https://seanmthompson.github.io/svc/

# HTML & CSS: LEVEL 1

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## SESSION OVERVIEW

- Review
- Anchor states and pseudo-elements
- Elements, Classes, and IDs
- HTML document organization overview: divs, sections, articles
- The CSS Box Model
- More CSS Styles and css abbreviations!

## REVIEW!

## REVIEW: WEB GRAPHICS

### “WEB READY” GRAPHICS

- Minimize file sizes to help load times in browser.
- **Optimizes images for RGB displays** with correct **resolution** for browsers
- **Flattens** layers and removes metadata from graphics.

## REVIEW: WEB IMAGE TYPES

- **JPG or JPEG (Joint Photographic Experts Group)** is traditional for photos. Millions of colors, no transparency, no animation.
- **GIF (Graphics Interchange Format)** - 256 colors, can be animated, has transparency.
- **PNG 24 (Portable Network Graphic)** - Millions of colors, full alpha transparency, no animation.

## REVIEW: WEB IMAGE GOTCHAS

- Best practice to work in 72 PPI in graphic editor programs. (keeps file sizes down)
- Always work in **RGB** n working with graphics for the web**.** **CMYK** is for print.
- Make your designers stick to these rules!
- Graphics for **Retina devices** need to be saved out at 2X their “normal” size.

## <> REVIEW:BLOCK & INLINE ELEMENTS

### Block-level elements

- If no width is set, will expand naturally to fill its parent container
- If no height is set, will expand naturally to fit its child elements (assuming they are not floated or positioned)
- Can have margins and/or padding
- By default, will be placed below previous elements in the markup (assuming no floats or positioning on surrounding elements)
- Ex: <**div>, <h1>, <h2>, <p>, <ul>, <li>**

