## Learning to love CSS.

Rachel Andrew @ c't webdev

## Doing things on the web since 1996

Co-founder Perch CMS & Notist. Editor in Chief Smashing Magazine. Writer of many books. CSS Working Group Member representing Fronteers. Spec editor Multicol and Page Floats. MDN tech writer.

















## **Today's Feature Articles**

### **BIRTH STORIES**

Peter's Birth, Dylan, Benjemen, Kimber, Gabriel, Stella's Birth,

Chris's Story, Dylan's Birth,

Maddie's Birth, Loss Of A Child

### SINGLE:

Single Parents
Re-Entering the
Dating Scene

### TODDLERS:

<u>Is It Normal For A</u> <u>Irish-Italian Spaghetti</u>

**RECIPES:** 

<u>Three-Year-Old</u> <u>Sauce</u>,

Boy To Hit? Grandma's Goulash,

Orange Rusks,
Barbecue Beans,
Barbie's Trail Mix,
Tuna Mac Salad,
Mushroom Rice

## **Special Content For This Week**

### **WINNERS' LISTS:**

- \*\*Spring Scavenger Hunt Winners List
- \*\*Mom Voyage Winner List

**SAFETY:** In light of the recent tragedy where three children, returning home from a family vacation with their parents, died from carbon monoxide while sleeping in the back of their parents' truck, we present these safety articles:

## What's Happening in Our Community Today

### **In Our Chat Rooms**

### **SPECIAL CHATS**

- \*December '97 Expecting Club, 3pmEDT
- \*ADD/ADHD Support Group, 9pmEDT
- \*Frugal Living, 10pmEDT
- \*Dyslexia Support Group, 10pmEDT
- \*The Family Bed Chat, 11pmEDT



## Cascading Style Sheets, level 1

W3C Recommendation 17 Dec 1996

This is:

http://www.w3.org/pub/WWW/TR/REC-CSS1

Authors:

Håkon Wium Lie (howcome@w3.org)

Bert Bos (bert@w3.org)

## Status of this document

This document is a W3C Recommendation. It has been reviewed by <u>W3C</u> (http://www.w3.org/) Members and general consensus that the specification is appropriate for use has been reached. It is a stable document and may be used as reference material or cited as a normative reference from another document. W3C promotes widespread deployment of this Recommendation.

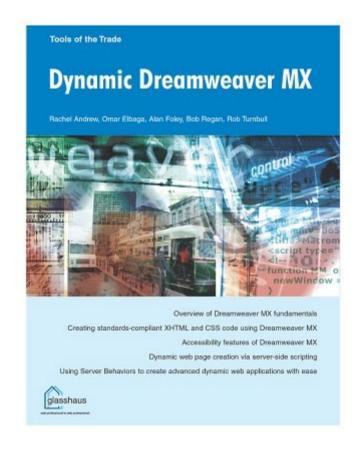
A list of current W3C Recommendations and other technical documents can be found at <a href="http://www.w3.org/pub/WWW/TR/">http://www.w3.org/pub/WWW/TR/</a>.

## **Abstract**

This document specifies level 1 of the Cascading Style Sheet mechanism (CSS1). CSS1 is a simple style sheet mechanism that allows authors and readers to attach style (e.g. fonts, colors and spacing) to HTML documents. The CSS1 language is human







## From to CSS

Turnip greens yarrow ricebean rutabaga endive cauliflower sea.

Veggies es bonus vobis, proinde vos postulo essum magis kohlrabi welsh onion daikon amaranth tatsoi tomatillo melon azuki bean garlic.

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Turnip greens
yarrow
ricebean
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Gumbo beet greens corn soko endive gumbo gourd. Parsley shallot courgette tatsoi pea sprouts fava bean collard greens dandelion okra wakame tomato. Dandelion cucumber earthnut pea peanut soko zucchini.

A footer

Turnip greens yarrow ricebean rutabaga endive cauliflower sea.

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## The 'Netscape Resize Fix'

Reloaded the browser window on resize, otherwise all positioned elements stacked up top left.

"He then employed the little-used CSS 'float' property to float the content to the desired width:"

https://alistapart.com/article/journey/

## The setup:

A liquid box has a float inside, and content that appears along side that float. All is well, until it's viewed in IE6. "Wah? Where's my content?!" You reload the page, and nothing. When you scroll down, or perhaps switch to another window, upon returning to the 'scene of the crime' there it all is, fat 'n sassy!

**Note:** This long standing bug has been suppressed in **IE7** (released in late 2006), so the Peekaboo Bug is finally on the way out. IE6 will still exist however, and as long as it does we'll need to fix it.

### The demo:

div#floatholder (dotted border) is dimensioned horizontally by margins, and vertically by content. div#float (thick brown border) is floated left, and contains a test link. Following that are several lines of bare text, alternating with divs containing more text, plus test links. Next is a cleared div (purple border), then another div for good measure.

