

MAKING YOUR RESPONSIVE SITE PICTURE PERFECT

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Previously presented:

July 31, 2014 - [Capital Camp and Gov Days '14](#)

August 23, 2014 - [Drupal Camp Asheville 2014](#)

September 13, 2014 - [Drupal Camp Chattanooga 2014](#)

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- Front-end Drupal Developer at [DSFederal](#)
- Started using Drupal in 2005
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PLAY ALONG AT HOME

Download a PDF and the code from this presentation at
<http://startinggravity.github.io/picture-perfect-drupal>

WHERE ARE WE TRYING TO GO?



GREAT LOOKING WEBSITES

Kundeorientiert

Ob Restaurant, Shop, Verein oder Unternehmen - Die eigene Website ist heute zum Standard. Der eigene Internet-Auftritt **muss nicht** kompliziert sein. Eine gut gestaltet Homepage heute wichtiger als je zuvor. Wir helfen Ihnen zu differenzieren und sich mit einem **individuellen** Auftritt zu präsentieren.

Mit Hilfe von HTML, CSS, JAVASCRIPT und PHP ver helfe ich Ihnen gerne bei der Entwicklung des Designs. Die Entwicklung des Designs geschieht unter Berücksichtigung der Kunden - das Ergebnis soll zu 100% seinen Erwartungen entsprechen. Wenn das nicht der Fall sein sollte gibt es das Geld zurück*.

Ich biete Ihnen das beste Preis-Leistungs-Verhältnis. Ich biete Ihnen ein sehr günstiges, individuelles Design. Wenn Sie das finden Sie finden Sie [hier](#).

Design

...THAT LOOK GOOD ON ANY DEVICE



EASY RESPONSIVE IMAGES

```
img {  
  max-width: 100%;  
}
```

Except... This won't work on IE 6 or 7



<http://sassmeister.com/gist/startinggravity/4f7f692eb60e92c23ece>

EASY RESPONSIVE IMAGES FOR IE 6 & 7

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


THANK YOU



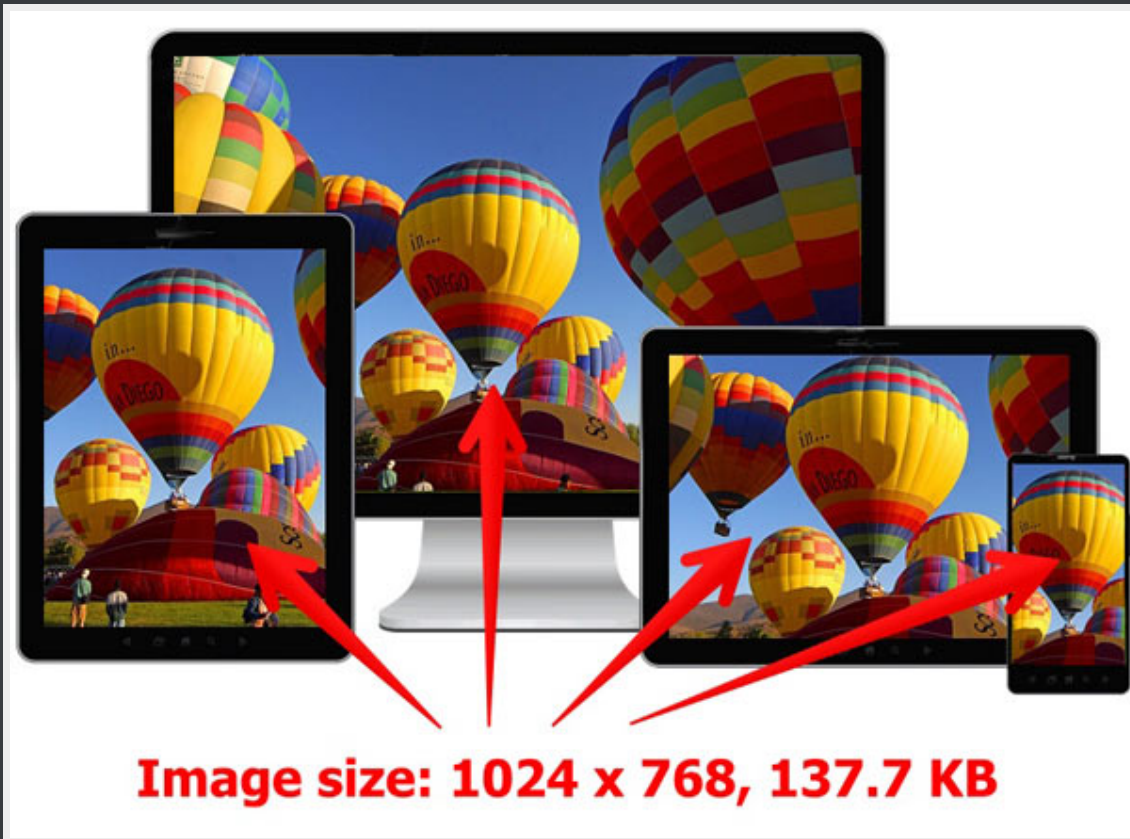
**YOU DIDN'T REALLY THINK IT WOULD BE
THAT EASY, DID YOU?**