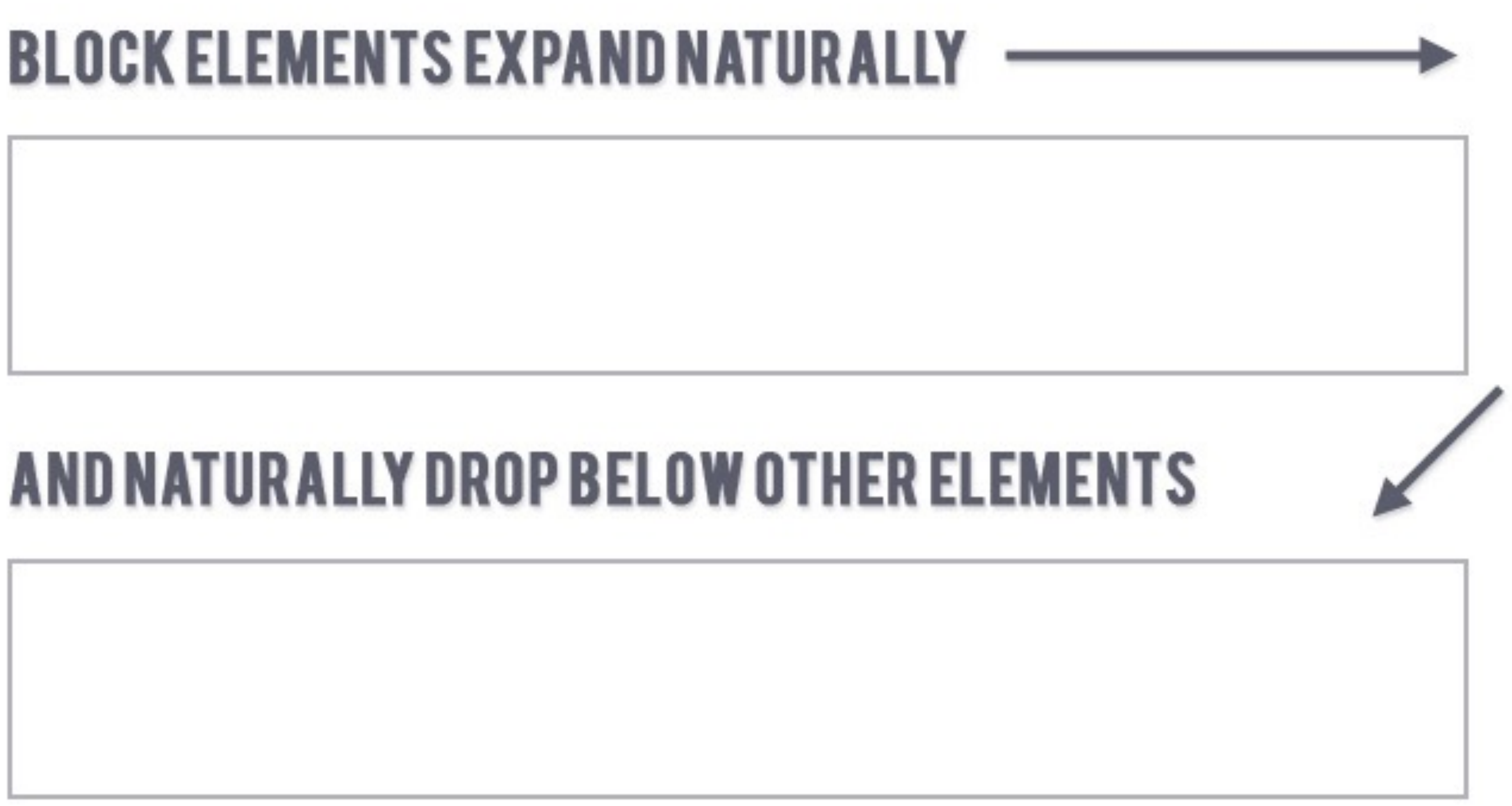
# <> BLOCK & INLINE ELEMENTS

## Inline elements

- Flows along with text content
- Will ignore top and bottom margin settings, but will apply left and right margins, and any padding
- Will ignore the width and height properties
- If floated left or right, will automatically become a block-level element, subject to all block characteristics
- Ex: **<a>**, **<em>**, **<strong>**, **<span>**

