A solution for the visual and source order disconnect

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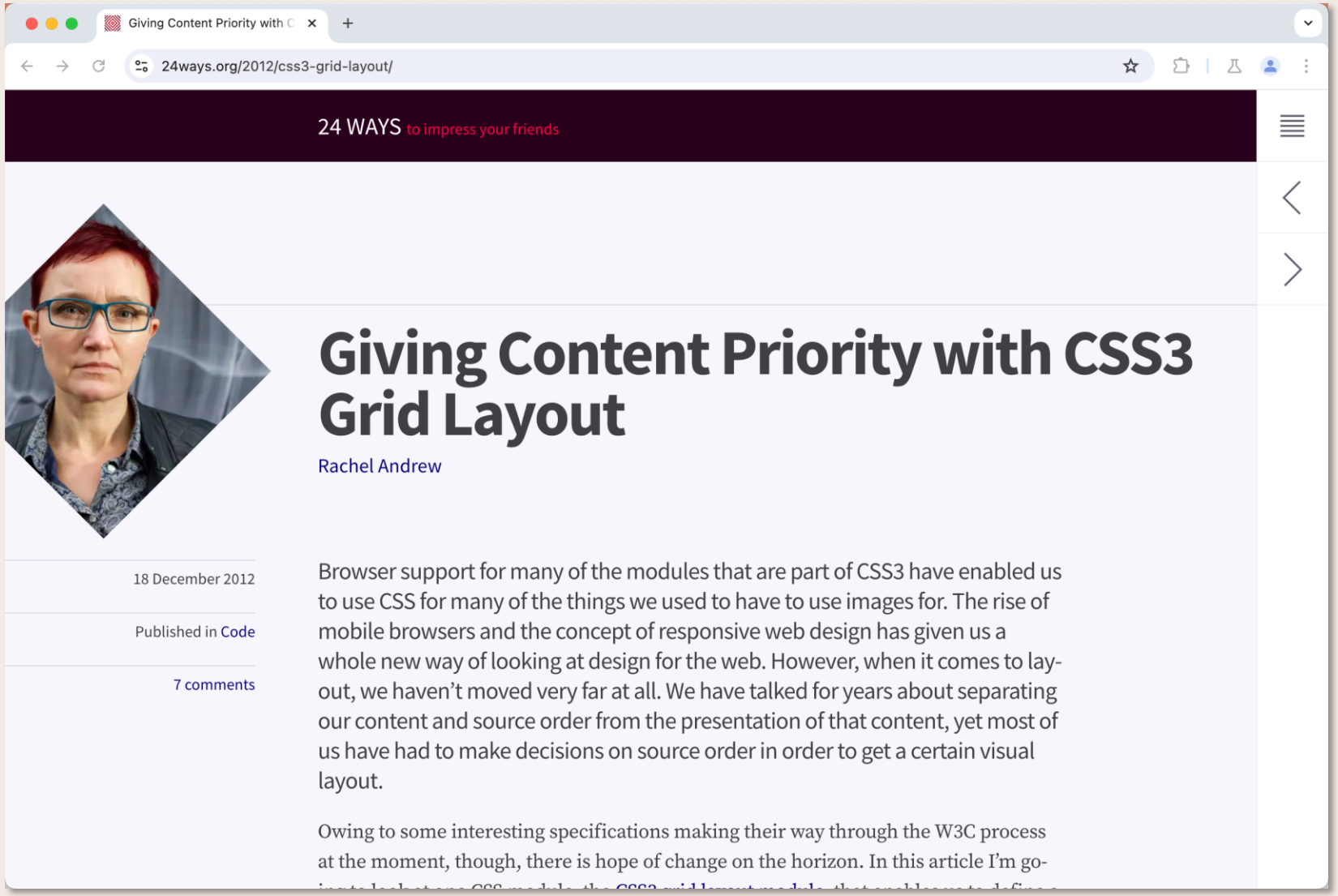
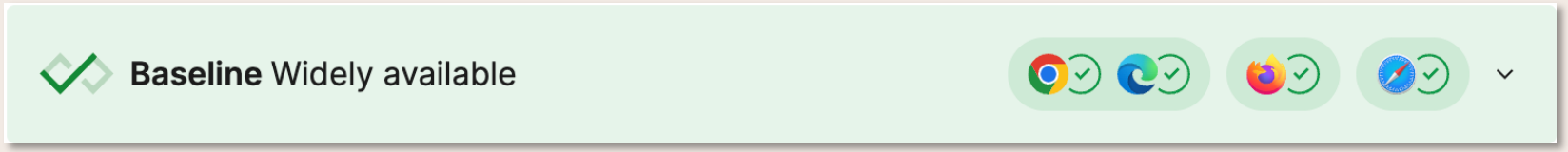
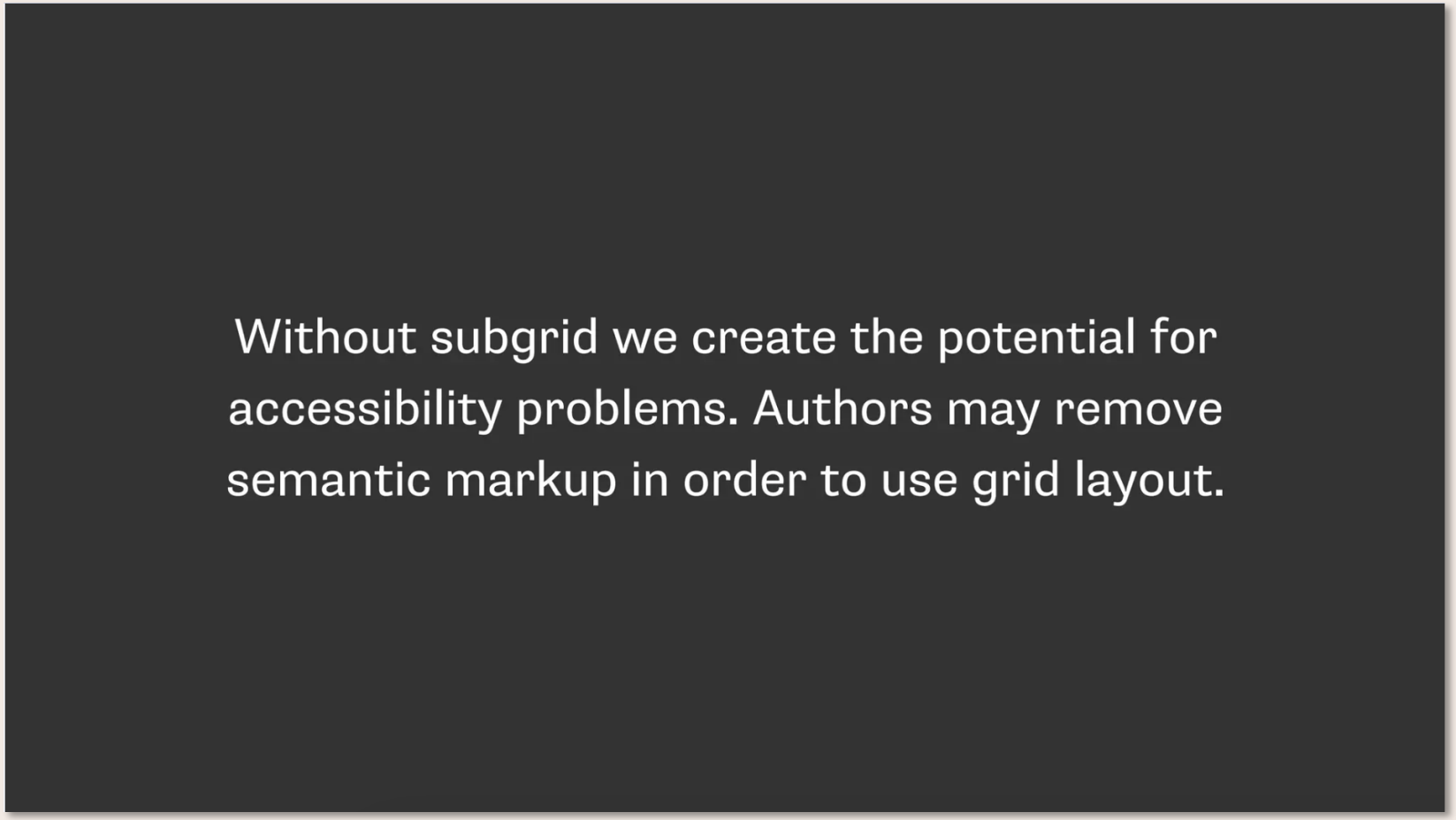