	This is bare text. Test link
	This is text inside a div. <u>Test link</u>
	This is bare text. Test link
Float	This is text inside a div. <u>Test link</u>
	This is bare text. <u>Test link</u>
	This is text inside a div. <u>Test link</u>
<u>test link</u>	This is bare text. <u>Test link</u>
Clearing div	
This div is after the cleared div. (purple box) If cleared div does not touch float, bug is not triggered. <u>Test link</u>	

To reset bug, reload page. <u>Screenshot</u>

### The bugs:

This effect may turn up in a number of different contexts. We would try to list them here, but the page would become very long, and make our heads hurt.

## The job of a web developer was as browser bug wrangler.

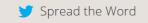


# Frameworks helped busy teams deal with fragile CSS layout methods.

## Solved by Flexbox

Cleaner, hack-free CSS





## Introduction

CSS has been lacking proper layout mechanisms for far too long. Transitions, animations, filters, all of these are great and useful additions to the language, but they don't address the major problems that Web developers have been complaining about for what seems like an eternity.

Finally, thanks to Flexbox, we have a solution.

This site is not another CSS framework. Instead, its purpose is to showcase problems once hard or impossible to solve with CSS alone, now made trivially easy with Flexbox. With the release of Internet Explorer 11 and Safari 6.1, the latest Flexbox spec is now supported in every modern browser.

Check out the demos below. View the styles in the Web inspector or dive into the source to see just how easy CSS layout becomes with Flexbox.

## Showcase







## The Grid Layout spec

Initial implementation in Internet Explorer 10.

## **Grid by Example**

Everything you need to learn CSS Grid Layout

Start Here Examples Patterns Video tutorial Resources

## **CSS Grid Layout**

This site is a collection of examples, video and other information to help you learn CSS Grid Layout. Developed and maintained by <u>Rachel Andrew</u>.

## **The Video Tutorial**

A collection of short and to the point videos, demonstrating various parts of the CSS Grid Layout specification.

## **Get Started Guide**

A structured guide to resources that will help you to start learning CSS Grid Layout.

New!

## The Examples

Small examples of the CSS Grid Layout specification. Each demonstrates a feature of the specification. Includes new Subgrid examples!

## **Patterns**

Grab & Go. A set of example patterns with fallbacks for older browsers.

## A real layout system at the heart of CSS

It's more than just grid and flex.

## Talking about CSS as a layout system

- Flow Layout
- Changing the value of display
- Out of flow elements
- Block Formatting Contexts
- Writing Modes
- Logical, flow-relative properties and values
- Alignment
- Sizing
- Media & Feature Queries

## Understanding display

## Normal Flow

Block and Inline Layout

## Just some HTML and content

Veggies es bonus vobis, proinde vos postulo essum magis kohlrabi welsh onion daikon amaranth tatsoi tomatillo melon azuki bean garlic.

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Turnip greens yarrow ricebean rutabaga endive cauliflower sea lettuce kohlrabi amaranth water spinach avocado daikon napa cabbage asparagus winter purslane kale.

## CSS is doing work for us, before we write any CSS.

Item One
Item Two
Item Three

```
.example {
  display: flex;
}
```

Item One Item Two Item Three

# Changing the value of display changes that element and its direct children.



## The two values of display

```
.example {
  display: inline grid;
  grid-template-columns: 1fr 1fr 1fr;
}
```

Item One Item Two Item Three
Paragraph 1.
Paragraph 2.

inline grid.

### The outer display type

How the box behaves in the layout - block or inline

### The inner display type

The formatting context of the direct children – grid, flex etc.

# Busting out of flow

# position

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Turnip greens yarrow ricebean rutabaga endive cauliflower sea lettuce kohlrabi amaranth water spinach avocado daikon napa cabbage asparagus winter purslane kale.

Celery potato scallion desert raisin horseradish spinach carrot soko. Lotus root water spinach fennel kombu maize bamboo shoot green bean swiss chard seakale pumpkin onion chickpea gram corn pea. Brussels sprout coriander water chestnut gourd swiss chard wakame kohlrabi beetroot carrot watercress. Corn amaranth salsify bunya nuts nori azuki bean chickweed potato bell pepper artichoke.

```
.position {
  position: absolute;
}
```

Veggies es bonus vobis, proinde vos postulo essum magis kohlrabi Turnip greens yarrow ricebean matillo melon azuki bean garlic. rutabaga endive cauliflower sea gumbo gourd. Parsley shallot spinach avocado daikon napaa bean collard greens dandelion okra veabbage asparagus wintercucumber earthnut pea peanut soko purslane kale.

Celery potato scallion desert raisin horseradish spinach carrot soko. Lotus root water spinach fennel kombu maize bamboo shoot green bean swiss chard seakale pumpkin onion chickpea gram corn pea. Brussels sprout coriander water chestnut gourd swiss chard wakame kohlrabi beetroot carrot watercress. Corn amaranth salsify bunya nuts nori azuki bean chickweed potato bell pepper artichoke.

### float

```
.box {
  background-color: rgb(43,91,128);
}
```



Veggies es bonus vobis, proinde vos postulo essum magis kohlrabi welsh onion daikon amaranth tatsoi tomatillo melon azuki bean garlic.

