CSS Selector

In CSS, selectors are patterns used to select the element(s) you want to style.

Use our [CSS Selector Tester](https://www.w3schools.com/cssref/trysel.asp) to demonstrate the different selectors.

|  |  |  |
| --- | --- | --- |
| **Selector** | **Example** | **Example description** |
| [.*class*](https://www.w3schools.com/cssref/sel_class.asp) | .intro | Selects all elements with class="intro" |
| *.class1.class2* | .name1.name2 | Selects all elements with both *name1* and *name2* set within its class attribute |
| *.class1 .class2* | .name1 .name2 | Selects all elements with *name2* that is a descendant of an element with *name1* |
| [#*id*](https://www.w3schools.com/cssref/sel_id.asp) | #firstname | Selects the element with id="firstname" |
| [\*](https://www.w3schools.com/cssref/sel_all.asp) | \* | Selects all elements |
| [*element*](https://www.w3schools.com/cssref/sel_element.asp) | p | Selects all <p> elements |
| [*element.class*](https://www.w3schools.com/cssref/sel_element_class.asp) | p.intro | Selects all <p> elements with class="intro" |
| [*element,element*](https://www.w3schools.com/cssref/sel_element_comma.asp) | div, p | Selects all <div> elements and all <p> elements |
| [*element* *element*](https://www.w3schools.com/cssref/sel_element_element.asp) | div p | Selects all <p> elements inside <div> elements |
| [*element*>*element*](https://www.w3schools.com/cssref/sel_element_gt.asp) | div > p | Selects all <p> elements where the parent is a <div> element |
| [*element*+*element*](https://www.w3schools.com/cssref/sel_element_pluss.asp) | div + p | Selects the first <p> element that is placed immediately after <div> elements |
| [*element1*~*element2*](https://www.w3schools.com/cssref/sel_gen_sibling.asp) | p ~ ul | Selects every <ul> element that is preceded by a <p> element |
| [[*attribute*]](https://www.w3schools.com/cssref/sel_attribute.asp) | [target] | Selects all elements with a target attribute |
| [[*attribute*=*value*]](https://www.w3schools.com/cssref/sel_attribute_value.asp) | [target=\_blank] | Selects all elements with target="\_blank" |
| [[*attribute*~=*value*]](https://www.w3schools.com/cssref/sel_attribute_value_contains.asp) | [title~=flower] | Selects all elements with a title attribute containing the word "flower" |
| [[*attribute*|=*value*]](https://www.w3schools.com/cssref/sel_attribute_value_lang.asp) | [lang|=en] | Selects all elements with a lang attribute value equal to "en" or starting with "en-" |
| [[*attribute*^=*value*]](https://www.w3schools.com/cssref/sel_attr_begin.asp) | a[href^="https"] | Selects every <a> element whose href attribute value begins with "https" |
| [[*attribute*$=*value*]](https://www.w3schools.com/cssref/sel_attr_end.asp) | a[href$=".pdf"] | Selects every <a> element whose href attribute value ends with ".pdf" |
| [[*attribute*\*=*value*]](https://www.w3schools.com/cssref/sel_attr_contain.asp) | a[href\*="w3schools"] | Selects every <a> element whose href attribute value contains the substring "w3schools" |
| [:active](https://www.w3schools.com/cssref/sel_active.asp) | a:active | Selects the active link |
| [::after](https://www.w3schools.com/cssref/sel_after.asp) | p::after | Insert something after the content of each <p> element |
| [::before](https://www.w3schools.com/cssref/sel_before.asp) | p::before | Insert something before the content of each <p> element |
| [:checked](https://www.w3schools.com/cssref/sel_checked.asp) | input:checked | Selects every checked <input> element |
| [:default](https://www.w3schools.com/cssref/sel_default.asp) | input:default | Selects the default <input> element |
| [:disabled](https://www.w3schools.com/cssref/sel_disabled.asp) | input:disabled | Selects every disabled <input> element |
| [:empty](https://www.w3schools.com/cssref/sel_empty.asp) | p:empty | Selects every <p> element that has no children (including text nodes) |
| [:enabled](https://www.w3schools.com/cssref/sel_enabled.asp) | input:enabled | Selects every enabled <input> element |
| [:first-child](https://www.w3schools.com/cssref/sel_firstchild.asp) | p:first-child | Selects every <p> element that is the first child of its parent |
| [::first-letter](https://www.w3schools.com/cssref/sel_firstletter.asp) | p::first-letter | Selects the first letter of every <p> element |
| [::first-line](https://www.w3schools.com/cssref/sel_firstline.asp) | p::first-line | Selects the first line of every <p> element |
