IS FLEXBOX THE FUTURE OF LAYOUT?

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Hello.

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happy to be here

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What are we going to talk about?

Flexbox… and can it fix what's wrong with CSS layout?

CSS layout should be easier

Be honest. How many techniques can you think of, just off the top of your head, for vertically centering something?

How easy are they?

I rest my case.

Which brings us to Flexbox

Flexbox allows us to control the size, order, and alignment of elements along multiple axes.

Why is it awesome?

Some of the high points:

It's flexible!

I mean, look at the name. You can easily make things stretch and flex to fit available space, great for responsive design.

Easy alignment

Horizontal, vertical, baseline… it's all good.

Source order independence

You want that before this, but only when that? OK.

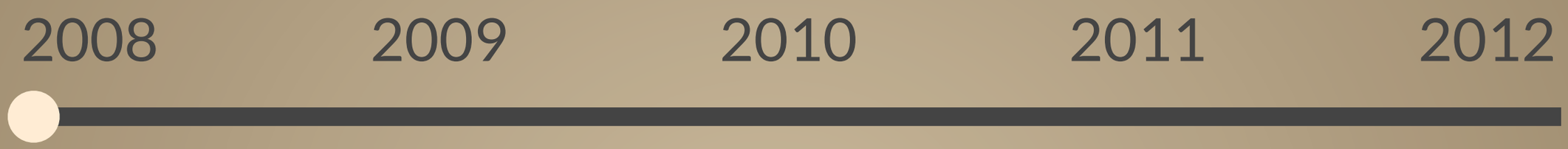
Easy Syntax

You can learn it in one afternoon.

Before you use Flexbox, you need to know a little history

pre 2008

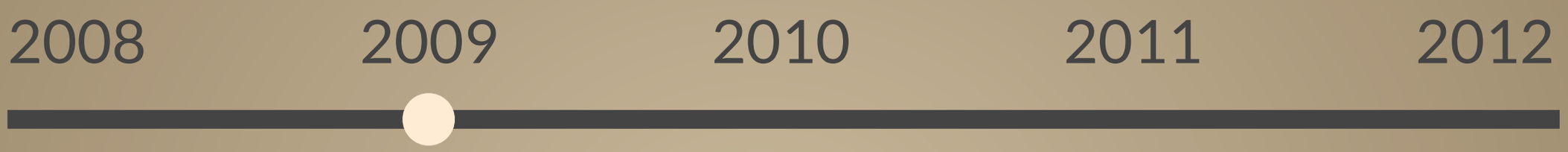
CSS Working Group discusses proposing a Flexible Box Model similar to what is found in XUL and XAML.



Before you use Flexbox, you need to know a little history

2009

The Flexible Box Layout Module is published as a working draft. Chrome and Safari add partial support while Mozilla support relies on older XUL implementation. The syntax closely follows XUL flexbox syntax and is often referred to as “Flexbox 2009.”



Before you use Flexbox, you need to know a little history

2011

Tab Atkins takes over as editor for the Flexbox Spec and publishes two working drafts over the course of the year. These drafts re-write the syntax significantly and are sometimes referred to as “tweener” syntax. Chrome, Opera and & IE 10 begin to implement this syntax.

Before you use Flexbox, you need to know a little history

2012

Syntax is further changed and refined. Spec is now a Candidate Recommendation. Opera releases un-prefixed support, Chrome supports the current syntax in prefixed form, and IE 10 adds prefixed support for the “tweener” syntax. Mozilla is close to releasing unprefixed support.

2008 2009 2010 2011 2012

Why does this matter?

In order to use Flexbox effectively, you'll need to know who supports the 2009 syntax, the "tweener" syntax, the modern syntax, and when to use vendor prefixes.

So... how's support?

Browser	support	notes
Firefox (older)	! 2.0+	old XUL syntax
Firefox	+ 22+	
Google Chrome	+ 22+	with -webkit- prefix
Safari	! 5.1+	
Opera	+ 12.1+	
Internet Explorer	! 10+	-ms- prefix, uses tweener syntax
iOS Safari	! 3.2	2009 syntax
Opera Mini	− 5 - 7	
Opera Mobile	+ 12.0+	
Android Browser	! 2.1	2009 syntax, -webkit- prefix
Chrome for Android	+ 27	with -webkit- prefix
Blackberry Browser	+ 10+	Wait.... what?

+ 2012 syntax supported ! 2009 syntax − nada

(as of 07-22-13)

How does Flexbox work?

Basic concepts:

It's a new layout mode

Joins block, inline, table, and positioned

Similar to block layout

Containing elements are laid out in a flow direction

Has super powers

Flow direction can be up or down, left or right, display order can be reversed, elements can "flex" their size to respond to available space and align to their containers or other elements

How does Flexbox work?

Basic steps:

Define flex containers

All direct child elements become flex items

Establish flow direction

Flex containers can flow either in a row or column and can be single or multiline

Go crazy with the cheese whiz

Flex items can now be spaced, flexed, aligned, or arranged as you see fit within the flow direction

How does Flexbox work?

It's all about the axis… er axes.

