



# Responsive Design

Web Page Design



# Components of a Responsive Page

- ▶ Flexible images and media
  - ▶ Assets are sized with percentages so that they scale up and down with the space available to them.
- ▶ A flexible (fluid), grid-based layout
  - ▶ A responsive web page has all **width** properties set in percentages so that layout components can shrink or expand.
  - ▶ Other horizontal properties typically use a relative unit too (em or percentage).
- ▶ Media queries
  - ▶ Adding these to your style sheet allows you to adjust your page design based on the width of the browser's viewable page area and other characteristics.



# Making Images Flexible

- ▶ For each image you wish to make flexible, omit the **width** and **height** attributes from the **img** tag in your HTML.
- ▶ In your style sheet, apply **max-width: 100%;** to each image you want to make flexible



# Making Your Layout Flexible

- ▶ For elements requiring a width to achieve your desired layout, set **width: percentage;** where **percentage** represents the percentage of horizontal space you want the element to occupy within its containing block.
  - ▶ Avoid setting elements to **width: 100%**
  - ▶ Elements set to **display: block;** by default (like **p** and many others) or manually will fill the entire space available to them by default



# Making Your Layout Flexible

- ▶ Optionally, apply **max-width: value;** to the element that contains your whole page, where value represents the maximum width to which your page can grow.
  - ▶ Typically, value is specified in pixels, but it can be expressed as a percentage or in ems or another unit value.



# Setting the Viewport

- ▶ HTML 5 introduced a method to let web designers take control of the viewport through the `<META>` tag and you should include the following meta viewport element in all web pages:

```
<meta name="viewport" content="width=device-width,  
initial-scale=1.0">
```



# Media Queries

- ▶ The @media rule can be used to include a block of CSS properties only if a certain condition is true.
  - ▶ Ex: @media only screen and (max-width: 500px) {  
    body {  
        background-color: lightblue;  
    }  
}



# Media Queries

➤ The @media rule can be used to include a block of CSS properties only if a certain condition is true.

➤ Ex: @media only screen and (orientation: landscape)

```
{  
  body {  
    background-color: lightblue;  
  }  
}
```





# Background Images

- ▶ Use the following code to make background-images responsive:

```
background-size: 100% 100%;
```

The background image will stretch to cover the entire content area.



# Setting Background Images for Different Devices

```
/* For width smaller than 400px: */  
body {  
    background-image: url('img_smallflower.jpg');  
}
```

```
/* For width 400px and larger: */  
@media only screen and (min-width: 400px) {  
    body {  
        background-image: url('img_flowers.jpg');  
    }  
}
```