| [:first-of-type](https://www.w3schools.com/cssref/sel_first-of-type.asp) | p:first-of-type | Selects every <p> element that is the first <p> element of its parent |
| [:focus](https://www.w3schools.com/cssref/sel_focus.asp) | input:focus | Selects the input element which has focus |
| [:fullscreen](https://www.w3schools.com/cssref/sel_fullscreen.asp) | :fullscreen | Selects the element that is in full-screen mode |
| [:hover](https://www.w3schools.com/cssref/sel_hover.asp) | a:hover | Selects links on mouse over |
| [:in-range](https://www.w3schools.com/cssref/sel_in-range.asp) | input:in-range | Selects input elements with a value within a specified range |
| [:indeterminate](https://www.w3schools.com/cssref/sel_indeterminate.asp) | input:indeterminate | Selects input elements that are in an indeterminate state |
| [:invalid](https://www.w3schools.com/cssref/sel_invalid.asp) | input:invalid | Selects all input elements with an invalid value |
| [:lang(*language*)](https://www.w3schools.com/cssref/sel_lang.asp) | p:lang(it) | Selects every <p> element with a lang attribute equal to "it" (Italian) |
| [:last-child](https://www.w3schools.com/cssref/sel_last-child.asp) | p:last-child | Selects every <p> element that is the last child of its parent |
| [:last-of-type](https://www.w3schools.com/cssref/sel_last-of-type.asp) | p:last-of-type | Selects every <p> element that is the last <p> element of its parent |
| [:link](https://www.w3schools.com/cssref/sel_link.asp) | a:link | Selects all unvisited links |
| [::marker](https://www.w3schools.com/cssref/sel_marker.asp) | ::marker | Selects the markers of list items |
| [:not(*selector*)](https://www.w3schools.com/cssref/sel_not.asp) | :not(p) | Selects every element that is not a <p> element |
| [:nth-child(*n*)](https://www.w3schools.com/cssref/sel_nth-child.asp) | p:nth-child(2) | Selects every <p> element that is the second child of its parent |
| [:nth-last-child(*n*)](https://www.w3schools.com/cssref/sel_nth-last-child.asp) | p:nth-last-child(2) | Selects every <p> element that is the second child of its parent, counting from the last child |
| [:nth-last-of-type(*n*)](https://www.w3schools.com/cssref/sel_nth-last-of-type.asp) | p:nth-last-of-type(2) | Selects every <p> element that is the second <p> element of its parent, counting from the last child |
| [:nth-of-type(*n*)](https://www.w3schools.com/cssref/sel_nth-of-type.asp) | p:nth-of-type(2) | Selects every <p> element that is the second <p> element of its parent |
| [:only-of-type](https://www.w3schools.com/cssref/sel_only-of-type.asp) | p:only-of-type | Selects every <p> element that is the only <p> element of its parent |
| [:only-child](https://www.w3schools.com/cssref/sel_only-child.asp) | p:only-child | Selects every <p> element that is the only child of its parent |
| [:optional](https://www.w3schools.com/cssref/sel_optional.asp) | input:optional | Selects input elements with no "required" attribute |
| [:out-of-range](https://www.w3schools.com/cssref/sel_out-of-range.asp) | input:out-of-range | Selects input elements with a value outside a specified range |
| [::placeholder](https://www.w3schools.com/cssref/sel_placeholder.asp) | input::placeholder | Selects input elements with the "placeholder" attribute specified |
| [:read-only](https://www.w3schools.com/cssref/sel_read-only.asp) | input:read-only | Selects input elements with the "readonly" attribute specified |
| [:read-write](https://www.w3schools.com/cssref/sel_read-write.asp) | input:read-write | Selects input elements with the "readonly" attribute NOT specified |
| [:required](https://www.w3schools.com/cssref/sel_required.asp) | input:required | Selects input elements with the "required" attribute specified |
| [:root](https://www.w3schools.com/cssref/sel_root.asp) | :root | Selects the document's root element |
| [::selection](https://www.w3schools.com/cssref/sel_selection.asp) | ::selection | Selects the portion of an element that is selected by a user |
| [:target](https://www.w3schools.com/cssref/sel_target.asp) | #news:target | Selects the current active #news element (clicked on a URL containing that anchor name) |
| [:valid](https://www.w3schools.com/cssref/sel_valid.asp) | input:valid | Selects all input elements with a valid value |
| [:visited](https://www.w3schools.com/cssref/sel_visited.asp) | a:visited | Selects all visited links |