24ways.org/2012/css3-grid-layout

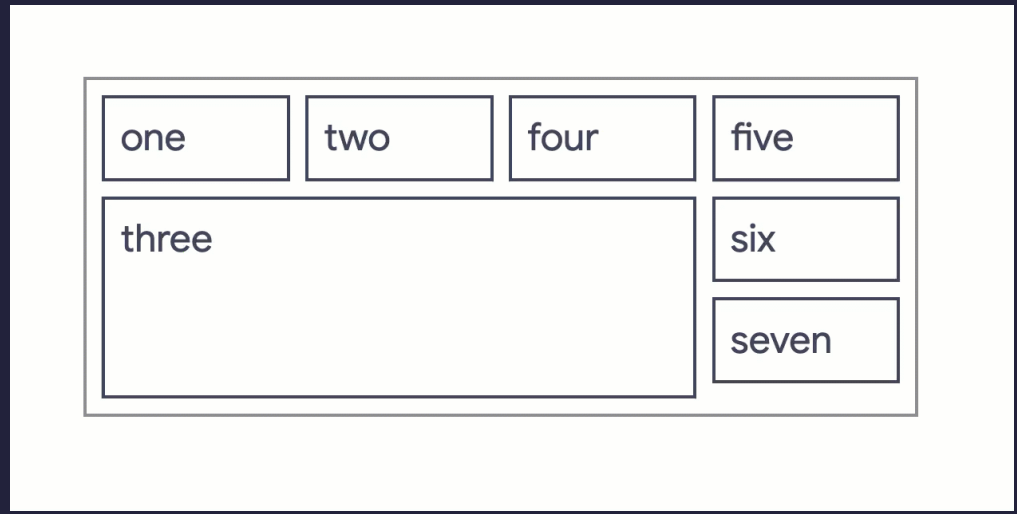


CSS Grid, Baseline Widely available since January 2023



Slide from 2015 CSS Day grid talk

```css
.grid a:nth-child(3) {
  grid-column: span 3;
  grid-row: span 3;
}

.grid {
  display: grid;
  grid-auto-flow: dense;
  grid-template-columns: repeat(4,1fr);
}
```



