

Introducing Grid Based Systems & Foundation

WEB DEVELOPMENT FUNDAMENTALS



What are Grid Systems and Frameworks?

- Grids are typically CSS frameworks designed to simplify
 - Page layout
 - Cross Browser compatibility
 - Increasingly responsive development patterns
- They are serious pieces of CSS work put together by developers
 - Rigorous software principals of reuse and modularisation are applied
- Providing reusable patterns and tools for:
 - Layout
 - Navigation
 - Typography
 - Plugins
- When used by CSS aware developers, they make everything easier!

Examples of Grid Systems

960 GRID SYSTEM **unsemantic**

B **Bootstrap**



Foundation
Start here, build everywhere.

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Demonstration - Getting Foundation

- Foundation can be freely downloaded from the web:
 - <http://foundation.zurb.com/>
 - As a good sign, their website is built using Foundation!
- When you download you have a few options
 - We will be using the complete version to begin with

Complete

Grab this version of Foundation if you want everything in the framework in simple, vanilla CSS and JS.

[Download Everything](#)

Essential

A simple, lighter version that includes typography, the grid, buttons, Reveal and Interchange.*

*59kb (okay, plus dependencies).

[Download Essentials](#)

Custom

Include or remove certain elements and define the size of columns, colors, font size and more.

[Custom Download](#)

Sass

Foundation is built using SCSS, and you can work with it in the same way. Check out the instructions on the Install documentation page.

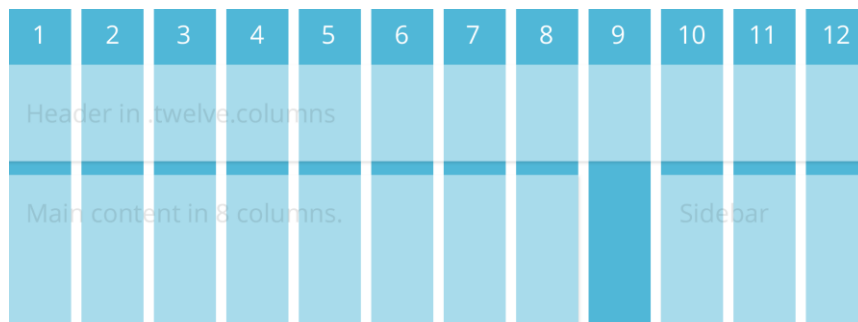
[Install via SCSS](#)

Previous Versions CSS Downloads: [Foundation 5](#) | [Foundation 4](#) | [Foundation 3](#)

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Using Foundation – The XY Grid

- The basis of Foundation is its Grid – it consists of 12 columns
 - The grid is metaphorical, there is no actual grid
 - We use it to space and control areas of content



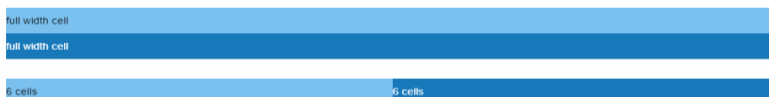
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Working with the Grid – Basic

- The basis of the Foundation system is the class named `cell`

The HTML Markup

```
<div class="grid-x">
  <div class="cell">full width cell</div>
  <div class="cell">full width cell</div>
</div>
<div class="grid-x">
  <div class="small-6 cell">6 cells</div>
  <div class="small-6 cell">6 cells</div>
</div>
```



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Working with the Grid – Basic

- The basis of the Foundation system is the class named `cell`

The HTML Markup

```
<div class="grid-x">
  <div class="medium-6 large-4 cell">12/6/4
  cells</div>
  <div class="medium-6 large-8 cell">12/6/8
  cells</div>
</div>
```

12/6/4 cells

12/6/8 cells

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Working with the Grid – Gutters

- Defining feature of the XY grid is to use margin AND padding grids in harmony
 - Simply set `.grid-margin-x` or `.grid-padding-x` on the grid

```
<div class="grid-x grid-margin-x">
  <div class="medium-6 large-4 cell">12/6/4
  cells</div>
  <div class="medium-6 large-8 cell">12/6/8
  cells</div> </div>
<div class="grid-x grid-padding-x">
  <div class="medium-6 large-4 cell">12/6/4
  cells</div>   <div class="medium-6 large-8
  cell">12/6/8 cells</div> </div>
```

12/6/4 cells

12/6/8 cells

12/6/4 cells

12/6/8 cells

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Working with the Grid – Grid Container

- Grid defaults to the full width of the available space

- Use `.grid-container` class to contain it

```
<div class="grid-container">
  <div class="grid-x grid-margin-x">
    <div class="cell small-4">cell</div>
    <div class="cell small-4">cell</div>
    <div class="cell small-4">cell</div>
  </div>
</div>
```

- To stretch the content to the full width of the available space
 - Add `.fluid` to `.grid-container`
- To stretch the content to the full width of the available space and remove grid container padding
 - add the `.full` to `.grid-container`

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Working with the Grid – Auto Sizing

- If the class `.auto` or `.[size]-auto` is added to the cell, it will take up the remaining space

```
<div class="grid-x grid-margin-x">
  <div class="small-4 cell">4 cells</div>
  <div class="auto cell">Whatever's left!</div>
</div>
```



