

# Browser compatibility in an evergreen world

@rachelandrew

# CSS Grid Layout by Rachel Andrew—An Event Apart video



Rachel Andrew is speaking on stage, wearing a dark suit and glasses, holding a small device in her hand.

### Defining a Grid

The `fr` unit is a fraction unit, representing a fraction of the available space in the container.

You can mix fraction units with other length units. Any tracks with a fraction unit share the space left after fixed size tracks and the gaps have been defined.

<http://cssgrid.me/05164>

```
.cards {  
  display: grid;  
  grid-template-columns: 500px 1fr 2fr;  
  grid-template-rows: 200px 200px 200px;  
  grid-gap: 20px;  
}
```



A 3x3 grid of nine images showing various hot air balloons in flight against a blue sky. The balloons are of different colors and sizes, some with visible basket or branding.



58:45

# 2022 looks like an exciting year for CSS!

- Cascade Layers
- New color functions
- subgrid
- accent-color
- Container Queries
- ...and more!

# Interoperable

```
div.content {  
    width:400px;  
    voice-family: "\}\\"";  
    voice-family:inherit;  
    width:300px;  
}
```

“ The W3C has established standards for interpreting Web-based content.

By releasing browsers which do not uniformly support those standards, browser makers are injuring Web developers, businesses and users alike. ”

Lack of uniform support for W3C standards makes using and developing Web-based technologies unnecessarily difficult and expensive.

WaSP Baseline Standards Proposal, 1998, <https://archive.webstandards.org/mission.html>

Software has bugs, and CSS is complicated.

# New to the web platform in February

Discover some of the interesting features that landed in stable and beta web browsers during February 2022.

Mar 2, 2022



Rachel Andrew

[Twitter](#) [GitHub](#) [Glitch](#) [Homepage](#)

## Stable browser releases

In January, Chrome 98 and Firefox 97 became stable.

Chrome 98 shipped the `self.structuredClone` method. It creates a deep clone of a value using the structured clone algorithm. [Read more about `structuredClone\(\)`](#).

Browser support:



98



94



98



15.4

[Source](#)

Firefox 97 includes [Cascade Layers](#). The `@layer` at-rule defines a cascade layer, helping you to control specificity.

```
@layer framework {  
  /* creates a new layer named framework */
```

How should this pace of improvement reflect in our browser support policies?

You are not a bad developer if you do not immediately adopt new things.

Be a magpie, pick up enough knowledge to  
know when a new thing might solve a problem.

How should we approach browser compatibility today?

# Browser bugs



Search or jump to...

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w3c / csswg-drafts Public

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Code Issues 2.2k Pull requests 52 Actions Projects 17 Security Insights Settings

# [css-multicol] Should column-span:all inside a transform really become a spanner? #6805

Edit

New issue

Open mstensho opened this issue on Nov 9, 2021 · 1 comment



mstensho commented on Nov 9, 2021



...

<https://drafts.csswg.org/css-multicol/#spanning-columns>

In order to become a spanner, we just require that the column-span:all element otherwise participate in the formatting context established by the multicol container / columns.

#elm becomes a spanner here:

```
<div style="columns:2;">
  <div>
    <div id="elm" style="column-span:all;">
```

#elm does NOT become a spanner here:

```
<div style="columns:2;">
  <div style="display:flow-root;">
    <div id="elm" style="column-span:all;">
```

Assignees

rachelandrew

Labels

css-multicol-1 Needs Edits

Projects

December 15 meeting

Everything else ▾

December 8 meeting

Temp3 ▾

January 19 meeting

Layout ▾

[wpt](#)

Search test files, like 'cors/allow-headers.htm', then press &lt;Enter&gt;

For information on the search syntax, [view the search documentation](#)

Browser Specific Failures graph (click the arrow to expand)

Showing 45375 tests (1791014 subtests) from the latest master test runs for chrome[experimental], edge[experimental], firefox[experimental], safari[experimental]

[LINK](#)[EDIT](#)