WHAT'S WRONG WITH THE EASY WAY?

```
img {  
  max-width: 100%;  
}
```

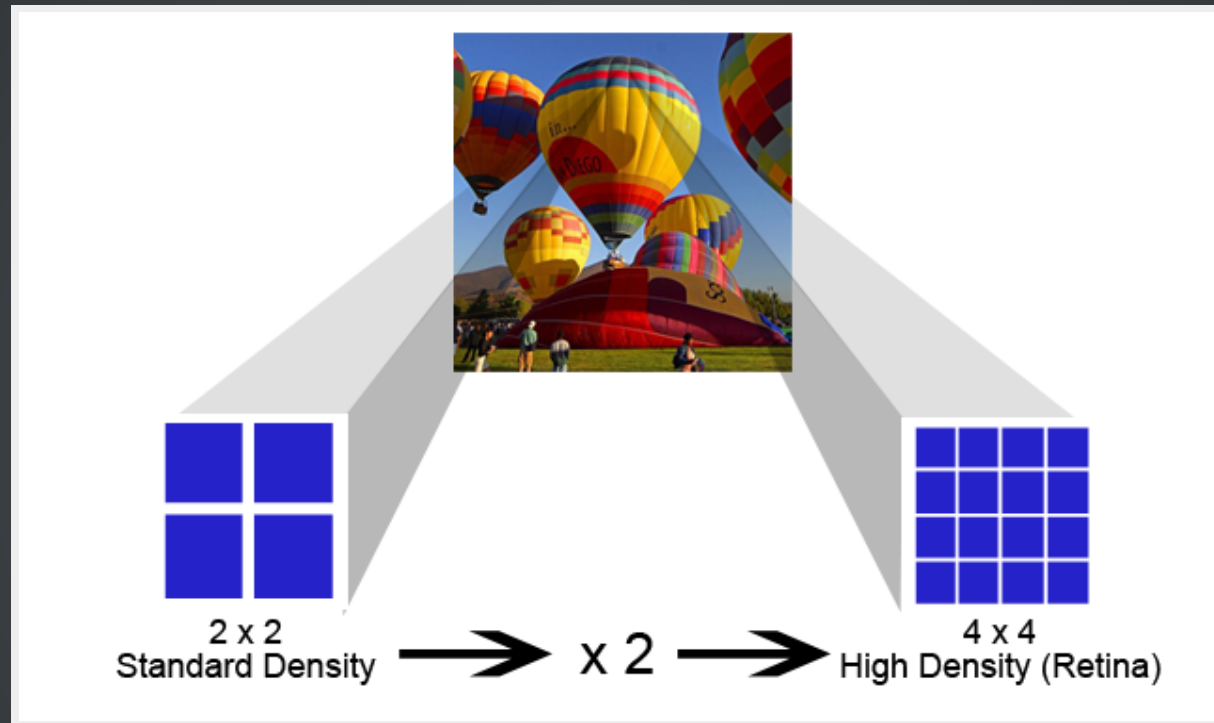
ONE SIZE DOES NOT FIT ALL!

Display Size



ONE SIZE DOES NOT FIT ALL!

Pixel Density



A collection of antique, rusty tools including axes, saws, and knives laid out on a wooden plank surface. The tools are arranged in a somewhat haphazard manner, with some lying flat and others propped up. The wood is a mix of light and dark brown planks, showing signs of age and wear. The tools are made of metal and wood, with the metal parts being heavily rusted and the wood parts being weathered. The overall scene suggests a workshop or a collection of old tools.

**FOR GREAT IMAGES YOU MUST
USE THE RIGHT TOOLS**

WHAT WE'LL USE

- Media Queries
- Breakpoints
- CSS Preprocessor (Sass)
- Compass
- Sprites
- Icon Fonts
- Modernizr.js
- Vector Graphics (SVG)

AND WE'LL USE

- Picture Module
- Breakpoints Module



**BEFORE WE GET TOO FAR,
SOME DEFINITIONS.**

definite article *n.* the word (*the* in English) preceding a noun and implying a specific instance.

definition /,defɪ'nɪʃ(ə)n/ *n.* 1 a definition
b statement of the meaning of a word, etc. 2 distinctness in outline, especially in a photographic image. [Latin: *relatio* to define]

definitive /dɪ'fɪnɪtɪv/ *adj.* 1 (of an answer, verdict, etc.) decisive, final. 2 (of a book etc.)

MEDIA QUERY

A media type and zero or more expressions that define a style sheet's scope. These may be such things as width, height, color or resolution.

MEDIA QUERY

```
@media (max-width: 50.875em) {  
  .links a {  
    display: block;  
    font-weight: 400;  
    height: 70px;  
    color: red;  
  }  
}  
@media (max-width: 68.75em) {  
  .links a {  
    height: 90px;  
    color: blue;  
  }  
}
```

BREAKPOINT

A defined point in the display where we want to make stuff change, such as the size and position of text and images, and the number of columns.