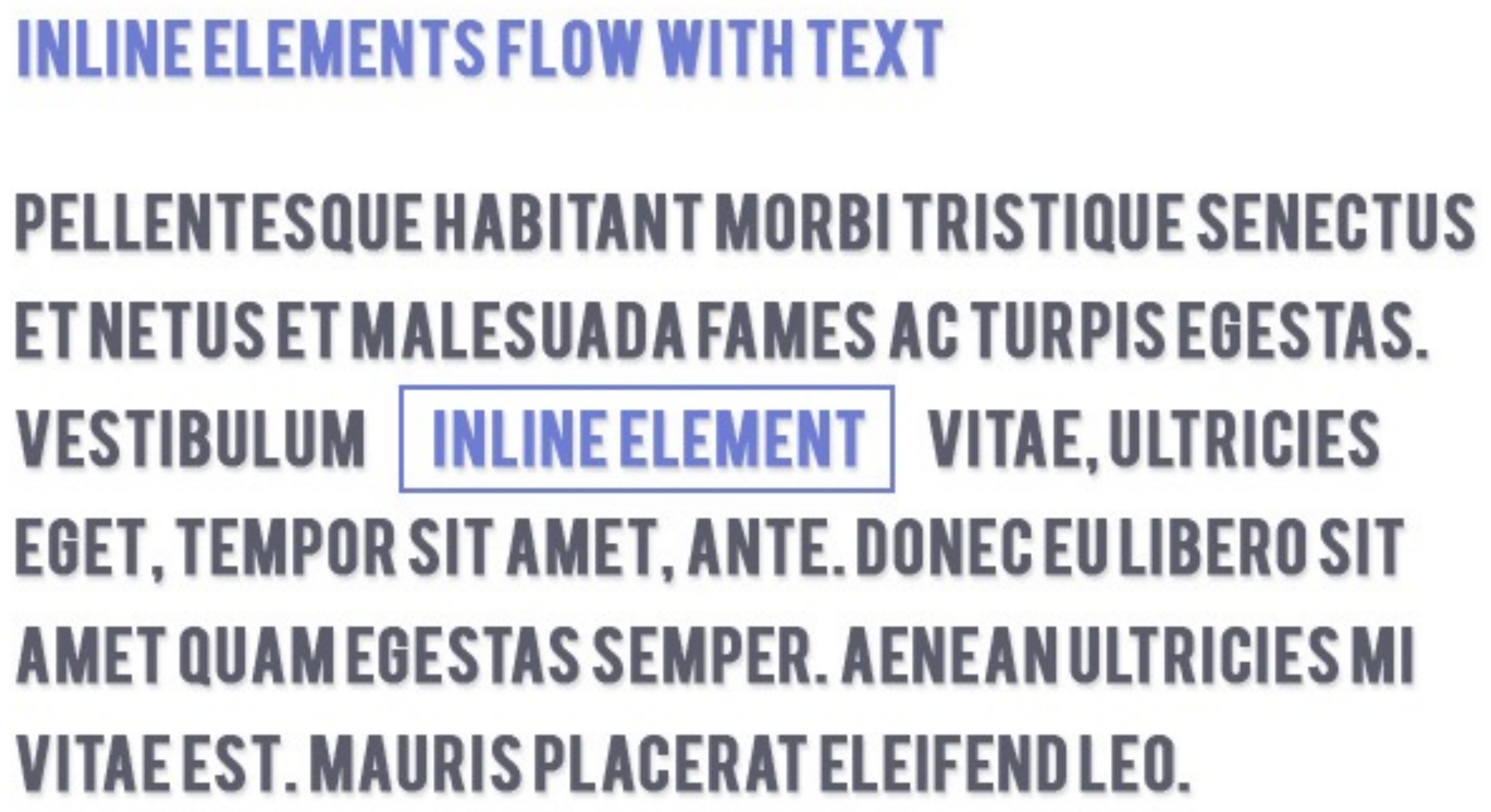
# <> BLOCK & INLINE ELEMENTS

## Block-level elements


BLOCK ELEMENTS EXPAND NATURALLY
AND NATURALLY DROP BELOW OTHER ELEMENTS

## <> BLOCK & INLINE ELEMENTS

### Inline elements



INLINE ELEMENTS FLOW WITH TEXT

PELLENTESQUE HABITANT MORBI TRISTIQUE SENECTUS ET NETUS ET MALESUADA FAMES AC TURPIS EGESTAS. VESTIBULUM INLINE ELEMENT VITAE, ULTRICIES EGET, TEMPOR SIT AMET, ANTE. DONEC EU LIBERO SIT AMET QUAM EGESTAS SEMPER. AENEAN ULTRICIES MI VITAE EST. MAURIS PLACERAT ELEIFEND LEO.

# <> BLOCK & INLINE ELEMENTS

## “Inline-block” elements

- Inline/Block hybrid.
- Take up width and height like block-level elements.
- Flow with content around them.
- Can have margin and padding.
- Elements we know: **<img>** elements.

## REVIEW: <DIV> ELEMENTS

```
<div></div>
```

- <div> elements are generic **block elements.**
- Used to create **sections or groups** in HTML for layout.
- Can be used wrappers for other elements (including other divs!) for creating complex layouts.
- Have height and width
- **Building blocks of HTML layouts!**

## REVIEW: <SPAN> ELEMENTS

```
<span></span>
```

- <span> elements are generic **inline elements.**
- Can **nest inside** other block or inline elements.
- Used to **style unique inline content** or **content inside block elements.**
- Flow with content around them.

