags/tag_samp.asp) | Defines computer output |
| [<var>](https://www.w3schools.com/tags/tag_var.asp) | Defines a variable |
| [<pre>](https://www.w3schools.com/tags/tag_pre.asp) | Defines preformatted text |

HTML Style Guide

[❮ Previous](https://www.w3schools.com/html/html5_semantic_elements.asp)[Next ❯](https://www.w3schools.com/html/html_entities.asp)

A consistent, clean, and tidy HTML code makes it easier for others to read and understand your code.

Here are some guidelines and tips for creating good HTML code.

Always Declare Document Type

Always declare the document type as the first line in your document.

The correct document type for HTML is:

<!DOCTYPE html>

Use Lowercase Element Names

HTML allows mixing uppercase and lowercase letters in element names.

However, we recommend using lowercase element names, because:

* Mixing uppercase and lowercase names looks bad
* Developers normally use lowercase names
* Lowercase looks cleaner
* Lowercase is easier to write

Good:

<body>  
<p>This is a paragraph.</p>  
</body>

Bad:

<BODY>  
<P>This is a paragraph.</P>  
</BODY>

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Close All HTML Elements

In HTML, you do not have to close all elements (for example the <p> element).

However, we strongly recommend closing all HTML elements, like this:

Good:

<section>  
  <p>This is a paragraph.</p>  
  <p>This is a paragraph.</p>  
</section>

Bad:

<section>  
  <p>This is a paragraph.  
  <p>This is a paragraph.  
</section>

Use Lowercase Attribute Names

HTML allows mixing uppercase and lowercase letters in attribute names.

However, we recommend using lowercase attribute names, because:

* Mixing uppercase and lowercase names looks bad
* Developers normally use lowercase names
* Lowercase look cleaner
* Lowercase are easier to write

Good:

<a href="https://www.w3schools.com/html/">Visit our HTML tutorial</a>

Bad:

<a HREF="https://www.w3schools.com/html/">Visit our HTML tutorial</a>

Always Quote Attribute Values

HTML allows attribute values without quotes.

However, we recommend quoting attribute values, because:

* Developers normally quote attribute values
* Quoted values are easier to read
* You MUST use quotes if the value contains spaces

Good:

<table class="striped">

Bad:

<table class=striped>

Very bad:

This will not work, because the value contains spaces:

<table class=table striped>

Always Specify alt, width, and height for Images

Always specify the alt attribute for images. This attribute is important if the image for some reason cannot be displayed.

Also, always define the width and height of images. This reduces flickering, because the browser can reserve space for the image before loading.

Good:

<img src="html5.gif" alt="HTML5" style="width:128px;height:128px">

Bad:

<img src="html5.gif">

Spaces and Equal Signs

HTML allows spaces around equal signs. But space-less is easier to read and groups entities better together.

Good:

<link rel="stylesheet" href="styles.css">

Bad:

<link rel = "stylesheet" href = "styles.css">

Avoid Long Code Lines

When using an HTML editor, it is NOT convenient to scroll right and left to read the HTML code.

Try to avoid too long code lines.

Blank Lines and Indentation

Do not add blank lines, spaces, or indentations without a reason.

For readability, add blank lines to separate large or logical code blocks.

For readability, add two spaces of indentation. Do not use the tab key.

Good:

<body>  
  
<h1>Famous Cities</h1>  
  
<h2>Tokyo</h2>  
<p>Tokyo is the capital of Japan, the center of the Greater Tokyo Area, and the most populous metropolitan area in the world.</p>  
  
<h2>London</h2>  
<p>London is the capital city of England. It is the most populous city in the United Kingdom.</p>  
  
<h2>Paris</h2>  
<p>Paris is the capital of France. The Paris area is one of the largest population centers in Europe.</p>  
  
</body>

Bad:

<body>  
<h1>Famous Cities</h1>  
<h2>Tokyo</h2><p>Tokyo is the capital of Japan, the center of the Greater Tokyo Area, and the most populous metropolitan area in the world.</p>  
<h2>London</h2><p>London is the capital city of England. It is the most populous city in the United Kingdom.</p>  
<h2>Paris</h2><p>Paris is the capital of France. The Paris area is one of the largest population centers in Europe.</p>  
</body>