Path	Chrome 101 Linux 20.04 <a href="#">3066f93</a> Mar 23, 2022	Edge 101 Windows 10.0 <a href="#">3066f93</a> Mar 23, 2022	Firefox 100 Linux 20.04 <a href="#">3066f93</a> Mar 23, 2022	Safari 141 preview macOS 11.6 <a href="#">3066f93</a> Mar 23, 2022
<a href="#">BackgroundSync/</a>	36 / 36	36 / 36	18 / 36	18 / 36
<a href="#">FileAPI/</a>	1479 / 1487	1479 / 1487	1479 / 1487	1468 / 1487
<a href="#">IndexedDB/</a>	2666 / 2670	2669 / 2670	2548 / 2670	2385 / 2458
<a href="#">WebCryptoAPI/</a>	40363 / 42727	40363 / 42727	33676 / 36057	42653 / 42724
<a href="#">accelerometer/</a>	159 / 162	95 / 162	13 / 162	13 / 162
<a href="#">accessibility/</a>	26 / 26	0 / 0	22 / 26	20 / 26
<a href="#">acid/</a>	102 / 103	102 / 103	101 / 103	102 / 103
<a href="#">ambient-light/</a>	59 / 59	36 / 59	11 / 59	11 / 59
<a href="#">animation-worklet/</a>	101 / 135	100 / 135	34 / 105	34 / 105
<a href="#">apng/</a>	3 / 3	3 / 3	3 / 3	3 / 3
<a href="#">audio-output/</a>	27 / 51	29 / 51	29 / 51	29 / 51
<a href="#">background-fetch/</a>	217 / 258	217 / 258	48 / 258	38 / 213
<a href="#">badging/</a>	63 / 73	63 / 73	40 / 73	40 / 73
<a href="#">battery-status/</a>	60 / 66	60 / 66	24 / 66	24 / 66
<a href="#">beacon/</a>	110 / 110	110 / 110	102 / 110	110 / 110
<a href="#">bluetooth/</a>	302 / 569	302 / 569	22 / 422	22 / 422
<a href="#">clear-site-data/</a>	18 / 22	21 / 25	21 / 27	14 / 27
<a href="#">client-hints/</a>	208 / 218	207 / 218	179 / 218	154 / 218
<a href="#">clipboard-apis/</a>	163 / 180	159 / 180	94 / 180	123 / 180
<a href="#">close-watcher/</a>	6 / 8	5 / 37	3 / 37	3 / 37
<a href="#">compat/</a>	117 / 126	115 / 126	111 / 126	113 / 126
<a href="#">compression/</a>	698 / 699	698 / 699	62 / 699	50 / 561

## RELATED TOPICS

▶ Firefox releases

▶ Add-ons

Firefox documentation

# Experimental features in Firefox

## IN THIS ARTICLE

**HTML**

CSS

SVG

JavaScript

APIs

Security and privacy

Developer tools

UI

See also

This page lists Firefox's experimental and partially implemented features, including those for proposed or cutting-edge web platform standards, along with information on the builds in which they are present, whether or not they are activated "by default", and which preference can be used to activate or deactivate them. This allows you to test the features before they are released.

New features appear first in the [Firefox Nightly](#) build, where they are often enabled by default. They later propagate through to [Firefox Developer Edition](#) and eventually to the release build. Once a feature is enabled by default in a release build it is no longer experimental, and should be removed from the topic.

Experimental features can be enabled or disabled using the [Firefox Configuration Editor](#) (enter `about:config` in the Firefox address bar) by modifying the associated preference listed below.

**Note:** For editors - when adding features to these tables, please try to include a link to the relevant bug or bugs using the [bug](#) macro: `{{bug(bug-number)}}`.

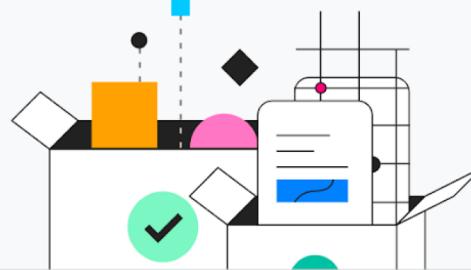
Learn how to isolate and identify bugs

# Create a reduced test case

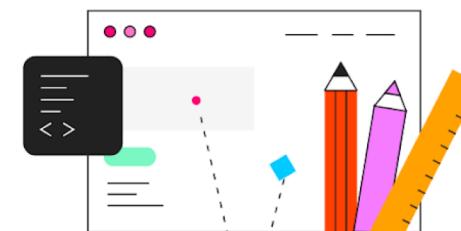
- Use a shareable environment such as CodePen, Glitch or jsFiddle.
- Remove everything that doesn't change the buggy behavior.
- Don't forget polyfills, post-processors, framework CSS or JavaScript.