## <> REVIEW: MORE INLINE ELEMENTS

- **em** elements are used to show *emphasis*. (*like italic*).
- **strong** elements are used to show **importance in context (like bold)**

```
<p>"Oh, great. Someone ate <em>my only clean socks</em>." </p>
<p>"Was it <strong>the cat</strong>?"</p>
<p>"No, it was <strong>the dog</strong>.</p>
```

## REVIEW: CASCADING STYLE SHEETS

- Language for specifying how documents are presented to users
- We can override the browser's default presentation styles with our own.
- Provides consistent and scalable ways to **style single elements, single pages, or entire websites.**
- **Separates look and feel from content/markup.**

## REVIEW: ANATOMY OF A CSS RULE

```
selector {property: value;}
```

- **Selector** is the **thing** you want to style.
- **Property** is the **aspect/attribute** you want to style.
- **Value** is how you want to style it.
- **Values** always end in semicolons ( ; )

```
p {font-size: 14px; color: blue;}
```

## REVIEW: EXAMPLE CSS RULE

```
p {font-size: 14px;}
```

- **Selector** is the **p**. (<p> in the HTML)
- **Property** is the **font-size.**
- **Value** is **30px** (30 pixels high).
- All paragraph tags will have a font size of 14px.

## {} REVIEW: MULTIPLE SELECTORS & PROPERTIES

- You can add multiple selectors to a CSS rule.
- You can add multiple properties to a CSS rule.
- Example: style all ordered and unordered lists:

```
ul,
ol {
  font-size: 16px;
  font-weight: bold;
  color: #444444;
}
```

## REVIEW: CSS COMMENTS

```
<style>
  /* I am a CSS comment! */

 h1 { /* I am also a CSS comment */
   color: #ff0000;
 }
</style>
```

- Just like HTML, CSS can have **comments.**

## {} REVIEW: COMMON FONT PROPERTIES

- **font-size:** a number followed by a measurement of how tall the element’s text is, usually in ems **(em)** or pixels **(px).**
- **font-family:** the name of a typeface.
- **font-style:** (**normal**, or **italic** are most common)
- **font-weight: bold** (can also be values of 100, 200, up to 900 depending on the typeface.
- **line-height:** a number followed by a measurement of how tall the element's line of is, usually in ems (em) or pixels (px) (similar to **leading** in typography)

## {} REVIEW: COLORS

- To set **text color,** the property is **color.**
- To set **background colors,** the property is **background-color.**
- Color **value** can be: **HEX, RGB,** or **RGBA.**
    - Hex: **#ffffff**
    - RGB: **rgb(245, 245, 245)**
    - RGBA: **rgba(245, 245, 245, 0.8)** - (0.8 represents alpha/opacity)

```
p {color: #222222;}
div {background-color: rgba(0,0,0,0.5);}
```

## {} REVIEW: WIDTH & HEIGHT

- Block elements have width and height by default, which you can override.
- You can set width and height of images with HTML attributes:

```
<img src="example.jpg" width="300" height="200">
```

- **But** it's recommended to use CSS:

```
img { width: 300px; height: 200px; }

img { width: 300px; height: auto; }
```

## {} CSS IN MULTIPLE PLACES

- **Inline styles** are applied to only a single element (best practice to avoid this if possible).
- **Internal styles** are added in the **<head>** of a page and style only that page.
- **External stylesheets** are called into multiple pages, and are declared in separate **.css** files. *Best practice.

## {} REVIEW: LINKING TO EXTERNAL STYLESHEET

```
<link href="css/styles.css" rel="stylesheet">
```

- Tells the browser to go find and load the CSS file.
- Goes inside the **<head>** element.
- Should go in every page that should load the styles.

## {} REVIEW: THE "CASCADING" PART

The beauty of CSS is being able to create styles and then override them when you want to customize the look of your pages.

**There are three big rules for determining how styles get applied:**

- Styles are loaded from far to near.
- Styles are loaded from top to bottom.
- Children elements are more specific than parents.

## {} REVIEW: STYLES "LOCATION"

Styles that are "closer" to the elements they style take precedence.