Gumbo beet greens corn soko endive gumbo gourd. Parsley shallot courgette tatsoi pea sprouts fava bean collard greens dandelion okra

wakame tomato. Dandelion cucumber earthnut pea peanut soko zucchini.

## display: flow-root

# Creating a new Block Formatting Context

```
.box {
  background-color: rgb(43,91,128);
  display: flow-root;
}
```



Veggies es bonus vobis, proinde vos postulo essum magis kohlrabi welsh onion daikon amaranth tatsoi tomatillo melon azuki bean garlic.

Gumbo beet greens corn soko endive gumbo gourd. Parsley shallot courgette tatsoi pea sprouts fava bean collard greens dandelion okra wakame tomato. Dandelion cucumber earthnut pea peanut soko zucchini.

# Writing Modes

### writing-mode: horizontal-tb;

#### Inline Dimension

### Block Dimension

Veggies es bonus vobis, proinde vos postulo essum magis kohlrabi welsh onion daikon amaranth tatsoi tomatillo melon azuki bean garlic.

Gumbo beet greens corn soko endive gumbo gourd. Parsley shallot courgette tatsoi pea sprouts fava bean collard greens dandelion okra wakame tomato. Dandelion cucumber earthnut pea peanut soko zucchini.

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Celery potato scallion desert raisin horseradish spinach carrot soko.

Lotus root water spinach fennel kombu maize bamboo shoot green
bean swiss chard seakale pumpkin onion chickpea gram corn pea.

Brussels sprout coriander water chestnut gourd swiss chard wakame
kohlrabi beetroot carrot watercress. Corn amaranth salsify bunya nuts
nori azuki bean chickweed potato bell pepper artichoke.

### writing-mode: vertical-rl;

onion chickpea gram corn pea. Brussels sprout coriander

amboo shoot green bean swiss chard seakale

carrot soko. Lotus root water spinach fennel kombu maize Celery potato scallion desert raisin horseradish spinach

nuts nori azuki bean chickweed potato bell pepper

eetroot carrot watercress. Corn amaranth

salsify bunya

### **Block Dimension**

Inline Dimension

tomatillo melon azuki bean garlic magis kohlrabi welsh onion daikon amaranth tatsoi Veggies es bonus vobis, proinde vos postulo Gumbo beet greens corn soko endive gumbo gourd <sup>o</sup>arsley shallot courgette tatsoi pea sprouts fava bean

cucumber earthnut pea peanut soko zucchini Turnip greens yarrow ricebean rutabaga endive

avocado daikon napa cabbage asparagus winter purslane cauliflower sea lettuce kohlrabi amaranth water spinach

#### **Block Start**

Veggies es bonus vobis, proinde vos postulo essum magis kohlrabi welsh onion daikon amaranth tatsoi tomatillo melon azuki bean garlic.

Gumbo beet greens corn soko endive gumbo gourd. Parsley shallot courgette tatsoi pea sprouts fava bean collard greens dandelion okra wakame tomato. Dandelion cucumber earthnut pea peanut soko zucchini.

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Block End

### **Block** End

urnip greens yarrow ricebean rutabaga endive omatillo melon azuki bean garlic nagis kohlrabi welsh onion daikon amaranth tatsoi sucumber earthnut pea peanut soko zucchini ollard greens dandelion okra wakame tomato. Dandelion arsley shallot courgette tatsoi umbo beet greens corn soko endive gumbo gourd es bonus vobis, proinde vos postulo pea sprouts fava

bean

onion chickpea gram corn pea. Brussels sprout coriander Celery potato scallion desert raisin horseradish spinach cauliflower sea lettuce kohlrabi amaranth water spinach vater chestnut gourd swiss chard wakame kohlrabi າvocado daikon napa cabbage asparagus winter purslane amboo shoot green bean swis arrot soko. Lotus root water spinach fennel kombu maiz s chard s pumpkin

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#### Inline Start

cauliflower sea lettuce kohlrabi amaranth water spinach urnip greens yarrow ricebean rutabaga endive sucumber earthnut pea peanut soko zucchini Celery potato scallion desert raisin horseradish spinach ເvocado daikon napa cabbage asparagus winter purslane amboo shoot green bean swis arrot soko. Lotus root water spinach fennel kombu maiz

onion chickpea gram corn pea. Brussels sprout coriandeı

s chard s

pumpkin

vater chestnut gourd swiss chard wakame kohlrabi

Corn amaranth salsify bunya

Inline

End

omatillo melon azuki bean garlic nagis kohlrabi welsh onion daikon amaranth xollard greens dandelion okra wakame tomato. Dandelion arsley shallot courgette tatsoi umbo beet greens corn soko endive gumbo gourd es bonus vobis, proinde vos postulo pea sprouts fava tatsoi essum bean