- Multiple expanding cells will share the leftover space equally

```
<div class="grid-x grid-margin-x">
  <div class="small-4 cell">4 cells</div>
  <div class="auto cell">Whatever's left!</div>
  <div class="auto cell">Whatever's left!</div>
</div>
```



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Working with the Grid – Auto Sizing

- A cell can also be made to shrink
 - Adding the `.shrink` or `[size]-shrink` class
 - This means it will only take up the space its contents need

```
<div class="grid-x grid-margin-x">  
  <div class="shrink cell">Shrink!</div>  
  <div class="auto cell">Expand!</div>  
</div>
```



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Working with the Grid – Responsive Adjustments

- To switch back to the auto behavior from a percentage or shrink behavior, use the classes `[size]-auto` or `[size]-shrink`
 - In the below example, the cells stack on small screens, and become even-width on large screens

```
<div class="grid-x">  
  <div class="large-auto cell">One</div>  
  <div class="large-auto cell">Two</div>  
  <div class="large-auto cell">Three</div>  
  <div class="large-auto cell">Four</div>  
  <div class="large-auto cell">Five</div>  
  <div class="large-auto cell">Six</div>  
</div>
```



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Working with the Grid – Collapse Cells

- The `.[size]-[gutter-type]-collapse` class lets you remove cell gutters

```
<div class="grid-x grid-margin-x medium-margin-collapse">
  <div class="small-6 cell">
    Gutters at small no gutters at medium.
  </div>
  <div class="small-6 cell">
    Gutters at small no gutters at medium.
  </div>
</div>
```

Gutters at small no gutters at medium.

Gutters at small no gutters at medium.

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Working with the Grid – Offsets

- Offsets work by applying `margin-left` (or `margin-top` for a vertical grid) to a grid

```
<div class="grid-x grid-margin-x">
  <div class="small-4 large-offset-2 cell">Offset 2
  on large</div>
  <div class="small-4 cell">4 cells</div>
</div>
```

Offset 2 on large

4 cells

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Working with the Grid – Block Grids

- To define cell widths within a direction-level, instead of the individual cell level, add the class `.size-up-[n]` to a `grid-x` or `grid-y`, where `[n]` is the number of cells to display per direction, and `[size]` is the breakpoint at which to apply the effect

```
<div class="grid-x grid-padding-x small-up-2 medium-up-4 large-up-6">
  <div class="cell">cell</div>
  <div class="cell">cell</div>
  <div class="cell">cell</div>
  <div class="cell">cell</div>
  <div class="cell">cell</div>
  <div class="cell">cell</div>
</div>
```



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Working with the Grid – Vertical Grids

- To define cell widths within a direction-level, instead of the individual cell level, add the class `.size-up-[n]` to a `grid-x` or `grid-y`, where `[n]` is the number of cells to display per direction, and `[size]` is the breakpoint at which to apply the effect

```
<div class="grid-y" style="height: 500px;">
  <div class="cell small-6 medium-8 large-2">
    6/8/2
  </div>
  <div class="cell small-6 medium-4 large-10">
    6/4/10
  </div>
</div>
```

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Controls – Buttons Basic

- Basic button can be created with minimal markup
 - Use the `<a>` tag if the button is a link to another page, or a link to an anchor within a page
 - Use the `<button>` tag if the button performs an action that changes something on the current page

```
<!-- Anchors (links) -->
<a href="about.html" class="button">Learn More</a>
<a href="#features" class="button">View All
Features</a>

<!-- Buttons (actions) -->
<button type="button" class="success
button">Save</button>
<button type="button" class="alert
button">Delete</button>
```

[Learn More](#)[View All Features](#)[Save](#)[Delete](#)

Controls – Buttons Group

- Add the `.button-group` class to a container, and inside it place any number of buttons
 - Separated by a small border

```
<div class="button-group">
  <a class="button">One</a>
  <a class="button">Two</a>
  <a class="button">Three</a>
</div>
```

[One](#)[Two](#)[Three](#)

Navigation – Basic Menu

- All versions of the menu are a `` filled with `` elements containing links. It keeps a suitable height and spacing to make it suitable for touch
 - By default, a Menu is horizontally oriented

```
<ul class="menu">
  <li><a href="#">One</a></li>
  <li><a href="#">Two</a></li>
  <li><a href="#">Three</a></li>
  <li><a href="#">Four</a></li>
</ul>
```

One Two Three Four

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Navigation - Breadcrumbs

- To make a set of breadcrumb links, just add the class `.breadcrumbs` to a ``
 - And then add links inside of the `` elements
 - To mark a disabled item, add the class `.disabled` to the ``

```
<nav aria-label="You are here:" role="navigation">
  <ul class="breadcrumbs">
    <li><a href="#">Home</a></li>
    <li><a href="#">Features</a></li>
    <li class="disabled">Gene Splicing</li>
    <li>
      <span class="show-for-sr">Current: </span> Cloning
    </li>
  </ul>
</nav>
```

HOME / FEATURES / GENE SPLICING / CLONING

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Exercise

- Use Foundation to create a mobile first page