Problem exists between keyboard and chair

About web.dev



Learn



## Explore structured learning paths to learn new skills

```
Elements Console Recorder Sources Network Performance Memory Application Security
<span class="hero_eyebrow" aria-hidden="true">About web.dev</span>
▼<div class="flow hero_content">
  <img alt="https://web-dev.imgix.net/image/jxu10d7LK0GIDU7jURMpSH2lyK2/zrBPJq2704l_VnK.svg" height="240" width="333" class="hero_decor" aria-hidden="true" importance="high">
  == $0
  <h1 class="hero_title">Let's build the future of the web, together</h1>
  ▶<p></p>
  ▶<a href="/about/" class="button" data-type="primary">...</a> (flex)
</div>
</div>
</div>
</div>
</header>
▶<article class="bg-core-bg hero homepage_page-speed-hero">...</article>
▶<div class="homepage_section bg-mid-bg">...</div>
▶<div class="homepage_section">...</div>
▶<div class="homepage_section bg-core-bg">...</div>
▶<div class="homepage_section bg-core-bg">...</div>
▶<web-subscribe>...</web-subscribe>
</div>
</main>
<footer class="site-footer" role="contentinfo">...</footer>
▶<div style="background-color: rgb(255, 255, 255); border: 1px solid rgb(204, 204, 204); box-shadow: rgba(0, 0, 0, 0.2) 2px 2px 3px; position: absolute; transition: visibility 0s linear 0.3s, opacity 0.3s linear 0s; opacity: 0; visibility: hidden; z-index: 2000000000; left: 0px; top: -10000px;">...</div>
</body>
```

Styles Computed Layout Event Listeners DOM Breakpoints Properties Accessibility

Filter :hov .cls + □

```
element.style {  
}  
.hero__decor[src$=".svg"], .hero__decor[src$=".png"] {  
    background-color: transparent;  
}  
img[src$=".svg"], img[src$=".png"] {  
    background-color: var(--color-transparent img mask);  
}  
img {  
    display: block;  
    height: auto;  
    max-width: 100%;  
}  
*, *::before, *::after {  
    box-sizing: border-box;  
}  
img[Attributes Style] {  
    height: 240px;  
    aspect-ratio: auto 333 / 240;  
    width: 333px;  
}  
Inherited from div.switcher.hero__columns  
.hero__columns {  
    next.css?v=1d8a0695:1
```

## RELATED TOPICS

### Learn CSS

► CSS first steps

► CSS building blocks

► Styling text

► CSS layout

### Reference

► Modules

► Properties

► Selectors

► Pseudo-classes

► Pseudo-elements

► At-rules

► Types

### Guides

► Animations

► Backgrounds and Borders

► Box alignment

► Box model

► Columns

► Conditional rules

► CSSOM view

# Browser compatibility

[Report problems with this compatibility data on GitHub](#)

	Desktop						Mobile					
	Chrome	Edge	Firefox	Internet Explorer	Opera	Safari	WebView Android	Chrome Android	Firefox for Android	Opera Android	Safari on iOS	Samsung Internet
grid-template-columns	✓ 57	✓ 16	✓ 52	✓ 10 ⌚	✓ 44	✓ 10.1	✓ 57	✓ 57	✓ 52	✓ 43	✓ 10.3	✓ 6.0
Animation of tracks	✗ No ✳️	✗ No ✳️	✓ 66	✗ No	✗ No ✳️	✗ No ✳️	✗ No ✳️	✗ No ✳️	✓ 66	✗ No ✳️	✗ No ✳️	✗ No ✳️
<code>fit-content()</code>	✓ 57	✓ 16	✓ 52	✗ No	✓ 44	✓ 10.1	✓ 57	✓ 57	✓ 52	✓ 43	✓ 10.3	✓ 6.0
masonry	✗ No	✗ No	✗ 77	✗ No	✗ No	✗ No	✗ No	✗ No	✗ No	✗ No	✗ No	✗ No
<code>minmax()</code>	✓ 57	✓ 16	✓ 52	✗ No	✓ 44	✓ 10.1	✓ 57	✓ 57	✓ 52	✓ 43	✓ 10.3	✓ 6.0
<code>repeat()</code>	✓ 57	✓ 16	✓ 76	✗ No	✓ 44	✓ 10.1	✓ 57	✓ 57	✓ 79	✓ 43	✓ 10.3	✓ 6.0
<code>subgrid</code>	✗ No ✳️	✗ No ✳️	✓ 71	✗ No	✗ No ✳️	✗ No ✳️	✗ No ✳️	✗ No ✳️	✗ No	✗ No ✳️	✗ No ✳️	✗ No ✳️

✓ Full support

❖ Partial support

✗ No support

⚗️ Experimental. Expect behavior to change in the future.

