CSS Flexible Box and Grid Layout

The web is fluid

[The first website](#)

Layouts in the dark ages (the 90s)

- Complex nested tables

- inline styles (such as they were)

- spacer gifs

- absolutely no flexibility

- animated gifs, `marquee` etc

- geocities

Table layouts

```
<table BGCOLOR="#ccccff" BORDER=10 BORDERCOLOR="#0000FF" BORDERCOLORLIGHT="#33CCFF" BORDERCOLORDARK="#0000CC" WIDTH="80%" ALIGN="CENTER">
  <tr>
    <td>
      <h1 align="center">
        <FONT SIZE="3" COLOR="red" FACE="verdana">
          Welcome to my home page!
        </FONT>
      </h1>
    </td>
  </tr>
</table>
```

Table-less layouts – divs, floats and positioning

- separation of presentation and content

- floats

- absolute and relative positioning

- media queries

Bootstrap   Getting started   CSS   Components   JavaScript   Customize   Themes   Expo   Blog

B

Bootstrap is the most popular HTML, CSS, and JS framework for developing responsive, mobile first projects on the web.
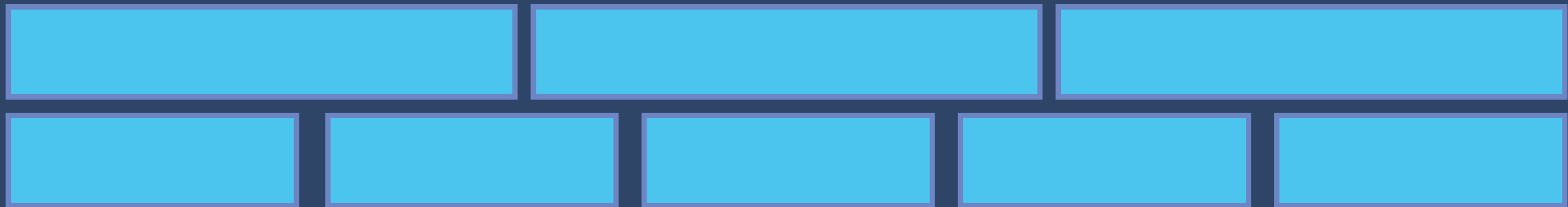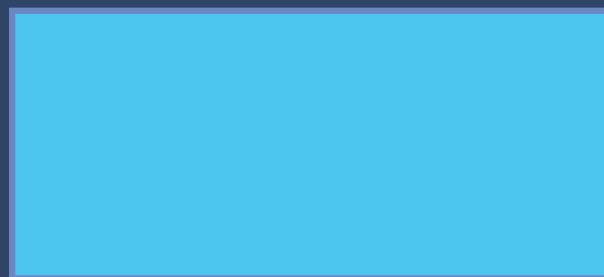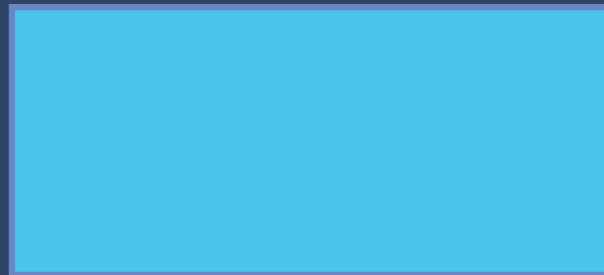
Download Bootstrap
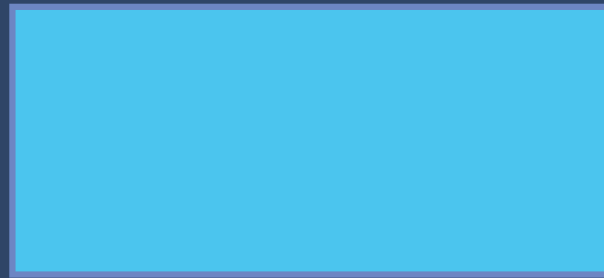
Currently v3.3.7

Flexbox versus grid

- flexbox was designed for layout in one dimension, i.e. layout in a row *or* a column