Good Table Example:

<table>  
  <tr>  
    <th>Name</th>  
    <th>Description</th>  
  </tr>  
  <tr>  
    <td>A</td>  
    <td>Description of A</td>  
  </tr>  
  <tr>  
    <td>B</td>  
    <td>Description of B</td>  
  </tr>  
</table>

Good List Example:

<ul>  
  <li>London</li>  
  <li>Paris</li>  
  <li>Tokyo</li>  
</ul>

Never Skip the <title> Element

The <title> element is required in HTML.

The contents of a page title is very important for search engine optimization (SEO)! The page title is used by search engine algorithms to decide the order when listing pages in search results.

The <title> element:

* defines a title in the browser toolbar
* provides a title for the page when it is added to favorites
* displays a title for the page in search-engine results

So, try to make the title as accurate and meaningful as possible:

<title>HTML Style Guide and Coding Conventions</title>

Omitting <html> and <body>?

An HTML page will validate without the <html> and <body> tags:

Example

<!DOCTYPE html>  
<head>  
  <title>Page Title</title>  
</head>  
  
<h1>This is a heading</h1>  
<p>This is a paragraph.</p>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_syntax_nobody)

However, we strongly recommend to always add the <html> and <body> tags!

Omitting <body> can produce errors in older browsers.

Omitting <html> and <body> can also crash DOM and XML software.

Omitting <head>?

The HTML <head> tag can also be omitted.

Browsers will add all elements before <body>, to a default <head> element.

Example

<!DOCTYPE html>  
<html>  
<title>Page Title</title>  
<body>  
  
<h1>This is a heading</h1>  
<p>This is a paragraph.</p>  
  
</body>  
</html>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_syntax_nohead)

However, we recommend using the <head> tag.

Close Empty HTML Elements?

In HTML, it is optional to close empty elements.

Allowed:

<meta charset="utf-8">

Also Allowed:

<meta charset="utf-8" />

If you expect XML/XHTML software to access your page, keep the closing slash (/), because it is required in XML and XHTML.

Add the lang Attribute

You should always include the lang attribute inside the <html> tag, to declare the language of the Web page. This is meant to assist search engines and browsers.

Example

<!DOCTYPE html>  
<html lang="en-us">  
<head>  
  <title>Page Title</title>  
</head>  
<body>  
  
<h1>This is a heading</h1>  
<p>This is a paragraph.</p>  
  
</body>  
</html>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_syntax_body)

Meta Data

To ensure proper interpretation and correct search engine indexing, both the language and the character encoding <meta charset="*charset*"> should be defined as early as possible in an HTML document:

<!DOCTYPE html>  
<html lang="en-us">  
<head>  
  <meta charset="UTF-8">  
  <title>Page Title</title>  
</head>

Setting The Viewport

The viewport is the user's visible area of a web page. It varies with the device - it will be smaller on a mobile phone than on a computer screen.

You should include the following <meta> element in all your web pages:

<meta name="viewport" content="width=device-width, initial-scale=1.0">

This gives the browser instructions on how to control the page's dimensions and scaling.

The width=device-width part sets the width of the page to follow the screen-width of the device (which will vary depending on the device).

The initial-scale=1.0 part sets the initial zoom level when the page is first loaded by the browser.

Here is an example of a web page *without* the viewport meta tag, and the same web page *with* the viewport meta tag:

**Tip:** If you are browsing this page with a phone or a tablet, you can click on the two links below to see the difference.

[[](https://www.w3schools.com/html/example_withoutviewport.htm)  
  
**Without the viewport meta tag**](https://www.w3schools.com/html/example_withoutviewport.htm)

[[](https://www.w3schools.com/html/example_withviewport.htm)  
  
**With the viewport meta tag**](https://www.w3schools.com/html/example_withviewport.htm)

HTML Comments

Short comments should be written on one line, like this:

<!-- This is a comment -->

Comments that spans more than one line, should be written like this:

<!--  
  This is a long comment example. This is a long comment example.  
  This is a long comment example. This is a long comment example.  
-->

Long comments are easier to observe if they are indented with two spaces.

