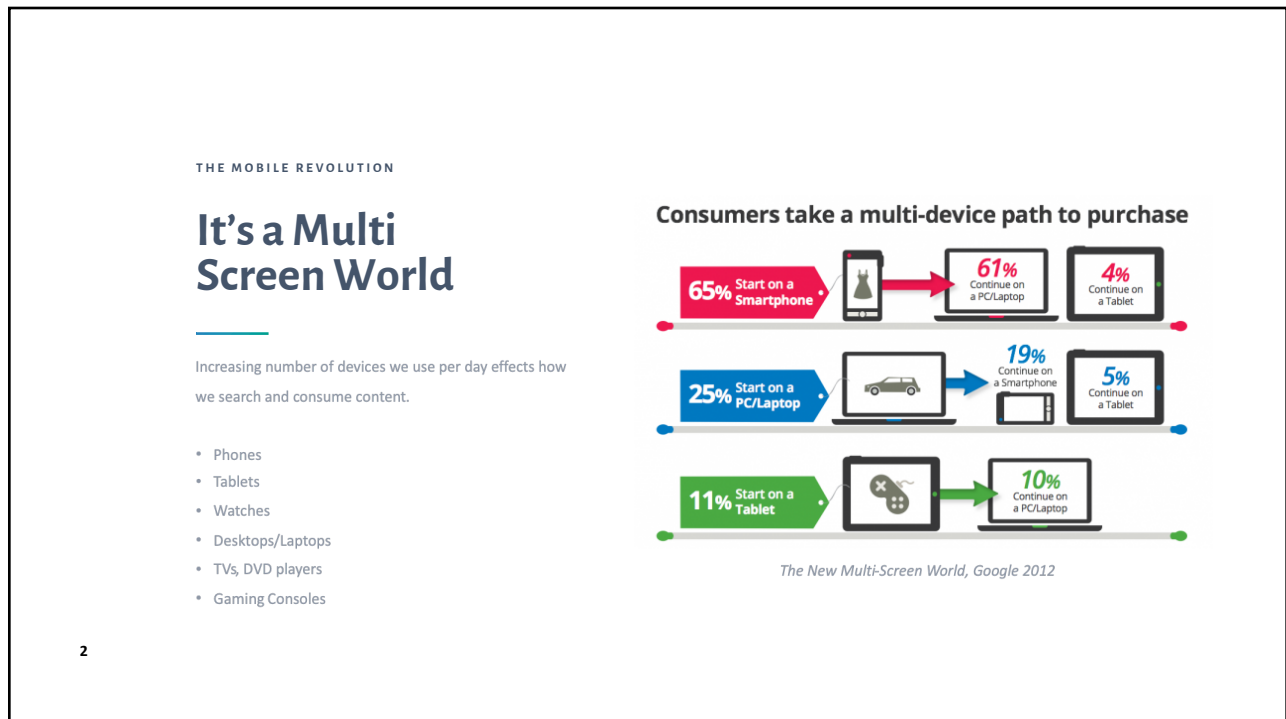




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## How do we adapt?



### SEPARATE MOBILE SITE

A separate website is designed specifically for mobile. Results in two code-bases with different functionality for each.



### ADAPTIVE WEB DESIGN

Site adapts to the width of the browser at specific points. Only concerned about the browser being a specific width, at which point it adapts the layout.



### RESPONSIVE WEB DESIGN

Site responds to the size of the browser at any given point. No matter what the browser width, the site adjusts its layout (and perhaps functionality) in a way that is optimized to the screen.

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**ETHAN MARCOTTE**

AUTHOR OF RESPONSIVE WEB DESIGN

“Rather than creating disconnected designs, each tailored to a particular device or browser, we should instead treat them as facets of the same experience. In other words, we can craft sites that are not only more flexible, but that can adapt to the media that renders them.”

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## Ingredients of Responsive Web Design

Responsive Website Design uses a single HTML code base for all platforms.