Here’s a cool thing

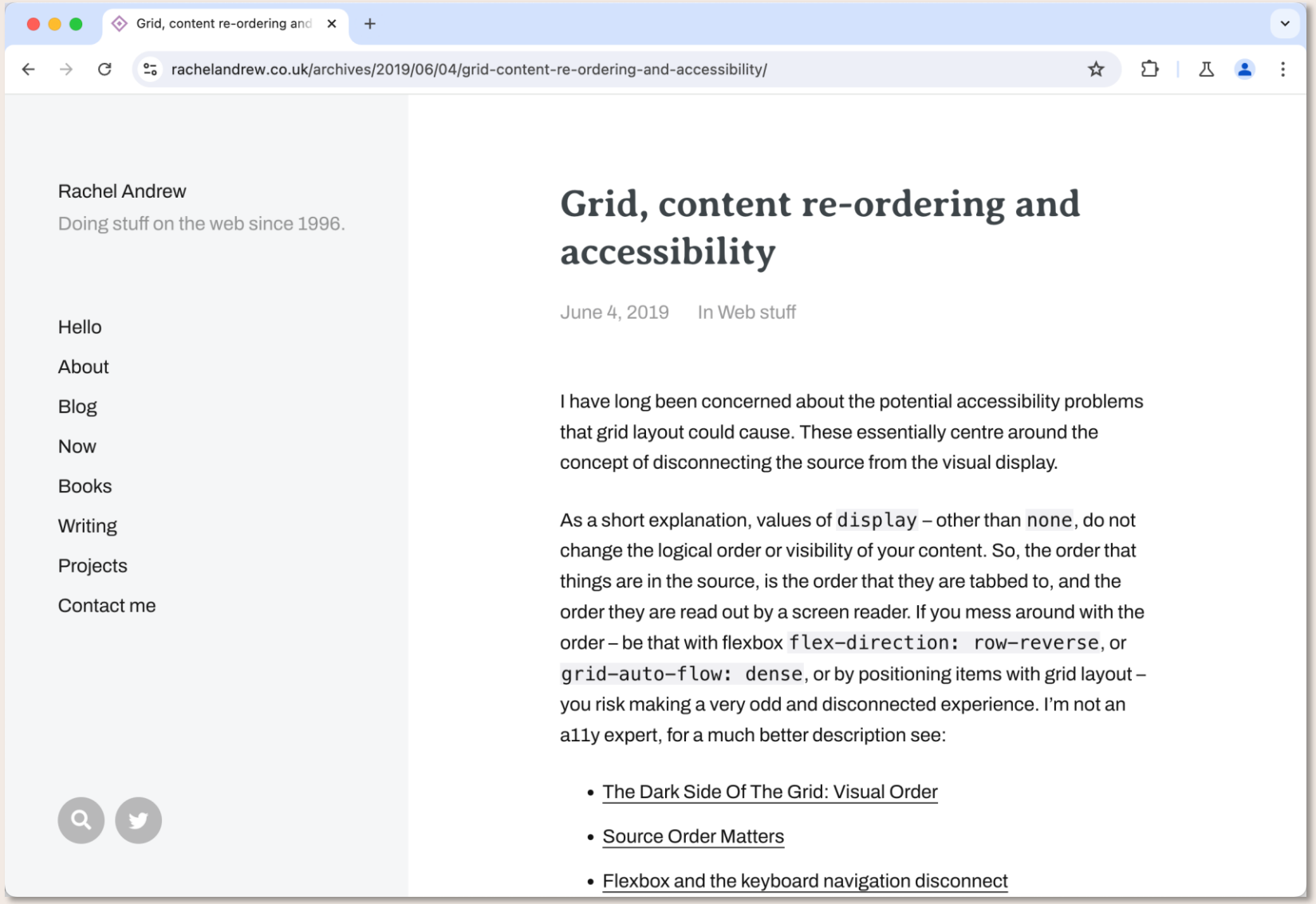
Please don’t use it.