MULTIPLIER

A number indicating the increased total of pixels displayed in an image compared to a standard image.

CSS PREPROCESSOR

A preprocessed language to parse code into CSS. This allows for variables, selector inheritance and other shorthand methods to be used to speed up coding and make the CSS more flexible.

Sass: <http://sass-lang.com>

COMPASS

Extends the use of Sass by providing reusable patterns.

Compass: <http://compass-style.org>

A warm, golden-brown bakery display case filled with various breads and pastries. The lighting is soft and inviting, highlighting the textures of the baked goods. In the foreground, there are several round loaves of bread, some with seeds, and a metal strainer with a wooden handle. In the background, more breads are visible, some in a glass display case.

**PICTURE MODULE:
PICTUREFILL POLYFILL GOODNESS BAKED IN!**

**AVAILABLE NOW IN DRUPAL 7
INCLUDED IN CORE FOR DRUPAL 8**

PICTURE MODULE

```
<picture>
  <!--[if IE 9]><video style="display: none;"><![endif]-->
  <source srcset="images/extralarge.jpg" media="(min-width: 1000px)">
  <source srcset="images/large.jpg" media="(min-width: 800px)">
  <!--[if IE 9]></video><![endif]-->
  
</picture>
```

<https://www.drupal.org/project/picture>

BREAKPOINTS MODULE

Breakpoints






Groups Multipliers Add responsive style settings

All breakpoints Bartik Add a new group Import a new breakpoint Import a new group

You can manage all your breakpoints on this screen, if one of your themes has breakpoints defined inside the .info file they will be shown here.

- To create a new breakpoint, you have to enter a name and a media query (ex. (min-width: 15em)).
- All breakpoints can be enabled or disabled so they cannot be used by other modules.
- For each breakpoint you can define what multipliers have to be available (needed to support 'retina' displays).
- Breakpoints you created yourself can be deleted.
- You can group multiple breakpoints in a group by using 'Add a new group', so other modules can easily interact with them.
- If you do not see the breakpoint group for your theme, make sure your theme is enabled and [clear your cache](#) or click the "Scan this theme for breakpoints" button on the bottom of the settings page of your theme.

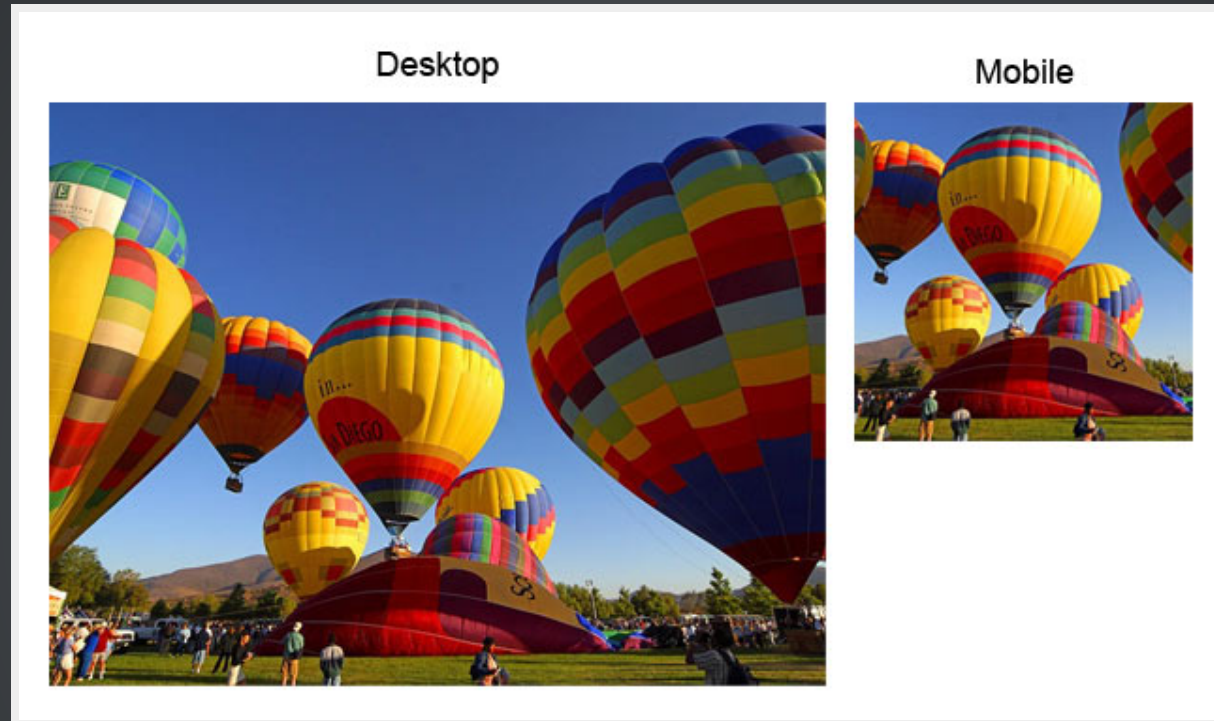
[Show row weights](#)

