Grids All The Way Down

@rachelandrew at Codegarden

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.

CSS Grid Layout

Two years on.

"I can make flexbox do anything. Why should I learn grid?"

People on Twitter.

"Should I use colour in this web design, or will fonts do?"

A question nobody asks.

"Should I build my site using Flexbox or Grid?"

A question I am asked almost daily.

Stop thinking about Flexbox & Grid as two separate layout methods

Should I build my site using Flexbox or Grid?

YES.





Look at the pattern you need to build.

That will tell you which layout method you need.

Flexbox when you have a bunch of different size stuff you want displayed in a readable way.

Bristol Bombay

Douglas C-26

Vickers Victoria

Cessna 172 Skyhawk

Short Stirling

Gloster IV

Airbus A380

Grid for when you want to control the structure and place items into it.

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Short Stirling

Gloster IV

Airbus A380

If you are putting widths on all your flex items to make them line up. You probably want grid.









de Havilland Canada DHC-3 Otter

The de Havilland Canada DHC-3 Otter is a single-engined, high-wing propeller-driven, short take-off and landing (STOL) aircraft.



Fokker F27 Friendship

The Fokker F27 Friendship is a turboprop airliner developed and manufactured by the Dutch aircraft manufacturer Fokker.



Airbus A380

The Airbus A380 is the world's largest passenger airliner.



Short Stirling | The Short Stirling was a British four-engined heavy bomber of WW2



Cessna 172 | The Cessna 172 is a four seat, single engine aircraft.

```
/* flex */
.airplanes {
   display: flex;
   flex-wrap: wrap;
}

.airplanes li {
   flex: 1 1 400px;
   height: 45vh;
   margin: 2vh 10px;
}
```

```
/* grid */
.airplanes {
  display: grid;
  grid-gap: 5vh;
  grid-template-columns:
   repeat(auto-fill, minmax(400px, auto));
  grid-auto-rows: 45vh;
}
```



de Havilland Canada DHC-3 Otter

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Cessna 172

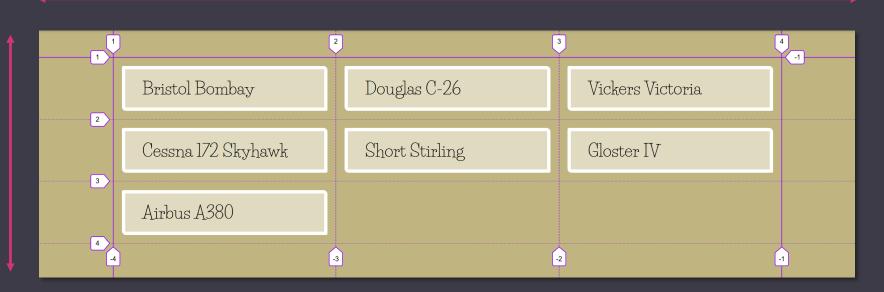
The Cessna 172 is a four seat, single engine aircraft.

Two-dimensional

Grid works in the same way in both axes.

Inline dimension: the grid fills the grid container

Block dimension: as tall as is needed for the content.



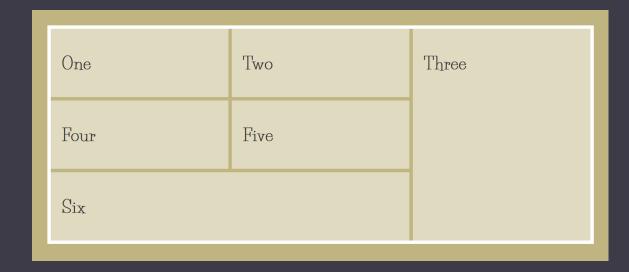
Inline dimension: the grid fills the grid container



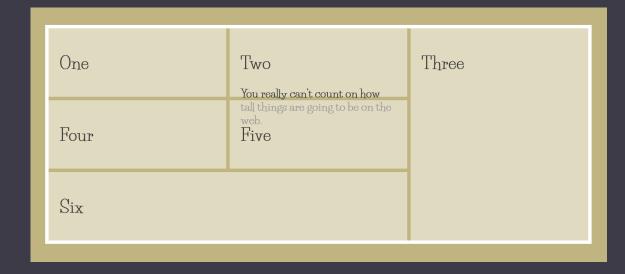
Block dimension:

the grid fills the grid container

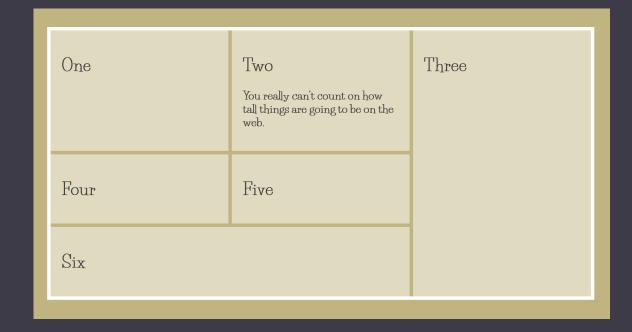
Slides & resources https://noti.st/rachelandrew



```
.grid {
  display: grid;
  grid-template-columns: repeat(3, 1fr);
  grid-template-rows: repeat(3,100px);
  gap: 5px;
}
```



```
.grid {
  display: grid;
  grid-template-columns: repeat(3, 1fr);
  grid-template-rows: repeat(3,100px);
  gap: 5px;
}
```



```
.grid {
    display: grid;
    grid-template-columns: repeat(3, 1fr);
    grid-template-rows:
        repeat(3, minmax(100px,auto));
        gap: 5px;
}
```

We have choices now!

Enjoy them, they have been a long time coming.

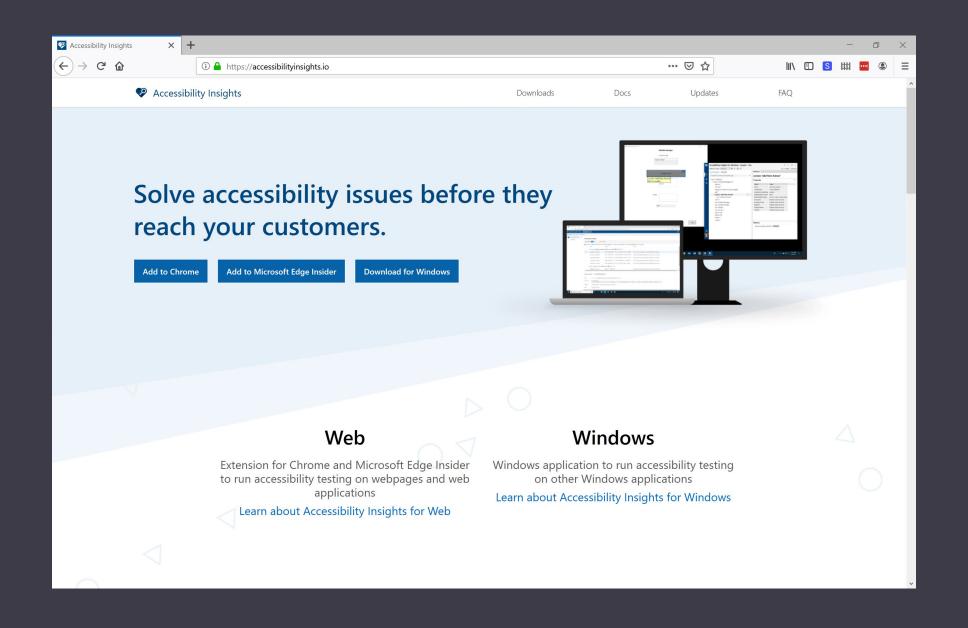


Follow

A quote by @rachelandrew during her workshop. This is her response when someone expressed concern about whether they're using CSS Grid correctly. I'm so happy about this! I always feel like I'm not utilizing CSS Grid "the right way" but it works... so...