CSS Grid Level 1

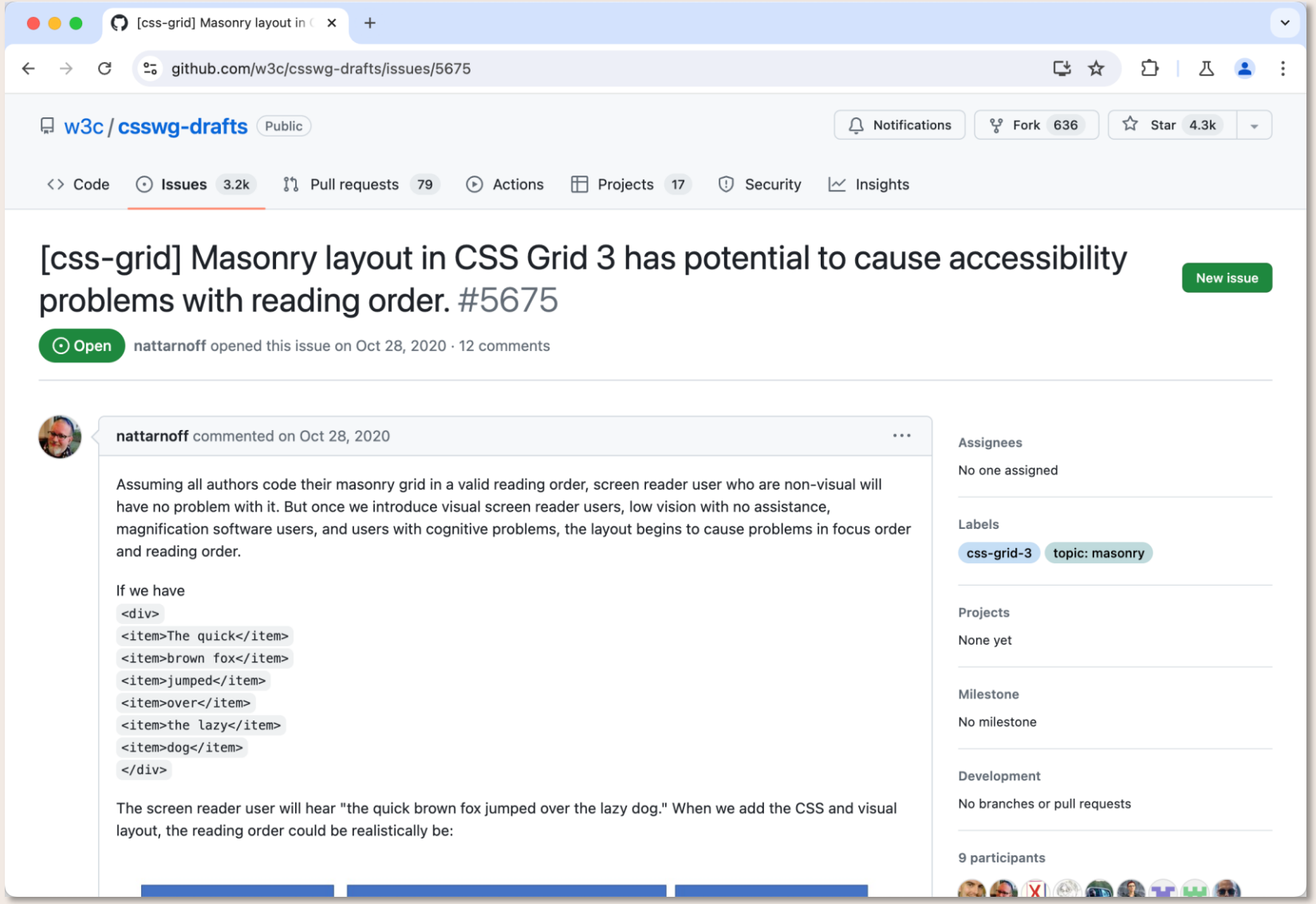
Correct source order is important for speech, for sequential navigation (such as keyboard navigation), and non-CSS UAs such as search engines, tactile browsers, etc. Grid placement *only* affects the visual presentation! This allows authors to optimize the document source for non-CSS/non-visual interaction modes, and use grid placement techniques to further manipulate the visual presentation so as to leave that source order intact.

Separating content from presentation

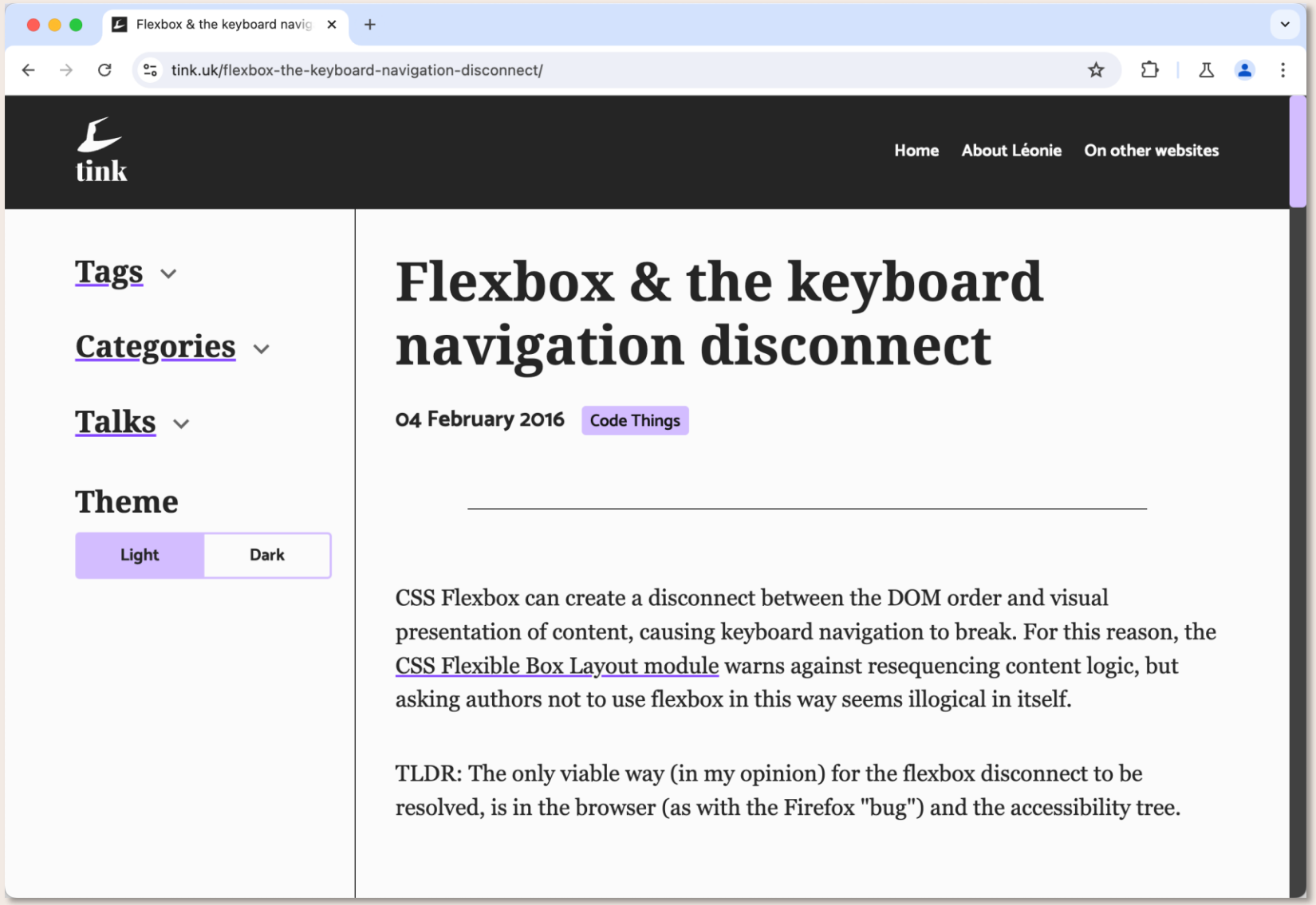
Something we've tried to do since the early days of CSS layout.