## CSS Functions

CSS functions are used as a value for various CSS properties.

|  |  |
| --- | --- |
| **Function** | **Description** |
| [attr()](https://www.w3schools.com/cssref/func_attr.asp) | Returns the value of an attribute of the selected element |
| [calc()](https://www.w3schools.com/cssref/func_calc.asp) | Allows you to perform calculations to determine CSS property values |
| [conic-gradient()](https://www.w3schools.com/cssref/func_conic-gradient.asp) | Creates a conic gradient |
| [counter()](https://www.w3schools.com/cssref/func_counter.asp) | Returns the current value of the named counter |
| [cubic-bezier()](https://www.w3schools.com/cssref/func_cubic-bezier.asp) | Defines a Cubic Bezier curve |
| [hsl()](https://www.w3schools.com/cssref/func_hsl.asp) | Defines colors using the Hue-Saturation-Lightness model (HSL) |
| [hsla()](https://www.w3schools.com/cssref/func_hsla.asp) | Defines colors using the Hue-Saturation-Lightness-Alpha model (HSLA) |
| [linear-gradient()](https://www.w3schools.com/cssref/func_linear-gradient.asp) | Creates a linear gradient |
| [max()](https://www.w3schools.com/cssref/func_max.asp) | Uses the largest value, from a comma-separated list of values, as the property value |
| [min()](https://www.w3schools.com/cssref/func_min.asp) | Uses the smallest value, from a comma-separated list of values, as the property value |
| [radial-gradient()](https://www.w3schools.com/cssref/func_radial-gradient.asp) | Creates a radial gradient |
| [repeating-conic-gradient()](https://www.w3schools.com/cssref/func_repeating-conic-gradient.asp) | Repeats a conic gradient |
| [repeating-linear-gradient()](https://www.w3schools.com/cssref/func_repeating-linear-gradient.asp) | Repeats a linear gradient |
| [repeating-radial-gradient()](https://www.w3schools.com/cssref/func_repeating-radial-gradient.asp) | Repeats a radial gradient |
| [rgb()](https://www.w3schools.com/cssref/func_rgb.asp) | Defines colors using the Red-Green-Blue model (RGB) |
| [rgba()](https://www.w3schools.com/cssref/func_rgba.asp) | Defines colors using the Red-Green-Blue-Alpha model (RGBA) |
| [var()](https://www.w3schools.com/cssref/func_var.asp) | Inserts the value of a custom property |

# CSS Web Safe Fonts

## Best Web Safe Fonts for HTML and CSS

The following fonts are the best web safe fonts for HTML and CSS:

* Arial (sans-serif)
* Verdana (sans-serif)
* Tahoma (sans-serif)
* Trebuchet MS (sans-serif)
* Times New Roman (serif)
* Georgia (serif)
* Garamond (serif)
* Courier New (monospace)
* Brush Script MT (cursive)

**Note:** Before you publish your website, always check how your fonts appear on different browsers and devices, and always use [fallback fonts](https://www.w3schools.com/cssref/css_fonts_fallbacks.asp)!