Name	Breakpoint, @media ...	Multipliers	Source	Status	Operations
 fullfeatures	(min-width: 68.75em)	<input checked="" type="checkbox"/> 1.5x <input checked="" type="checkbox"/> 2x	bartik (theme)	Enabled	Disable Export
 twocolumn	(min-width: 56.25em)	<input checked="" type="checkbox"/> 1.5x <input checked="" type="checkbox"/> 2x	bartik (theme)	Enabled	Disable Export
 tabs	(min-width: 36.250em)	<input checked="" type="checkbox"/> 1.5x <input checked="" type="checkbox"/> 2x	bartik (theme)	Enabled	Disable Export
 hamburger	(min-width: 20em)	<input checked="" type="checkbox"/> 1.5x <input checked="" type="checkbox"/> 2x	bartik (theme)	Enabled	Disable Export
 <input type="text"/>	<input type="text"/>	<input type="checkbox"/> 1.5x <input type="checkbox"/> 2x			

Save

<https://www.drupal.org/project/breakpoints>

PICTURE & BREAKPOINTS MODULES



Using these modules with Image Styles allows you to select images of different sizes for your breakpoints.

PICTURE & BREAKPOINTS MODULES



Trigger the use of high-density images.

PICTURE & BREAKPOINTS MODULES



The screenshot shows a web interface for configuring an image style. At the top, there is a label "Image style name" with a red asterisk. Below it is a text input field containing "Article Hamburger @2x". To the right of this field is a label "Machine name: article_hamburger_2x" followed by a blue "[Edit]" link. Below the input field is a section titled "Effect" in a dark grey header. This section contains a list of effects, each with a plus icon in a square to its left. The first two effects are "Scale and crop 100x100" and "Resize 200x200". The third effect is a placeholder "Select a new effect" with a dropdown arrow, followed by an "Add" button. At the bottom of the form is a rounded button labeled "Update style".

Image style name *

Article Hamburger @2x Machine name: article_hamburger_2x [\[Edit\]](#)

Effect

- ✚ Scale and crop 100x100
- ✚ Resize 200x200
- ✚ Select a new effect ▾ [Add](#)

[Update style](#)

High-density versions can be created automatically with Image Styles.

PICTURE & BREAKPOINTS MODULES

Define breakpoints first

```
@import "breakpoint";  
@import "compass";  
  
// min-width (by default) if only a number  
$breakpoint-hamburger: 20em; // 320px  
$breakpoint-tabs: 36.25em; // 580px  
$breakpoint-twocolumn: 56.25em; // 900px  
$breakpoint-fullfeatures: 68.75em; // 1100px
```

If you use Sass, use the Breakpoint Compass extension.



<http://sassmeister.com/gist/cd26d6de7d8779f2b4f4>

PICTURE & BREAKPOINTS MODULES

Set breakpoints in theme.info

```
; =====  
; Breakpoints  
; =====  
  
breakpoints[fullfeatures] = (min-width: 68.75em)  
multipliers[fullfeatures][] = 1.5x  
multipliers[fullfeatures][] = 2x  
breakpoints[twocolumn] = (min-width: 56.25em)  
multipliers[twocolumn][] = 1.5x  
multipliers[twocolumn][] = 2x  
breakpoints[tabs] = (min-width: 36.250em)  
multipliers[tabs][] = 1.5x  
multipliers[tabs][] = 2x  
breakpoints[hamburger] = (min-width: 20em)  
multipliers[hamburger][] = 1.5x  
multipliers[hamburger][] = 2x
```

Breakpoint order should be largest to smallest.

PICTURE & BREAKPOINTS MODULES

Breakpoints in theme.info will load automatically

Name	Breakpoint, @media ...	Multipliers
<input type="text" value="fullfeatures"/>	<input type="text" value="(min-width: 68.75em)"/>	<input checked="" type="checkbox"/> 1.5x <input checked="" type="checkbox"/> 2x
<input type="text" value="twocolumn"/>	<input type="text" value="(min-width: 56.25em)"/>	<input checked="" type="checkbox"/> 1.5x <input checked="" type="checkbox"/> 2x
<input type="text" value="tabs"/>	<input type="text" value="(min-width: 36.250em)"/>	<input checked="" type="checkbox"/> 1.5x <input checked="" type="checkbox"/> 2x
<input type="text" value="hamburger"/>	<input type="text" value="(min-width: 20em)"/>	<input checked="" type="checkbox"/> 1.5x <input checked="" type="checkbox"/> 2x
<input type="text"/>	<input type="text"/>	<input type="checkbox"/> 1.5x <input type="checkbox"/> 2x

Save

Clear cache to see breakpoints in the configuration page.