**Less Specific**

- Browser defaults
- External styles (in a **.css** file)
- Internal styles (in the **<head>**)
- Inline styles (on an element)

**Most Specific**

## {} REVIEW: TOP TO BOTTOM

If the same property is styled multiple times for the same selector, **the last one sticks.**

```
p { color: #2f4251; }

ul{ color: #444444; }

/* some other stuff */

p { color: #daa645; } /* this one wins */
```

## {} REVIEW: CHILDREN ARE SPECIFIC

Children elements **inherit** styles from their parents but can **override** parents with their own styles

```
body { color: #2f4251; } /* parent */

p { color: #daa645; } /* child */
```

## {} REVIEW: SELECTORS CAN BE MORE SPECIFIC

If one style is **more specific** than another, it takes precedence

```
p { color: #daa645; } /* all paragraphs */

a { color: #e7c0c8; } /* links in general */

p a { color: #c4fe46; } /* a nested in p */

div p a { color: #a5dd5e; } /* a in p in div */
```

## QUESTIONS?

{}

## ANCHOR STATES & CSS PSEUDO CLASSES

## {} ANCHOR PSEUDO CLASSES

- **Pseudo-classes** are added to a selector to add **conditional styles** to an element.
- Most commonly used to style **states** of <a> and form elements.

```
a { /* default */ }
a:visited { /* a link that has been clicked */ }
a:hover { /* a link that has a mouse hover */ }
a:focus { /* a link that has keyboard focus */ }
a:active { /* a link that is being clicked */ }
```

## {} :HOVER VS. :FOCUS

- **:hover** is for a link or other element that has a **mouse hover.**
- **:focus** is for a link or other element that has **keyboard focus.**

```
a:hover,
a:focus {
 /* often easiest to style them together */
}
```

## {} OTHER PSEUDO CLASSES

- **:first-letter** styles the first letter of a block of text.
- **:first-child** and **:last-child** style the first and last children of a parent.
- **:nth-child()** can be used to style even or odd children, or to do math to style every 3rd or 5th, etc.
- **::selection** styles text that is selected by the user.

{}

## DEMO

## ID & CLASS SELECTORS

## ELEMENT CSS SELECTOR

- Remember we can target all elements in CSS like so:

```
p {
  /* all paragraphs on the page will be targeted */
}
```

## CLASSES AND IDS

- **class** and **id** attributes can be added to any HTML element.
- **Classes** are for multiple elements on the page. (styles to re-used)
- **IDs** are for single, unique elements on a page.
- You can create whatever **class** and **id** values you want.

```
<div id=“header”></div>
<div class=“comment-box”></div>
```

## CLASS ATTRIBUTES

```
.comment-box {
  width: 300px;
  padding: 20px;
  margin: auto;
}
```

- **classes** can be shared by multiple elements on a page.
- Elements can have **multiple** classes.

```
<div class=“comment-box bg-blue margin-sm”></div>
```

## CLASS SELECTORS IN CSS

- Start with a **period** (.)
- Can style any element with the class.

```
.kittens { width: 300px; }
```

- Or can be used to style only a **specific type** of element with the class.

```
h3.kittens { width: 400px; }
```

- Classes are **more specific** than an HTML selector.

## ID ATTRIBUTES

- **IDs** *cannot* be shared by multiple elements on a single page.
- Elements ***cannot*** have multiple IDs.

```
<div id=“header”></div>
<div id=“main”></div>
<div id=“footer”></div>
```

## ID SELECTORS IN CSS

- Start with a **hash/pound sign** (#)
- Can style the single element with the ID.

```
#kittens { background-color: #000000; }
```

- IDs are **more specific** than class selectors!

## MIXING CLASS AND ID ATTRIBUTES

- Elements can have **id** and **class** attributes at the same time.

```
<div id=“kittens”>…</div>
<div id=“puppies” class=“small fluffy”></div>
<div id=“birds” class=“small feathery”></div>
```

- IDs selector styles can be used to override class selector styles.

## TIPS

- Recommended order of attack:
  - Type/element selectors
  - Class selectors
  - Descendant selectors
  - ID selectors

- If you overuse **IDs** in your styles, you’re going to have a hard time.