12:59 PM - 12 May 2019











I'm Rachel Andrew. I'm a web developer, writer, public speaker. Co-founder of Perc 7 CMS and Note 1 wiember of the CSS Wee 9 ng Group. Editor in Chief of Smashin vagazine. This is my website.

Latest work

When And How io Use CSS

How To Learn CSS

Smashing Magazine

2018: A Smashing Year In

What can't we do yet?





The de Havilland Canada DHC-3 Otter is a single-engined, high-wing, propeller-driven, short take-off and landing (STOL)





Airbus A380 The Airbus A380 is the world's largest passenger airliner.





Short Stirling

The Short Stirling was a British four-engined heavy bomber of WW2



```
figure {
  display: grid;
  height: 100%;
  grid-template-columns: 1fr 3fr;
  grid-template-rows:
     1fr minmax(1em, auto);
}
```

Only direct children become grid or flex items.

Their children return to normal flow.

The following content uses block and inline layout

Block elements extend to fill the container in the inline direction. They break onto a new line. Any inline elements such as a **span** do not break onto a new line.



Media Object

Content inside the flex item returns to normal flow layout.

Unless you change the value of display, elements continue to display using these block and inline rules.





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Airbus A380 The Airbus A380 is the world's largest passenger airliner.





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de Havilland Canada DHC-3 Otter

The de Hav single-engi short take-c

DHC-3 Otter is a g, propeller-driven, g (STOL) aircraft.



Airbus A380 The Airbus airliner.

orld's largest passenger



Fokker F27 Friendship The Fokker F27 Friendship is a turboprop airliner developed and manufactured by the Dutch aircraft manufacturer Fokker.

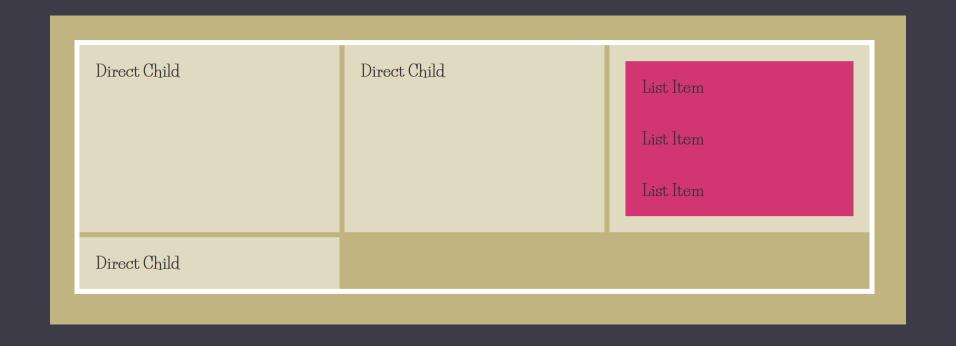


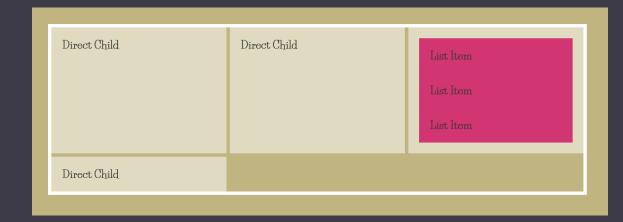
Short Stirling

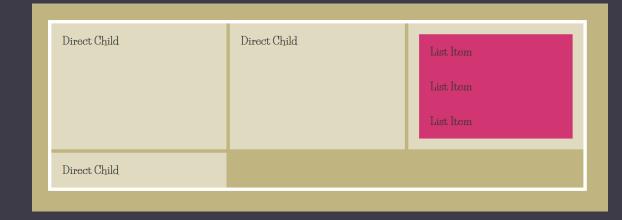
The Short Stirling was a British four-engined heavy bomber of WW2

display: contents

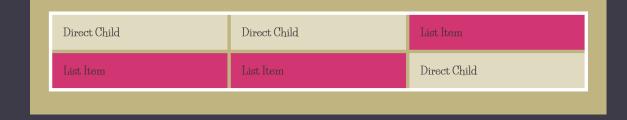
Removing the box from the layout.



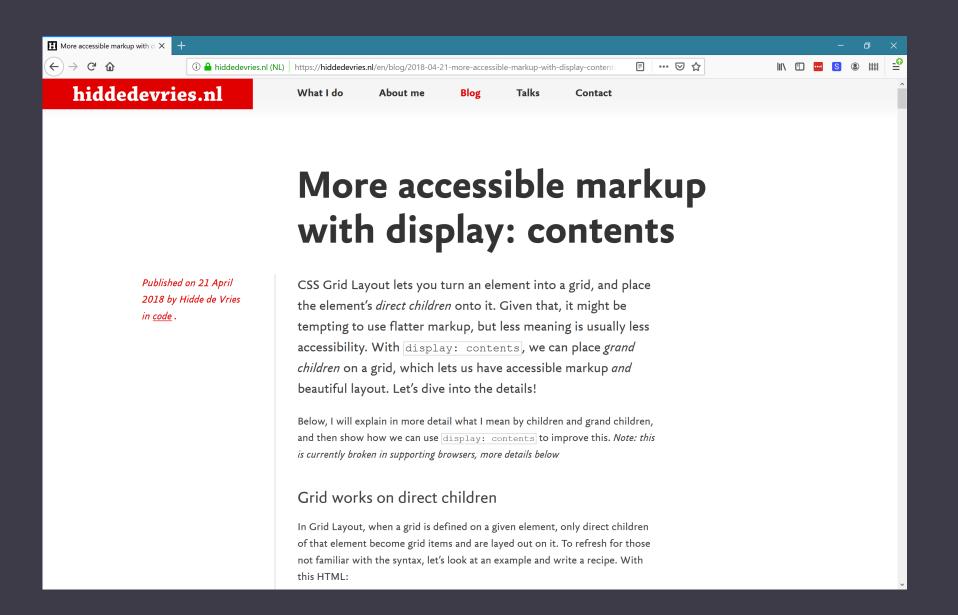




```
/* CSS */
.grid {
  display: grid;
  grid-template-columns: repeat(3, 1fr);
.grid > * {
  background-color: rgba(255,255,255,.5);
ul > * {
  background-color: rgb(209,54,114);
ul {
```

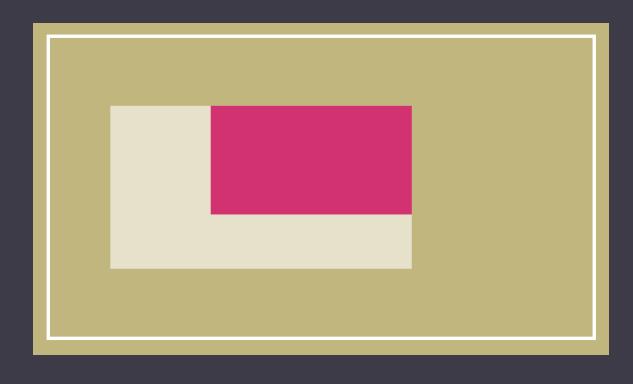


```
/* CSS */
.grid {
  display: grid;
  grid-template-columns: repeat(3, 1fr);
.grid > * {
  background-color: rgba(255,255,255,.5);
ul > * {
  background-color: rgb(209,54,114);
ul {
  display: contents;
```