https://rachelandrew.co.uk/archives/2019/06/04/grid-content-re-ordering-and-accessibility/



https://github.com/w3c/csswg-drafts/issues/5675



https://tink.uk/flexbox-the-keyboard-navigation-disconnect/

reading-flow

CSS Display Level 4

Can we just opt into the order that flex or grid items are laid out?

Reading or visual order is subjective

flex-direction: row-reverse

In most cases DOM order is what you want

No universal switch to let developers forget about source order.

Scoped to particular layout methods

We’re not trying to do this on block layout.

reading-flow: normal

Follow the order of items in the DOM. The initial value.

```css
.flex {
  display: flex;
  flex-direction: row-reverse;
}
```

```
normal
flex-flow
flex-visual
grid-rows
grid-columns
grid-order
```

Values for reading-flow

reading-flow: flex-visual

Follow the visual layout, taking writing mode and direction into account.

```
.flex {
  display: flex;
  flex-direction: row-reverse;
  reading-flow: flex-visual;
}
```

reading-flow: flex-flow

Follow the flow order.

```
.flex {
  display: flex;
  flex-direction: row-reverse;
  reading-flow: flex-flow;
}
```

Adding the order property

The reading flow now takes into account the modification made by order.

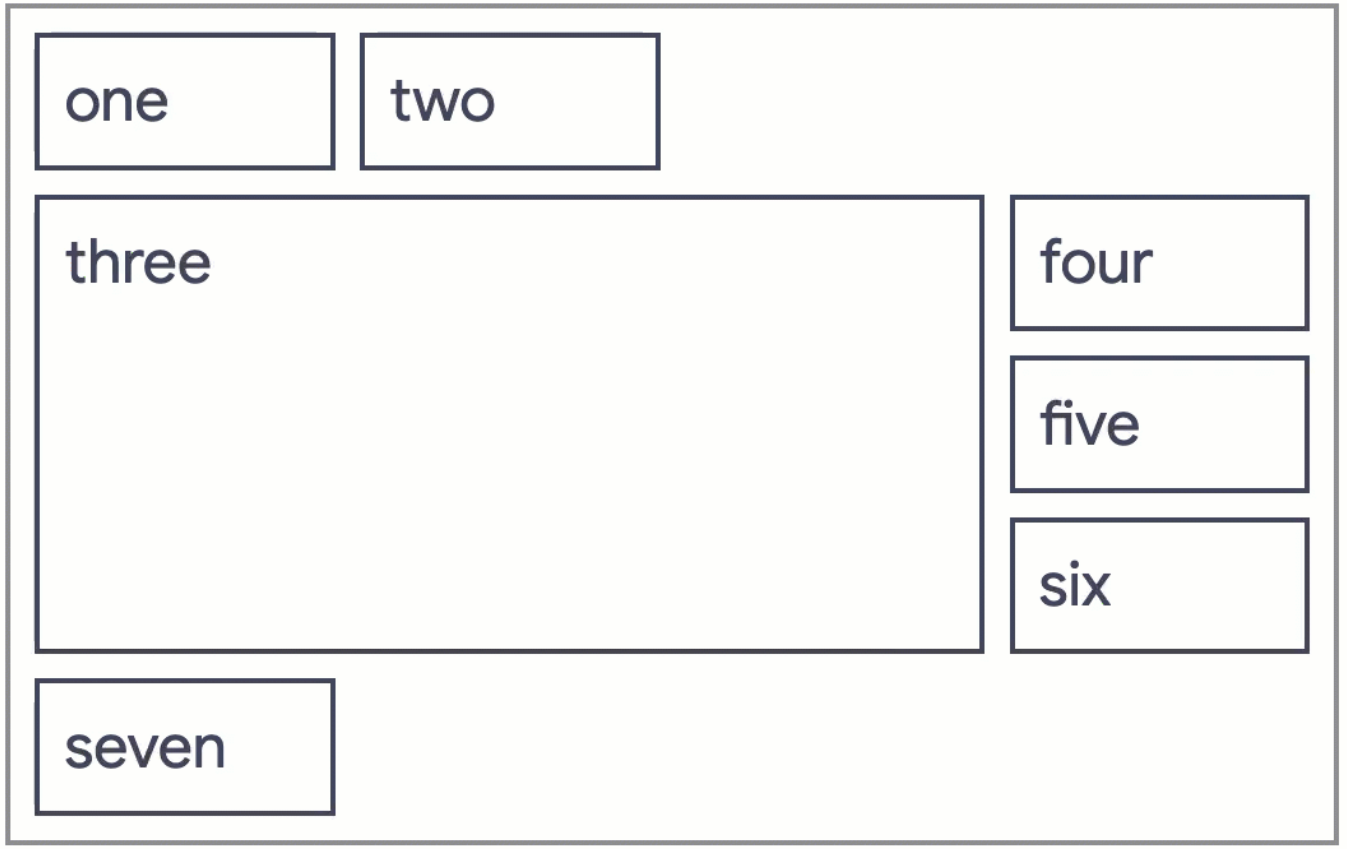
```
.flex a:nth-child(3) {
  order: -1;
}

.flex {
  display: flex;
  flex-direction: row-reverse;
  reading-flow: normal;
}
```