## Arial (sans-serif)

Arial is the most widely used font for both online and printed media. Arial is also the default font in Google Docs.

Arial is one of the safest web fonts, and it is available on all major operating systems.

### Example

# Lorem ipsum dolor sit amet

Lorem ipsum dolor sit amet.

0 1 2 3 4 5 6 7 8 9

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

## Verdana (sans-serif)

Verdana is a very popular font. Verdana is easily readable even for small font sizes.

### Example

# Lorem ipsum dolor sit amet

Lorem ipsum dolor sit amet.

0 1 2 3 4 5 6 7 8 9

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

## Tahoma (sans-serif)

The Tahoma font has less space between the characters.

### Example

# Lorem ipsum dolor sit amet

Lorem ipsum dolor sit amet.

0 1 2 3 4 5 6 7 8 9

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

## Trebuchet MS (sans-serif)

Trebuchet MS was designed by Microsoft in 1996. Use this font carefully. Not supported by all mobile operating systems.

### Example

# Lorem ipsum dolor sit amet

Lorem ipsum dolor sit amet.

0 1 2 3 4 5 6 7 8 9

## Times New Roman (serif)

Times New Roman is one of the most recognizable fonts in the world. It looks professional and is used in many newspapers and "news" websites. It is also the primary font for Windows devices and applications.

### Example

# Lorem ipsum dolor sit amet

Lorem ipsum dolor sit amet.

0 1 2 3 4 5 6 7 8 9

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

## Georgia (serif)

Georgia is an elegant serif font. It is very readable at different font sizes, so it is a good candidate for mobile-responsive design.

### Example

# Lorem ipsum dolor sit amet

Lorem ipsum dolor sit amet.

0 1 2 3 4 5 6 7 8 9

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

## Garamond (serif)

Garamond is a classical font used for many printed books. It has a timeless look and good readability.

### Example

# Lorem ipsum dolor sit amet

Lorem ipsum dolor sit amet.

0 1 2 3 4 5 6 7 8 9

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

## Courier New (monospace)

Courier New is the most widely used monospace serif font. Courier New is often used with coding displays, and many email providers use it as their default font. Courier New is also the standard font for movie screenplays.

### Example

# Lorem ipsum dolor sit amet

Lorem ipsum dolor sit amet.

0 1 2 3 4 5 6 7 8 9

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

## Brush Script MT (cursive)

The Brush Script MT font was designed to mimic handwriting. It is elegant and sophisticated, but can be hard to read. Use it carefully.

### Example

# Lorem ipsum dolor sit amet

Lorem ipsum dolor sit amet.

0 1 2 3 4 5 6 7 8 9

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

**Tip:** Also check out all available [Google Fonts](https://www.w3schools.com/howto/howto_google_fonts.asp) and how to use them.

# CSS Fallback Fonts

## Commonly Used Fallback Fonts

There are no 100% completely web safe fonts. There is always a chance that a font is not found or is not installed properly. Therefore, it is very important to always use fallback fonts.

This means that you should add a list of similar "backup fonts" in the font-family property. If the first font does not work, the browser will try the next one, and the next one, and so on. Always end the list with a generic font family name.