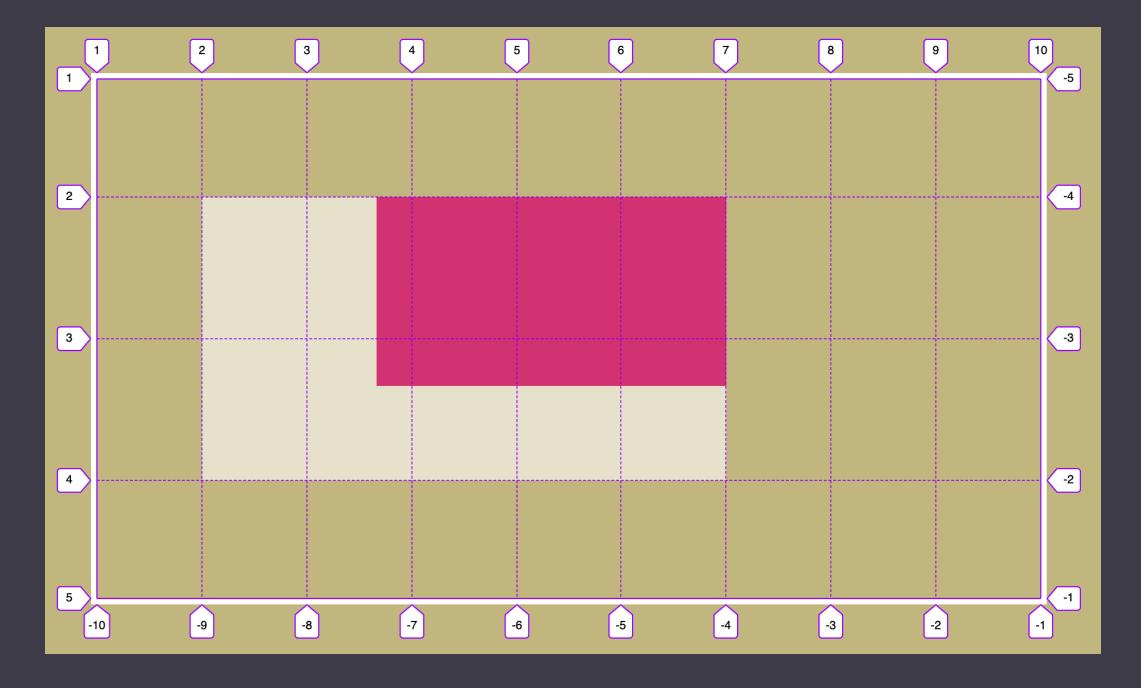


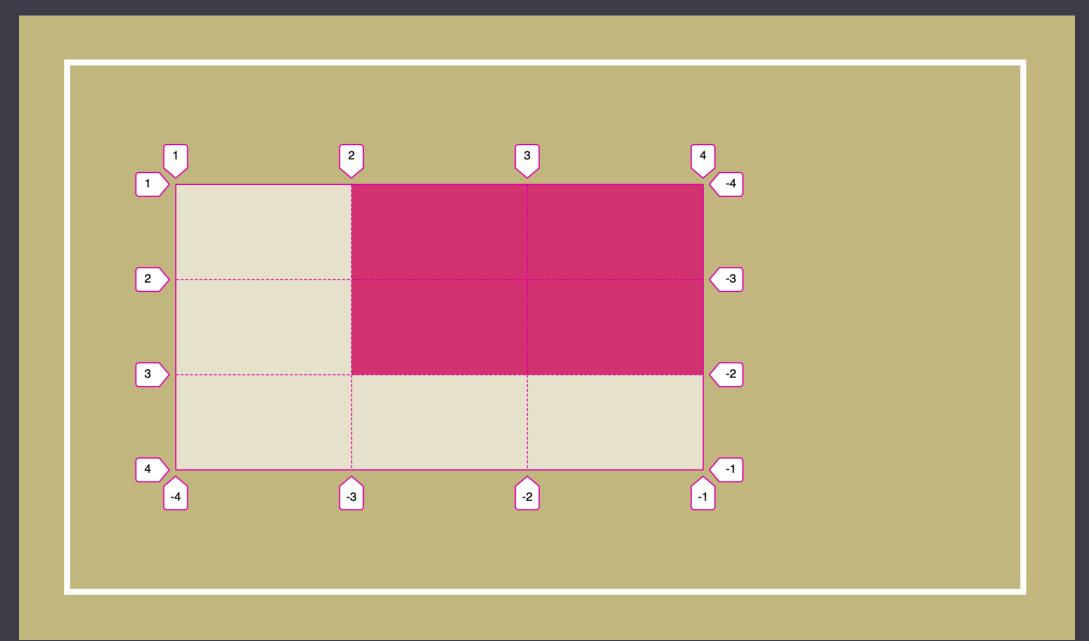
Subgrid

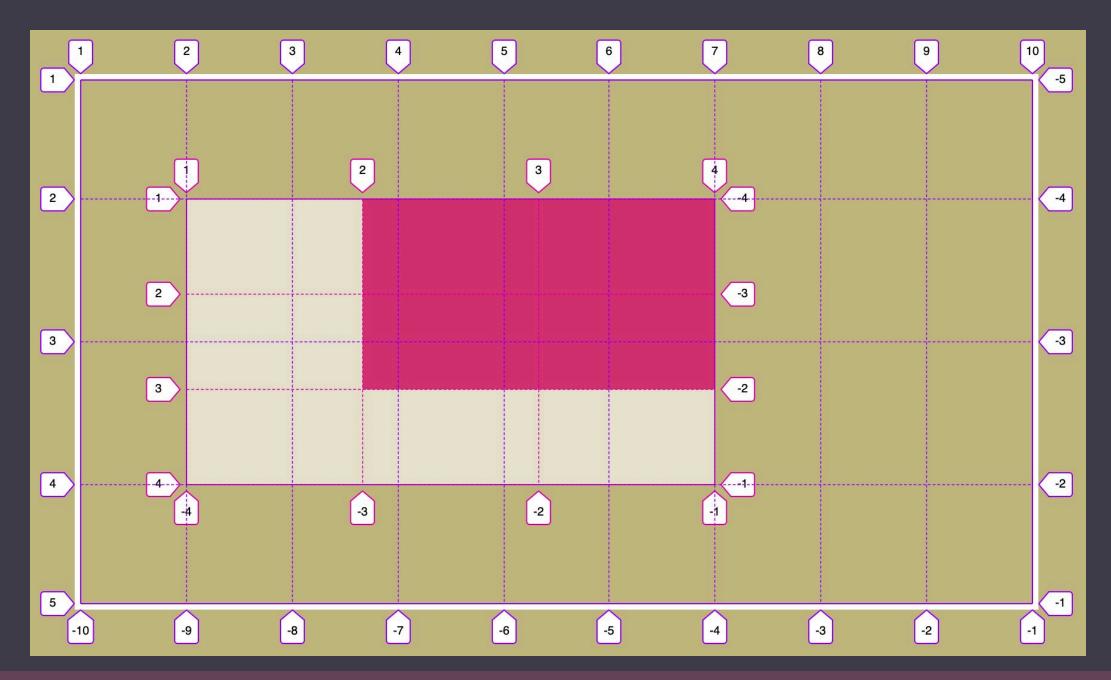
Create a grid on a grid item which uses the grid tracks defined on the parent – for rows, columns or both.

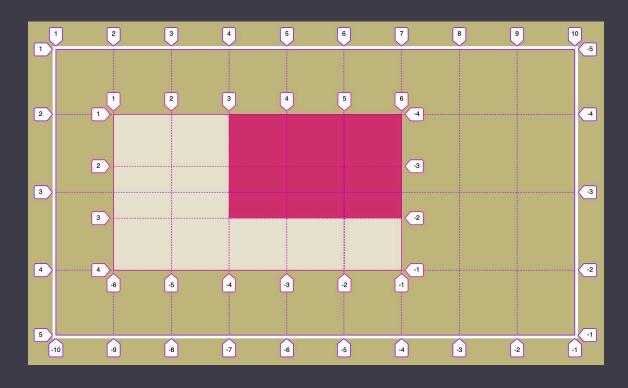


```
.grid {
 display: grid;
  grid-template-columns: repeat(9, 1fr);
  grid-template-rows: repeat(4, minmax(100px,
auto);
.item {
  grid-column: 2 / 7;
  grid-row: 2 / 4;
 display: grid;
  grid-template-columns: repeat(3, 1fr);
  grid-template-rows: repeat(3, 80px);
.subitem {
  grid-column: 2 / 4;
  grid-row: 1 / 4;
```

