

# PROGRESSIVE ENHANCEMENT & MOBILE

Aaron Gustafson

[@aarongustafson](#)

[slideshare.net/AaronGustafson](https://slideshare.net/AaronGustafson)

**BROWSERS ARE A  
PAIN IN THE ASS**

















**AND THEN THERE'S**  
**MOBILE**



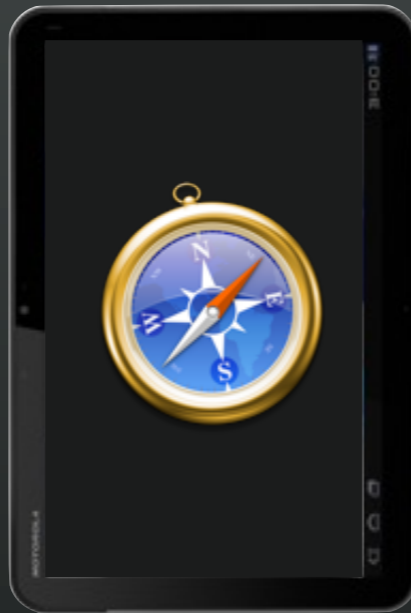
# THIS IS THE WEB.



# WHAT IS MOBILE?



# WHAT IS MOBILE?



**“There is no WebKit  
on Mobile**

**— Peter-Paul Koch**

**“There is no WebKit  
on Mobile**

**— Peter-Paul Koch**

<http://www.quirksmode.org/webkit.html>



**“There is no Android  
— Stephanie Rieger**

17.	Android	993x1688	6	1.50	00:00:46	100.00%	50.00%
18.	Android	480x679	2	1.50	00:00:15	100.00%	50.00%
19.	Android	993x1574	4	2.00	00:01:20	100.00%	50.00%
20.	Android	993x1537	1	1.00	00:00:00	100.00%	100.00%
21.	Android	320x201	3	1.33	00:00:04	100.00%	66.67%
22.	Android	993x663	1	2.00	00:00:33	100.00%	0.00%
23.	Android	600x937	1	3.00	00:03:23	100.00%	0.00%
24.	Android	800x1125	21	1.19	00:00:20	80.95%	85.71%
25.	Android	480x369	1	1.00	00:00:00	100.00%	100.00%
26.	Android	320x473	45	2.09	00:00:30	64.44%	66.67%
27.	Android	369x628	2	5.50	00:02:34	100.00%	0.00%
28.	Android	800x447	1	6.00	00:03:14	100.00%	0.00%
29.	Android	993x514	9	1.44	00:00:53	88.89%	88.89%
30.	Android	993x616	1	1.00	00:00:00	100.00%	100.00%
31.	Android	1025x508	1	2.00	00:00:28	100.00%	0.00%
32.	Android	993x444	4	2.00	00:00:36	100.00%	75.00%
33.	Android	480x762	525	4.53	00:02:47	87.81%	6.86%
34.	Android	320x320	1	1.00	00:00:00	100.00%	100.00%
35.	Android	470x725	1	1.00	00:00:00	100.00%	100.00%
36.	Android	993x1149	2	1.50	00:00:15	100.00%	50.00%
37.	Android	600x1024	2	13.00	00:18:31	100.00%	0.00%
38.	Android	480x700	1	8.00	00:01:34	100.00%	0.00%

<http://yfrog.com/z/ob5kndj>

17.	Android	993x1688	6	1.50	00:00:46	100.00%	50.00%
18.	Android	480x679	2	1.50	00:00:15	100.00%	50.00%
19.	Android	993x1574	4	2.00	00:01:20	100.00%	50.00%
20.	Android	993x1537	1	1.00	00:00:00	100.00%	100.00%
21.	Android	320x201	3	1.33	00:00:04	100.00%	66.67%
22.	Android	993x663	1	2.00	00:00:33	100.00%	0.00%
23.	Android	600x937	1	3.00	00:03:23	100.00%	0.00%
24.	Android	800x1125	21	1.19	00:00:20	80.95%	85.71%
25.	Android	480x369	1	1.00	00:00:00	100.00%	100.00%
26.	Android	320x473	45	2.09	00:00:30	64.44%	66.67%
27.	Android	369x628	2	5.50	00:02:34	100.00%	0.00%
28.	Android	800x447	1	6.00	00:03:14	100.00%	0.00%
29.	Android	993x514	9	1.44	00:00:53	88.89%	88.89%
30.	Android	993x616	1	1.00	00:00:00	100.00%	100.00%
31.	Android	1025x508	1	2.00	00:00:28	100.00%	0.00%
32.	Android	993x444	4	2.00	00:00:36	100.00%	75.00%
33.	Android	480x762	525	4.53	00:02:47	87.81%	6.86%
34.	Android	320x320	1	1.00	00:00:00	100.00%	100.00%
35.	Android	470x725	1	1.00	00:00:00	100.00%	100.00%
36.	Android	993x1149	2	1.50	00:00:15	100.00%	50.00%
37.	Android	600x1024	2	13.00	00:18:31	100.00%	0.00%
38.	Android	480x700	1	8.00	00:01:34	100.00%	0.00%

<http://yfrog.com/z/ob5kndj>

17.	Android	993x1537	6	1.50	00:00:46	100.00%	50.00%
18.	Android	320x201	2	1.50	00:00:15	100.00%	50.00%
19.	Android	993x663	4	2.00	00:01:20	100.00%	50.00%
20.	Android	600x937	1	1.00	00:00:00	100.00%	100.00%
21.	Android	800x1125	3	1.33	00:00:04	100.00%	66.67%
22.	Android	480x369	1	2.00	00:00:33	100.00%	0.00%
23.	Android	320x473	1	3.00	00:03:23	100.00%	0.00%
24.	Android	369x628	21	1.19	00:00:20	80.95%	85.71%
25.	Android	800x447	1	1.00	00:00:00	100.00%	100.00%
26.	Android	993x514	45	2.09	00:00:30	64.44%	66.67%
27.	Android	993x616	2	5.50	00:02:34	100.00%	0.00%
28.	Android	1025x508	1	6.00	00:03:14	100.00%	0.00%
29.	Android	993x444	9	1.44	00:00:53	88.89%	88.89%
30.	Android	480x762	1	1.00	00:00:00	100.00%	100.00%
31.	Android	993x514	1	2.00	00:00:28	100.00%	0.00%
32.	Android	993x616	4	2.00	00:00:36	100.00%	75.00%
33.	Android	993x616	525	4.53	00:02:47	87.81%	6.86%
34.	Android	1025x508	1	1.00	00:00:00	100.00%	100.00%
35.	Android	993x444	1	1.00	00:00:00	100.00%	100.00%
36.	Android	993x444	2	1.50	00:00:15	100.00%	50.00%
37.	Android	480x762	2	13.00	00:18:31	100.00%	0.00%
38.	Android	480x762	1	8.00	00:01:34	100.00%	0.00%

<http://yfrog.com/z/ob5kndj>

# WHAT IS MOBILE?



**Um... I think I'll just  
build an iPhone app.  
kthxbye.**

**NATIVE**  
*vs.*  
**WEB**

**CONSISTENT**

*vs.*

**UNPREDICTABLE**



**SPECIFIC**  
*vs.*  
**UNIVERSAL**

# THIS IS THE WEB.



# THIS WILL BE THE WEB.



**WE DON'T KNOW**



**WE DON'T KNOW**

**EVEN WHEN  
WE THINK  
WE KNOW,  
WE ARE  
PROBABLY  
WRONG**

**SO HOW DO WE  
COPE?**



# PROGRESSIVE ENHANCEMENT

**TECHNOLOGICAL  
RESTRICTIONS**

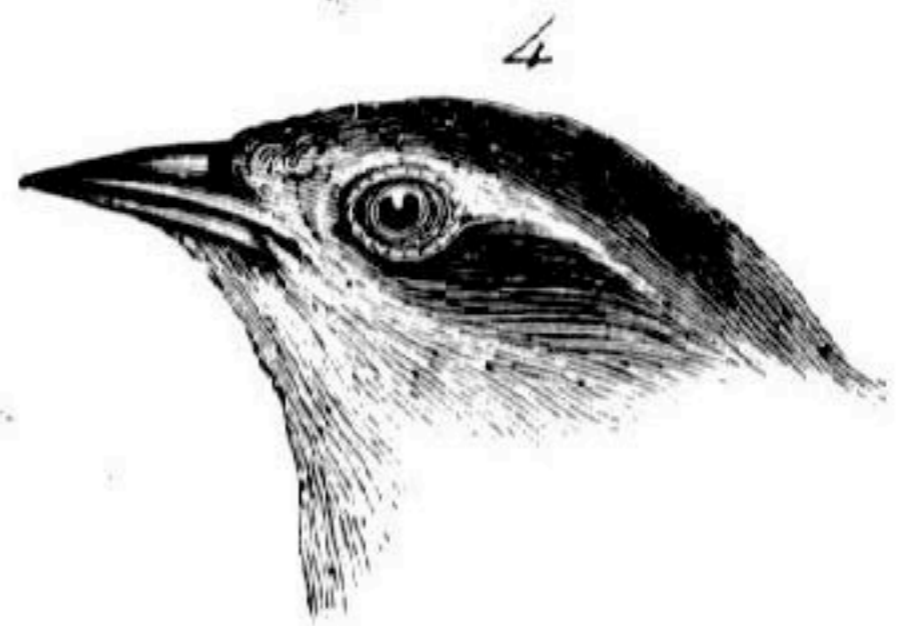
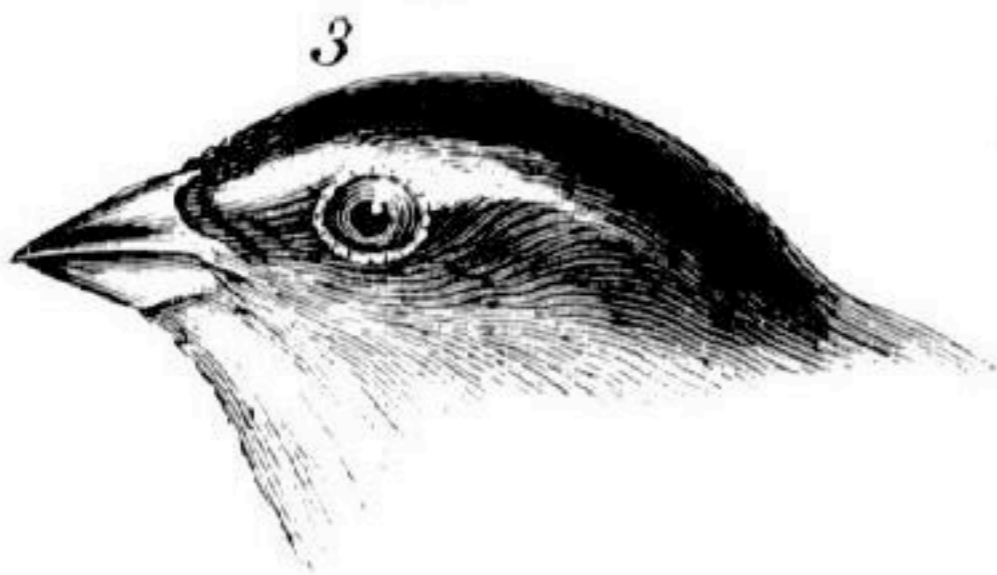
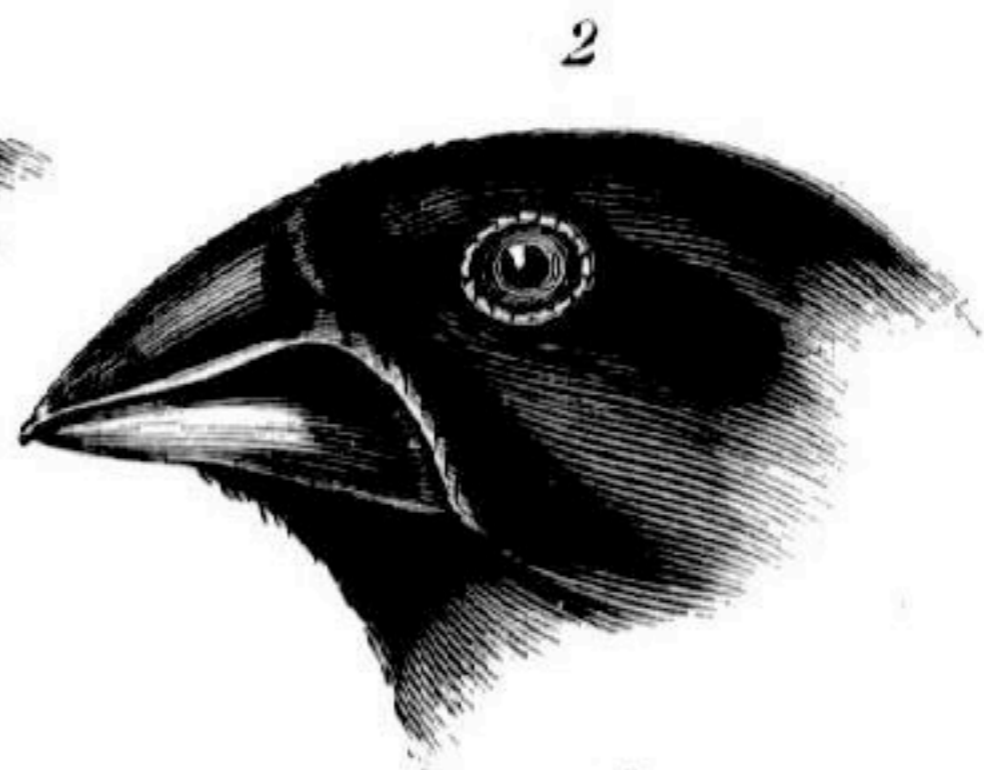
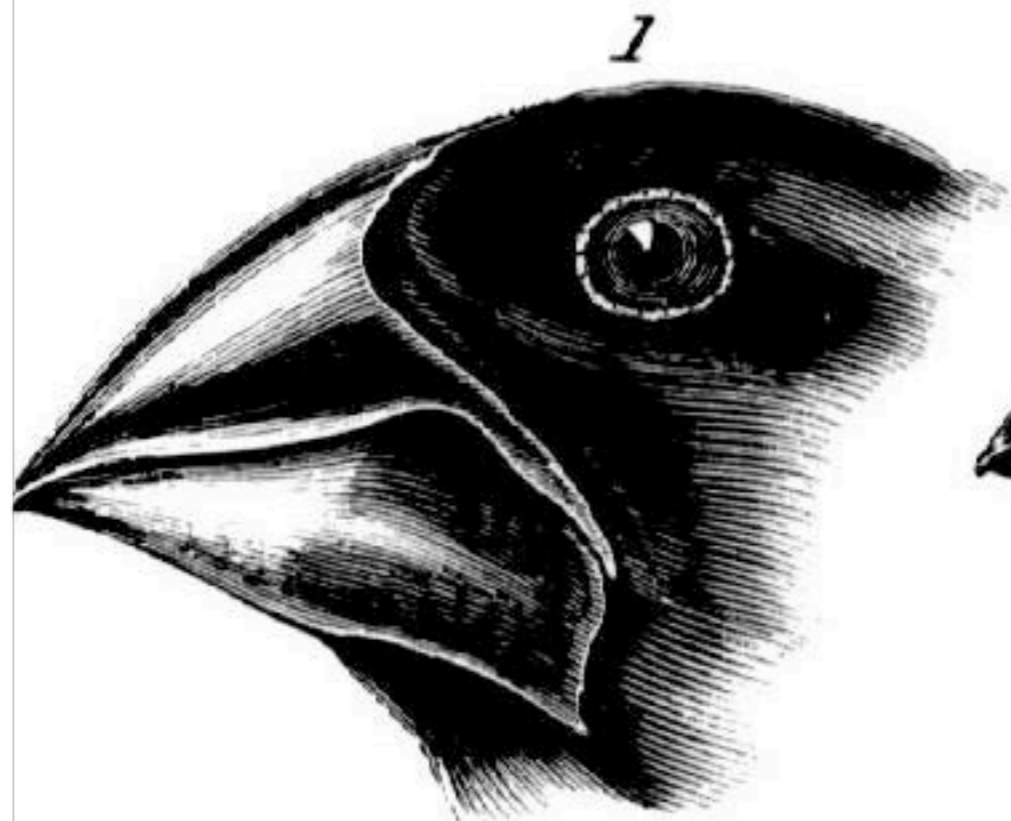