Below are some commonly used fallback fonts, organized by the 5 generic font families:

* **Serif**
* **Sans-serif**
* **Monospace**
* **Cursive**
* **Fantasy**

## Serif Fonts

|  |  |  |
| --- | --- | --- |
| **font-family** | **Example text** | **Code** |
| "Times New Roman", Times, serif | This is a Heading This is a paragraph. | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_font_fb_tts) |
| Georgia, serif | This is a Heading This is a paragraph. | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_font_fb_gs) |
| Garamond, serif | This is a Heading This is a paragraph. | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_font_fb_gas) |

## Sans-Serif Fonts

|  |  |  |
| --- | --- | --- |
| **font-family** | **Example text** | **Code** |
| Arial, Helvetica, sans-serif | This is a Heading This is a paragraph. | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_font_fb_ahs) |
| Tahoma, Verdana, sans-serif | This is a Heading This is a paragraph. | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_font_fb_tvs) |
| "Trebuchet MS", Helvetica, sans-serif | This is a Heading This is a paragraph. | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_font_fb_ths) |
| Geneva, Verdana, sans-serif | This is a Heading This is a paragraph. | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_font_fb_gvs) |

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## Monospace Fonts

|  |  |  |
| --- | --- | --- |
| **font-family** | **Example text** | **Code** |
| "Courier New", Courier, monospace | This is a Heading This is a paragraph. | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_font_fb_ccm) |

## Cursive Fonts

|  |  |  |
| --- | --- | --- |
| **font-family** | **Example text** | **Code** |
| "Brush Script MT", cursive | This is a Heading This is a paragraph. | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_font_fb_bc) |

## Fantasy Fonts

|  |  |  |
| --- | --- | --- |
| **font-family** | **Example text** | **Code** |
| Copperplate, Papyrus, fantasy | This is a Heading This is a paragraph. | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_font_fb_cpf) |

**Tip:** Also check out all available [Google Fonts](https://www.w3schools.com/howto/howto_google_fonts.asp) and how to use them.

# CSS Animatable

## Definition and Usage

Some CSS properties are animatable, meaning that they can be used in animations and transitions.

Animatable properties can change gradually from one value to another, like size, numbers, percentage and color.

## Browser Support

The numbers in the table specifies the first browser version that fully support CSS animations.

Numbers followed by -webkit-, -moz-, or -o- specify the first version that worked with a prefix.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| 43.0 4.0 -webkit- | 10.0 | 16.0 5.0 -moz- | 9.0 4.0 -webkit- | 30.0 15.0 -webkit- 12.0 -o- |

### Example

Animate the background-color from red to blue:

@keyframes mymove {  
  from {background-color: red;}  
  to {background-color: blue;}  
}

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

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## Animatable Properties

These properties are animatable in CSS:

|  |
| --- |
| **Property** |
| [background](https://www.w3schools.com/cssref/css3_pr_background.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_background) |
| [background-color](https://www.w3schools.com/cssref/pr_background-color.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_background-color) |
| [background-position](https://www.w3schools.com/cssref/pr_background-position.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_background-position) |
| [background-size](https://www.w3schools.com/cssref/css3_pr_background-size.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_background-size) |
| [border](https://www.w3schools.com/cssref/pr_border.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border) |
| [border-bottom](https://www.w3schools.com/cssref/pr_border-bottom.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-bottom) |
| [border-bottom-color](https://www.w3schools.com/cssref/pr_border-bottom_color.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-bottom-color) |
| [border-bottom-left-radius](https://www.w3schools.com/cssref/css3_pr_border-bottom-left-radius.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-bottom-left-radius) |
| [border-bottom-right-radius](https://www.w3schools.com/cssref/css3_pr_border-bottom-right-radius.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-bottom-right-radius) |
| [border-bottom-width](https://www.w3schools.com/cssref/pr_border-bottom_width.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-bottom-width) |
| [border-color](https://www.w3schools.com/cssref/pr_border-color.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-color) |
| [border-left](https://www.w3schools.com/cssref/pr_border-left.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-left) |
| [border-left-color](https://www.w3schools.com/cssref/pr_border-left_color.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-left-color) |
| [border-left-width](https://www.w3schools.com/cssref/pr_border-left_width.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-left-width) |
| [border-right](https://www.w3schools.com/cssref/pr_border-right.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-right) |
| [border-right-color](https://www.w3schools.com/cssref/pr_border-right_color.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-right-color) |
| [border-right-width](https://www.w3schools.com/cssref/pr_border-right_width.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-right-width) |
| [border-spacing](https://www.w3schools.com/cssref/pr_border-spacing.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-spacing) |
| [border-top](https://www.w3schools.com/cssref/pr_border-top.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-top) |
| [border-top-color](https://www.w3schools.com/cssref/pr_border-top_color.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-top-color) |
| [border-top-left-radius](https://www.w3schools.com/cssref/css3_pr_border-top-left-radius.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-top-left-radius) |
| [border-top-right-radius](https://www.w3schools.com/cssref/css3_pr_border-top-right-radius.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-top-right-radius) |
| [border-top-width](https://www.w3schools.com/cssref/pr_border-top_width.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_border-top-width) |
| [bottom](https://www.w3schools.com/cssref/pr_pos_bottom.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_bottom) |
| [box-shadow](https://www.w3schools.com/cssref/css3_pr_box-shadow.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_box-shadow) |
| [clip](https://www.w3schools.com/cssref/pr_pos_clip.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_clip) |
| [color](https://www.w3schools.com/cssref/pr_text_color.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_color) |
| [column-count](https://www.w3schools.com/cssref/css3_pr_column-count.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_column-count) |
| [column-gap](https://www.w3schools.com/cssref/css3_pr_column-gap.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_column-gap) |
| [column-rule](https://www.w3schools.com/cssref/css3_pr_column-rule.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_column-rule) |
| [column-rule-color](https://www.w3schools.com/cssref/css3_pr_column-rule-color.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_column-rule-color) |
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| [column-width](https://www.w3schools.com/cssref/css3_pr_column-width.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_column-width) |
| [columns](https://www.w3schools.com/cssref/css3_pr_columns.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_columns) |
| [filter](https://www.w3schools.com/cssref/css3_pr_filter.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_filter) |
| [flex](https://www.w3schools.com/cssref/css3_pr_flex.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_flex) |
| [flex-basis](https://www.w3schools.com/cssref/css3_pr_flex-basis.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_flex-basis) |
| [flex-grow](https://www.w3schools.com/cssref/css3_pr_flex-grow.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_flex-grow) |
| [flex-shrink](https://www.w3schools.com/cssref/css3_pr_flex-shrink.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_flex-shrink) |
| [font](https://www.w3schools.com/cssref/pr_font_font.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_font) |
| [font-size](https://www.w3schools.com/cssref/pr_font_font-size.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_font-size) |
| [font-size-adjust](https://www.w3schools.com/cssref/css3_pr_font-size-adjust.asp) |
| [font-stretch](https://www.w3schools.com/cssref/css3_pr_font-stretch.asp) |
| [font-weight](https://www.w3schools.com/cssref/pr_font_weight.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_font-weight) |
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| [grid-area](https://www.w3schools.com/cssref/pr_grid-area.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_grid-area) |
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| [left](https://www.w3schools.com/cssref/pr_pos_left.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_left) |
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| [margin-bottom](https://www.w3schools.com/cssref/pr_margin-bottom.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_margin-bottom) |
| [margin-left](https://www.w3schools.com/cssref/pr_margin-left.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_margin-left) |
| [margin-right](https://www.w3schools.com/cssref/pr_margin-right.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_margin-right) |
| [margin-top](https://www.w3schools.com/cssref/pr_margin-top.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_margin-top) |
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| [max-width](https://www.w3schools.com/cssref/pr_dim_max-width.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_max-width) |
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| [order](https://www.w3schools.com/cssref/css3_pr_order.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_order) |
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| [outline-color](https://www.w3schools.com/cssref/pr_outline-color.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_outline-color) |
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| [padding](https://www.w3schools.com/cssref/pr_padding.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_padding) |
| [padding-bottom](https://www.w3schools.com/cssref/pr_padding-bottom.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_padding-bottom) |
| [padding-left](https://www.w3schools.com/cssref/pr_padding-left.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_padding-left) |
| [padding-right](https://www.w3schools.com/cssref/pr_padding-right.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_padding-right) |
| [padding-top](https://www.w3schools.com/cssref/pr_padding-top.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_padding-top) |
| [perspective](https://www.w3schools.com/cssref/css3_pr_perspective.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_perspective) |
| [perspective-origin](https://www.w3schools.com/cssref/css3_pr_perspective-origin.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_perspective-origin) |
| [right](https://www.w3schools.com/cssref/pr_pos_right.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_right) |
| [text-decoration-color](https://www.w3schools.com/cssref/css3_pr_text-decoration-color.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_text-decoration-color) |
| [text-indent](https://www.w3schools.com/cssref/pr_text_text-indent.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_text-indent) |
| [text-shadow](https://www.w3schools.com/cssref/css3_pr_text-shadow.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_text-shadow) |
| [top](https://www.w3schools.com/cssref/pr_pos_top.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_top) |
| [transform](https://www.w3schools.com/cssref/css3_pr_transform.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_transform) |
| [transform-origin](https://www.w3schools.com/cssref/css3_pr_transform-origin.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_transform-origin) |
| [vertical-align](https://www.w3schools.com/cssref/pr_pos_vertical-align.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_vertical-align) |
| [visibility](https://www.w3schools.com/cssref/pr_class_visibility.asp) |
| [width](https://www.w3schools.com/cssref/pr_dim_width.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_width) |
| [word-spacing](https://www.w3schools.com/cssref/pr_text_word-spacing.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_word-spacing) |
| [z-index](https://www.w3schools.com/cssref/pr_pos_z-index.asp)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_anim_z-index) |