Using Style Sheets

Use simple syntax for linking to style sheets (the type attribute is not necessary):

<link rel="stylesheet" href="styles.css">

Short CSS rules can be written compressed, like this:

p.intro {font-family:Verdana;font-size:16em;}

Long CSS rules should be written over multiple lines:

body {  
  background-color: lightgrey;  
  font-family: "Arial Black", Helvetica, sans-serif;  
  font-size: 16em;  
  color: black;  
}

* Place the opening bracket on the same line as the selector
* Use one space before the opening bracket
* Use two spaces of indentation
* Use semicolon after each property-value pair, including the last
* Only use quotes around values if the value contains spaces
* Place the closing bracket on a new line, without leading spaces

Loading JavaScript in HTML

Use simple syntax for loading external scripts (the type attribute is not necessary):

<script src="myscript.js">

Accessing HTML Elements with JavaScript

Using "untidy" HTML code can result in JavaScript errors.

These two JavaScript statements will produce different results:

Example

getElementById("Demo").innerHTML = "Hello";  
  
getElementById("demo").innerHTML = "Hello";

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_syntax_javascript)

[Visit the JavaScript Style Guide](https://www.w3schools.com/js/js_conventions.asp).

Use Lower Case File Names

Some web servers (Apache, Unix) are case sensitive about file names: "london.jpg" cannot be accessed as "London.jpg".

Other web servers (Microsoft, IIS) are not case sensitive: "london.jpg" can be accessed as "London.jpg".

If you use a mix of uppercase and lowercase, you have to be aware of this.

If you move from a case-insensitive to a case-sensitive server, even small errors will break your web!

To avoid these problems, always use lowercase file names!

File Extensions

HTML files should have a **.html** extension (**.htm** is allowed).

CSS files should have a **.css** extension.

JavaScript files should have a **.js** extension.

Differences Between .htm and .html?

There is no difference between the .htm and .html file extensions!

Both will be treated as HTML by any web browser and web server.

Default Filenames

When a URL does not specify a filename at the end (like "https://www.w3schools.com/"), the server just adds a default filename, such as "index.html", "index.htm", "default.html", or "default.htm".

If your server is configured only with "index.html" as the default filename, your file must be named "index.html", and not "default.html".

However, servers can be configured with more than one default filename; usually you can set up as many default filenames as you want.

Using Emojis in HTML

[❮ Previous](https://www.w3schools.com/html/html_symbols.asp)[Next ❯](https://www.w3schools.com/html/html_charset.asp)

Emojis are characters from the UTF-8 character set: 😄 😍 💗

What are Emojis?

Emojis look like images, or icons, but they are not.

They are letters (characters) from the UTF-8 (Unicode) character set.

UTF-8 covers almost all of the characters and symbols in the world.

The HTML charset Attribute

To display an HTML page correctly, a web browser must know the character set used in the page.

This is specified in the <meta> tag:

<meta charset="UTF-8">

If not specified, UTF-8 is the default character set in HTML.

UTF-8 Characters

Many UTF-8 characters cannot be typed on a keyboard, but they can always be displayed using numbers (called entity numbers):

* A is 65
* B is 66
* C is 67

Example

<!DOCTYPE html>  
<html>  
<head>  
<meta charset="UTF-8">  
</head>  
<body>  
  
<p>I will display A B C</p>  
<p>I will display &#65; &#66; &#67;</p>  
  
</body>  
</html>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_emojis_utf8)

Example Explained

The <meta charset="UTF-8"> element defines the character set.

The characters A, B, and C, are displayed by the numbers 65, 66, and 67.

To let the browser understand that you are displaying a character, you must start the entity number with &# and end it with ; (semicolon).