**MCMMLXXVII**

**MCMMLXXVII**

**(that's 1977)**

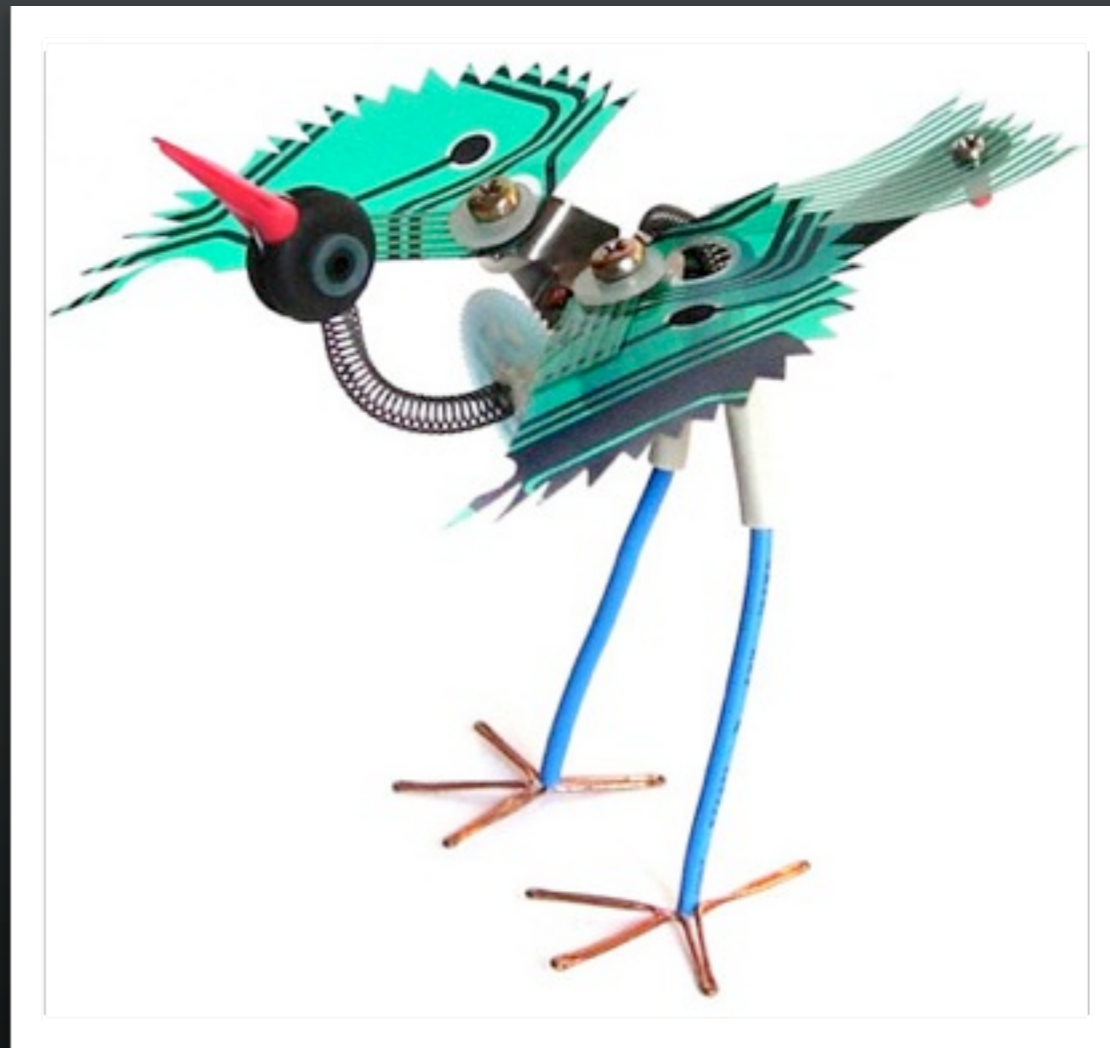








HTML



CSS

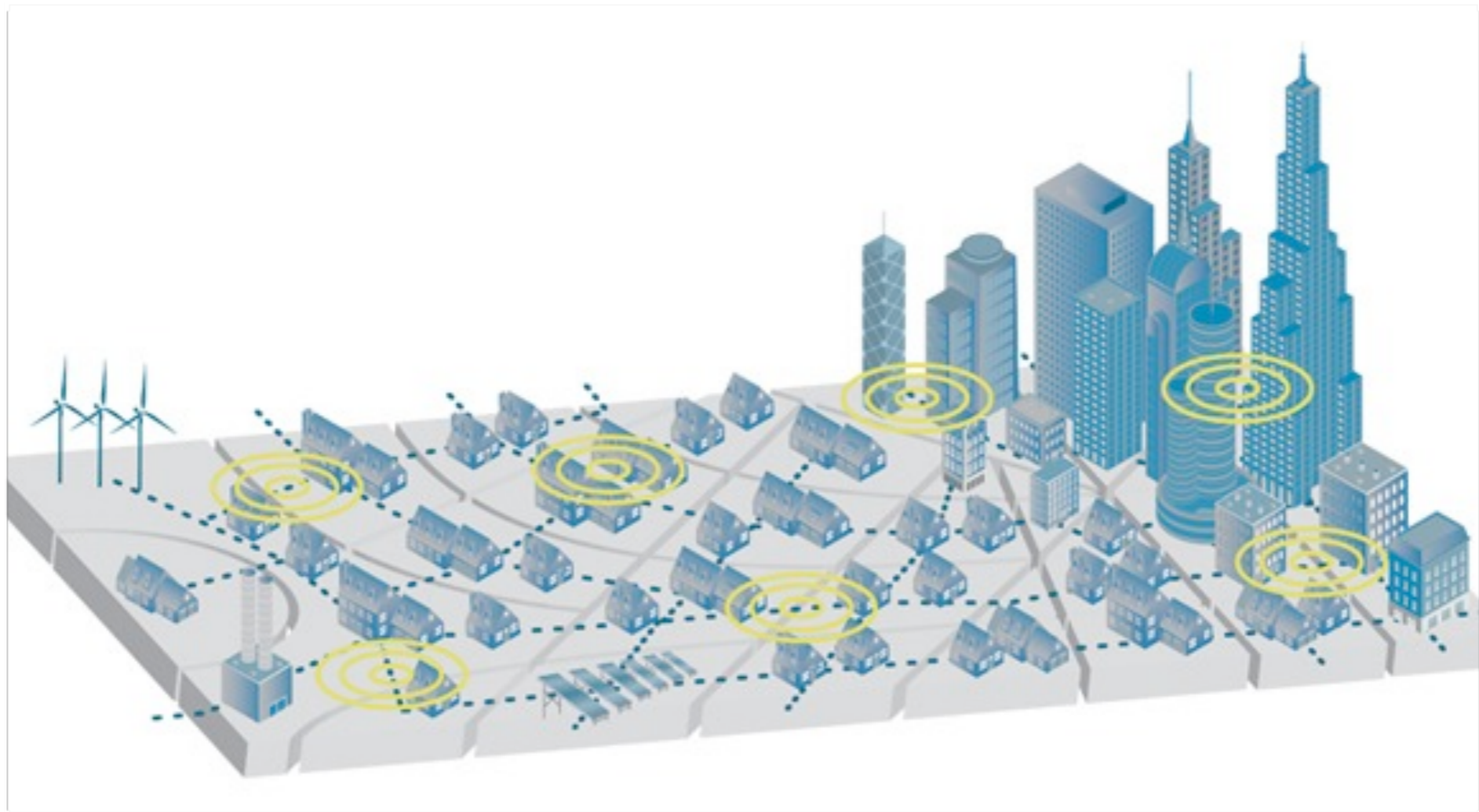


# fault tolerance

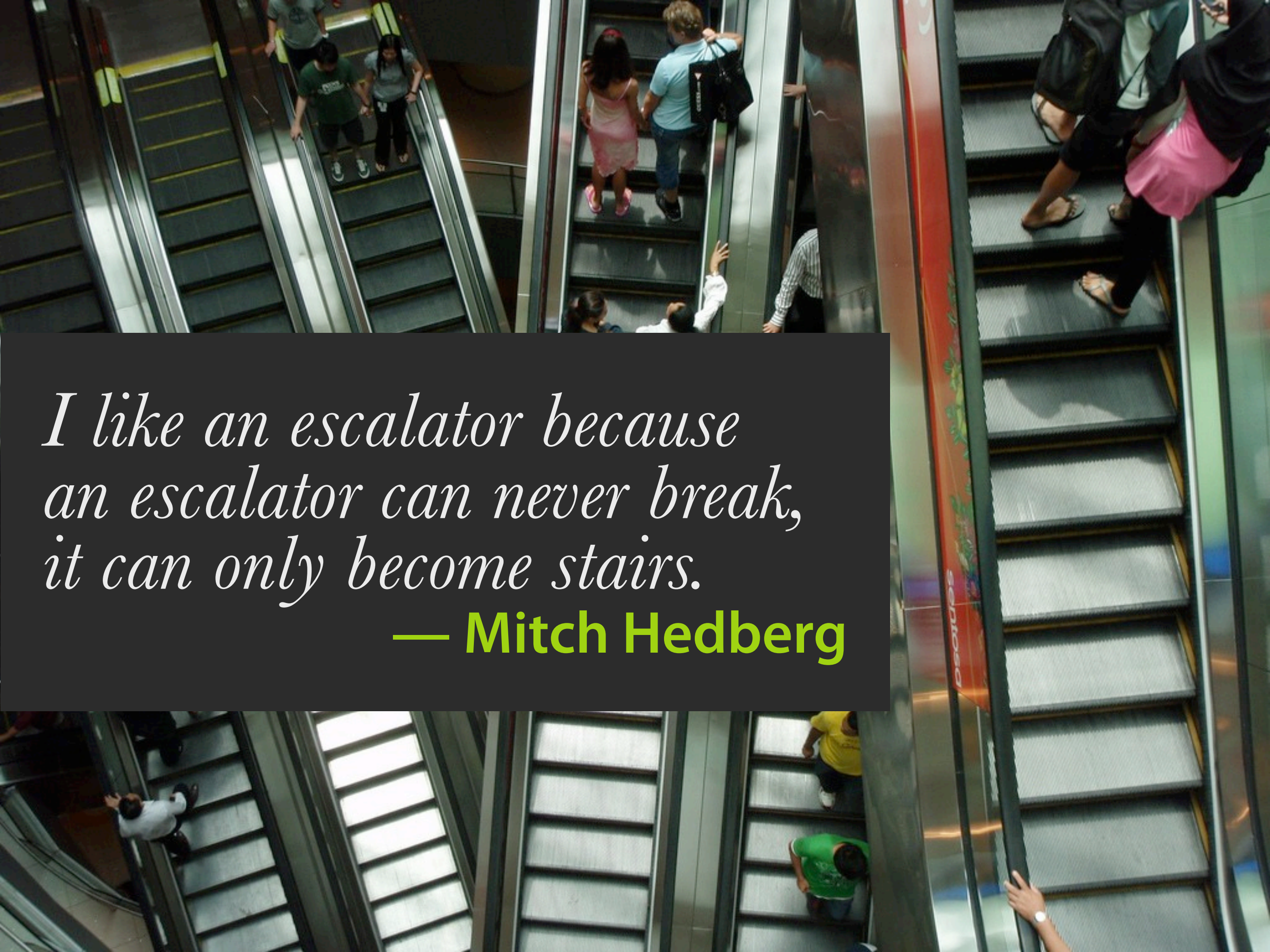
*n.* a system's ability to continue to operate when it encounters and unexpected error.







**BROWSERS  
IGNORE WHAT  
THEY DON'T  
UNDERSTAND**



*I like an escalator because  
an escalator can never break,  
it can only become stairs.*

— **Mitch Hedberg**

*an electric toothbrush  
can never break, it  
can only become a  
toothbrush.*





## WEEKENDHACKER

### WEEKENDHACKER

## Make the Best of Your Travel Plans This Weekend

BY WHITSON

Share

The holidays are upon us, and if you're going to spend them you're probably going to be dealing with the stress that is travel. Here are some tips for making travel as pain-free as possible. [More »](#)

### RELATED STORIES

- Avoid a Weekend of Boredom
- Discover Some New Music This Weekend
- Find Yourself Some Great Deals This Weekend

### WEB SITES



### TAXES



LOGIN

LATEST STORIES ▾ SATURDAY, NOV 19, 2011

...you'll find it waiting in your basket online.


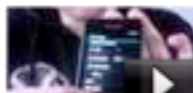


**£10 OFF**  
your first online shop\*

Start saving

[www.fesco.com](http://www.fesco.com)

\*When you spend £50 or more. Excludes delivery charge. Terms here.

-  **WEEKENDHACKER** 5:00 PM  
Make the Best of Your Travel Plans This Weekend
-  **FOR WHAT IT'S WORTH** 4:00 PM  
Remains of the Day: Ice Cream

*a dynamic web page can never break, it can only become a web page.*

▸ The Ultimate Black Friday Gadget

MORE STORIES...

App Deals

▸ The Ultimate Black Friday Gadget





TIPS AND DOWNLOADS FOR  
GETTING THINGS DONE

---

[MORE STORIES...](#)