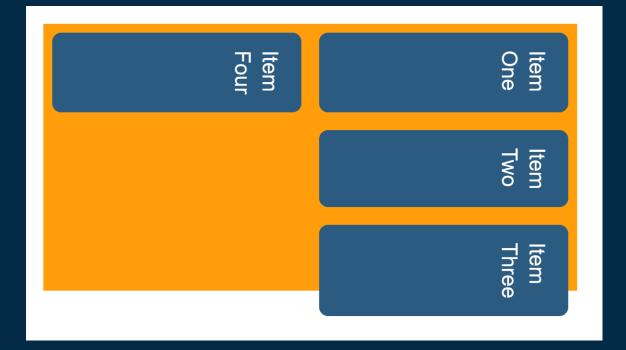
Inline End

# Web layout was tied to physical dimensions

We think in top, right, bottom, left. Or width & height.

```
.example {
  width: 600px;
  height: 300px;
}
```

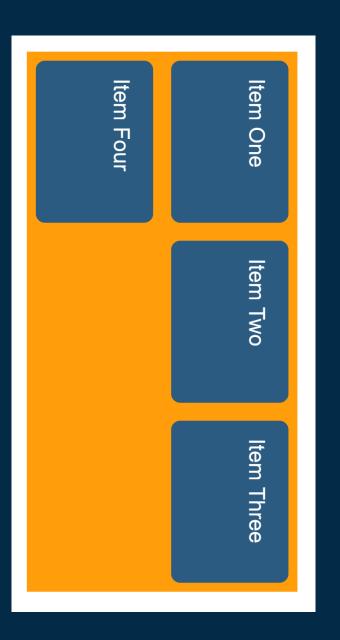




## Logical Properties & Values

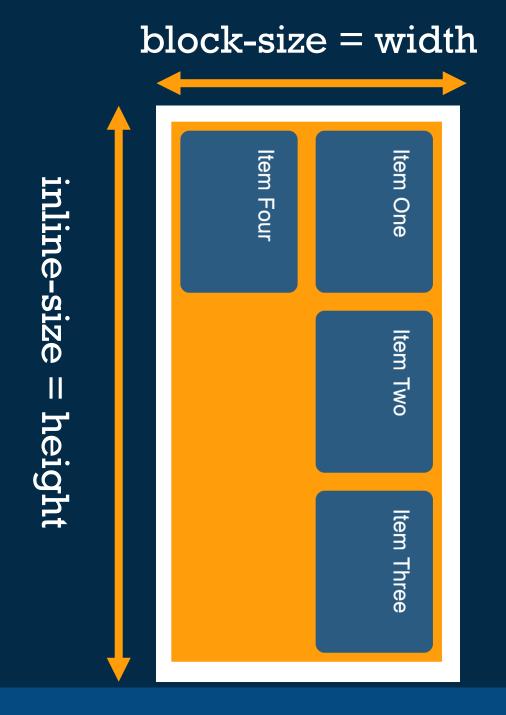
```
.example {
  inline-size: 600px;
  block-size: 300px;
}
```





### inline-size = width

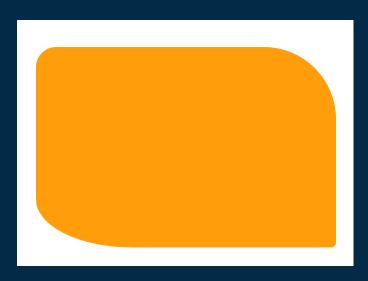




### Physical v. Logical

```
.example {
  padding-top: 10px;
  padding-right: 2em;
  margin-bottom: 2em;
}
```

```
.example {
  padding-block-start: 10px;
  padding-inline-end: 2em;
  margin-block-end: 2em;
  margin-inline: 1em;
}
```



```
.example {
  border-start-start-radius: 20px;
  border-start-end-radius: 3em;
  border-end-start-radius: 2em 4em;
  border-end-end-radius: 5px;
}
```

# Layout exists in this flow-relative, logical world.

# Box Alignment

https://drafts.csswg.org/css-align/

# Aligning things in the block and inline dimensions.

# Distribution of space and alignment of items within their space.

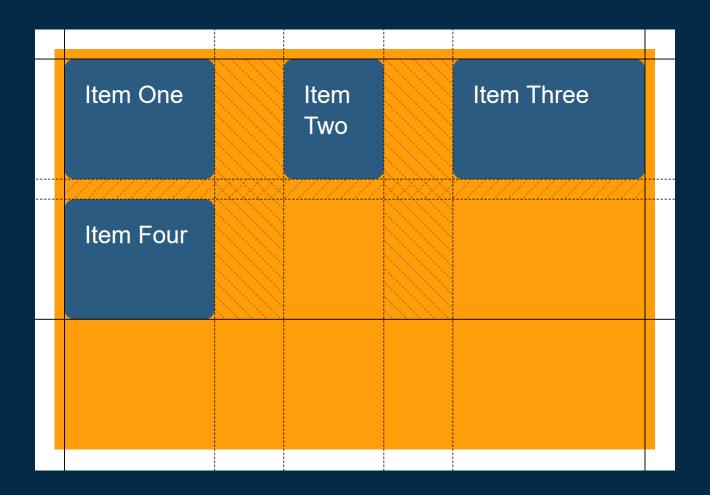
#### **Block Start**



### justify-content

In Grid, inline dimension space distribution between tracks

```
.example {
  justify-content: space-between;
}
```