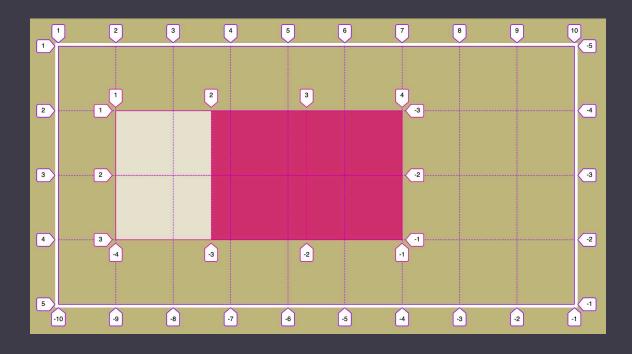




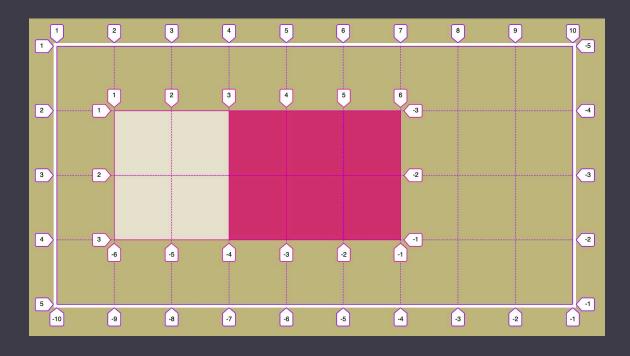




```
.grid {
 display: grid;
  grid-template-columns: repeat(9, 1fr);
  grid-template-rows: repeat(4, minmax(100px,
auto));
.item {
  grid-column: 2 / 7;
  grid-row: 2 / 4;
  display: grid;
  grid-template-columns: subgrid;
  grid-template-rows: repeat(3, 80px);
.subitem {
  grid-column: 3 / 6;
  grid-row: 1 / 4;
```



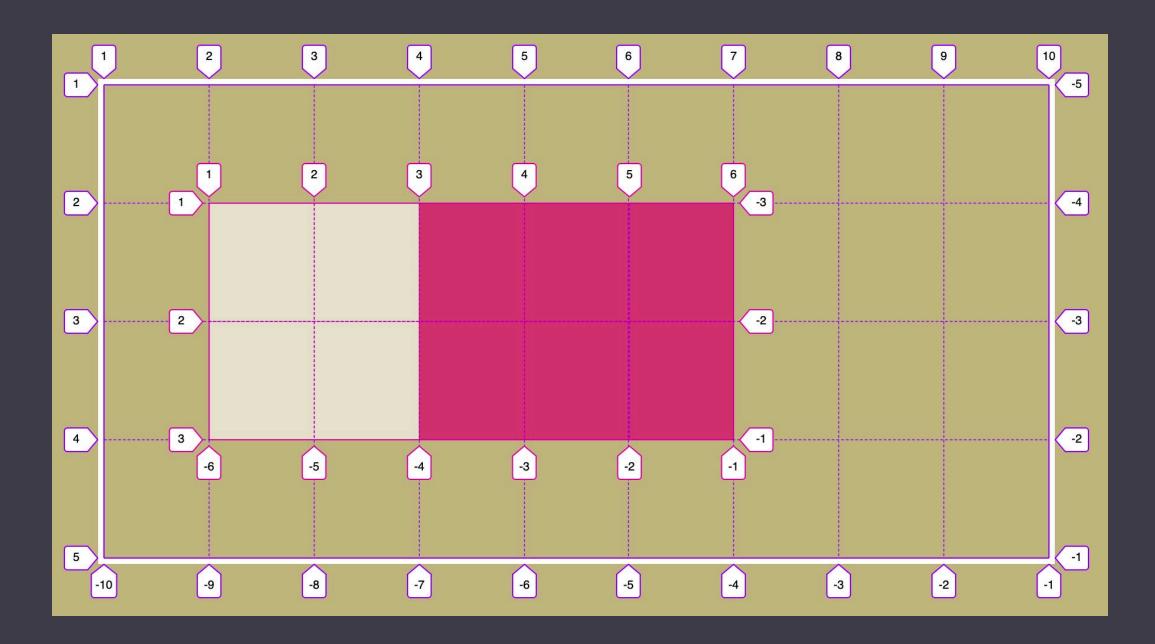
```
.grid {
 display: grid;
  grid-template-columns: repeat(9, 1fr);
  grid-template-rows: repeat(4, minmax(100px,
auto));
.item {
  grid-column: 2 / 7;
  grid-row: 2 / 4;
  display: grid;
  grid-template-columns: repeat(3, 1fr);
  grid-template-rows: subgrid;
.subitem {
  grid-column: 2 / 4;
  grid-row: 1 / 3;
```



```
.grid {
 display: grid;
  grid-template-columns: repeat(9, 1fr);
  grid-template-rows: repeat(4, minmax(100px,
auto));
.item {
  grid-column: 2 / 7;
  grid-row: 2 / 4;
  display: grid;
  grid-template-columns: subgrid;
  grid-template-rows: subgrid;
.subitem {
  grid-column: 3 / 6;
  grid-row: 1 / 3;
```

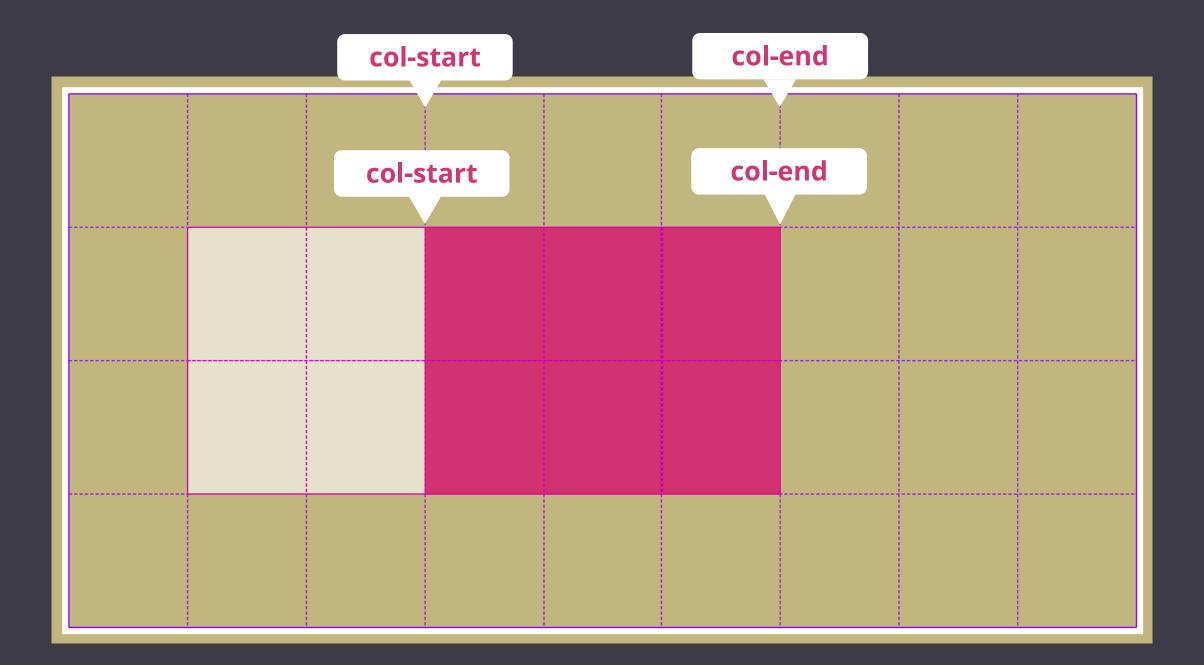
Line numbers start from 1 inside the subgrid.

You position child items in the subgrid according to the subgrid line numbering, not those of the parent.



Line names on the parent are passed into the subgrid.