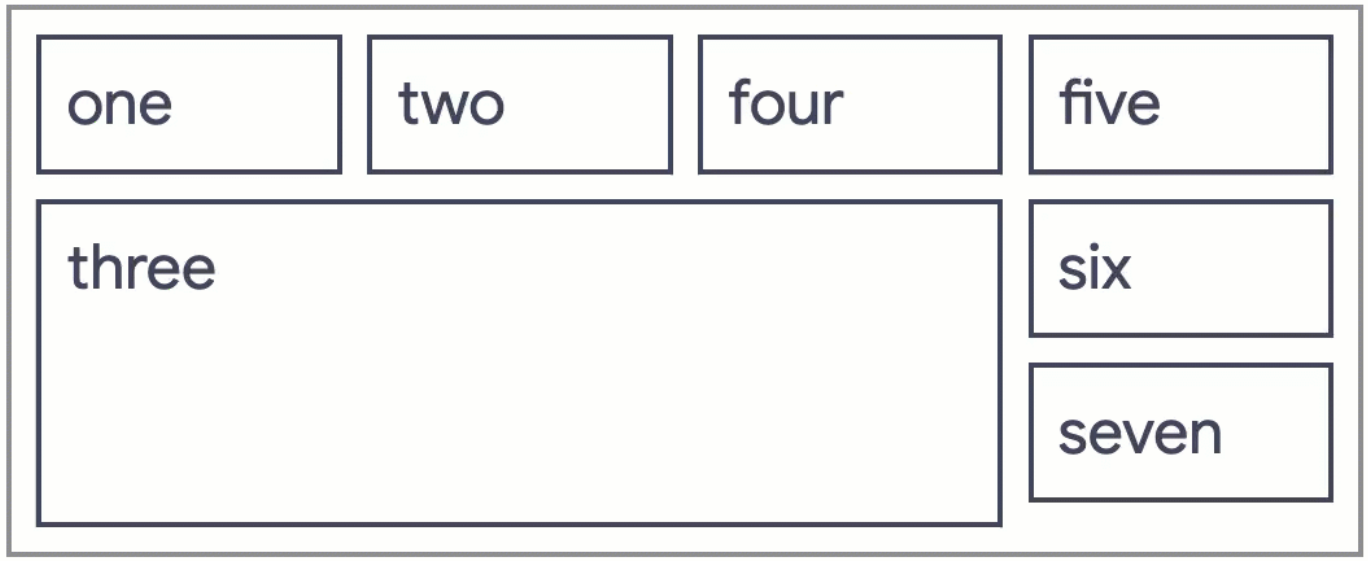
```css
.flex a:nth-child(3) {
  order: -1;
}

.flex {
  display: flex;
  flex-direction: row-reverse;
  reading-flow: flex-visual;
}
```

```
.flex a:nth-child(3) {
  order: -1;
}

.flex {
  display: flex;
  flex-direction: row-reverse;
  reading-flow: flex-flow;
}
```