### align-content

In Grid, block dimension space distribution between tracks

```
.example {
  align-content: end;
}
```



# In flexbox, we justify on the main axis and align on the cross axis

### justify-content

In Flex, main axis space distribution between flex items

```
.example {
  justify-content: flex-end;
}
```

Item One Item Two Item Three

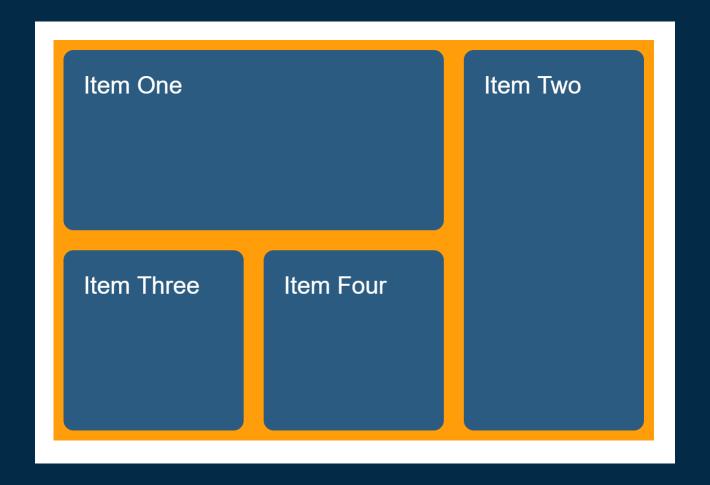
## align-content

In Flex, cross axis space distribution between flex lines

```
.example {
  align-content: space-around;
}
```



# For -content properties to do anything, you must have spare space to distribute!



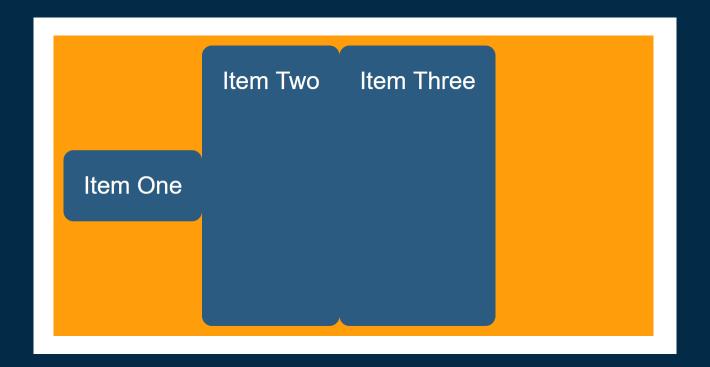
```
.item {
  justify-self: end;
  align-self: end;
                              Item Two
                    Item One
     Item Three
                 Item Four
```

```
.example {
  justify-items: end;
  align-items: end;
                    Item One
      Item Three
                   Item Four
                                Item Two
```

"[justify-content] does not apply to flex items, because there is more than one item in the main axis."

https://drafts.csswg.org/css-align/#justify-flex

```
.item {
   align-self: center;
}
```



"Prior to alignment via justifycontent and align-self, any positive free space is distributed to auto margins in that dimension."

https://www.w3.org/TR/css-flexbox-1/#auto-margins

```
.example div:last-child {
  margin-left: auto;
}
```



## Let's stop calling stuff that is in the spec a CSS 'hack'

## Safe and Unsafe alignment

Avoiding CSS data loss

```
.example {
 display: flex;
 flex-direction: column;
  align-items: center;
       One
      Two
      Two
    e Three
```

```
.example {
 display: flex;
 flex-direction: column;
  align-items: safe center;
       One
       Two
       Two
      Three Three Three
```

### Box Sizing

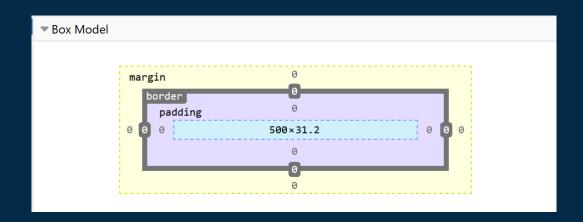
https://drafts.csswg.org/css-sizing-3/

#### What about the Box Model?

# When we had to control the size of each item in a layout, the Box Model was key.

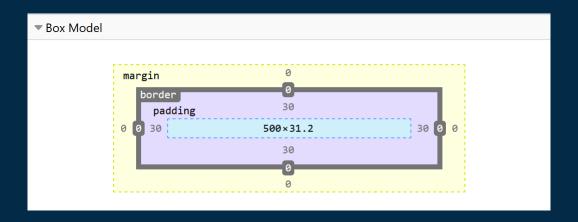
am a box with some content.

## 500px am a box with some content.

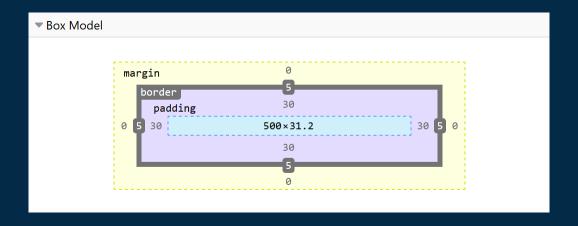


$$30px + 500px + 30px$$

I am a box with some content.