# GRACEFUL DEGRADATION

# MODERN BROWSERS

OLDER BROWSERS

# MODERN BROWSERS



OLDER BROWSERS

# MODERN BROWSERS

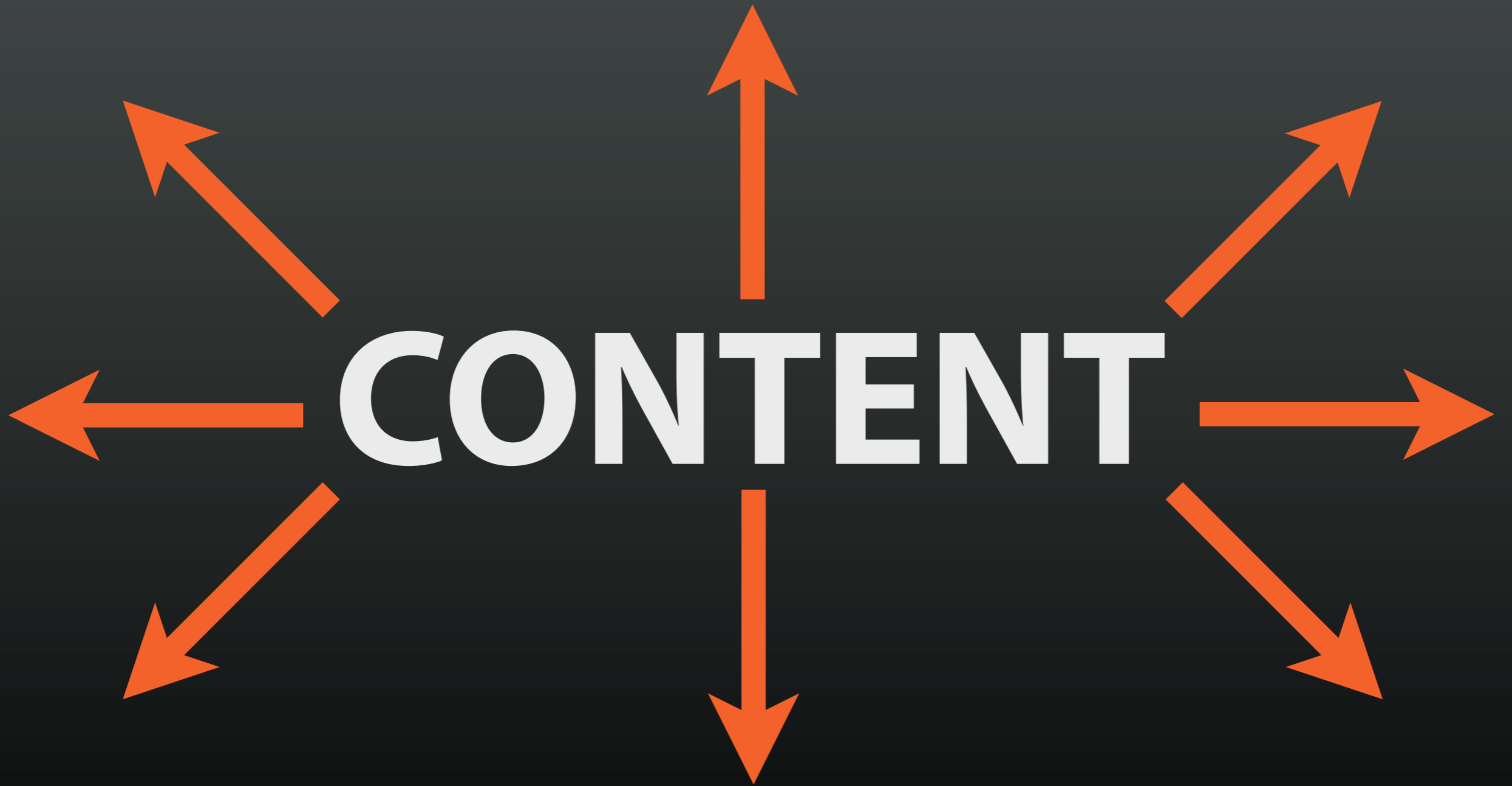


OLD BROWSERS



# PROGRESSIVE ENHANCEMENT

**CONTENT**





**ACCESSIBILITY**

**“SPECIAL NEEDS”**

**“SPECIAL NEEDS”**

**“SPECIAL NEEDS”  
CAN BE  
CONTEXTUAL**



YOU MUST BE THIS TALL  
TO RIDE WITH AN ADULT





**GRACEFUL DEGRADATION**

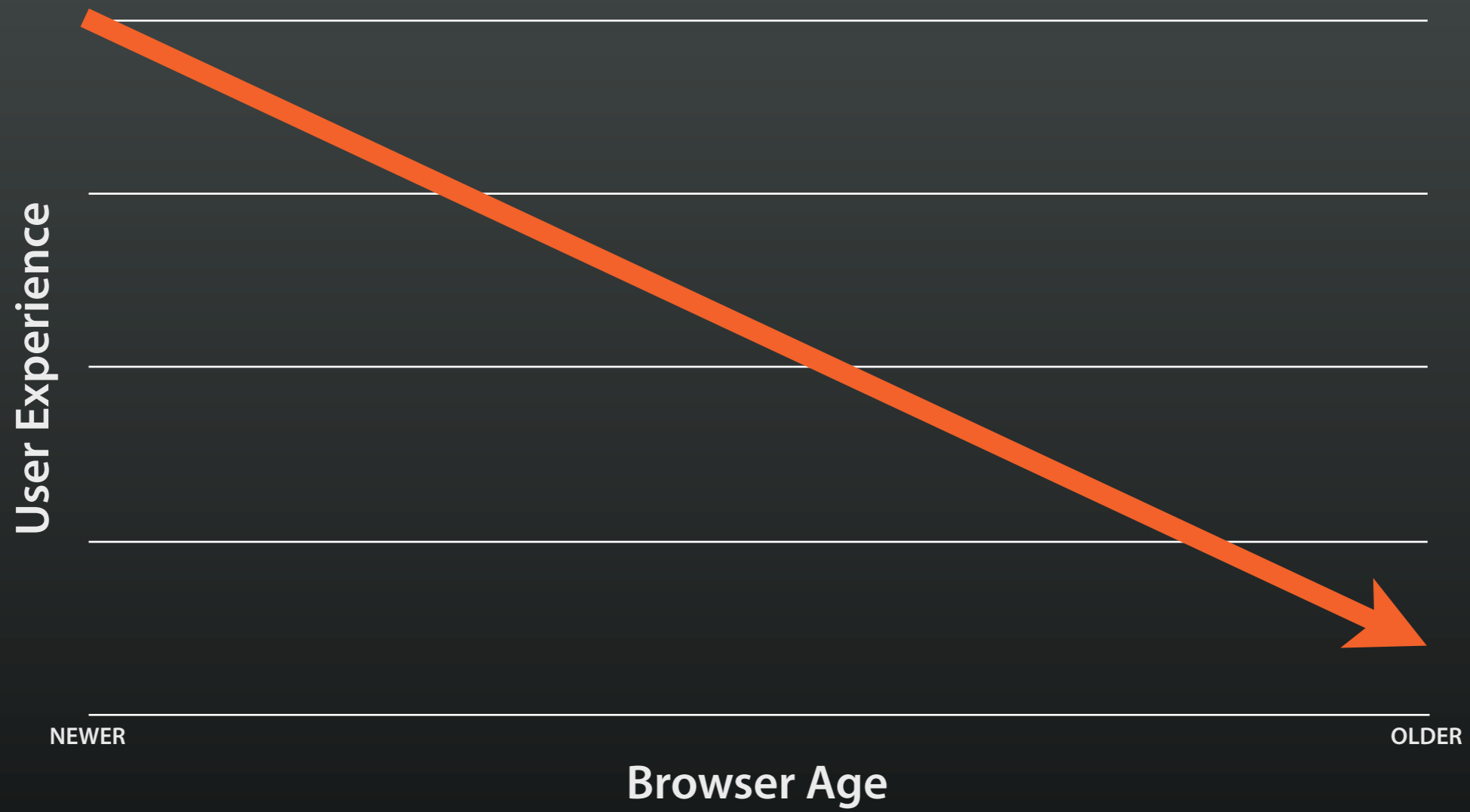
**PROGRESSIVE  
ENHANCEMENT**

**OOOH, SHINY!**

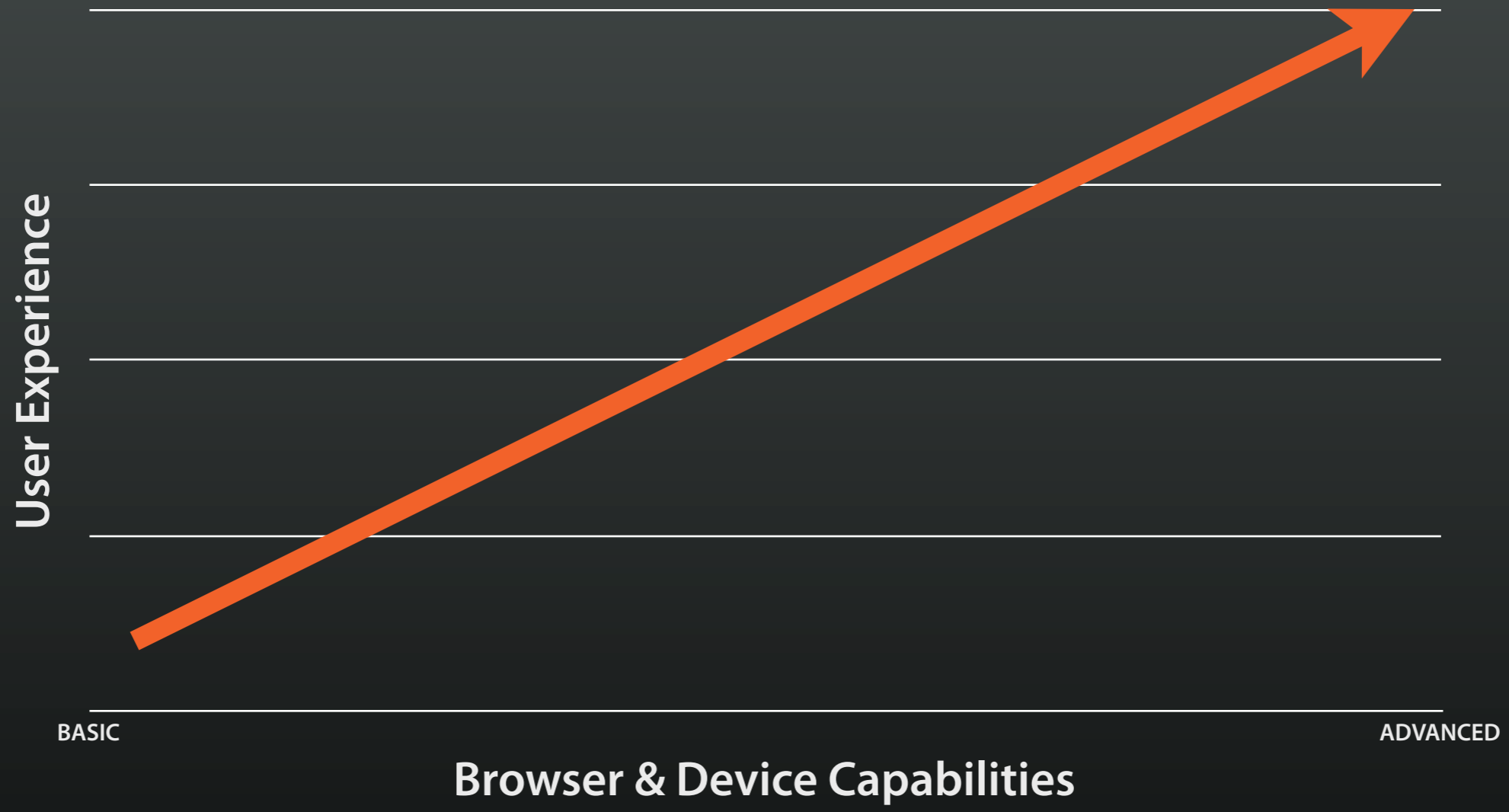
**PROGRESSIVE  
ENHANCEMENT  
ISN'T ABOUT  
BROWSERS**