Emoji Characters

Emojis are also characters from the UTF-8 alphabet:

* 😄 is 128516
* 😍 is 128525
* 💗 is 128151

Example

<!DOCTYPE html>  
<html>  
<head>  
<meta charset="UTF-8">  
</head>  
<body>  
  
<h1>My First Emoji</h1>  
  
<p>&#128512;</p>  
  
</body>  
</html>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_emojis)

Since Emojis are characters, they can be copied, displayed, and sized just like any other character in HTML.

Example

<!DOCTYPE html>  
<html>  
<head>  
<meta charset="UTF-8">  
</head>  
<body>  
  
<h1>Sized Emojis</h1>  
  
<p style="font-size:48px">  
&#128512; &#128516; &#128525; &#128151;  
</p>  
  
</body>  
</html>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_emojis_size)

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Some Emoji Symbols in UTF-8

|  |  |  |
| --- | --- | --- |
| **Emoji** | **Value** | **Try it** |
| 🗻 | &#128507; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_emoji_128507) |
| 🗼 | &#128508; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_emoji_128508) |
| 🗽 | &#128509; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_emoji_128509) |
| 🗾 | &#128510; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_emoji_128510) |
| 🗿 | &#128511; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_emoji_128511) |
| 😀 | &#128512; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_emoji_128512) |
| 😁 | &#128513; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_emoji_128513) |
| 😂 | &#128514; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_emoji_128514) |
| 😃 | &#128515; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_emoji_128515) |
| 😄 | &#128516; | [Try it »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_emoji_128516) |
| 😅 | &#128517; |  |

# HTML Canvas Graphics

[❮ Previous](https://www.w3schools.com/html/html_form_attributes_form.asp)[Next ❯](https://www.w3schools.com/html/html5_svg.asp)

The HTML <canvas> element is used to draw graphics on a web page.

The graphic to the left is created with <canvas>. It shows four elements: a red rectangle, a gradient rectangle, a multicolor rectangle, and a multicolor text.

## What is HTML Canvas?

The HTML <canvas> element is used to draw graphics, on the fly, via JavaScript.

The <canvas> element is only a container for graphics. You must use JavaScript to actually draw the graphics.

Canvas has several methods for drawing paths, boxes, circles, text, and adding images.

## Browser Support

The numbers in the table specify the first browser version that fully supports the <canvas> element.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Element |  |  |  |  |  |
| <canvas> | 4.0 | 9.0 | 2.0 | 3.1 | 9.0 |

## Canvas Examples

A canvas is a rectangular area on an HTML page. By default, a canvas has no border and no content.

The markup looks like this:

<canvas id="myCanvas" width="200" height="100"></canvas>

**Note:** Always specify an id attribute (to be referred to in a script), and a width and height attribute to define the size of the canvas. To add a border, use the style attribute.

Here is an example of a basic, empty canvas:

### Example

<canvas id="myCanvas" width="200" height="100" style="border:1px solid #000000;">  
</canvas>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml5_canvas_empty)

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## Add a JavaScript

After creating the rectangular canvas area, you must add a JavaScript to do the drawing.

Here are some examples:

### Draw a Line

### Example

<script>  
var c = document.getElementById("myCanvas");  
var ctx = c.getContext("2d");  
ctx.moveTo(0, 0);  
ctx.lineTo(200, 100);  
ctx.stroke();  
</script>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml5_canvas_tut_path)

### Draw a Circle

### Example

<script>  
var c = document.getElementById("myCanvas");  
var ctx = c.getContext("2d");  
ctx.beginPath();  
ctx.arc(95, 50, 40, 0, 2 \* Math.PI);  
ctx.stroke();  
</script>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml5_canvas_tut_path2)

### Draw a Text

### Example

<script>  
var c = document.getElementById("myCanvas");  
var ctx = c.getContext("2d");  
ctx.font = "30px Arial";  
ctx.fillText("Hello World", 10, 50);  
</script>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml5_canvas_tut_text)

### Stroke Text

### Example

<script>  
var c = document.getElementById("myCanvas");  
var ctx = c.getContext("2d");  
ctx.font = "30px Arial";  
ctx.strokeText("Hello World", 10, 50);  
</script>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml5_canvas_tut_text2)