PICTURE & BREAKPOINTS MODULES

Map images to breakpoints and multipliers

1x hamburger [(min-width: 20em)]

Type

- ☐ Do not use this breakpoint
- ☒ Use image styles
- ☐ Use the sizes attribute

Image style

Article Hamburger @1x

Select an image style for this breakpoint.

1.5x hamburger [(min-width: 20em)]

Type

- ☐ Do not use this breakpoint
- ☒ Use image styles
- ☐ Use the sizes attribute

Image style

Article Hamburger @1.5x

Select an image style for this breakpoint.

PICTURE & BREAKPOINTS MODULES

News Article ⓘ

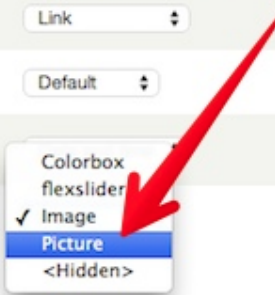
Edit | Manage fields | Manage dependencies | **Manage display** | Comment fields

Field	Label	Format	
+ Body	<Hidden> ▾	Default ▾	
+ Program	Above ▾	Link ▾	
+ Summary	Above ▾	Default ▾	
+ Published on	Above ▾		Display dates using the Long (Wednesday, Show all value(s) starting with earliest, en
+ Primary Image	<Hidden> ▾		Image style: Large (560x260)

Hidden

No field is hidden.

Select 'Picture'



Colorbox
flexslider
✓ Image
Picture
<Hidden>

PICTURE & BREAKPOINTS MODULES

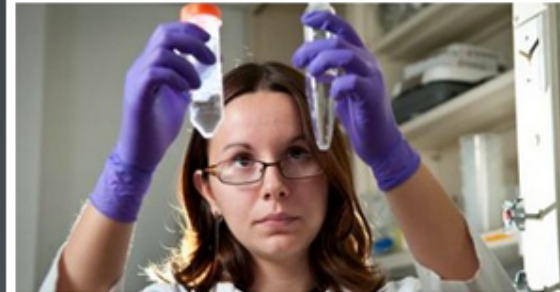
Desktop



Biological Safety

The Biological Safety Program (BSP) is responsible for overseeing all research, teaching, and testing activities involving infectious agents and recombinant materials.

Mobile

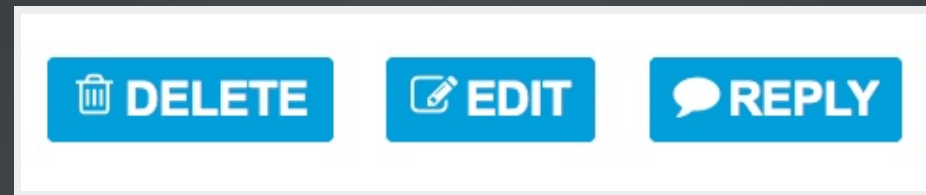


Biological Safety

The Biological Safety Program (BSP) is responsible for overseeing all research, teaching, and testing activities involving infectious agents and recombinant materials.

Done correctly, the right image for the display size and pixel density will be delivered.

WHEN NOT TO USE PICTURE & BREAKPOINTS MODULES



Not every image is a photo, but
every image needs to be handled responsively.

SPRITES

Several small images combined into a single image, then a portion of the image is selected for display through CSS.

SPRITES



```
.stars-half, .stars-one, .stars-one-half, .stars-two, .stars-two-half, .st
  background-image: url("../images/sprite.png");
  background-repeat: no-repeat;
  display: inline-block;
}
.stars-half {
  background-position: 0 0;
  height: 17px;
  width: 8px;
}
.stars-one {
  background-position: -10px 0;
  height: 17px;
  width: 16px;
}
...
```

SEVERAL WAYS TO MAKE SPRITES

- Photoshop or other image creation software
- Online tool, such as [SpritePad](#)
- Application, such as [Sprite Master Web](#)

SPRITES AREN'T ALWAYS THE BEST APPROACH

- They use more bandwidth than you think.
 - Download size != memory size.
- They are pain to maintain.

ANOTHER WAY TO MAKE SPRITES

Use Compass and Sass to make your sprites on the fly!

- Much easier to maintain, update
- But also comes with costs
 - Can slow stylesheet compilation time
 - Can load up Sass file with many variables

More: <http://compass-style.org/help/tutorials/spriting>

ICON FONTS

Clean, resizable icons that can be used regardless of browser or pixel density



ICON FONTS

- Scalable
- Small compared to images
- Change color, add text shadow with CSS
- No cross-browser compatibility issues
- Can't be complex; limited to one color
- Accessibility can be a tricky issue to solve



<http://sassmeister.com/gist/startinggravity/70cb05adac7d5f386d1c>

CREATE YOUR OWN ICON FONT SET

Online tools let you create a custom set from multiple libraries.
