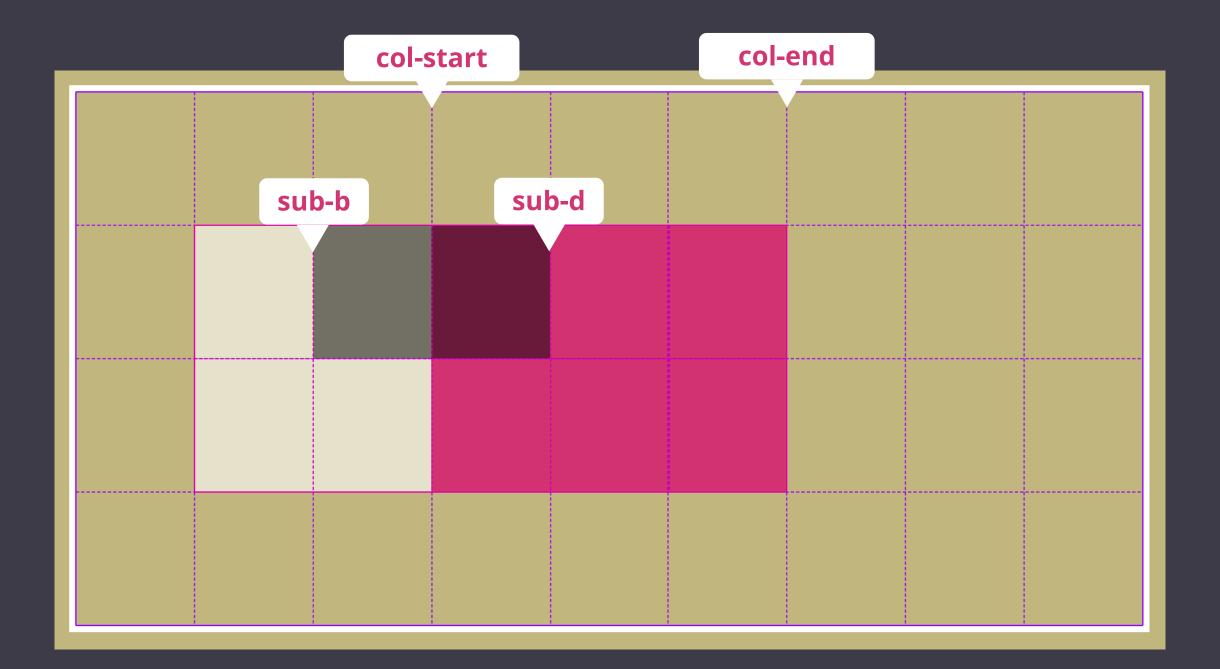
If you have named lines on the parent grid they will be passed into the subgrid and added to any names defined there.



```
.grid {
 display: grid;
  grid-template-columns:1fr 1fr 1fr [col-start] 1fr 1fr 1fr [col-end] 1fr 1fr 1fr;
  grid-template-rows: repeat(4, minmax(100px, auto));
.item {
  grid-column: 2 / 7;
  grid-row: 2 / 4;
 display: grid;
  grid-template-columns: subgrid;
  grid-template-rows: subgrid;
.subitem {
  grid-column: col-start / col-end;
 grid-row: 1 / 3;
```

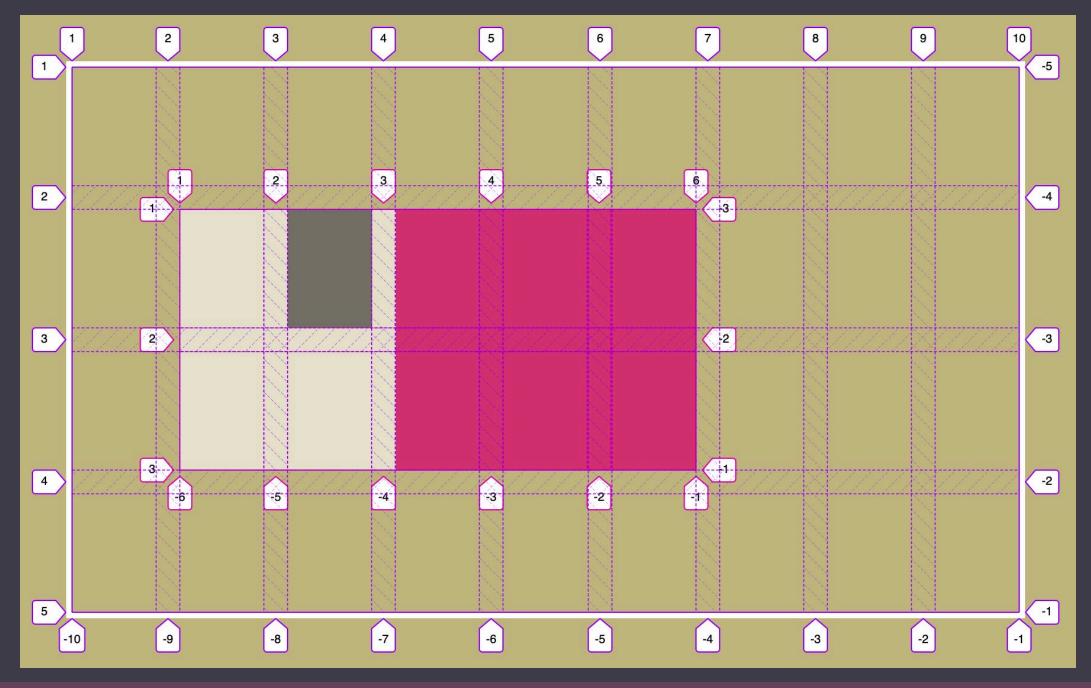
You can add named lines to the subgrid.

Line names are added after the subgrid keyword.

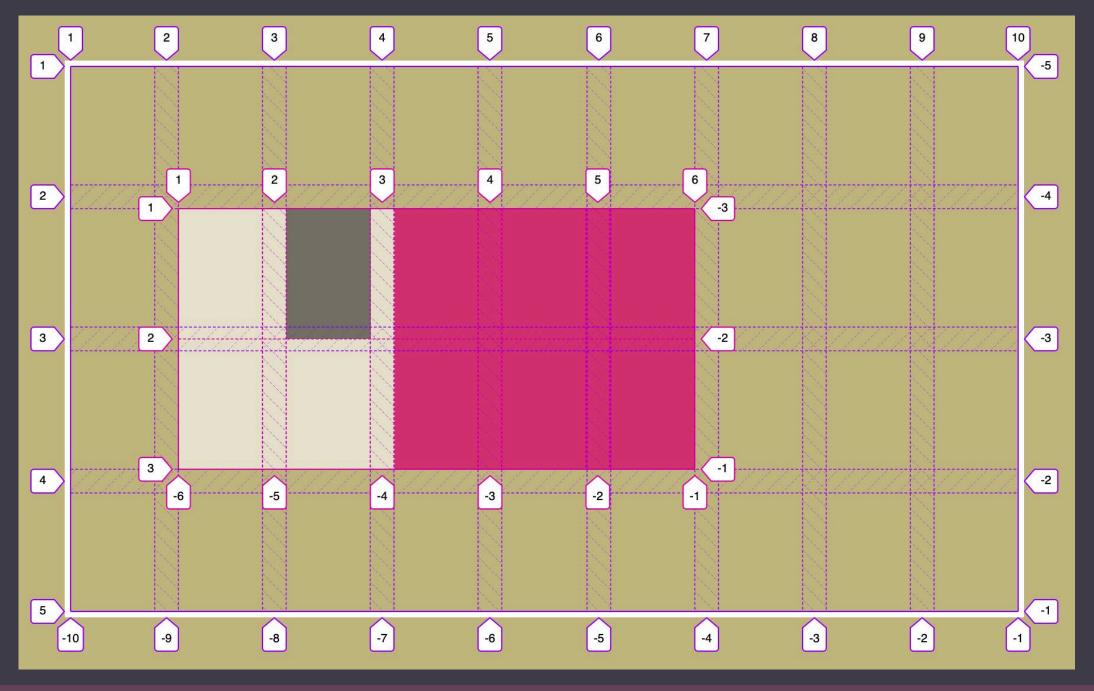


```
.grid {
 display: grid;
 grid-template-columns: 1fr 1fr 1fr [col-start] 1fr 1fr 1fr [col-end] 1fr 1fr 1fr;
 grid-template-rows: repeat(4, minmax(100px, auto));
.item {
 grid-column: 2 / 7;
 grid-row: 2 / 4;
 display: grid;
 grid-template-columns: subgrid [sub-a] [sub-b] [sub-c] [sub-d] [sub-e] [sub-f];
 grid-template-rows: subgrid;
.subitem {
 grid-column: col-start / col-end;
 grid-row: 1 / 3;
.subitem {
 grid-column: sub-b / sub-d;
 grid-row: 1 / 3;
```