### Draw Linear Gradient

### Example

<script>  
var c = document.getElementById("myCanvas");  
var ctx = c.getContext("2d");  
  
// Create gradient  
var grd = ctx.createLinearGradient(0, 0, 200, 0);  
grd.addColorStop(0, "red");  
grd.addColorStop(1, "white");  
  
// Fill with gradient  
ctx.fillStyle = grd;  
ctx.fillRect(10, 10, 150, 80);  
</script>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml5_canvas_tut_grad)

### Draw Circular Gradient

### Example

<script>  
var c = document.getElementById("myCanvas");  
var ctx = c.getContext("2d");  
  
// Create gradient  
var grd = ctx.createRadialGradient(75, 50, 5, 90, 60, 100);  
grd.addColorStop(0, "red");  
grd.addColorStop(1, "white");  
  
// Fill with gradient  
ctx.fillStyle = grd;  
ctx.fillRect(10, 10, 150, 80);  
</script>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml5_canvas_tut_grad2)

### Draw Image

<script>  
var c = document.getElementById("myCanvas");  
var ctx = c.getContext("2d");  
var img = document.getElementById("scream");  
ctx.drawImage(img, 10, 10);  
</script>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml5_canvas_tut_img)

# HTML Multimedia

[❮ Previous](https://www.w3schools.com/html/html5_svg.asp)[Next ❯](https://www.w3schools.com/html/html5_video.asp)

Multimedia on the web is sound, music, videos, movies, and animations.

## What is Multimedia?

Multimedia comes in many different formats. It can be almost anything you can hear or see, like images, music, sound, videos, records, films, animations, and more.

Web pages often contain multimedia elements of different types and formats.

## Browser Support

The first web browsers had support for text only, limited to a single font in a single color.

Later came browsers with support for colors, fonts, images, and multimedia!

## Multimedia Formats

Multimedia elements (like audio or video) are stored in media files.

The most common way to discover the type of a file, is to look at the file extension.

Multimedia files have formats and different extensions like: .wav, .mp3, .mp4, .mpg, .wmv, and .avi.

## Common Video Formats

|  |  |
| --- | --- |
| Videoformats | There are many video formats out there.  The MP4, WebM, and Ogg formats are supported by HTML.  The MP4 format is recommended by YouTube. |

|  |  |  |
| --- | --- | --- |
| **Format** | **File** | **Description** |
| MPEG | .mpg .mpeg | MPEG. Developed by the Moving Pictures Expert Group. The first popular video format on the web. Not supported anymore in HTML. |
| AVI | .avi | AVI (Audio Video Interleave). Developed by Microsoft. Commonly used in video cameras and TV hardware. Plays well on Windows computers, but not in web browsers. |
| WMV | .wmv | WMV (Windows Media Video). Developed by Microsoft. Commonly used in video cameras and TV hardware. Plays well on Windows computers, but not in web browsers. |
| QuickTime | .mov | QuickTime. Developed by Apple. Commonly used in video cameras and TV hardware. Plays well on Apple computers, but not in web browsers. |
| RealVideo | .rm .ram | RealVideo. Developed by Real Media to allow video streaming with low bandwidths. Does not play in web browsers. |
| Flash | .swf .flv | Flash. Developed by Macromedia. Often requires an extra component (plug-in) to play in web browsers. |
| Ogg | .ogg | Theora Ogg. Developed by the Xiph.Org Foundation. Supported by HTML. |
| WebM | .webm | WebM. Developed by Mozilla, Opera, Adobe, and Google. Supported by HTML. |
| MPEG-4 or MP4 | .mp4 | MP4. Developed by the Moving Pictures Expert Group. Commonly used in video cameras and TV hardware. Supported by all browsers and  recommended by YouTube. |

**Note:** Only MP4, WebM, and Ogg video are supported by the HTML standard.

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## Common Audio Formats

MP3 is the best format for compressed recorded music. The term MP3 has become synonymous with digital music.