Grid and reading flow

Automatic layout—grid-auto-flow: dense

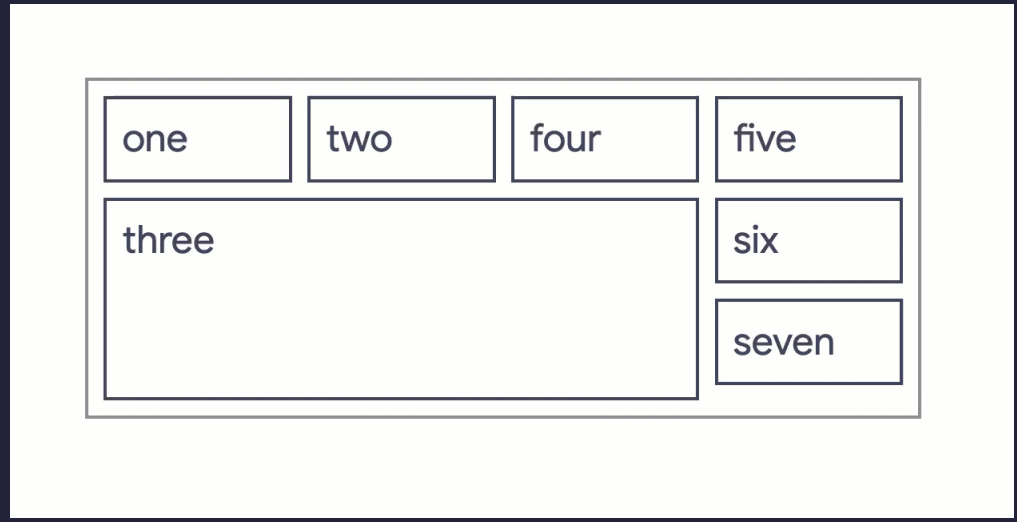

one
two
three
four
five
six
seven


one
two
four
five
three
six
seven

reading-flow: grid-rows

Follow the reading order by row.

```css
.grid a:nth-child(3) {
  grid-column: span 3;
  grid-row: span 3;
}

.grid {
  display: grid;
  grid-auto-flow: dense;
  grid-template-columns: repeat(4,1fr);
  reading-flow: grid-rows;
}
```



reading-flow: grid-columns

Follow the reading order by column.

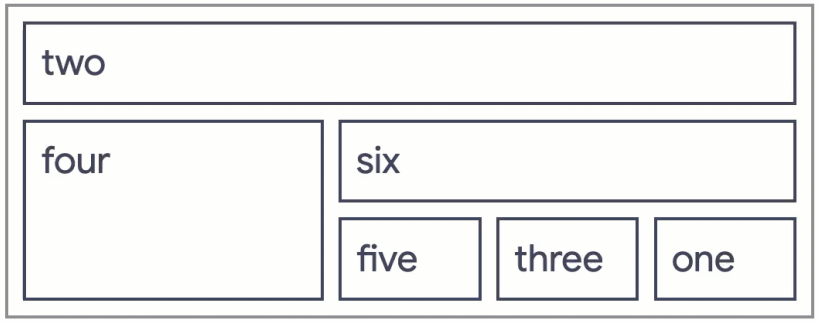
one
two
five
three
six
four
seven

```css
.grid a:nth-child(2) {
  grid-column: span 3;
  grid-row: span 3;
}

.grid {
  display: grid;
  grid-auto-flow: column dense;
  grid-template-columns: repeat(5,1fr);
  reading-flow: grid-columns;
}
```

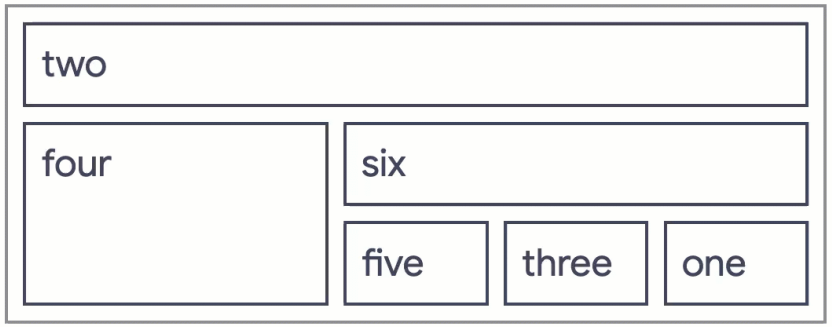
Grid and reading flow

Line-based placement, grid-template-areas

```
.grid {
  display: grid;
  grid-template-columns: repeat(5,1fr);
  grid-template-areas:
    "b b b b b"
    "d d f f f"
    "d d e c a";
}
```

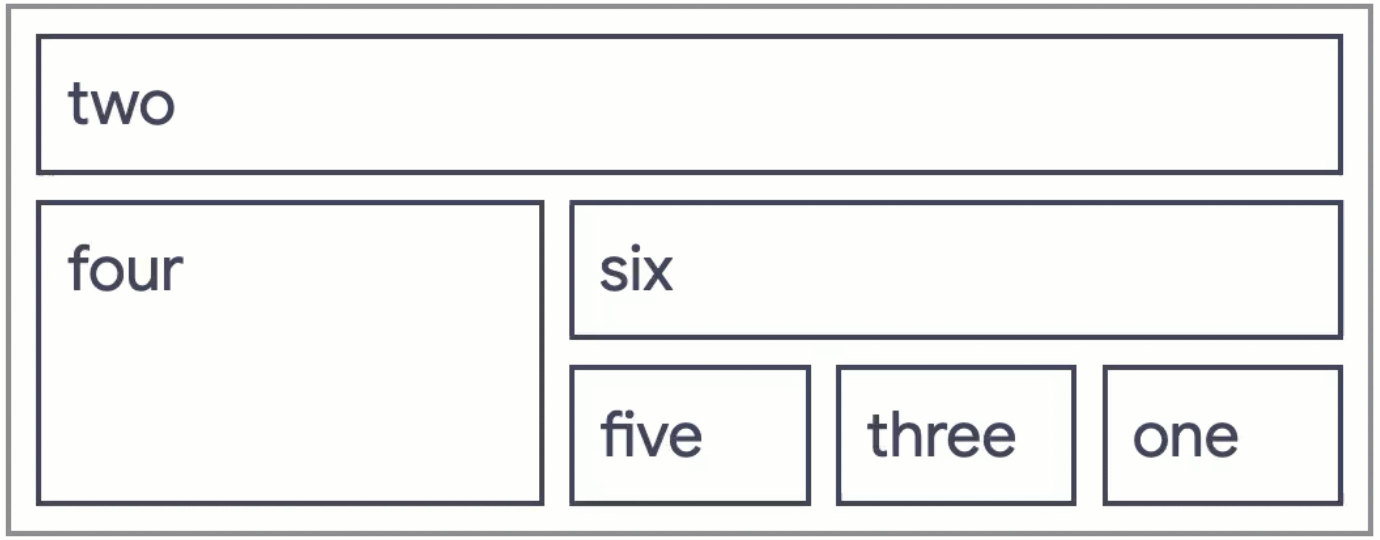


```
.grid {
  display: grid;
  grid-template-columns: repeat(5,1fr);
  grid-template-areas:
    "b b b b b"
    "d d f f f"
    "d d e c a";
  reading-flow: grid-rows;
}
```