**BROWSERS AND  
TECHNOLOGIES  
COME AND GO**

**DON'T LOSE SIGHT  
OF YOUR USERS**

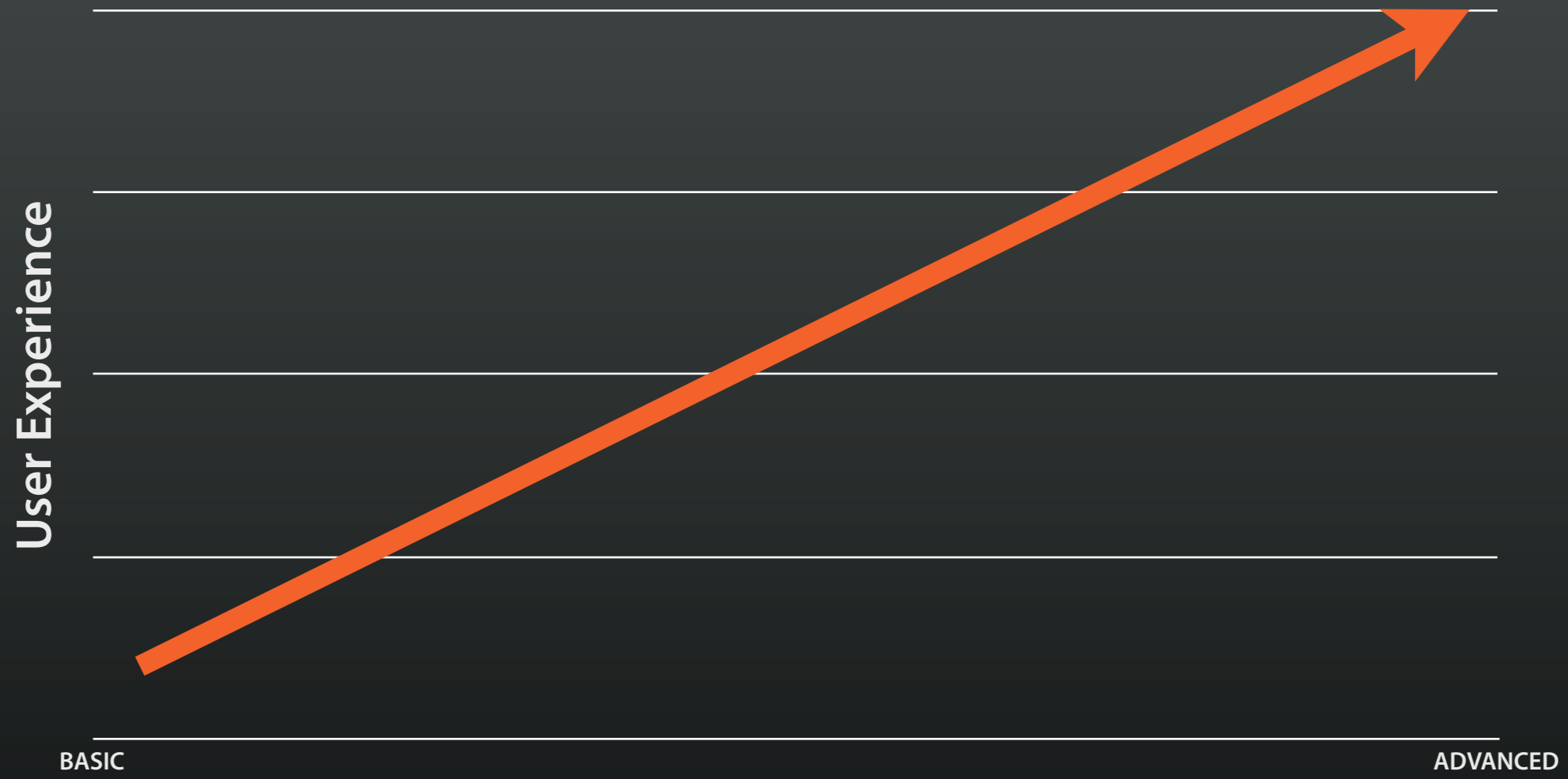


**Graceful Degradation**



**Progressive Enhancement**

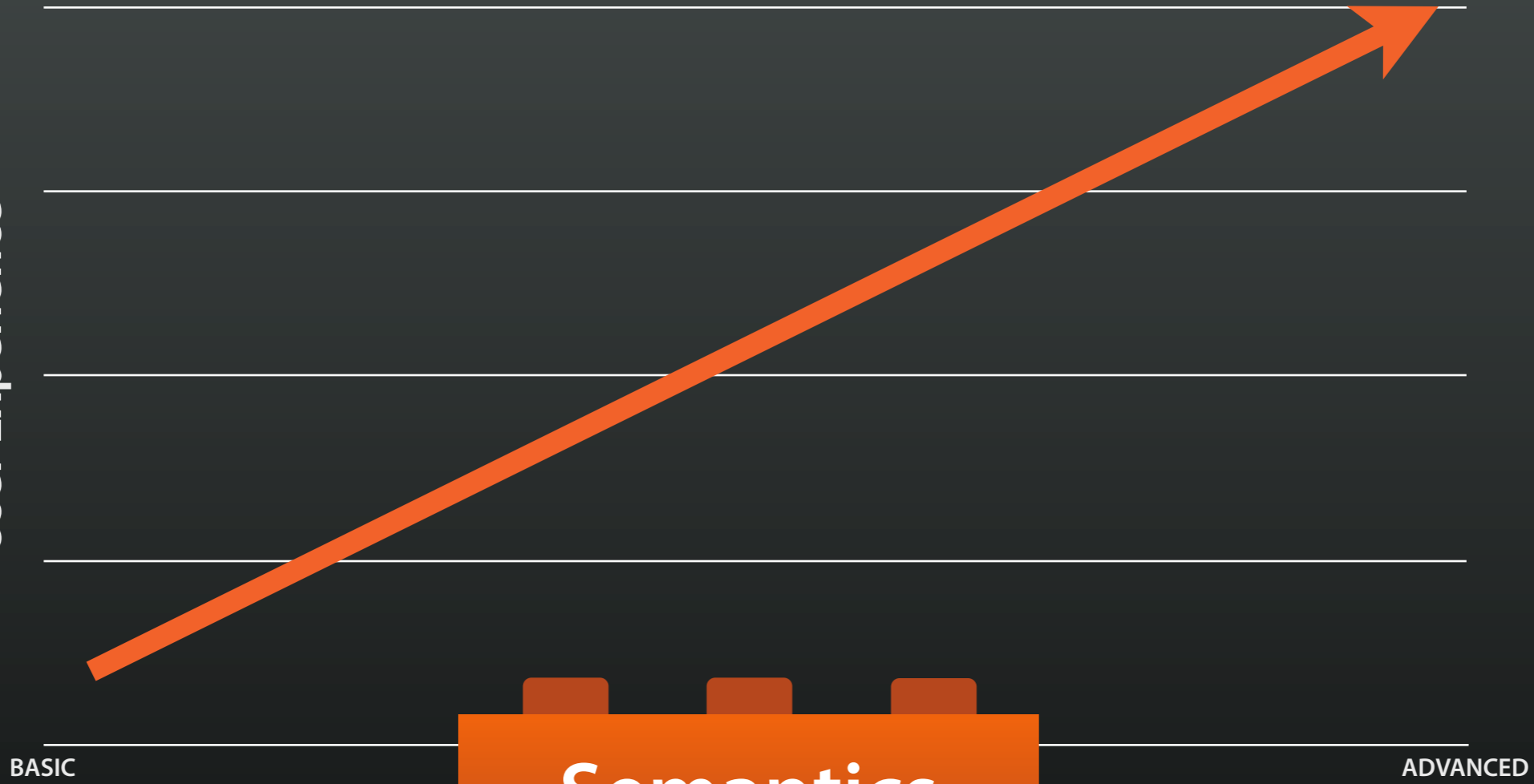




Browser & Device Capabilities

Content

User Experience



BASIC

ADVANCED

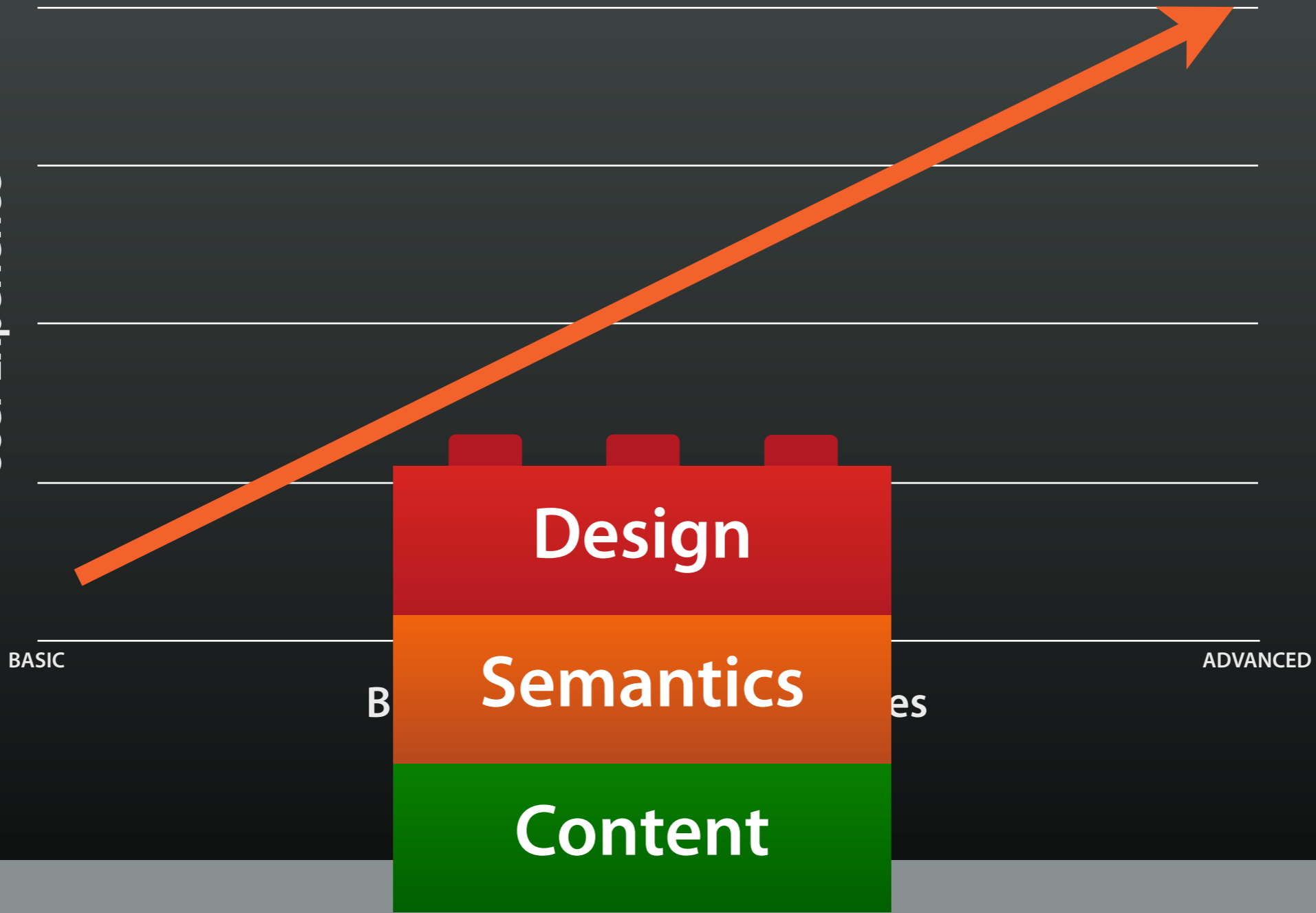
B

Semantics

es

Content

User Experience



BASIC

B

Design

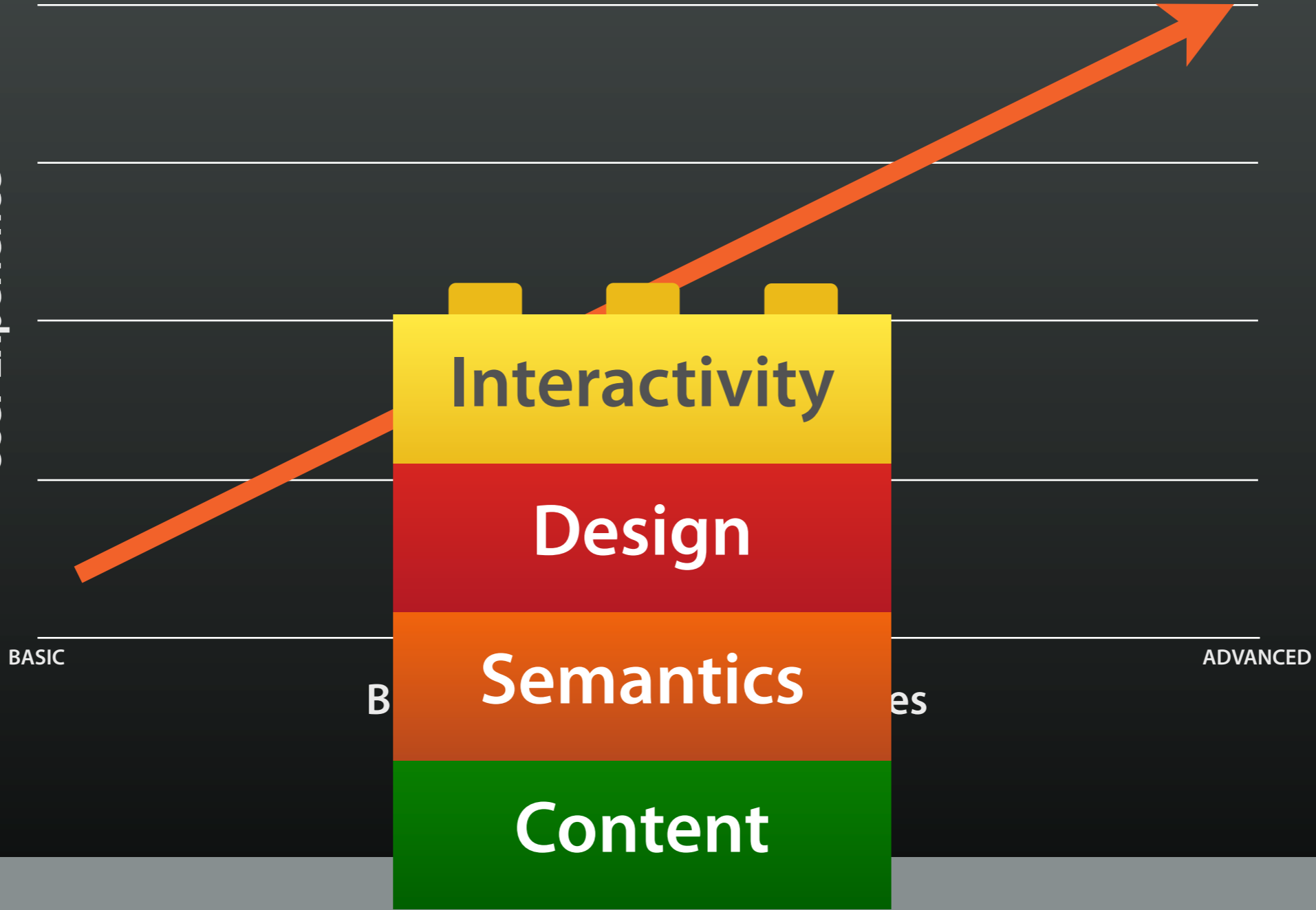
Semantics

es

ADVANCED

Content

User Experience



BASIC

B

Interactivity

Design

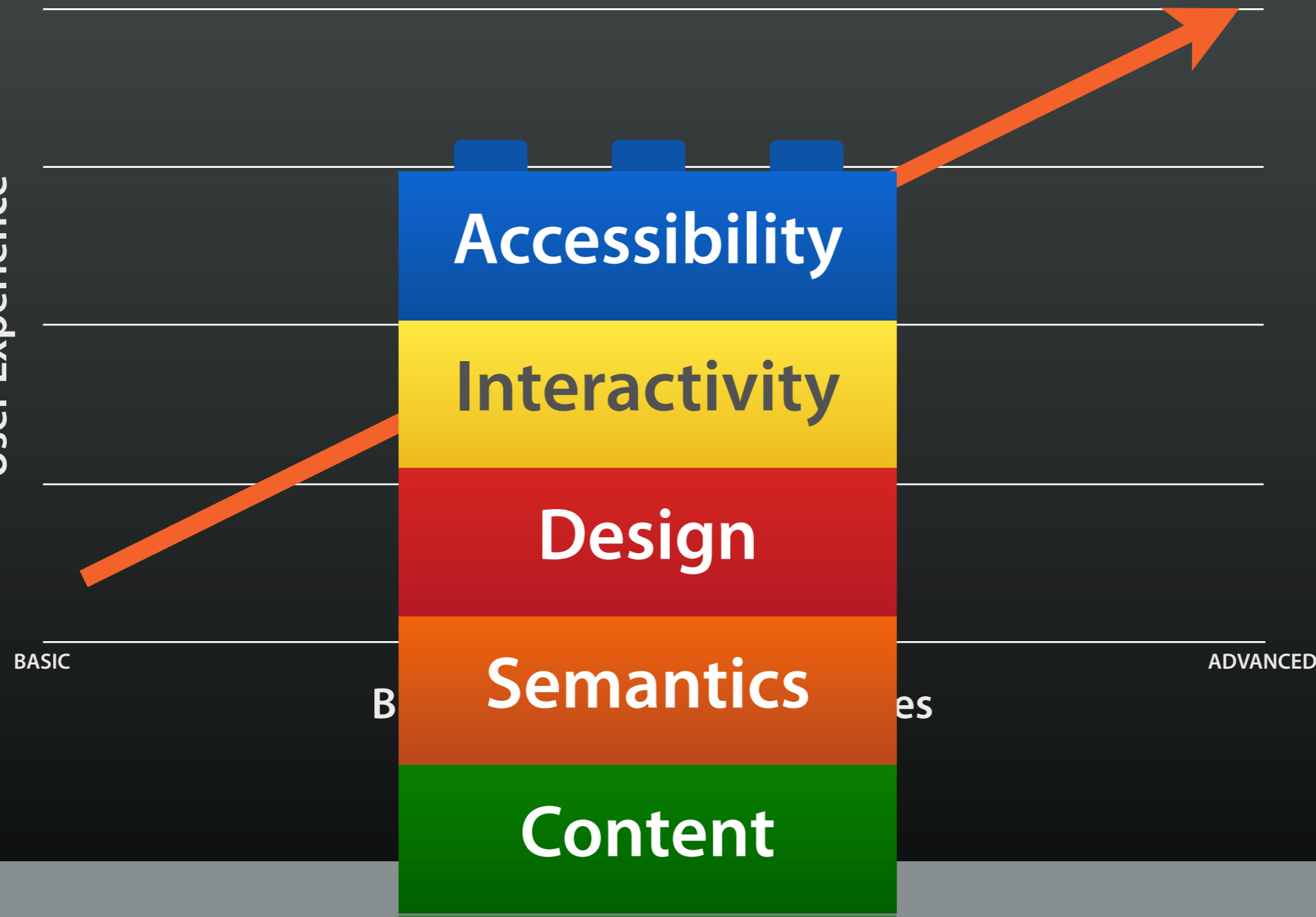
Semantics

Content

es

ADVANCED

User Experience



Accessibility

Interactivity

Design

Semantics

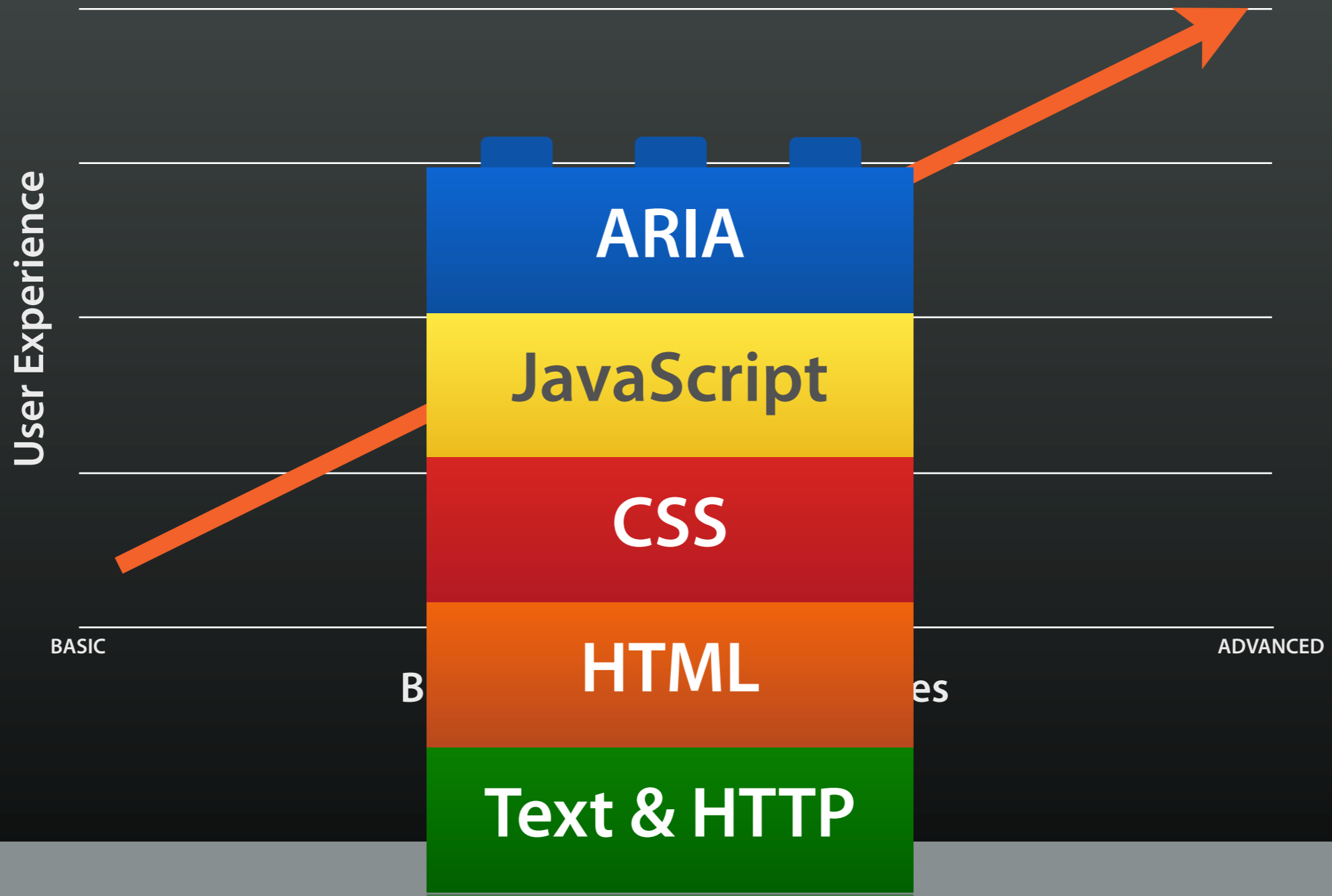
Content

BASIC

ADVANCED

B

es





**HTML**



HTML5

Microformats

HTML4



**EXAMPLES**

# PE with HTML

```
<video poster="poster.png">
  <source src="video.m4v" />
  <source src="video.webm" />
  <source src="video.ogv" />
  
  <ul>
    <li><a href="video.m4v">Download MP4</a></li>
    <li><a href="video.webm">Download WebM</a></li>
    <li><a href="video.ogv">Download Ogg</a></li>
  </ul>
</video>
```

# PE with HTML

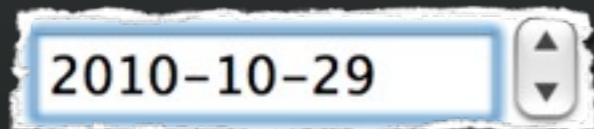
```

<ul>
  <li><a href="video.m4v">Download MP4</a></li>
  <li><a href="video.webm">Download WebM</a></li>
  <li><a href="video.ogv">Download Ogg</a></li>
</ul>
```

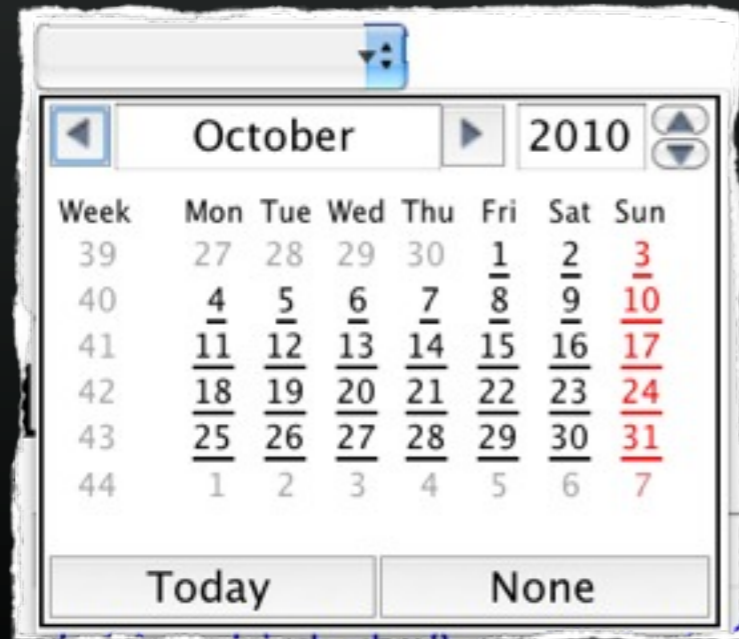
# PE with HTML

```
<input type="date" name="dob" />
```

I get it!



2010-10-29




October 2010

Week	Mon	Tue	Wed	Thu	Fri	Sat	Sun
39	27	28	29	30	1	2	3
40	4	5	6	7	8	9	10
41	11	12	13	14	15	16	17
42	18	19	20	21	22	23	24
43	25	26	27	28	29	30	31
44	1	2	3	4	5	6	7

Today None

I don't get it :-)



# PE with CSS

```
p {  
  color: #ccc;  
  color: rgba( 0, 0, 0, .5 );  
}
```

# PE with CSS

```
html[lang] p {  
  color: #ccc;  
  color: rgba( 0, 0, 0, .5 );  
}
```

# CSS ZEN GARDEN

FINDING THE RIGHT "BOX MODEL"

## the road to enlightenment

Littering a dark and dreary road lay the past relics of browser-specific tags, incompatible DOMs, and broken CSS support.

Today, we must clear the mind of past practices. Web enlightenment has been achieved thanks to the tireless efforts of folk like the W3C, WAP and the major browser creators.

The css Zen Garden invites you to relax and meditate on the important lessons of the masters. Begin to see with clarity. Learn to use the (yet to be) time-honored techniques in new and invigorating fashion. Become one with the web.