Flexbox syntax*

Defining flex containers

```
.flex {
   display: -webkit-flex;
   display: -ms-flexbox;
   display: flex;
}
```

(there's also an **inline-flex** variation)

**A note about syntax. I'll be showing 2012 syntax including webkit prefixes, IE prefix ("tweener" syntax), and unprefixed syntax. I won't show older (2009 syntax) or older -o- and -moz- prefixes*

Flexbox syntax

Setting flow direction and line wrap

```
.flex {
   -webkit-flex-flow: <flex direction> | <flex wrap>
   -ms-flex-flow: “”
   flex-flow: “”
}
```

You can also set **flex-direction** and **flex-wrap** as individual properties if you wish.

Flexbox syntax

Controlling flex item flexibility

```
.flex-item {
   -webkit-flex: none |<flex-grow> <flex-shrink>|| <flex-basis>
   -ms-flex: “”
   flex: “”
}
```

I’m not going to lie… this takes some explaining…

Flexbox syntax

Flex: Flex Grow

```
.flex-item {
   -webkit-flex: none |<flex-grow> <flex-shrink>|| <flex-basis>
   -ms-flex: “”
   flex: “”
}
```

<number> Represents how much the flex item will grow relative to the rest of the flex items in the container once positive space has been distributed. If left out, it defaults to ‘**1**’

Flexbox syntax

Flex: Flex Shrink

```
.flex-item {
   -webkit-flex: none |<flex-grow> <flex-shrink>|| <flex-basis>
   -ms-flex: “”
   flex: “”
}
```

<number> Represents how much the flex item will shrink relative to the rest of the flex items in the container once negative space has been distributed. If left out, it defaults to ‘**1**’

Flexbox syntax

Flex: Flex Basis

```
.flex-item {
   -webkit-flex: none |<flex-grow> <flex-shrink>|| <flex-basis>
   -ms-flex: “”
   flex: “”
}
```

auto | <width> Represents the initial main size of a flex item, before free space is distributed. When omitted, it defaults to ‘0’

Flexbox syntax

Common Flex Values

Flex: 0 auto initial

Equates to **0 1 auto**. Sizes items based on width/height values. Item is inflexible but is allowed to shrink to its min value

Flex: auto

Equates to **1 1 auto**. Sizes items based on width/height values, but makes them fully flexible to grow or shrink based on available space

Flex: none

Equates to **0 0 auto**. Sizes items based on width/height values, but makes the item totally inflexible.

Flex: <positive number>

Equates to **<value> 1 0px**. Makes the item flexible and sets the basis to 0. This ensures the item receives the specified portion of free space available.

Flexbox syntax

Controlling display order

```
.flex-item {
   -webkit-order: <integer>
   -ms-flex-order: “”
   order: “”
}
```

Values start at ‘0’ and increments up. A negative value is displayed before positive values. You can also reverse row and column direction.

Flexbox syntax

Controlling main axis alignment

```
.flex {
-webkit-justify-content: flex-start | flex-end | center |
                         space-between | space-around
-ms-flex-pack: start | end | center | justify
justify-content:””
}
```

Axis alignment is performed after flexible lengths and auto margins have been resolved.

Flexbox syntax

Controlling cross axis alignment

```
.flex {
-webkit-align-items: flex-start | flex-end | center |
                     baseline | stretch
-ms-flex-align: start | end | center | baseline | stretch
justify-content:””
}
```

Align-items applies to all flex items in a container. To align a single item, you can use the **align-self** property to a flex item and use the same values.

Flexbox syntax

Aligning multiple flex lines

```
.flex {
-webkit-align-content: flex-start | flex-end | center |
                       space-between | space-around | stretch
-ms-flex-line-pack: start | end | center | justify | distribute
                    | stretch
align-content:”” }
```

Aligns multiple flex lines within a flex container. Has no effect on single line flex containers.

Fantastic

Let's see what it can do.

Demo take-aways

Some things to remember:

Don't overuse it

Let normal flow do the work where it makes sense

Think through your structure carefully

Defining regions and re-ordering content properly does rely on structure, think these things through

Understand flex-basis

Knowing how an element's main and cross size's are determined is crucial to achieving expected results

Don't forget your margins

When setting alignments along axes, margins are taken into account. Also, flex item margins don't collapse.

So wait... is it the future or not?

Yes!... along with other emerging models

It's great at 1D, OK at 2D

This makes Flexbox a great choice for UI elements, application interfaces, and aligning/flexing items in specific page regions

It's not great at 3D or across page regions

CSS Grid Layout is a better choice for that

So what will we probably see?

Eventually I see Flexbox being used in conjunction with other layout models to exact finer-grain control over responsive elements

Go learn you some Flexbox

Go read the spec:

http://www.w3.org/TR/css3-flexbox/

Browser support:

http://caniuse.com/flexbox

Using Flexbox:

https://developer.mozilla.org/en-US/docs/CSS/Using_CSS_flexible_boxes

Layout Nirvana?

http://dev.opera.com/articles/view/flexbox-basics/

CSS Flexbox First Look

http://www.lynda.com/CSS-tutorials/CSS-Flexbox-First-Look/116352-2.html

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