# CSS Units

## CSS Units

CSS has several different units for expressing a length.

Many CSS properties take "length" values, such as width, margin, padding, font-size, etc.

**Length** is a number followed by a length unit, such as 10px, 2em, etc.

**Note:** A whitespace cannot appear between the number and the unit. However, if the value is 0, the unit can be omitted.

For some CSS properties, negative lengths are allowed.

There are two types of length units: **absolute** and **relative**.

## Absolute Lengths

The absolute length units are fixed and a length expressed in any of these will appear as exactly that size.

Absolute length units are not recommended for use on screen, because screen sizes vary so much. However, they can be used if the output medium is known, such as for print layout.

|  |  |
| --- | --- |
| **Unit** | **Description** |
| cm | centimeters[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_unit_cm) |
| mm | millimeters[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_unit_mm) |
| in | inches (1in = 96px = 2.54cm)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_unit_in) |
| px \* | pixels (1px = 1/96th of 1in)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_unit_px) |
| pt | points (1pt = 1/72 of 1in)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_unit_pt) |
| pc | picas (1pc = 12 pt)[Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_unit_pc) |

\* Pixels (px) are relative to the viewing device. For low-dpi devices, 1px is one device pixel (dot) of the display. For printers and high resolution screens 1px implies multiple device pixels.

## Relative Lengths

Relative length units specify a length relative to another length property. Relative length units scale better between different rendering medium.

|  |  |  |
| --- | --- | --- |
| **Unit** | **Description** |  |
| em | Relative to the font-size of the element (2em means 2 times the size of the current font) | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_unit_em) |
| ex | Relative to the x-height of the current font (rarely used) | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_unit_ex) |
| ch | Relative to the width of the "0" (zero) | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_unit_ch) |
| rem | Relative to font-size of the root element | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_unit_rem) |
| vw | Relative to 1% of the width of the viewport\* | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_unit_vw) |
| vh | Relative to 1% of the height of the viewport\* | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_unit_vh) |
| vmin | Relative to 1% of viewport's\* smaller dimension | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_unit_vmin) |
| vmax | Relative to 1% of viewport's\* larger dimension | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_unit_vmax) |
| % | Relative to the parent element | [Try it](https://www.w3schools.com/cssref/tryit.asp?filename=trycss_unit_percentage) |

**Tip:** The em and rem units are practical in creating perfectly scalable layout!  
\* Viewport = the browser window size. If the viewport is 50cm wide, 1vw = 0.5cm.