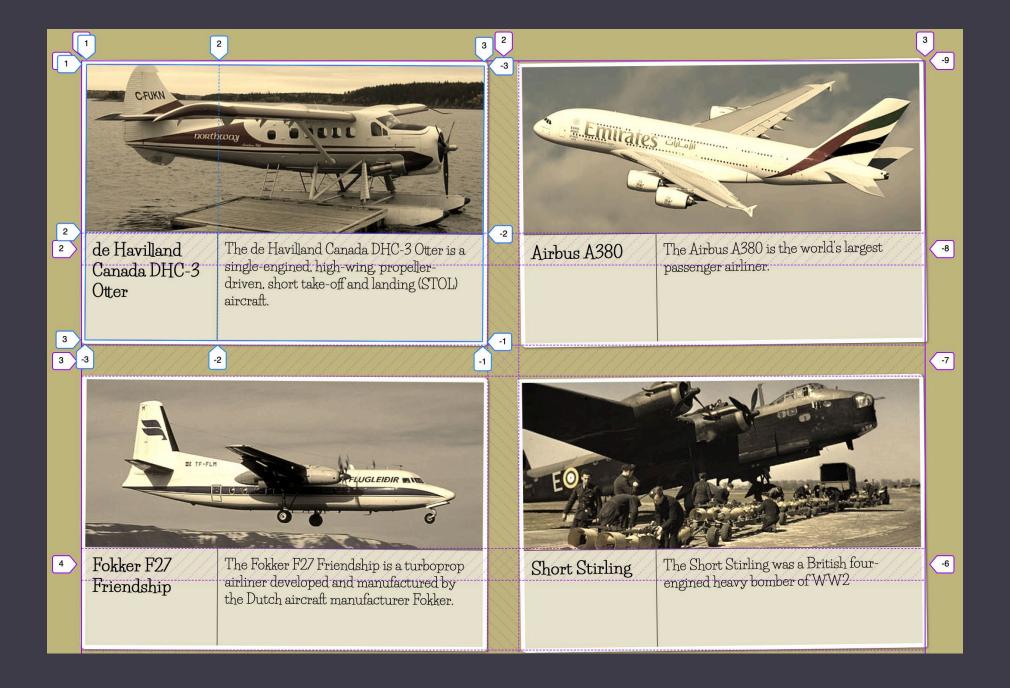
The subgrid inherits the gaps from the parent.



You can change the gaps on the subgrid.

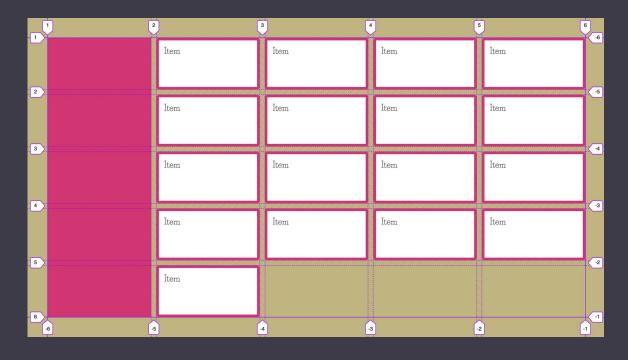


Sizing of items in the subgrid can change the size of the parent tracks.



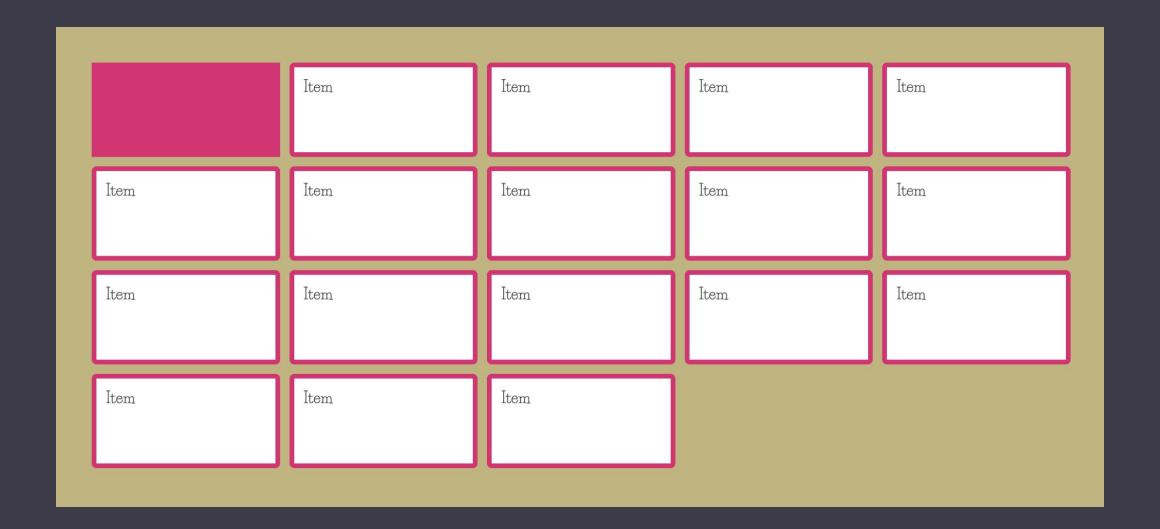
Solved by subgrid ...

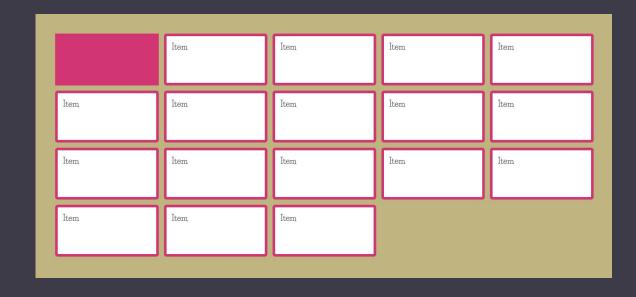




```
.wrapper {
 display: grid;
 gap: 10px;
 grid-template-columns: repeat(5, 1fr);
 /* 5 explicit rows */
 grid-template-rows:
   repeat(5, minmax(100px, auto));
.fullheight {
 background-color: rgb(209,54,114);
 grid-row: 1 / -1;
```

Line -l is the end line of the explicit grid.