If your website is about recorded music, MP3 is the choice.

|  |  |  |
| --- | --- | --- |
| **Format** | **File** | **Description** |
| MIDI | .mid .midi | MIDI (Musical Instrument Digital Interface). Main format for all electronic music devices like synthesizers and PC sound cards. MIDI files do not contain sound, but digital notes that can be played by electronics. Plays well on all computers and music hardware, but not in web browsers. |
| RealAudio | .rm .ram | RealAudio. Developed by Real Media to allow streaming of audio with low bandwidths. Does not play in web browsers. |
| WMA | .wma | WMA (Windows Media Audio). Developed by Microsoft. Plays well on Windows computers, but not in web browsers. |
| AAC | .aac | AAC (Advanced Audio Coding). Developed by Apple as the default format for iTunes. Plays well on Apple computers, but not in web browsers. |
| WAV | .wav | WAV. Developed by IBM and Microsoft. Plays well on Windows, Macintosh, and Linux operating systems. Supported by HTML. |
| Ogg | .ogg | Ogg. Developed by the Xiph.Org Foundation. Supported by HTML. |
| MP3 | .mp3 | MP3 files are actually the sound part of MPEG files. MP3 is the most popular format for music players. Combines good compression (small files) with high quality. Supported by all browsers. |
| MP4 | .mp4 | MP4 is a video format, but can also be used for audio. Supported by all browsers. |

# HTML Video

[❮ Previous](https://www.w3schools.com/html/html_media.asp)[Next ❯](https://www.w3schools.com/html/html5_audio.asp)

The HTML <video> element is used to show a video on a web page.

### Example

Courtesy of [Big Buck Bunny](https://www.bigbuckbunny.org/):

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml5_video)

## The HTML <video> Element

To show a video in HTML, use the <video> element:

### Example

<video width="320" height="240" controls>  
  <source src="movie.mp4" type="video/mp4">  
  <source src="movie.ogg" type="video/ogg">  
Your browser does not support the video tag.  
</video>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml5_video_all)

## How it Works

The controls attribute adds video controls, like play, pause, and volume.

It is a good idea to always include width and height attributes. If height and width are not set, the page might flicker while the video loads.

The <source> element allows you to specify alternative video files which the browser may choose from. The browser will use the first recognized format.

The text between the <video> and </video> tags will only be displayed in browsers that do not support the <video> element.

## HTML <video> Autoplay

To start a video automatically, use the autoplay attribute:

### Example

<video width="320" height="240" autoplay>  
  <source src="movie.mp4" type="video/mp4">  
  <source src="movie.ogg" type="video/ogg">  
Your browser does not support the video tag.  
</video>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml5_video_autoplay)

**Note:** Chromium browsers do not allow autoplay in most cases. However, muted autoplay is always allowed.

Add muted after autoplay to let your video start playing automatically (but muted):

### Example

<video width="320" height="240" autoplay muted>  
  <source src="movie.mp4" type="video/mp4">  
  <source src="movie.ogg" type="video/ogg">  
Your browser does not support the video tag.  
</video>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml5_video_autoplay_mute)

## Browser Support

The numbers in the table specify the first browser version that fully supports the <video> element.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Element |  |  |  |  |  |
| <video> | 4.0 | 9.0 | 3.5 | 4.0 | 10.5 |

## HTML Video Formats

There are three supported video formats: MP4, WebM, and Ogg. The browser support for the different formats is:

|  |  |  |  |
| --- | --- | --- | --- |
| **Browser** | **MP4** | **WebM** | **Ogg** |
| Edge | YES | YES | YES |
| Chrome | YES | YES | YES |
| Firefox | YES | YES | YES |
| Safari | YES | YES | NO |
| Opera | YES | YES | YES |

## HTML Video - Media Types

|  |  |
| --- | --- |
| **File Format** | **Media Type** |
| MP4 | video/mp4 |
| WebM | video/webm |
| Ogg | video/ogg |

## HTML Video - Methods, Properties, and Events

The HTML DOM defines methods, properties, and events for the <video> element.

This allows you to load, play, and pause videos, as well as setting duration and volume.