Flexbox - flex-direction: row

Flexbox - `flex-direction: column`

Flexbox versus grid

- Grid was designed for two-dimensional layout, i.e. layout in rows and columns at the same time
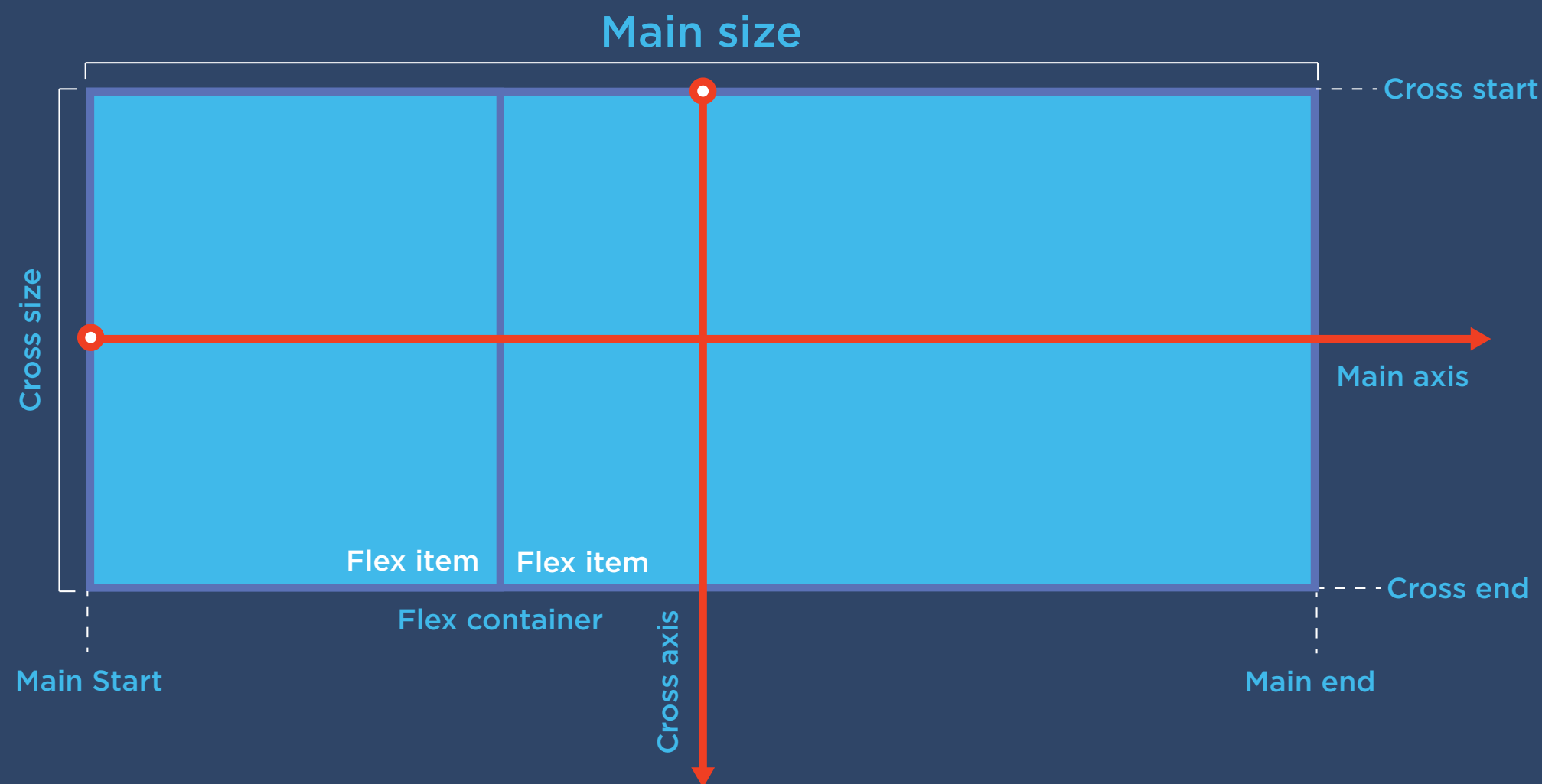
Grid

Flexbox

- The defining aspect of the flex layout is the ability to alter items' width and/or height to best fit in the available space on any display device.

- A flex container expands items to fill available free space, or shrinks them to prevent overflow.

- Display mode is direction agnostic

Flexbox diagram

Grid

CSS Grid Layout introduces a two dimensional grid system to CSS. Grids can be used to lay out major page area or small user interface elements.

What is a grid?

A grid is an intersecting set of horizontal and vertical lines – one set defining columns and the other rows. Onto the grid elements can be placed respecting these column and row lines.

Features

- Fixed and flexible track sizes

- Item placement

- Creation of additional tracks to hold content

- Alignment control

- Control of overlapping content

The Grid container

We create a grid container by declaring `display: grid` or `display: inline-grid` on an element. As soon as we do this all direct children of that element will become grid items.