## SEMANTIC ELEMENTS

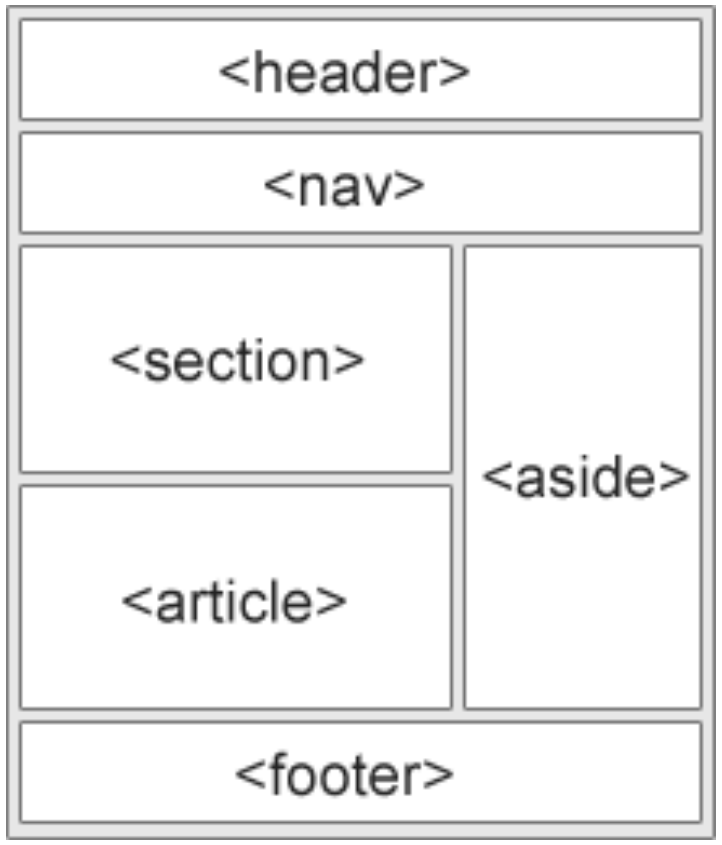
- **Semantics** is the study of the meanings of words and phrases in a language.
- **Semantic elements** = elements with a meaning.
- A semantic element clearly describes its meaning to both the **browser** and the **developer**.
- Non-semantic: <div>, <span>
- Semantic: <form>, <article>, <section>

## SEMANTIC ELEMENTS (HTML5)

- <article>
- <aside>
- <details>
- <figcaption>
- <figure>
- <footer>
- <header>
- <main>
- <mark>
- <nav>
- <section>
- <summary>
- <time>