- Fontello: <http://fontello.com>
- IcoMoon: <http://icomoon.io/app>
- Fontastic: <http://fontastic.me>



**BUT WAIT,
THERE'S ONE MORE WAY TO
ADD ICON FONTS!**

FONT AWESOME LIBRARY & FONT AWESOME MODULE

All the advantages of icon fonts
with the convenience of a Drupal module.

 fa-adjust [B]	 fa-adn []
 fa-align-left []	 fa-align-right []
 fa-android []	 fa-angle-double-down []
 fa-angle-double-up []	 fa-angle-down []
 fa-angle-up []	 fa-apple []
 fa-arrow-circle-left []	 fa-arrow-circle-o-down []
 fa-arrow-circle-o-up []	 fa-arrow-circle-right []
 fa-arrow-left []	 fa-arrow-right []
 fa-arrows-alt []	 fa-arrows-h []
 fa-automobile (alias) []	 fa-backward []
 fa-bar-chart-o []	 fa-barcode []
 fa-behance []	 fa-behance-square []
 fa-bitbucket []	 fa-bitbucket-square []
 fa-bolt []	 fa-bomb []
 fa-bookmark-o []	 fa-briefcase []
 fa-building []	 fa-building-o []

<https://www.drupal.org/project/fontawesome>


FONT AWESOME LIBRARY & FONT AWESOME MODULE


Several ways to use

Title *

Icon *

Select an icon from the Font Awesome library (<http://fontawesome.github.io/Font-Awesome/cheatsheet/>).



	Research News
---	---------------

This example shows just one way to use the Font Awesome module.

ICON FONTS SOMETIMES COME UP SHORT

They're convenient and flexible,
but they miss the mark for most logos.



That's when you need vector (SVG) images.

WHY SVG IMAGES?

- Completely scalable
- Resolution independent
- No matter how large or small, only one file is served
- The file size is small
- Opens opportunities for CSS3 animation

MAJOR BROWSERS NOW SUPPORT SVG IMAGES

- Internet Explorer 9+
- Firefox 4+
- Chrome 4+
- Safari 4+
- Opera 9.5+
- Android 2.4+

SIMPLE TO SAVE ANY VECTOR AS SVG



ADD SVG IMAGES 'THE OLD FASHIONED WAY'

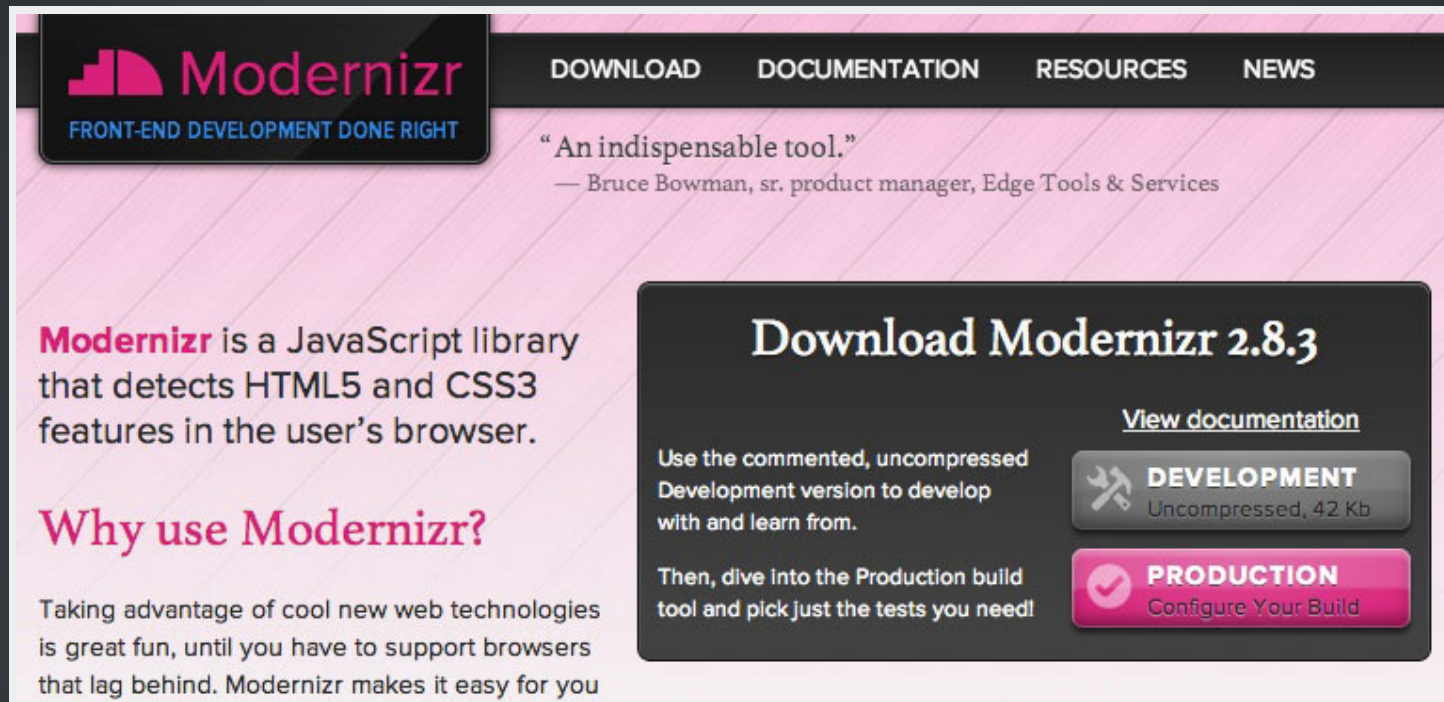
```

```


**WHAT HAPPENS WHEN YOU MUST DESIGN
FOR AN OLDER BROWSER?**



MODERNIZR TO THE RESCUE!