A demonstration of what can be accomplished visually through CSS-based design. Select any style sheet from the list to load it into this page.

Download the sample [html file](#) and [css file](#).

## SO WHAT IS THIS ABOUT?

There is clearly a need for CSS to be taken seriously by graphic artists. The Zen Garden aims to excite, inspire, and encourage participation. To begin, view some of the existing designs in the list. Clicking on any one will load the style sheet into this very page. The code remains the same, the only thing that has changed is the external .css file. Yes, really.

CSS allows complete and total control over the style of a hypertext document. The only way this can be illustrated in a way that gets people excited is by demonstrating what it can truly be, once the reins are placed in the hands of those able to create beauty from structure. To date, most examples of neat tricks and hacks have been demonstrated by structurists and coders. Designers have yet to make their mark. This needs to change.

## PARTICIPATION

Graphic artists only please. You are modifying this page, so strong CSS skills are necessary, but the example files are commented well enough that even CSS novices can use them as starting points. Please see the [CSS Resource Guide](#) for advanced tutorials and tips on working with CSS.

You may modify the style sheet in any way you wish, but not the HTML. This may seem daunting at first if you've never worked this way before, but follow the listed links to learn more, and use the sample files as a guide.

Download the sample [html file](#) and [css file](#) to work on a copy locally. Once you have completed your masterpiece (and please, don't submit half-finished work) upload your .css file to a web server under your control. [Send us a link](#) to the file and if we choose to use it, we will spider the associated images. Final submissions will be placed on our server.

## BENEFITS

Why participate? For recognition, inspiration, and a resource we can all refer to when making the case for CSS-based design. This is sorely needed, even today. More and more major sites are taking the leap, but not enough have. One day this gallery will be a historical curiosity; that day is not today.