✳️ See implementation notes.

FLAG User must explicitly enable this feature.

⌚ Uses a non-standard name.

## IN THIS ARTICLE

Try it

Syntax

Formal definition

Formal syntax

Examples

Specifications

Browser compatibility

See also

See also

# Browser bug trackers

- <https://bugzilla.mozilla.org/home>
- <https://bugs.webkit.org/describecomponents.cgi?product=WebKit>
- <https://bugs.chromium.org/p/chromium/issues/list>

Once you understand a bug,  
it's often possible to work round it.

I found a new bug!

Report it to the browser you think has the issue  
using their bug tracker.

Add your reduced test case to the bug

Published 4 YEARS AGO · [code](#)

# More accessible markup with `display: contents`

CSS Grid Layout lets you turn an element into a grid, and place the element's *direct children* onto it. Given that, it might be tempting to use flatter markup, but less meaning is usually less accessibility. With `display: contents`, we can place *grand children* on a grid, which lets us have accessible markup *and* beautiful layout. Let's dive into the details!

Below, I will explain in more detail what I mean by children and grand children, and then show how we can use `display: contents` to improve this. *Note: this is currently broken in Webkit, more details below*

The gap

# Experimental implementations

# Container Queries

Experimentation started in Chrome, lots of changes as the specification is refined.

# Prioritization

# Interop 2022 focus areas

Cascade layers, CSS Color Spaces, Color functions, new viewport units, scrolling, subgrid, the contain property, the `<dialog>` element, form controls, typography and encodings, web compat, flexbox, grid, position: sticky, aspect-ratio, CSS transforms.

[Latest Run](#) [Recent Runs](#) [interop 2022](#) [Insights](#) [Processor](#) [About](#)

# Interop 2022 Dashboard

These scores represent how browser engines are doing in  
15 focus areas and 3 joint investigation efforts.

STABLE

EXPERIMENTAL



Chrome  
Dev



Edge  
DEV



Firefox  
Nightly



Safari  
Technology Preview

wpt.fyi/interop-2022 (March 2022)

How should web developers deal with the gap between implementations?

# Using the cascade

```
.box {  
  color: color-contrast(var(--background) vs #000, #fff);  
}
```

```
.box {  
background-color: var(--background);  
color: color-contrast(var(--background) vs #000, #fff);  
}
```

```
<div class="example">
  <div class="sidebar">Sidebar</div>
  <div class="content">...</div>
</div>
```

```
.container {
  display: grid;
  grid-template-columns: 1fr 3fr;
}
```

```
.sidebar {
  float: left;
}
```

# Feature Queries

## @supports

Feature queries test if a browser can parse a particular property and value pair

```
@supports (gap: 1em) {  
  /* code used if gap is supported in any context */  
}
```

```
@supports not selector(:is(a, b)) {  
  /* Fallback for when :is() is unsupported */  
}
```

# Enhancing components with feature queries

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\$29.99

Subgrid is part of Interop 2022. It's coming to  
your browser soon.

```
@supports (grid-template-rows: subgrid) {  
  .pricing {  
    grid-template-rows: auto 1fr auto;  
    row-gap: 0;  
  }  
  
  .pricing > li {  
    grid-row: 1 / -1;  
    grid-template-rows: subgrid;  
  }  
}
```

```
@supports (contain: inline-size) {  
  /* Container query code here */  
}
```

```
@supports not (contain: inline-size) {  
  /* Media query based fallback */  
}
```

# Polyfills



Search or jump to...