The screenshot shows the Modernizr website homepage. At the top left is the Modernizr logo with the tagline "FRONT-END DEVELOPMENT DONE RIGHT". To the right is a navigation bar with links for "DOWNLOAD", "DOCUMENTATION", "RESOURCES", and "NEWS". Below the navigation bar is a quote: "An indispensable tool." by Bruce Bowman, sr. product manager, Edge Tools & Services. The main content area on the left describes Modernizr as a JavaScript library that detects HTML5 and CSS3 features. Below this is a section titled "Why use Modernizr?" which explains that it helps support older browsers. On the right side of the main content area is a dark box titled "Download Modernizr 2.8.3". Inside this box, there is a link to "View documentation", two buttons for "DEVELOPMENT" (Uncompressed, 42 Kb) and "PRODUCTION" (Configure Your Build), and two paragraphs of text explaining the development and production builds.

Modernizr FRONT-END DEVELOPMENT DONE RIGHT

DOWNLOAD DOCUMENTATION RESOURCES NEWS

“An indispensable tool.”
— Bruce Bowman, sr. product manager, Edge Tools & Services

Modernizr is a JavaScript library that detects HTML5 and CSS3 features in the user’s browser.

Why use Modernizr?

Taking advantage of cool new web technologies is great fun, until you have to support browsers that lag behind. Modernizr makes it easy for you

Download Modernizr 2.8.3

[View documentation](#)

Use the commented, uncompressed Development version to develop with and learn from.

Then, dive into the Production build tool and pick just the tests you need!

DEVELOPMENT
Uncompressed, 42 Kb

PRODUCTION
Configure Your Build

<http://modernizr.com>

MODERNIZR TELLS YOU WHAT YOU HAVE TO WORK WITH AND WHAT YOU DON'T

```
<!DOCTYPE html>
<!--[if lt IE 9 ]>    <html class="lt-ie9 no-js"  lang="en" dir="ltr"> <![endif]-->
<!--[if gte IE 9]><!-->
▼<html class="js flexbox flexboxlegacy canvas canvastext postmessage indexeddb hashchange history draganddrop rgba
hsla multiplebgs backgroundsize borderimage borderradius boxshadow textshadow opacity cssanimations csscolumns
cssgradients cssreflections csstransforms csstransforms3d csstransitions fontface generatedcontent video audio
localstorage applicationcache svg inlinesvg smil svgclippaths" lang="en" dir="ltr" prefix="content: http://purl.org/
rss/1.0/modules/content/
dc: http://purl.org/dc/terms/
```

<http://modernizr.com>



<http://sassmeister.com/gist/6fa96162d0668cafb813>

OR RUN A PIXEL DENSITY MEDIA QUERY!

```
$hidpi: min-resolution 1.5dppx;  
$cross-reso: max-resolution 143dpi;  
  
#foo{  
  @include breakpoint($hidpi){  
    content:'Device Pixel Ratio of at least 1.5';  
  }  
  @include breakpoint($cross-reso){  
    content:'Cross Browser Resolution Query'  
  }  
}
```

<http://breakpoint-sass.com>

KNOW WHAT YOUR SCREEN CAN DISPLAY

Device pixel density tests

Device pixel density tests	
-webkit-min-device-pixel-ratio	1.0
-o-min-device-pixel-ratio	nothin'
min-resolution (dpi)	96dpi

<http://bjango.com/articles/min-device-pixel-ratio>

KNOW WHAT YOUR BROWSER CAN DISPLAY

Can I Use ____?