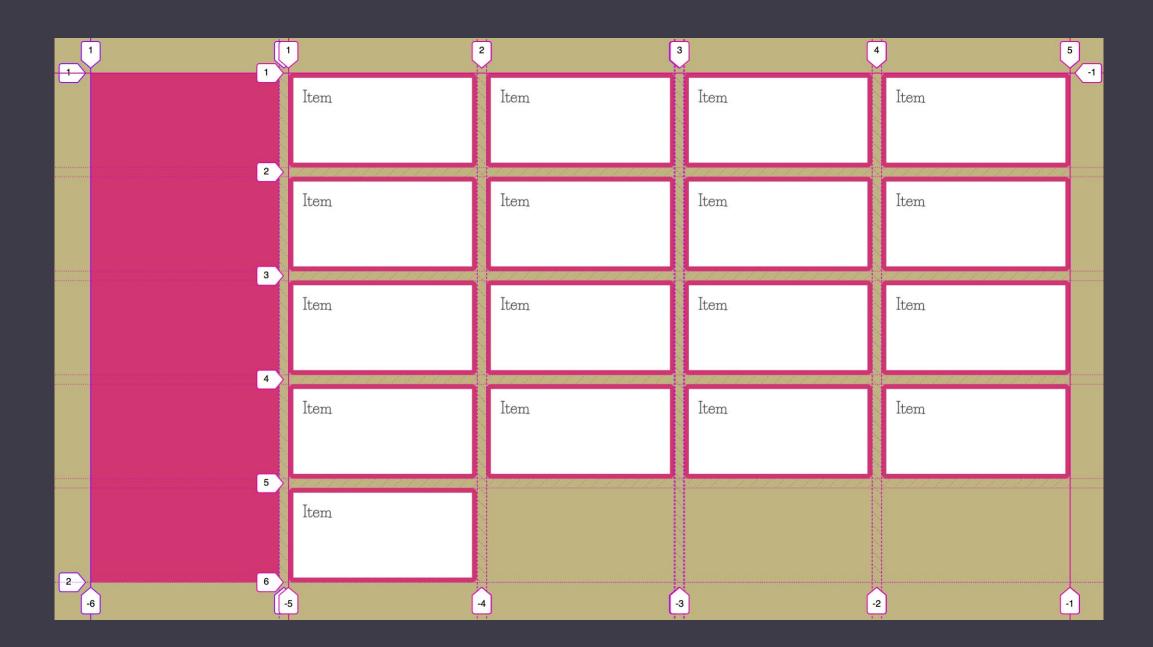


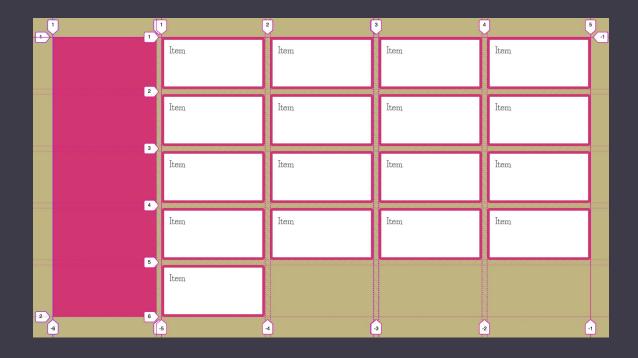


```
.wrapper {
  display: grid;
  gap: 10px;
  grid-template-columns: repeat(5, 1fr);
  /* no defined explicit rows */
  grid-auto-rows: minmax(100px, auto);
}
.fullheight {
  background-color: rgb(209,54,114);
  grid-row: 1 / -1;
}
```

We can't target the end line of the implicit grid.

Place the items in a container which uses a subgrid for columns

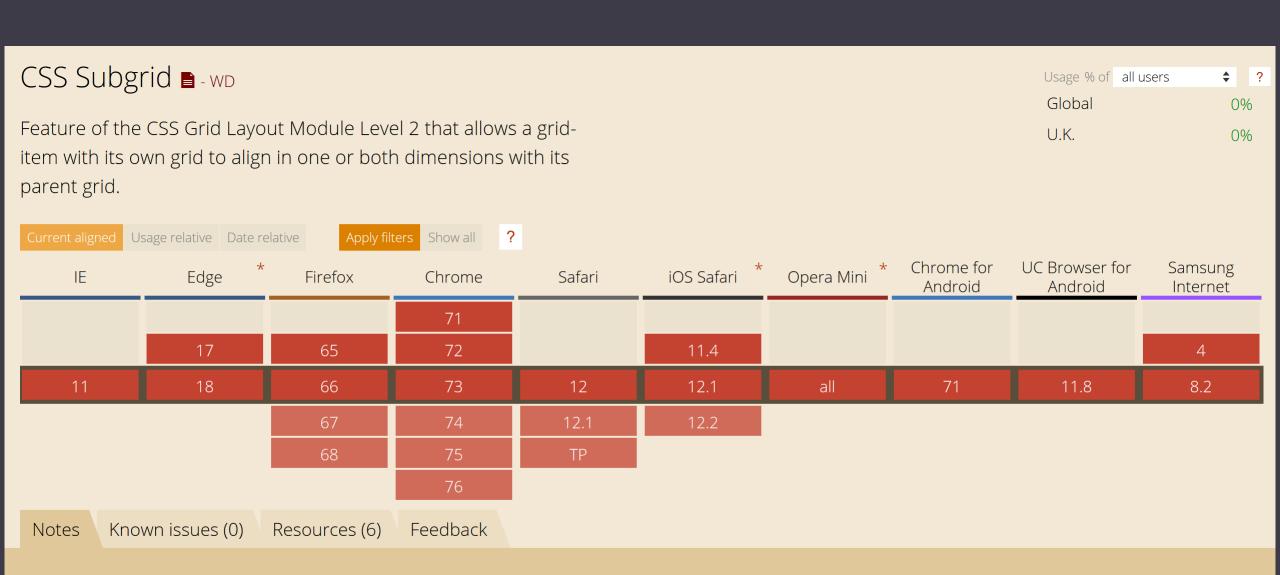




```
.wrapper {
 display: grid;
 gap: 10px;
 grid-template-columns: repeat(5, 1fr);
 /* no defined explicit rows */
 grid-auto-rows: minmax(100px, auto);
.items {
 grid-column: 2 / -1;
 display: grid;
 grid-template-columns: subgrid;
 grid-auto-rows: minmax(100px, auto);
.fullheight {
 background-color: rgb(209,54,114);
 grid-row: 1 / -1;
```

Now the bad news

There are currently no browser implementations of subgrid.



Firefox status: in-development

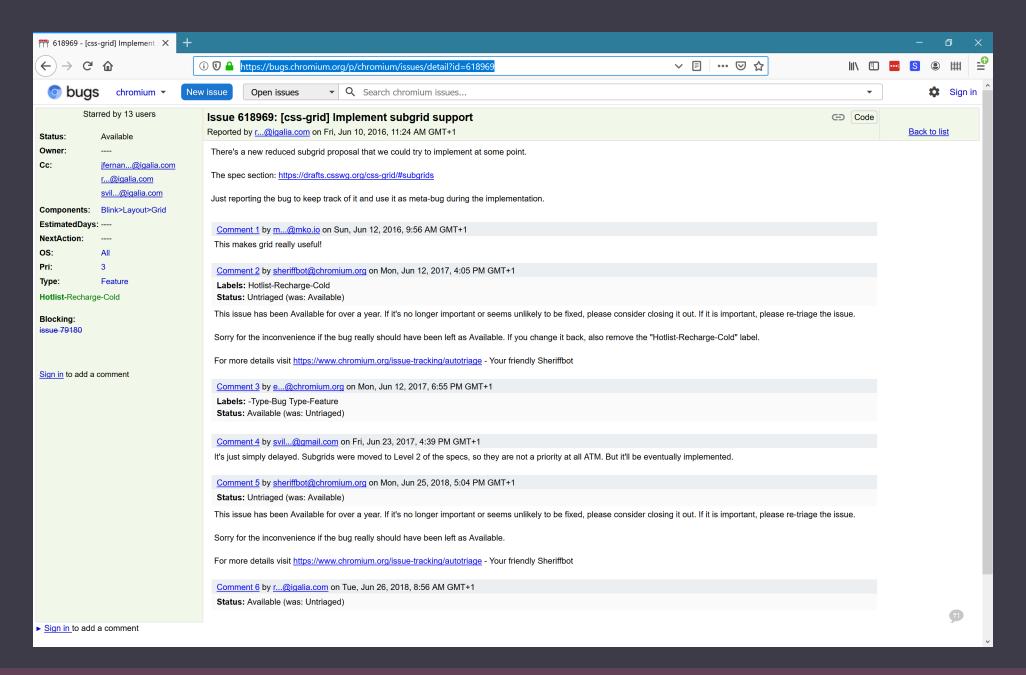
Slightly better news

Firefox are implementing subgrid as we speak!