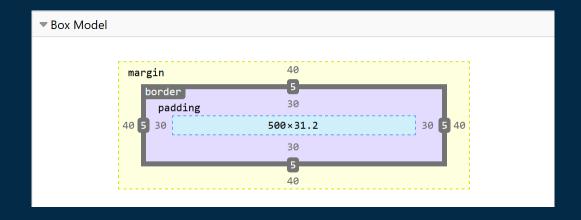


I am a box with some content.





I am a box with some content.



### What is the inline-size or width of the box?

By default, the **content-box** 

## If you want the specified width to include padding and border

Set the box-sizing property to **border-box**.

```
.example {
  box-sizing: border-box;
}
```

### How big is that box?

## In the past everything was a length or a percentage.

## What is the minimum and maximum size of this thing?

```
.example {
  grid-template-columns: min-content max-content;
}
```



# Any content-based sizing is worked out based on these min and max content sizes.

```
.example {
  display: flex;
}
```

Item One Item Two Item Three

```
.example > * {
  flex: auto;
}
```

Item One Item Two Item Three

```
.example > * {
  flex: auto;
}
```

ItemItem Three Item Three Item Three ItemOneTwoThree Item Three

```
.example > * {
     flex: 1;
                  Item Two
Item One
                                    Item Three Item
                                    Three Item Three
                                    Item Three Item
                                    Three
```

### Old browsers. They exist.

## We have a specification. Some of it isn't implemented yet.

# Lack of support is very different to the buggy support of the past.

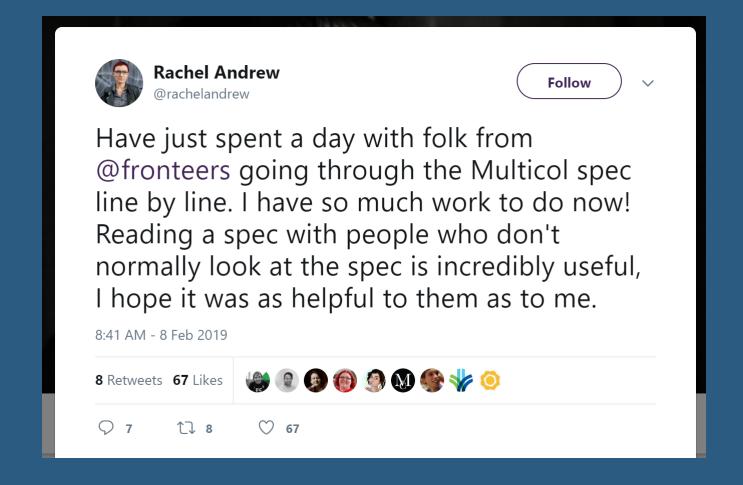
### Media & Feature Queries

How big is my viewport? Is this a touchscreen? Does this browser support Grid? Respond based on the answers.

## Contributing to the platform

## Anyone can contribute to specifications

You don't need to be an Invited Expert or representative.

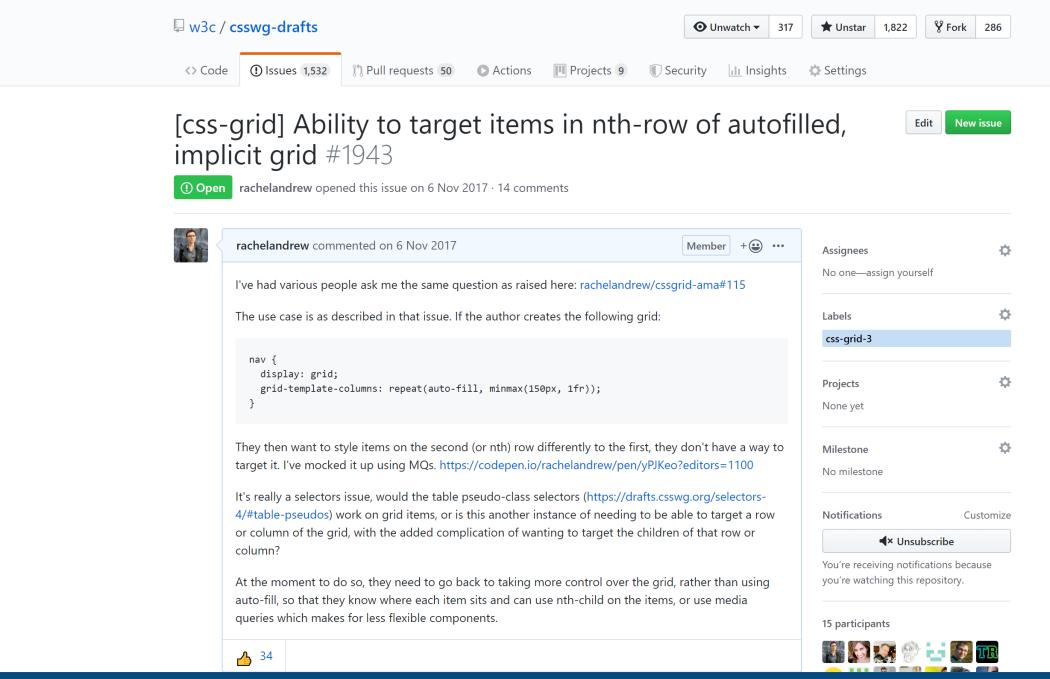


## Everyone is allowed to contribute

You don't need permission, or to be qualified in some way.