1. Flexible/Fluid Layouts
2. Flexible Images and Media
3. Media Queries



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RWD INGREDIENTS

## Flexible/Fluid Layouts

- Fluid Grid Layouts
- Responsive Typography
- New CSS Features like Flexbox, Grid & advanced calc() functions

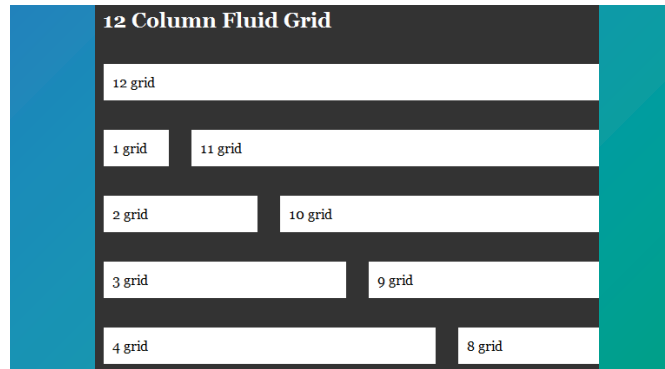
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RWD: FLEXIBLE/FLUID LAYOUTS

## Fluid Grid Layouts

- Rather than setting our layouts in pixels we use percentages.
- We adjust our box model math accordingly



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RWD: FLEXIBLE/FLUID LAYOUTS

## Flexible Typography

- We set type in percentages, em units, or rem units
- Type adjusts relative to a flexible baseline.
- Watch your line length for readability.
- Adjust font size to be larger on smaller screens

```
body {
  font-size: 100%; /* flexible baseline */
}

p {
  font-size: 1.25em; /* 1.25em relative to 16px baseline */
}
```

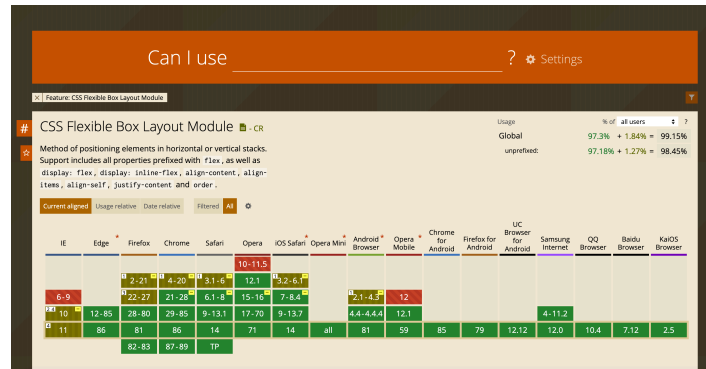
8

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RWD: FLEXIBLE/FLUID LAYOUTS

## New CSS Features

- Flexbox
- CSS Grid
- Advanced Calc Functions  
(min, max, clamp)



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RWD INGREDIENTS

## Flexible Images & Media

- Flexible Images
- SVGs
- For High Res- Screens

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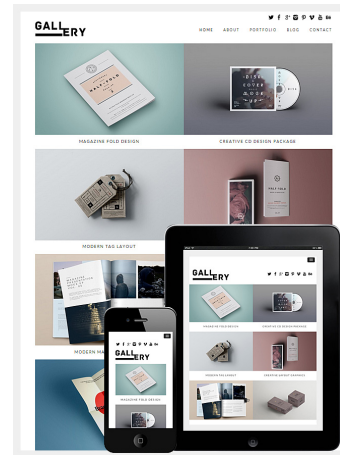
10

RWD: FLEXIBLE IMAGES/MEDIA

## Flexible Images

- Image widths are set to expand to fill the size of their container and maintain proportion.
- Capture at highest resolution & let browser scale

```
img {
  width: 100%;
  height: auto;
}
```



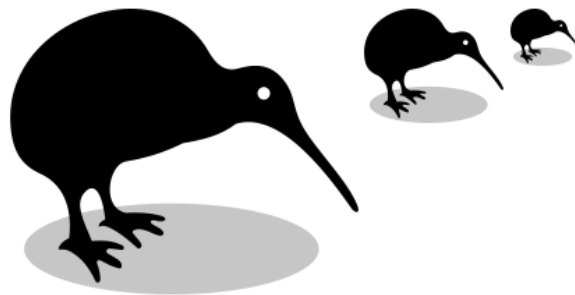
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RWD: FLEXIBLE IMAGES/MEDIA

## Scalable Vector Graphics (SVGs)

- Vector based graphics rendered by the browser.
- Can scale up/down without loss of quality
- Low file sizes
- Can be modified via css to change size, color, etc...