## REQUIREMENTS

We would like to see as much CSS1 as possible. CSS2 should be limited to widely-supported elements only. The css Zen Garden is about functional, practical CSS and not the latest bleeding-edge tricks viewable by 2% of the browsing public. The only real requirement we have is that your CSS validates.

Unfortunately, designing this way highlights the flaws in the various implementations of CSS. Different browsers display differently, even completely valid CSS at times, and this becomes maddening when a fix for one leads to breakage in another. View the [Resources](#) page for information on some of the fixes available. Full browser compliance is still sometimes a pipe dream, and we do not expect you to come up with pixel-perfect code across every platform. But do test in as many as you can. If your design doesn't work in at least IES+Win and Mozilla (run by over 90% of the population), chances are we won't accept it.

## SELECT A DESIGN

[Under the Sea](#) by Eric Steff

[Make 'em Proud](#) by Michael McAdams and Scotty Reinhardt

[Refractor](#)

[Orchid Beauty](#) by Kevin Addison

[Download](#) by Justin Gray

[CSS Co. Ltd.](#) by Benjamin Klemm

[Sakura](#) by Tatsuya Uchida

[Kerita Forest](#) by John Poltowski

[A Walk in the Garden](#) by Simon Van Heusermeiren



## ARCHIVE

[css ZenGarden v](#)  
[View All Designs](#)

## RESOURCES

[View This ZenGarden's CSS](#)  
[CSS Resource](#)  
[FAQ](#)  
[Submit a Design](#)  
[Licenses](#)

← IE6 & under

MOSe



# Fault tolerance

```
#intro {  
  /* Basic Layout */  
}
```

```
/* ... */
```

```
body[id=css-zen-garden] #intro {  
  /* Advanced Layout */  
}
```



# Fault tolerance

```
#intro {  
  /* Basic Layout */  
}  
  
/* ... */  
  
[foo],  
#intro {  
  /* Advanced Layout */  
}
```

# PE with CSS

```
@import 'not-for-IE7-or-below.css'  
    screen;
```

```
@media screen, print, refrigerator {  
    /* IE will get these rules */  
}
```

# PE with CSS

```
@media
```

```
screen and (min-device-width:1024px)  
and (max-width:989px),
```

```
screen and (max-device-width:480px),
```

```
screen and (max-device-width:480px)  
and (orientation:landscape),
```

```
screen and (min-device-width:481px)  
and (orientation:portrait) {
```

```
/* Layout for narrower desktop (below 990px)
```

```
or
```

```
iPhone running iOS 3 (or equivalent)
```

```
or
```

```
iPhone running iOS 4 (or equivalent) in "landscape" view
```

```
or
```

```
iPad (or equivalent) in "portrait" view */
```

```
}
```