## FURTHER READING

- http://www.w3schools.com/html/html5_semantic_elements.asp

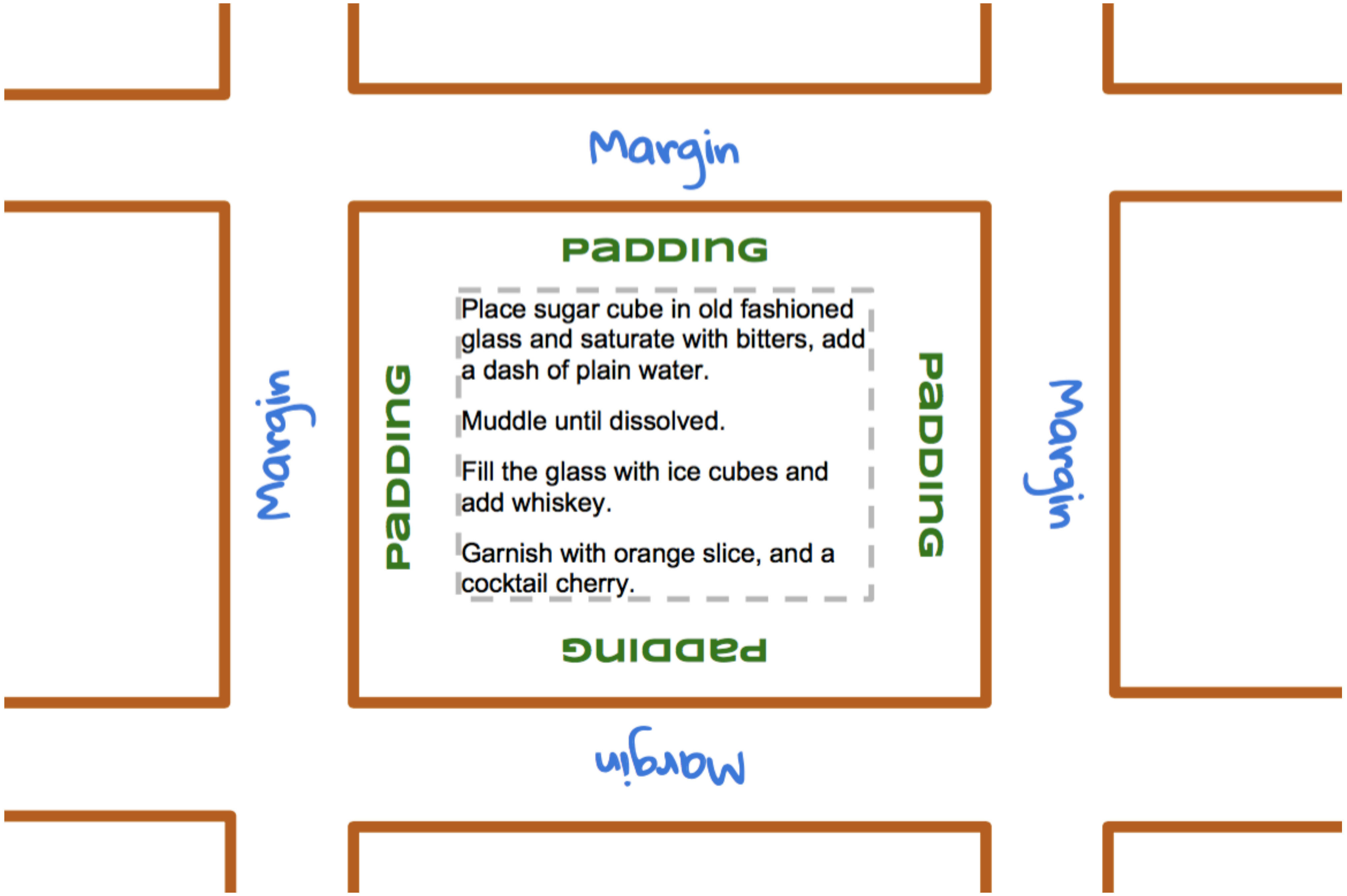


## THE CSS BOX MODEL

## CSS BOX MODEL

- **Content:** stuff in the box
- **Padding:** bubble wrap and packing peanuts
- **Border:** sides of the box
- **Margin:** space between multiple boxes
- In general, the box model applies to **block** ad **inline-block** elements.