There are also DOM events that can notify you when a video begins to play, is paused, etc.

### Example: Using JavaScript

Play/Pause Big Small Normal

Video courtesy of [Big Buck Bunny](https://www.bigbuckbunny.org/).

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml5_video_js_prop)

For a full DOM reference, go to our [HTML Audio/Video DOM Reference](https://www.w3schools.com/tags/ref_av_dom.asp).

## HTML Video Tags

|  |  |
| --- | --- |
| **Tag** | **Description** |
| [<video>](https://www.w3schools.com/tags/tag_video.asp) | Defines a video or movie |
| [<source>](https://www.w3schools.com/tags/tag_source.asp) | Defines multiple media resources for media elements, such as <video> and <audio> |
| [<track>](https://www.w3schools.com/tags/tag_track.asp) | Defines text tracks in media players |

# HTML Audio

[❮ Previous](https://www.w3schools.com/html/html5_video.asp)[Next ❯](https://www.w3schools.com/html/html_object.asp)

The HTML <audio> element is used to play an audio file on a web page.

## The HTML <audio> Element

To play an audio file in HTML, use the <audio> element:

### Example

<audio controls>  
  <source src="horse.ogg" type="audio/ogg">  
  <source src="horse.mp3" type="audio/mpeg">  
Your browser does not support the audio element.  
</audio>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml5_audio_all)

## HTML Audio - How It Works

The controls attribute adds audio controls, like play, pause, and volume.

The <source> element allows you to specify alternative audio files which the browser may choose from. The browser will use the first recognized format.

The text between the <audio> and </audio> tags will only be displayed in browsers that do not support the <audio> element.

## HTML <audio> Autoplay

To start an audio file automatically, use the autoplay attribute:

### Example

<audio controls autoplay>  
  <source src="horse.ogg" type="audio/ogg">  
  <source src="horse.mp3" type="audio/mpeg">  
Your browser does not support the audio element.  
</audio>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml5_audio_autoplay)

**Note:** Chromium browsers do not allow autoplay in most cases. However, muted autoplay is always allowed.

Add muted after autoplay to let your audio file start playing automatically (but muted):

### Example

<audio controls autoplay muted>  
  <source src="horse.ogg" type="audio/ogg">  
  <source src="horse.mp3" type="audio/mpeg">  
Your browser does not support the audio element.  
</audio>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml5_audio_autoplay_mute)

## Browser Support

The numbers in the table specify the first browser version that fully supports the <audio> element.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Element |  |  |  |  |  |
| <audio> | 4.0 | 9.0 | 3.5 | 4.0 | 10.5 |

ADVERTISEMENT

## HTML Audio Formats

There are three supported audio formats: MP3, WAV, and OGG. The browser support for the different formats is:

|  |  |  |  |
| --- | --- | --- | --- |
| **Browser** | **MP3** | **WAV** | **OGG** |
| Edge/IE | YES | YES\* | YES\* |
| Chrome | YES | YES | YES |
| Firefox | YES | YES | YES |
| Safari | YES | YES | NO |
| Opera | YES | YES | YES |

\*From Edge 79

## HTML Audio - Media Types

|  |  |
| --- | --- |
| **File Format** | **Media Type** |
| MP3 | audio/mpeg |
| OGG | audio/ogg |
| WAV | audio/wav |

## HTML Audio - Methods, Properties, and Events

The HTML DOM defines methods, properties, and events for the <audio> element.

This allows you to load, play, and pause audios, as well as set duration and volume.

There are also DOM events that can notify you when an audio begins to play, is paused, etc.

For a full DOM reference, go to our [HTML Audio/Video DOM Reference](https://www.w3schools.com/tags/ref_av_dom.asp).

## HTML Audio Tags

|  |  |
| --- | --- |
| **Tag** | **Description** |
| [<audio>](https://www.w3schools.com/tags/tag_audio.asp) | Defines sound content |
| [<source>](https://www.w3schools.com/tags/tag_source.asp) | Defines multiple media resources for media elements, such as <video> and <audio> |