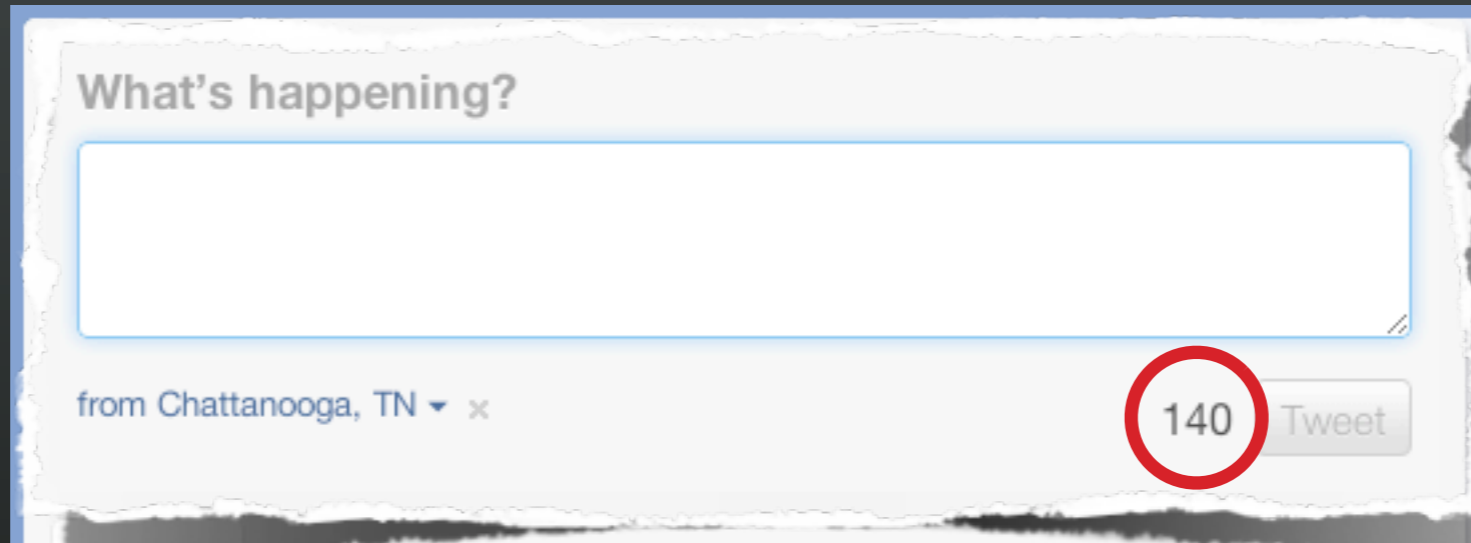
# PE with HTML & ARIA

```
<header role="banner">  
  <h1></h1>  
  <nav role="navigation">  
    <ol>  
      <li><a href="#details">Details</a></li>  
      <li><a href="#schedule">Schedule</a></li>  
      <li><a href="#instructors">Instructors</a></li>  
      <li><a href="#lodging">Lodging</a></li>  
      <li><a href="#location">Location</a></li>  
    </ol>  
  </nav>  
</header>
```

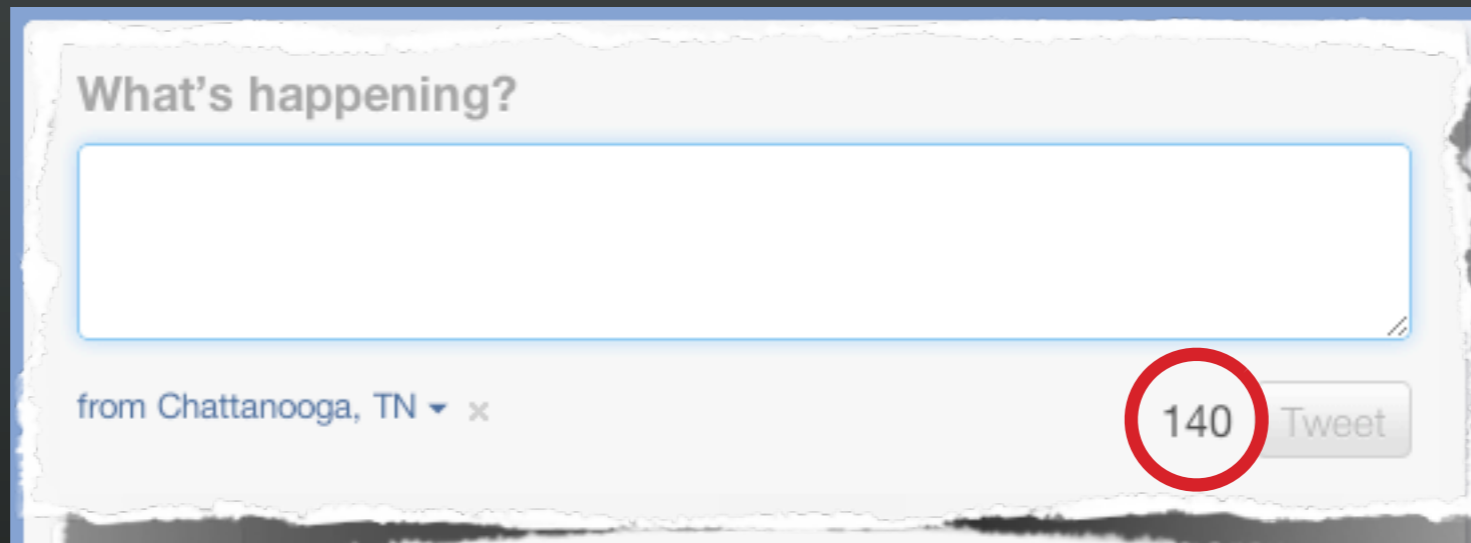
# PE with JavaScript



# PE with JavaScript

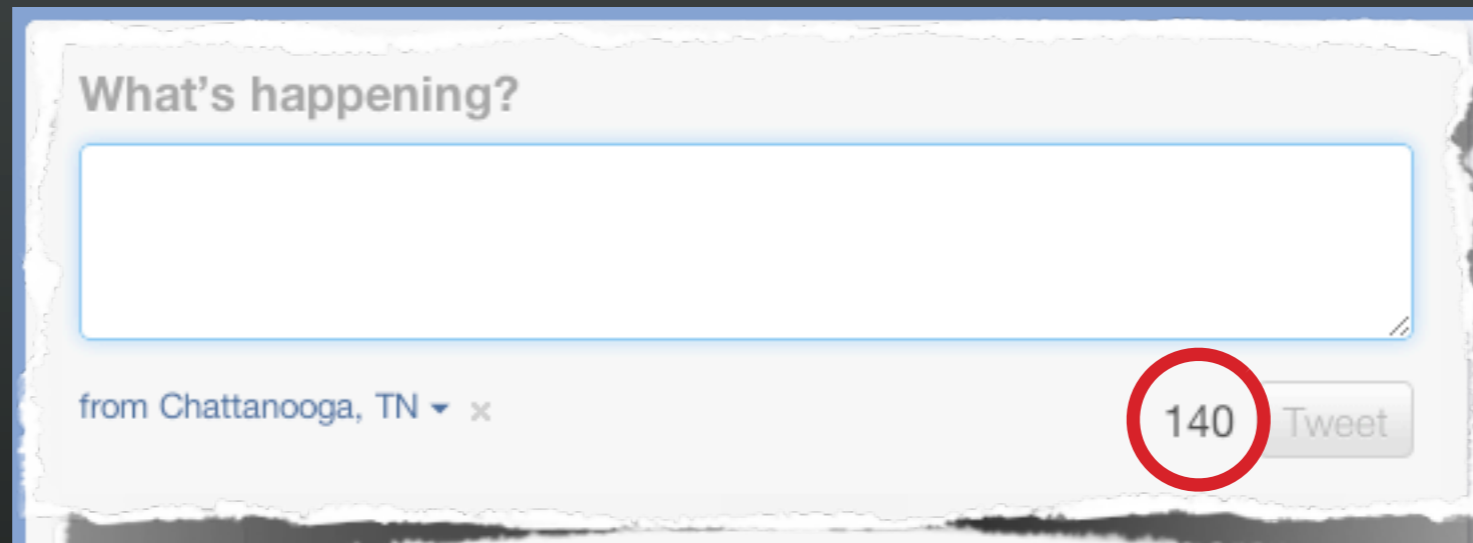


# PE with JavaScript



```
<input class="tweet-counter" value="140" disabled="disabled">
```

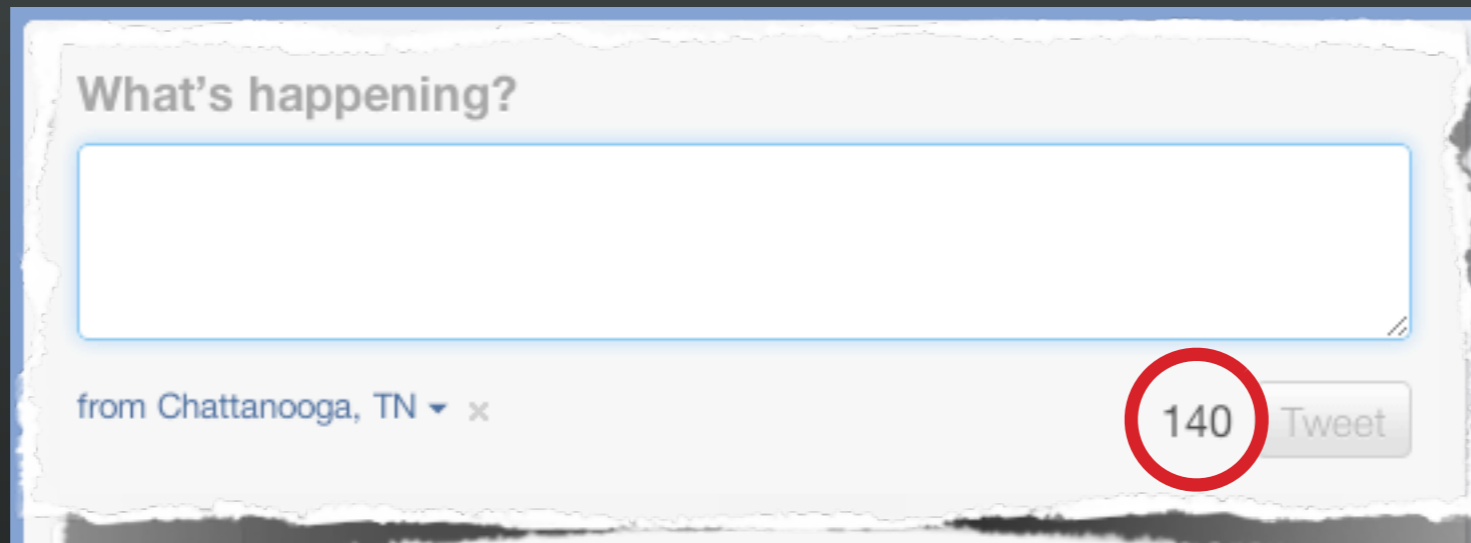
# PE with JavaScript



```
<span id="chars_left_notice" class="numeric">  
  <strong id="status-field-char-counter"  
    class="char-counter">140</strong>  
</span>
```



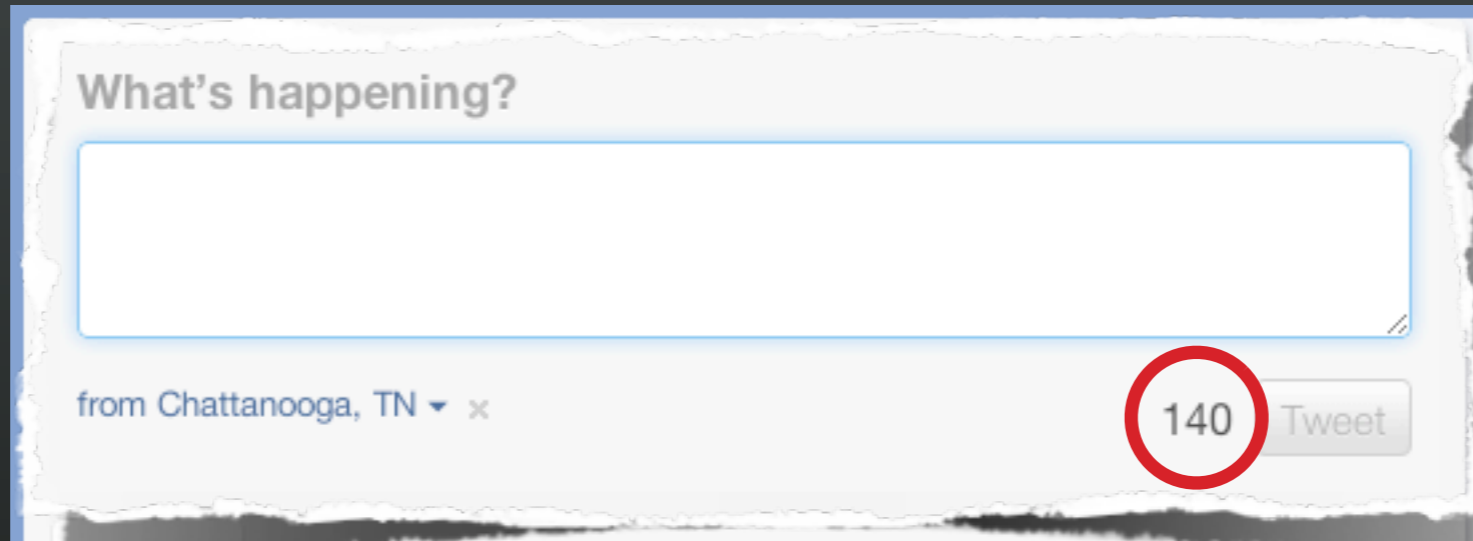
# PE with JavaScript



```
<span class="tweet-counter">140  
  <b class="hidden"> characters remaining</b></span>
```

```
.hidden {  
  position: absolute;  
  left: -999em;  
}
```