Grid
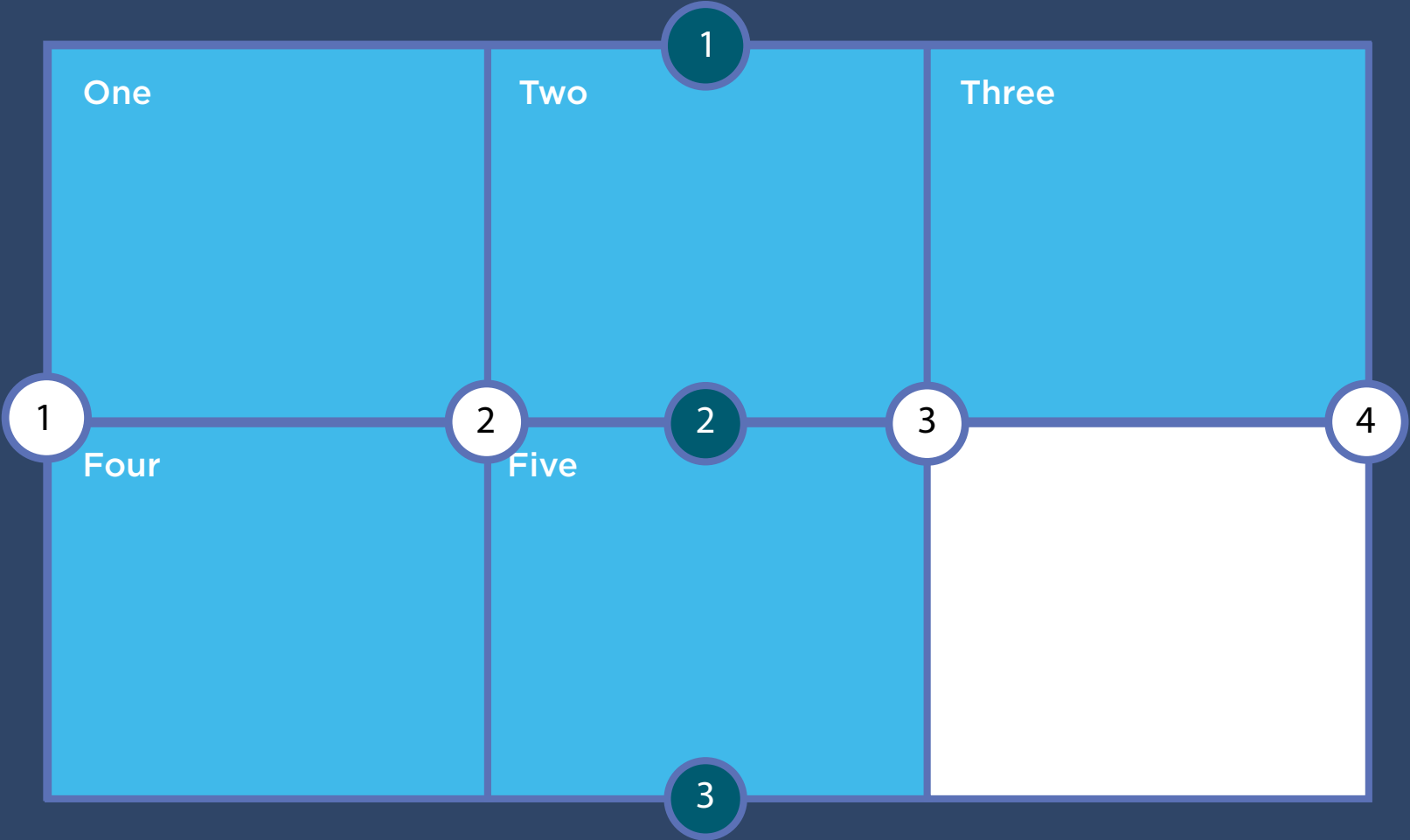
fr unit

- Fractional unit

- 1 fr is for 1 part of the available space

Use other CSS features

- content-fill: fit-content etc

Browser support flexbox

Flexible Box Layout Module 📄 - CR

Global	83.12%	+ 14.49%	=	97.61%
unprefixed:	82.2%	+ 3.66%	=	85.86%

Method of positioning elements in horizontal or vertical stacks. Support includes the support for the all properties prefixed with `flex` as well as `display: flex`, `display: inline-flex`, `align-content`, `align-items`, `align-self`, `justify-content` and `order`.

Current aligned | Usage relative | Date relative | Show all

IE	Edge *	Firefox	Chrome	Safari	Opera	iOS Safari *	Opera Mini *	Android Browser *	Chrome for Android
			49					4.4	
			55			9.3		4.4.4	
[4] 11	14	51	56	10	43	10.2	all	53	56
	15	52	57	10.1	44				
		53	58	TP	45				
		54	59						

Notes | Known issues (8) | Resources (13) | Feedback

Most partial support refers to supporting an older version of the specification or an older syntax.

[4] Partial support is due to large amount of bugs present (see known issues)

Browser support grid

CSS Grid Layout 📄 - CR

Method of using a grid concept to lay out content, providing a mechanism for authors to divide available space for layout into columns and rows using a set of predictable sizing behaviors. Includes support for all `grid-*` properties and the `fr` unit.

Global   69.57% + 5.77% = 75.34%
unprefixed: 69.57%

Current aligned | Usage relative | Date relative   Show all

IE	Edge	Firefox	Chrome	Safari	Opera	iOS Safari	Opera Mini	Android Browser	Chrome for Android
			[1] 49						
		[4] 52	60			10.2			
	[2] 15	55	61	10.1		10.3		4.4	
[2] 11	16	56	62	11	48	11	all	56	61
		57	63	TP	49				
		58	64		50				
		59	65						

Notes | Known issues (2) | Resources (13) | Feedback

[1] Enabled in Chrome through the "experimental Web Platform features" flag in chrome://flags

[2] Partial support in IE refers to supporting an older version of the specification.

CSS @supports

- CSS feature queries

- supports allows us to check whether a browser has implemented a particular CSS feature