Fewer rendering engines

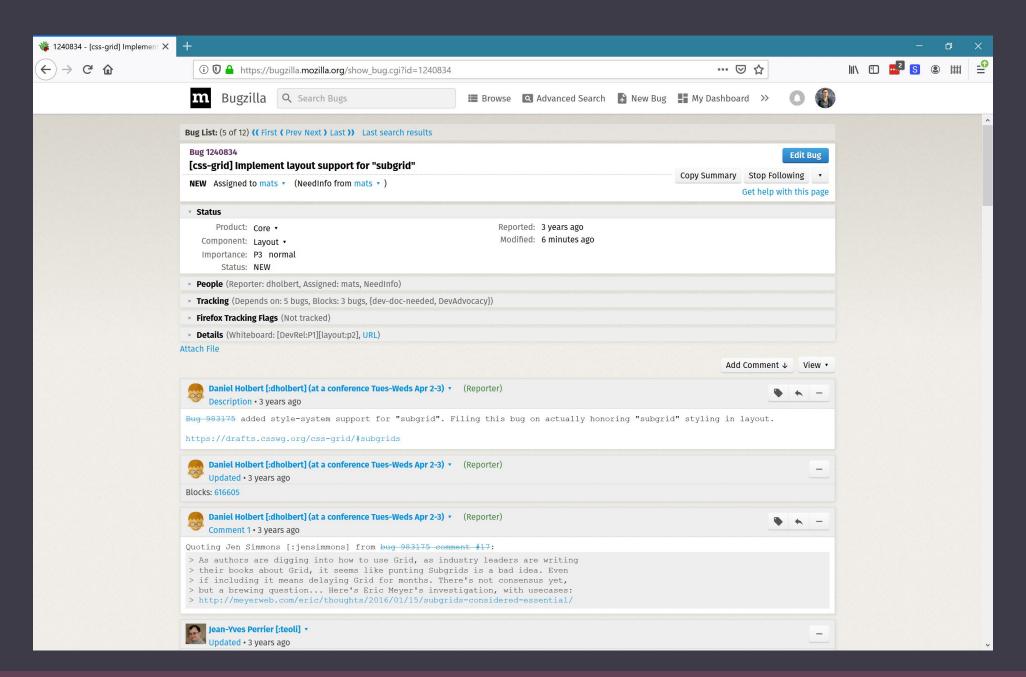
fewer places where new ground can be broken.

Tell browsers what you want in the platform.



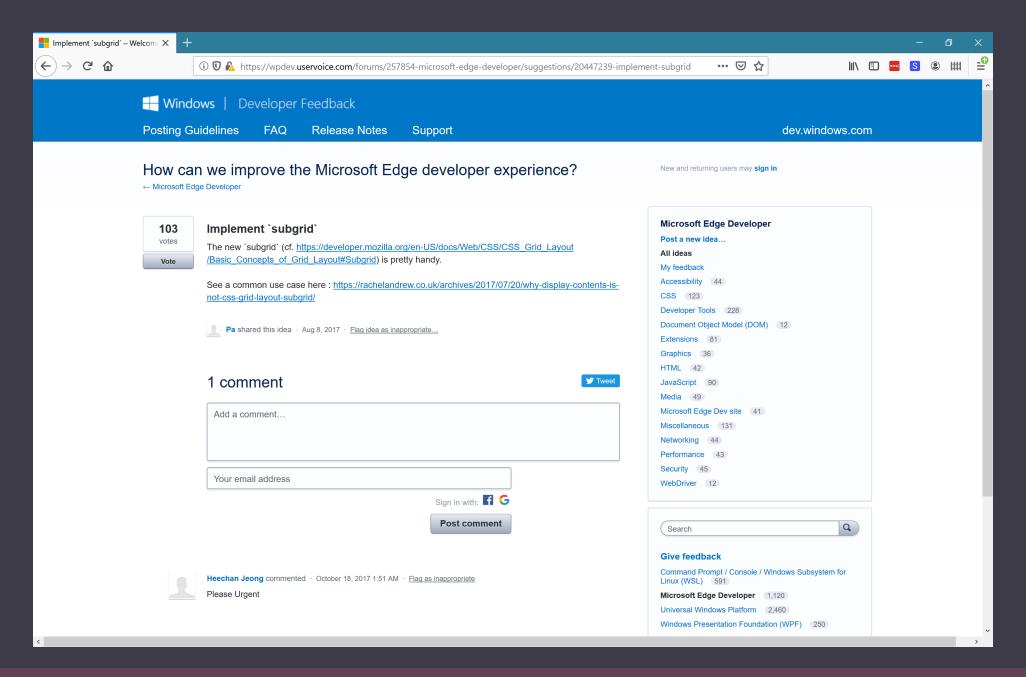
https://bugs.chromium.org/p/chromium/issues/detail?id=618969





https://bugzilla.mozilla.org/show_bug.cgi?id=1240834





https://wpdev.uservoice.com/forums/257854-microsoft-edgedeveloper/suggestions/20447239-implement-subgrid



Write about features you want to see in browsers

Write up your use cases, the problems having the feature will solve.

Use new features

Browsers are watching.

Use of CSS properties over time.

grid-template-rows

▼ Show all historical data: □

Percentage of page loads that use this feature

The chart below shows the percentage of page loads (in Chrome) that use this feature at least once. Data is across all channels and platforms.

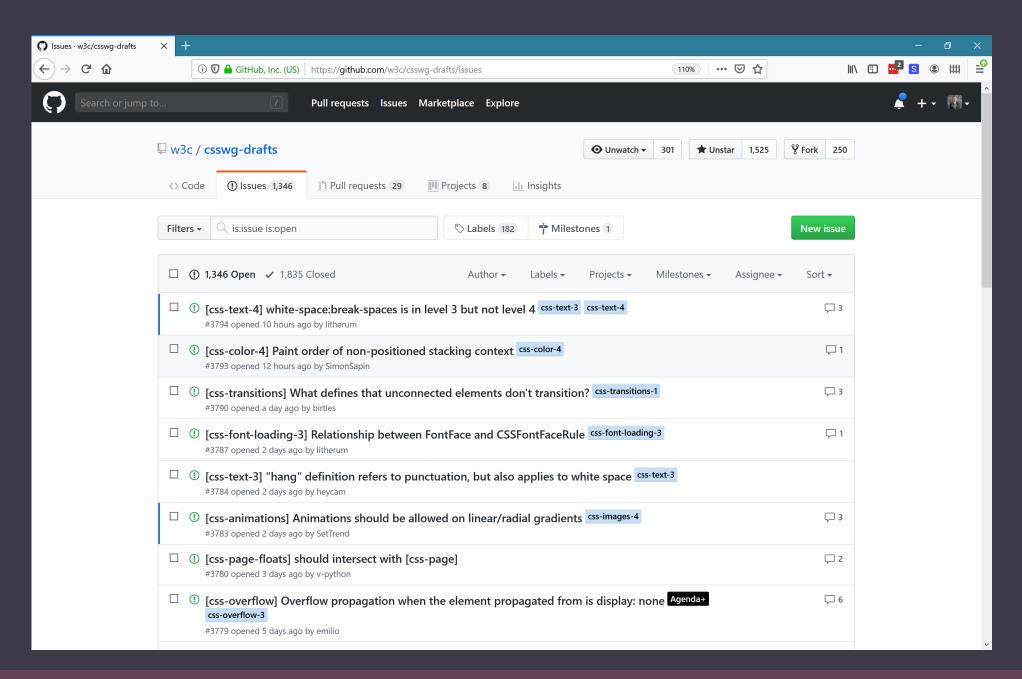


Use new features when they are behind a flag

You get to beta test the web platform!

Give feedback to the CSS Working Group

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



Participate in the web platform

Or you are leaving your future as a designer or developer in the hands of the very few who do.

Thank you

@rachelandrew