/ Pull requests Issues Marketplace Explore



GoogleChromeLabs / container-query-polyfill

Public

Watch 14

Fork 17

Star 758

<>

Code

Issues 11

Pull requests 4

Actions

Projects

Security

Insights

main

3 branches

11 tags

Go to file

Add file

Code

surma 0.1.2

faf2600 on Jan 15 78 commits

src	Handle double braces (fixes #20)	2 months ago
tests	Handle double braces (fixes #20)	2 months ago
.gitignore	Never added the test runner, did I	4 months ago
CONTRIBUTING.md	Fix RO in Safari	4 months ago
LICENSE	Licenses	4 months ago
README.md	Fix typo in README ("supporrted" → "supported")	2 months ago
package-lock.json	0.1.2	2 months ago
package.json	0.1.2	2 months ago
superstatic.json	Add CDN test	4 months ago

README.md

## Container Query Polyfill

A tiny polyfill for [CSS Container Queries](#), weighing about 1.6kB brotli'd. It transpiles CSS code on the client-side

### About

A polyfill for CSS Container Queries

[npm.im/container-query-polyfill](#)

Readme

Apache-2.0 License

758 stars

14 watching

17 forks

### Releases

11 tags

### Packages

No packages published

### Used by 19



```
const supportsContainerQueries = "container" in document.documentElement.style;  
if (!supportsContainerQueries) {  
    import("container-query-polyfill");  
}  
}
```

A polyfill introduces another place for buggy behavior to creep in

# PostCSS

# Autoprefixer

Write tomorrow's CSS today with  
postcss-preset-env

```
a {  
    color: rgb(0, 0, 255, 0.9);  
  
    &:hover {  
        color: rebeccapurple;  
    }  
}
```

```
a {  
    color: rgba(0, 0, 255, 0.9);  
}  
  
a:hover {  
    color: rebeccapurple;  
}
```



CSS

LIVE

```
1 @custom-media --viewport-medium (width <= 50rem);
2 @custom-selector :--heading h1, h2, h3, h4, h5, h6;
3
4 :root {
5   --fontSize: 1rem;
6   --mainColor: #12345678;
7   --secondaryColor: lab(32.5 38.5 -47.6 / 90%);
8 }
9
10 html {
11   overflow: hidden auto;
12 }
13
14 @media (--viewport-medium) {
15   body {
16     color: var(--mainColor);
17     font-family: system-ui;
18     font-size: var(--fontSize);
19     line-height: calc(var(--fontSize) * 1.5);
20     overflow-wrap: break-word;
21     padding-inline: calc(var(--fontSize) / 2 + 1px);
22   }
23 }
24
25 :--heading {
26   margin-block: 0;
27 }
28
29 .hero:matches(main, .main) {
30   background-image: image-set("img/background.jpg" 1x, "img/background-2x.jpg"
31   2x);
32 }
33 a {
34   color: rgb(0 0 100% / 90%);
35
36 &:hover {
37   color: rebeccapurple;
```

Result

```
--fontSize: 1rem;
--mainColor: rgba(18,52,86,0.47059);
--secondaryColor: rgba(102, 51, 153, 0.9);
}

html {
  overflow-x: hidden;
  overflow-y: auto;
  overflow: hidden auto;
}

@media (max-width: 50rem) {
  body {
    color: var(--mainColor);
    font-family: system-ui;
    font-size: var(--fontSize);
    line-height: calc(var(--fontSize) * 1.5);
    overflow-wrap: break-word;
    padding-left: calc(var(--fontSize) / 2 + 1px);
    padding-right: calc(var(--fontSize) / 2 + 1px);
  }
}

h1,h2,h3,h4,h5,h6 {
  margin-top: 0;
  margin-bottom: 0;
}

main.hero, .hero.main {
  background-image: -webkit-image-set(url("img/background.jpg") 1x, url("img/background-2x.jpg")
  2x);
  background-image: image-set("img/background.jpg" 1x, "img/background-2x.jpg" 2x);
}

a {
  color: rgba(0, 0, 255, 0.9)
```

EDIT ON  
CODEPEN

You have options

Choose options that allow you to easily remove the fallback code when no longer required.

# Getting buy-in

We have to redefine the narrative around browser support with our team or clients.

Define what you mean when you talk about  
“browser support”.

# The cost of “make it look the same”

- Development is more time-consuming and expensive.
- Additional code makes the site slower.
- Complex fallback code needs maintenance creating an ongoing cost.
- Developer frustration and burnout.

Show examples of sites that do progressive enhancement well, or build out a component or two.

We have to move away from an idea of browser support that is tied to past release schedules.

# Future-proof development

# Thank you!

@rachelandrew