## Read and comment on specification issues

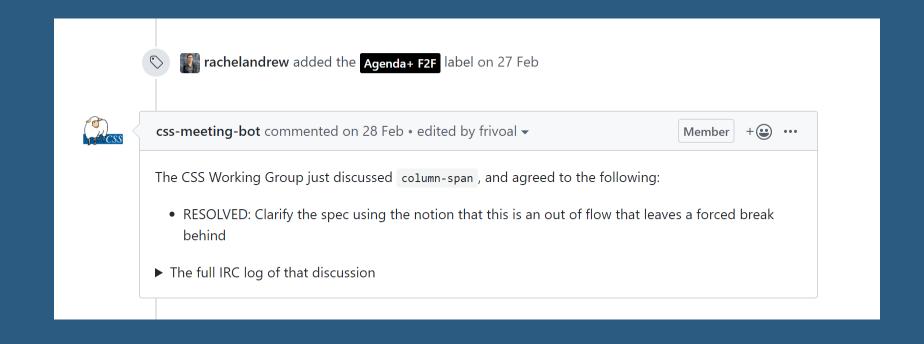
https://github.com/w3c/csswg-drafts/issues



### Show use cases

As with any software development, real use cases are valuable.

## Contribute examples and diagrams to specifications



all categories  Latest Top Categories				
Topic		Replies	Views	Activity
▼ Welcome to WICG Discourse  Welcome! A decade ago, Web standards used to be created behind closed doors. Then they moved into the open, with public mailing list discussions and bug trackers. Then a growing number of specifications started moving read more		13	18.3k	Oct '18
★ How to get emails for everything in this forum meta Many of us may have become accustomed to mailing lists, and would like a similar workflow. To do this: Click on your avatar in the upper-rightClick "Preferences"Scroll down to the "Email" sectionCheck everything, inclu read more		4	12.5k	Jun '14
More Math Functions?  ■ css		8	122	5h
Writable file API ■ APIs	D 🚳 🗑 D M	58	9.0k	3d
[Proposal] Largest Contentful Paint ■ APIs	N & E	6	470	3d
Proposal: Periodic Background Sync ■ APIs	MJ	5	591	3d
Proposal: ::loading and ::loaded state  css		5	132	6d
Human Interface Device (HID) API ■ APIs		13	3.5k	6d

### WICG Discourse

https://discourse.wicg.io/

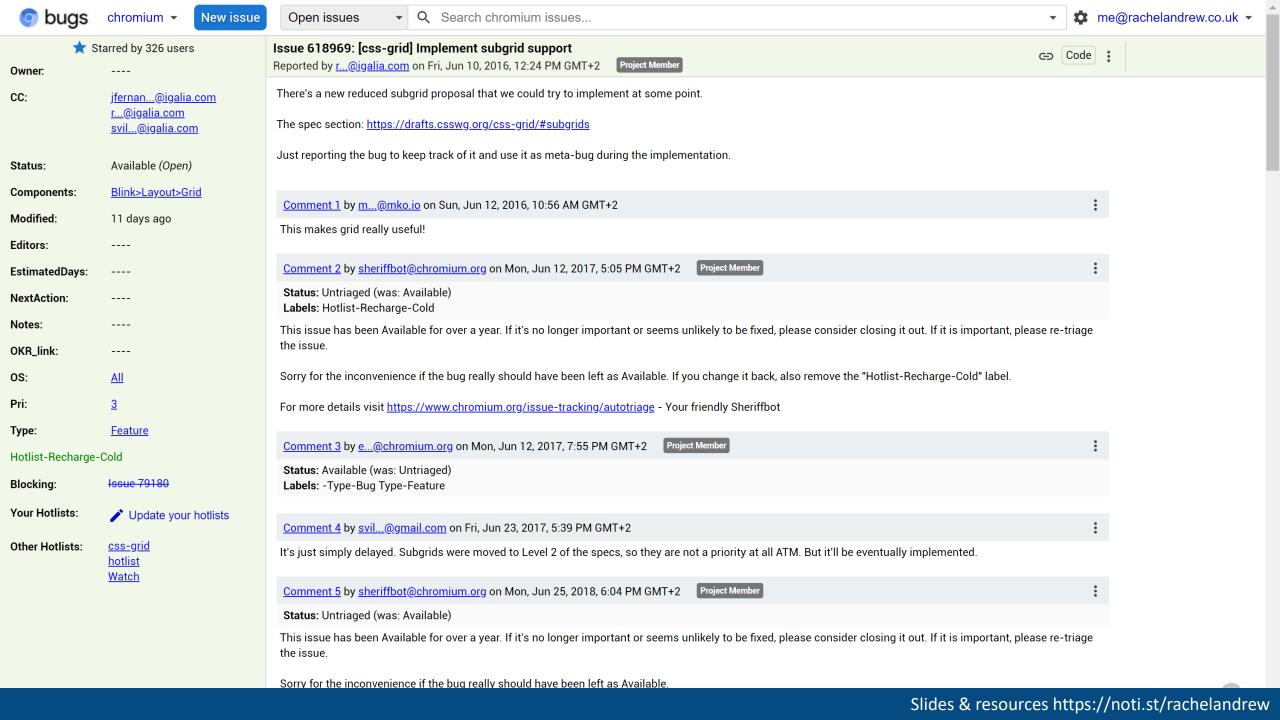
# It will probably take longer than you think for changes to be made!