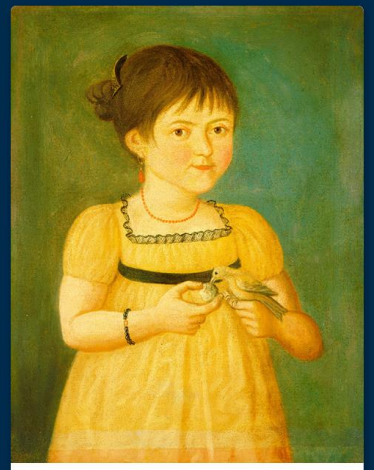
reading-flow: grid-order

As normal, but take the order property into account.


two
four
six
five
three
one

The reading-order property

For the children of a reading flow container.

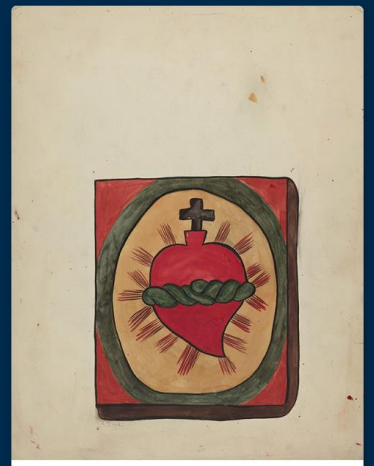


Feeding the Bird
American 19th Century

oil on canvas 1800
Not on View 1953.5.63

Keelmen Heaving in Coals by Moonlight
Joseph Mallord William Turner

oil on canvas 1835
West Building, Main Floor 1942.9.86
Gallery 57



Retablo
E. Boyd

watercolor, colored pencil 1935
Not on View 1943.8.6831

Painted Chest
Majel G. Claflin

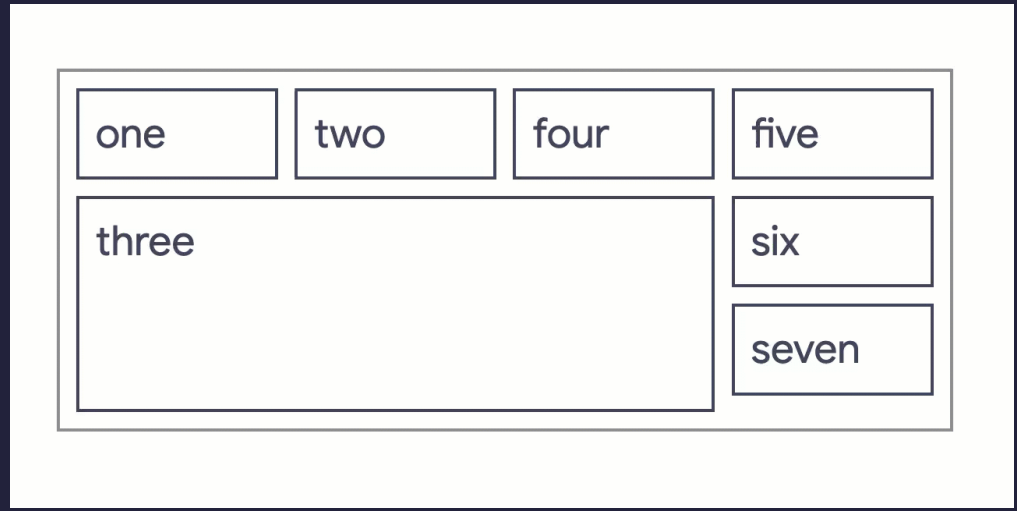
National Gallery of Art

The National Gallery of Art is an art museum in Washington, D.C., United States, located on the National Mall, between 3rd and 9th Streets, at Constitution Avenue NW.

Open to the public and free of charge, the museum was privately established in 1937 for the American people by a joint resolution of the United States Congress.

Visit

```css
.grid a:nth-child(3) {
  grid-column: span 3;
  grid-row: span 3;
}

.grid {
  display: grid;
  grid-auto-flow: dense;
  grid-template-columns: repeat(4,1fr);
  reading-flow: grid-rows;
}

.grid a:nth-child(5) {
  grid-column: 4;
  grid-row: 1;
  grid-order: -1;
}
```



Source order is important

Never use reading-flow to avoid the work of updating your HTML.

Create a sensible document

Then consider small tweaks to optimize the reading experience at different breakpoints.

Try it out in Chrome Canary

https://chrome.dev/reading-flow-examples

Questions?

Rachel Andrew

https://noti.st/rachelandrew/Aj6atb/