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RWD: FLEXIBLE IMAGES/MEDIA

## What about hi-res screens?

Some techniques use new HTML elements or attributes to account for multiple versions of the image to fit the correct resolution determined by the browser.

- <picture> element
- srcset attribute

```
<picture>
  <source media="(min-width: 650px)" srcset="img_car_desktop.jpg"
    alt="Car" >
  <source media="(min-width: 465px)" srcset="img_car_mobile.jpg"
    alt="Car" >
  
</picture>


```

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RWD INGREDIENTS

## Media Queries

- What are Media Queries?
- Responsive Web Design Approaches
- Graceful Degradation vs Progressive Enhancement

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RWD: MEDIA QUERIES

## What are Media Queries?

Media Queries are a CSS3 module allowing content rendering to adapt to conditions such as screen resolution (e.g. smartphone screen vs. computer screen).

- max-width
- max-device-width
- min-width
- min-device-width
- vw (viewport width)
- vh (viewport height)

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```
@media only screen and (min-width: 769px) {
  .push-header {
    display: none;
  }
}

@media only screen and (max-width: 480px) {
  .mail-bar {
    display: none;
  }
}
```

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RWD: MEDIA QUERIES

## Responsive Web Design Kittens



**Max**

Prefers desktop-down



**Min**

Prefers mobile-up



**Mo'**

Switches project-by-project

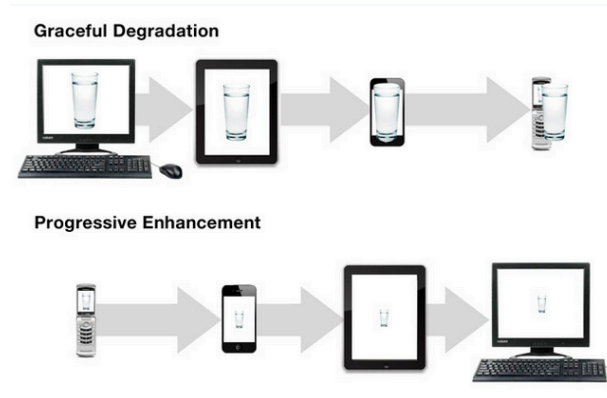
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RWD: MEDIA QUERIES

## Graceful Degradation vs Progressive Enhancement



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THINGS TO CONSIDER

## Keep in Mind!

- Performance/Load times
- Accessibility
- Imagery
- Scripts
- Typography - web fonts, font stack  
fallbacks on devices (standard desktop  
typefaces not available on mobile)
- Testing

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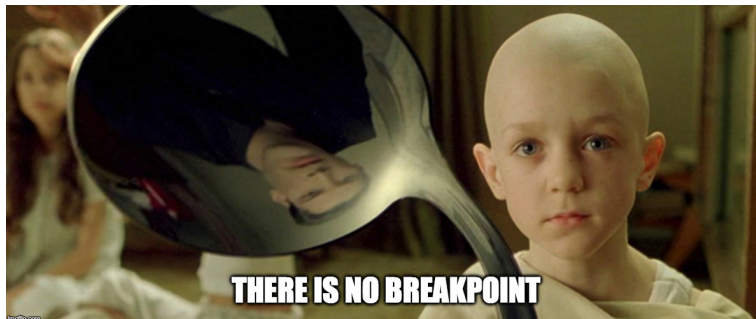
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Test!  
Test!  
Test!

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"A successful responsive design bends, flexes, and breaks the right way  
to make the best use of the available space."

JAMIE NEELY, TYPECAST

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