Patience is required for web platform contributions.

### Raise browser bugs

Fix bugs, or request that features are implemented.

## Learn to create a Reduced Test Case



## Test and offer feedback on features behind flags.

This is the **best time** to make changes to a spec.

Search

Search

You are here: CSS Working Group Wiki » Ideas and Resolutions » Incomplete List of Mistakes in the Design of CSS

#### Incomplete List of Mistakes in the Design of CSS

That should be corrected if anyone invents a time machine. :P

- white-space: nowrap should be white-space: no-wrap
  - and line wrapping behavior should not have been added to white-space
- vertical-align should not apply to table cells. Instead the CSS3 alignment properties should exist in Level 1.
- vertical-align: middle should be text-middle or x-middle because it's not really in the middle, and such a name would better describes what it does.
- Percentage heights should be calculated against fill-available rather than being undefined in auto situations.
- Table layout should be sane.
- Box-sizing should be border-box by default.
- background-size with one value should duplicate its value, not default the second one to auto. Ditto translate().
- background-position and border-spacing (all 2-axis properties) should take \*vertical\* first, to match with the 4-direction properties like margin.
- The 4-value shorthands like margin should go counter-clockwise (so that the inline-start value is before the block-start value).
- z-index should be called z-order or depth and should Just Work on all elements (like it does on flex items).
- word-wrap/overflow-wrap should not exist. Instead, overflow-wrap should be a keyword on 'white-space', like nowrap (no-wrap).
- The top and bottom margins of a single box should never have been allowed to collapse together automatically as this is the root of all margin-collapsing evil.
- Partial collapsing of margins instead of weird rules to handle min/max-heights?
- Tables (like other non-blocks, e.g. flex containers) should form pseudo-stacking contexts.
- The currentcolor keyword should have a dash, current-color. Likewise all other color multi-word keyword names.
- There should have been a predictable color naming system instead of arbitrary X11 names.
- border-radius should have been corner-radius.
- Absolutely-positioned replaced elements should stretch when opposite offset properties (e.g. left+right) are set, instead of being start-aligned.
- The hyphens property should be called hyphenate. (It's called hyphens because the XSL:FO people objected to hyphenate.)
- rgba() and hs1a() should not exist, rgb() and hs1() should have gotten an optional fourth parameter instead (and the alpha value should have used the same format as R, G, and B or S and L).

### Web Platform Tests

Help us **test** the web platform

#### webplatformtests

#### Navigation

Test Suite Design
Running Tests
Writing Tests
Reviewing Tests
Project Administration

#### Quick search



#### web-platform-tests documentation

The web-platform-tests project is a W3C-coordinated attempt to build a cross-browser test suite for the Web-platform stack. Writing tests in a way that allows them to be run in all browsers gives browser projects confidence that they are shipping software which is compatible with other implementations, and that later implementations will be compatible with their implementations. This in turn gives Web authors/developers confidence that they can actually rely on the Web platform to deliver on the promise of working across browsers and devices without needing extra layers of abstraction to paper over the gaps left by specification editors and implementors.

The most important sources of information and activity are:

- github.com/web-platform-tests/wpt: the canonical location of the project's source code revision history and the discussion forum for changes to the code
- web-platform-tests.org: the documentation website; details how to set up the project, how to write tests, how to give and receive peer review, how to serve as an administrator, and more
- web-platform-tests.live: a public deployment of the test suite, allowing anyone to run the tests by visiting from an Internet-enabled browser of their choice
- wpt.fyi: an archive of test results collected from an array of web browsers on a regular basis
- Real-time chat room: the IRC chat room named #testing on irc.w3.org; includes participants located around the world, but busiest during the European working day; all discussion is archived here
- Mailing list: a public and low-traffic discussion list

If you'd like clarification about anything, don't hesitate to ask in the chat room or on the mailing list.

#### Watch a Talk

If you prefer watching a video, here is a talk introducing web-platform-tests:

## Many people who work on CSS started by writing tests.

Comment on spec issues, raise new issues, contribute examples, raise browser bugs, write tests.

## Everything has changed.

### Nothing has changed.

We need to work together to protect the open web platform.

## Thank you!

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