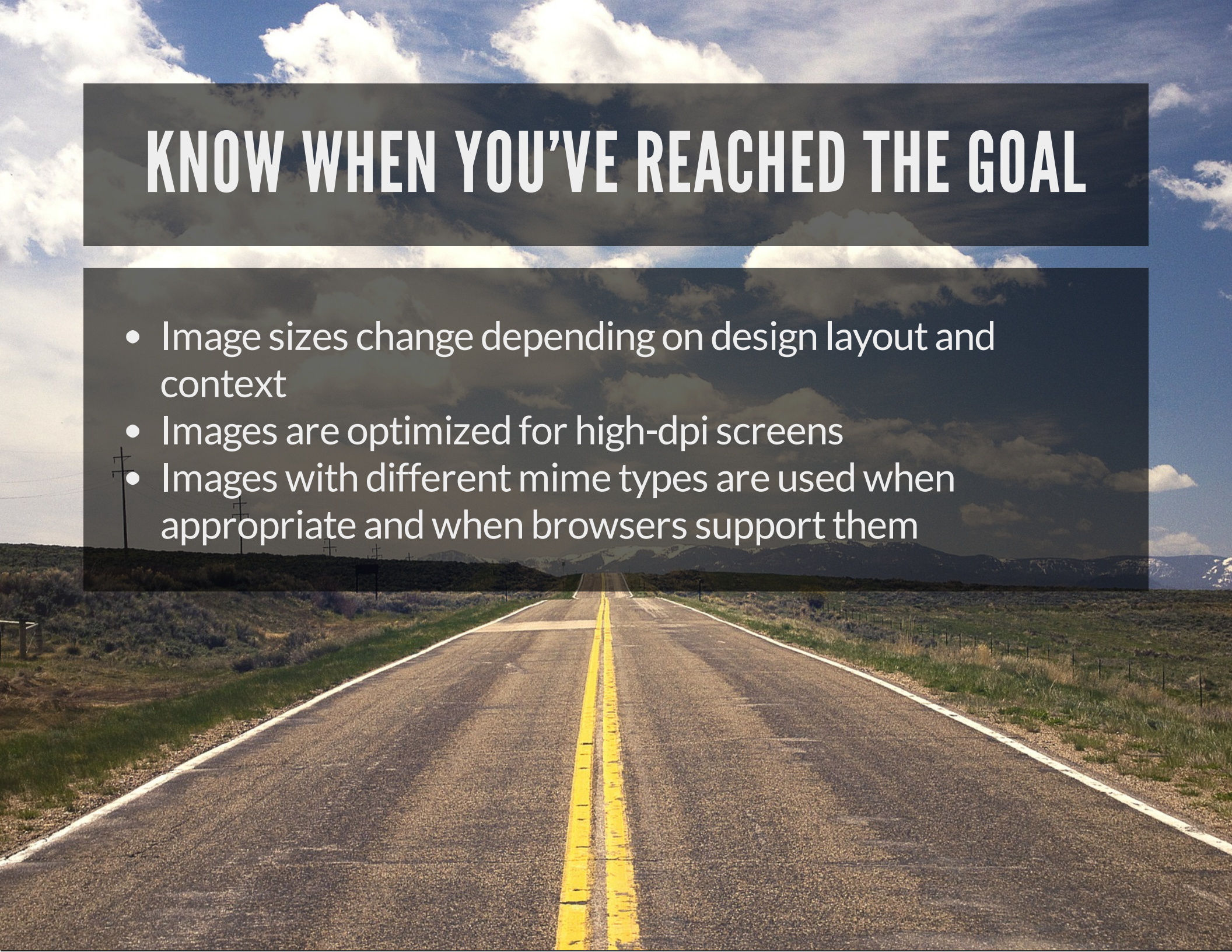
The screenshot shows the Can I Use website interface. At the top, there are navigation links: "About", "News", "July 27, 2014 - Added indicator for di...", "Compare browsers", and "Index". Below these are links for "AdChoices", "HTML5 CSS3", "HTML5 3D", "Chrome HTML5", and "HTML5 Canvas Tag". The main header area contains the text "Can I use ____?" followed by a "Settings" link with a gear icon. Below the header, there are three columns of supported features:

CSS	HTML5	SVG
<ul style="list-style-type: none">▪ @font-face Web fonts▪ Blending of HTML/SVG elements▪ calc() as CSS unit value▪ 2.1 selectors▪ background-blend-mode▪ Counters▪ Feature Queries	<ul style="list-style-type: none">▪ Audio element▪ Canvas (basic support)▪ Canvas blend modes▪ Color input type▪ contenteditable attribute (basic support)▪ Custom Elements▪ Datalist element	<ul style="list-style-type: none">▪ Inline SVG in HTML5▪ SVG (basic support)▪ SVG effects for HTML▪ SVG filters▪ SVG fonts▪ SVG fragment identifiers▪ SVG in CSS backgrounds▪ SVG in HTML img element

<http://caniuse.com>

KNOW WHEN YOU'VE REACHED THE GOAL

- Image sizes change depending on design layout and context
- Images are optimized for high-dpi screens
- Images with different mime types are used when appropriate and when browsers support them



THANK YOU

(AGAIN)

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<http://www.smashingmagazine.com/2014/03/05/rethinking-responsive-svg>
- Adding Your Own Icon Fonts to Your Drupal Theme
<http://www.mediacurrent.com/blog/adding-your-own-icon-fonts-your-drupal-theme>

GET A COPY OF THIS PRESENTATION

Download a PDF and download the code at
<http://startinggravity.github.io/picture-perfect-drupal>

JIM SMITH



- Email: jim.smith@dsfederal.com
- Twitter: [@_JimSmith_](https://twitter.com/_JimSmith_)
- IRC: startinggravity