# PE with JavaScript

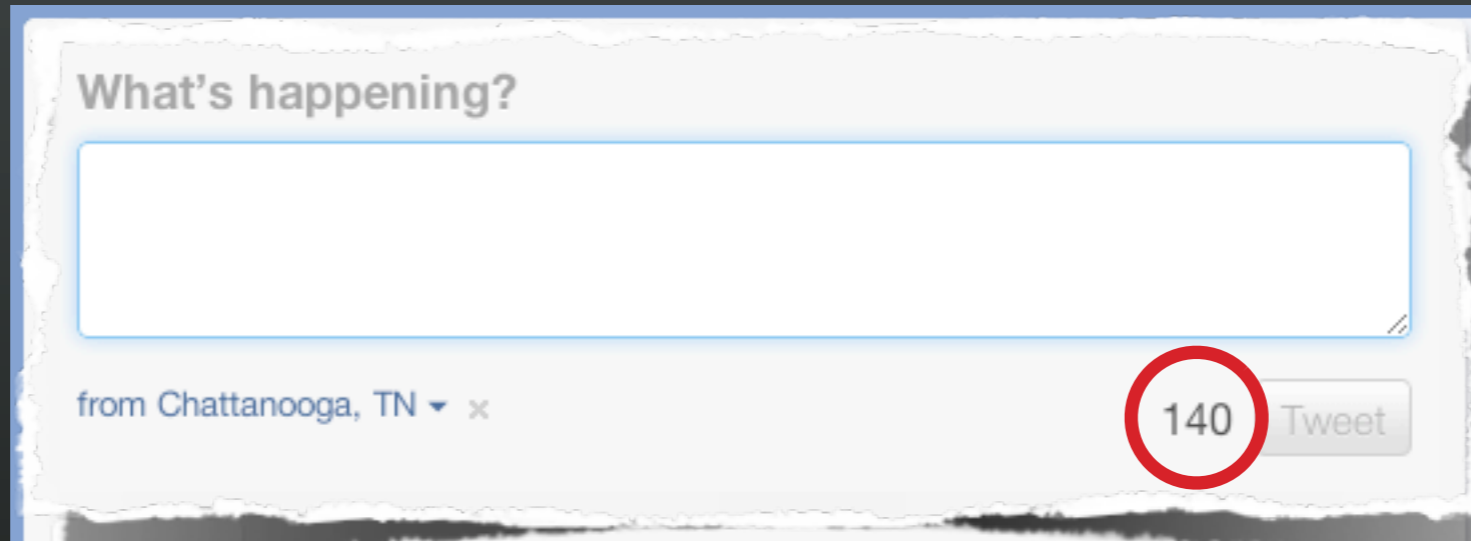


```
<span class="tweet-counter">maximum of 140 characters</span>
```



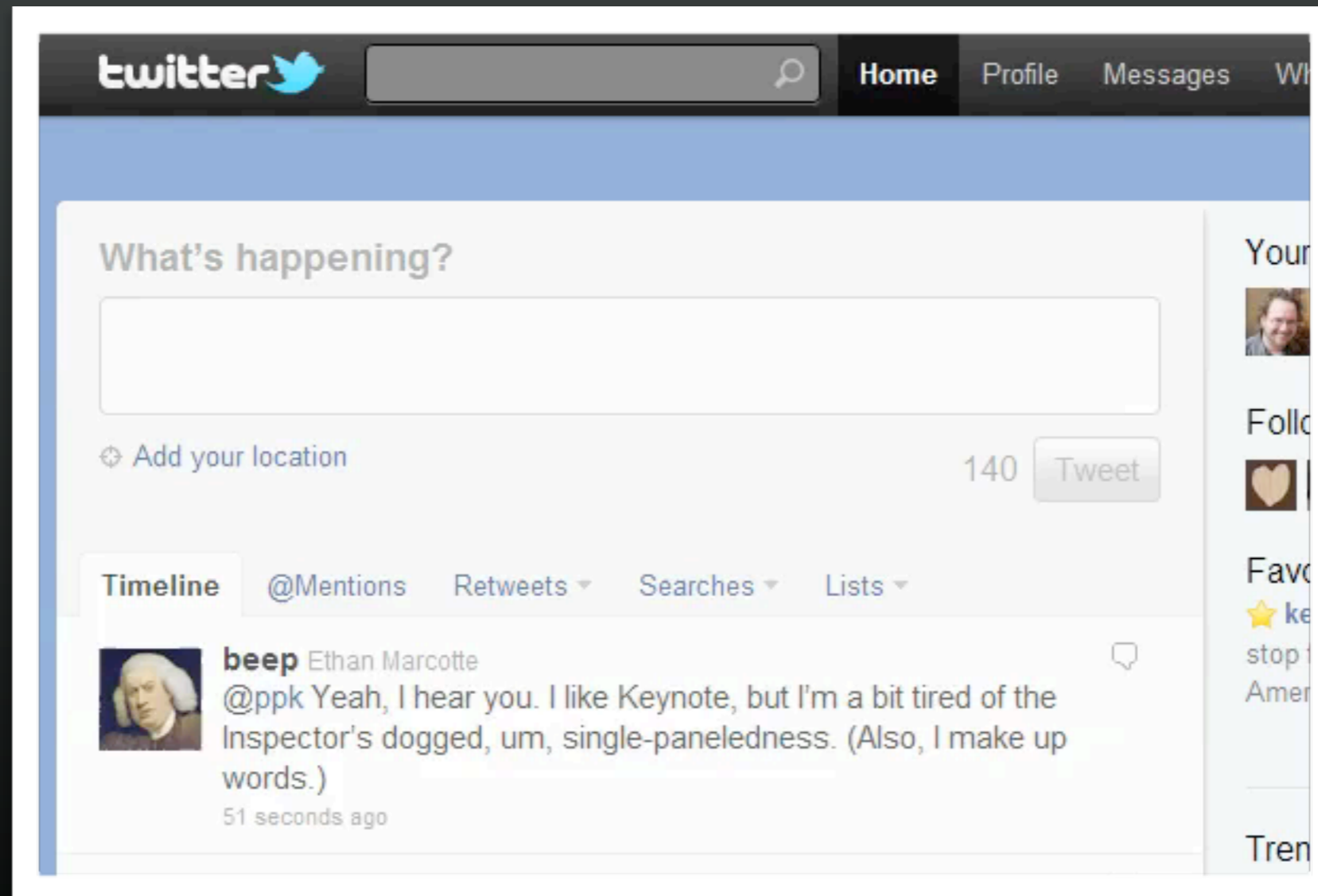
```
<span class="tweet-counter">140  
<b class="hidden"> characters remaining</b></span>
```

# PE with JavaScript & ARIA



```
<span aria-live="polite" aria-atomic="true"  
  class="tweet-counter">140<b class="hidden">  
  characters remaining</b></span>
```

# PE with JavaScript & ARIA



# PE with JavaScript & ARIA

## Pumpkin Pie

### OVERVIEW

Whether you're hosting a festive party or a casual get-together with friends, our Pumpkin Pie will make entertaining easy!

**Original recipe yield:** 1 × 9-inch deep dish pie

**Prep Time:** 10min

**Cook Time:** 1hr

**Ready In:** 1hr 10min



### INGREDIENTS

- 1 (9in) unbaked deep dish pie crust
- ½ cup white sugar
- 1 tsp ground cinnamon
- ½ tsp salt
- ½ tsp ground ginger
- ¼ tsp ground cloves
- 2 eggs
- 1 can (15oz) pumpkin puree
- 1 can (12fl oz) evaporated milk

### DIRECTIONS

1. Preheat oven to 425°F
2. Combine sugar, salt, cinnamon, ginger and cloves in small bowl.
3. Beat eggs lightly in large bowl.
4. Stir in pumpkin and sugar-spice mixture.

# PE with JavaScript & ARIA

## Pumpkin Pie

OVERVIEW | INGREDIENTS | DIRECTIONS | NUTRITION

Whether you're hosting a festive party or a casual get-together with friends, our Pumpkin Pie will make entertaining easy!

**Original recipe yield:** 1 × 9-inch deep dish pie

**Prep Time:** 10min  
**Cook Time:** 1hr  
**Ready In:** 1hr 10min



`role="application"`  
`aria-activedescendant="folder-1"`

# PE with JavaScript & ARIA

`role="tablist"`

## Pumpkin Pie

OVERVIEW

INGREDIENTS

DIRECTIONS

NUTRITION

Whether you're hosting a festive party or a casual get-together with friends, our Pumpkin Pie will make entertaining easy!

**Original recipe yield:** 1 × 9-inch deep dish pie

**Prep Time:** 10min

**Cook Time:** 1hr

**Ready In:** 1hr 10min



# PE with JavaScript & ARIA

```
role="tab"  
aria-selected="true"  
aria-controls="folder-1"
```

## Pumpkin Pie

OVERVIEW   INGREDIENTS   DIRECTIONS   NUTRITION

Whether you're hosting a festive party or a casual get-together with friends, our Pumpkin Pie will make entertaining easy!

**Original recipe yield:** 1 × 9-inch deep dish pie

**Prep Time:** 10min  
**Cook Time:** 1hr  
**Ready In:** 1hr 10min





# PE with JavaScript & ARIA

```
role="tab"  
aria-selected="false"  
aria-controls="folder-4"
```

## Pumpkin Pie

OVERVIEW | INGREDIENTS | DIRECTIONS | **NUTRITION**

Whether you're hosting a festive party or a casual get-together with friends, our Pumpkin Pie will make entertaining easy!

**Original recipe yield:** 1 × 9-inch deep dish pie

**Prep Time:** 10min  
**Cook Time:** 1hr  
**Ready In:** 1hr 10min



# PE with JavaScript & ARIA

## Pumpkin Pie

OVERVIEW | INGREDIENTS | DIRECTIONS | NUTRITION

Whether you're hosting a festive party or a casual get-together with friends, our Pumpkin Pie will make entertaining easy!

**Original recipe yield:** 1 × 9-inch deep dish pie

**Prep Time:** 10min  
**Cook Time:** 1hr  
**Ready In:** 1hr 10min



`role="tabpanel"`  
`aria-hidden="false"`  
`aria-labelledby="folder-1-tab"`

# PE with JavaScript & ARIA

## Pumpkin Pie

OVERVIEW

INGREDIENTS

DIRECTIONS

NUTRITION

Whether you're hosting a festive party or a casual get-together with friends, our Pumpkin Pie will make entertaining easy!

**Original recipe yield:** 1 × 9-inch deep dish pie

**Prep Time:** 10min

**Cook Time:** 1hr

**Ready In:** 1hr 10min



**Pumpkin pie Mozilla Firefox**

*Photo by [Paul Goyette](#), licensed under [Creative Commons](#).*

**ARIA**

**JavaScript**

**CSS**

**HTML**

**Text & HTTP**

Available  
now  
from



[easy-readers.net](http://easy-readers.net)

or me



# Progressive Enhancement & Mobile

by Aaron Gustafson

[@AaronGustafson](#)

Further reading:

<http://adaptivewebdesign.info>

<http://blog.easy-designs.net>

<http://mobilewebbestpractices.com>

Slides available at

<http://slideshare.net/AaronGustafson>

This presentation is licensed under

[Creative Commons](#)

[Attribution-Noncommercial-Share Alike 3.0](#)

except where otherwise noted

**flickr** Photo Credits

<http://www.flickr.com/photos/aarongustafson/galleries/72157628049759763/>