# CSS BOX MODEL



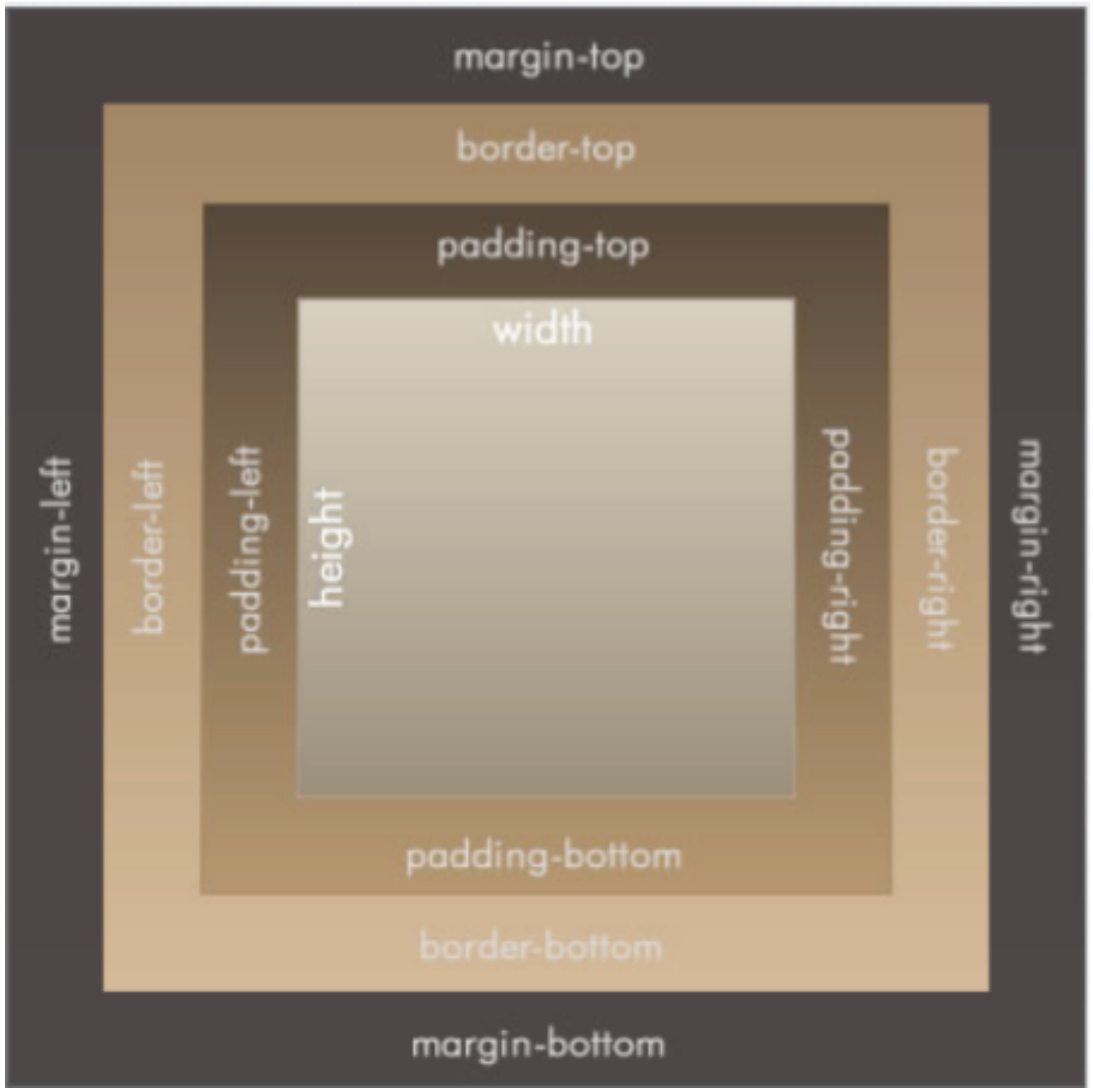
Place sugar cube in old fashioned glass and saturate with bitters, add a dash of plain water.

Muddle until dissolved.

Fill the glass with ice cubes and add whiskey.

Garnish with orange slice, and a cocktail cherry.

# CSS BOX MODEL



## BOX SIZING

```
body {
    box-sizing: content-box; /* browser default*/
}

body {
    box-sizing: border-box;
}
```

- **border-box** includes border and padding **inside** of width (recommended)

## PADDING

- **padding** creates space between content and the **border** for readability/visual spacing.

```
#my-box {
   padding-top: 20px;
   padding-right: 40px;
   padding-bottom 40px;
   padding-left: 20px;
}
/* or.. */
#my-box {
   padding: 20px 40px 40px 20px;
}
```

## PADDING

- If **top/bottom** and **left/right** padding match…

```
#my-box {
    padding-top: 20px;
   padding-right: 40px;
   padding-bottom 20px;
   padding-left: 40px;
}
/* COMBINE THEM! */
#my-box {
    padding: 20px 40px;
}
```

## PADDING

- If **ALL** padding match…

```
#my-box {
    padding-top: 20px;
   padding-right: 20px;
   padding-bottom 20px;
   padding-left: 20px;
}
/* COMBINE THEM EVEN MORE! */
#my-box {
    padding: 20px;
}
```

## MARGIN

- Goes outside the **border.**
- Creates space between the “boxes” of elements.
- Same abbreviation style as padding.
- Can take **negative** values to shift elements opposite direction.

```
#my-box {
    margin-top: -20px;
   margin-left: 30px;
}
```

## MARGIN

- Goes outside the **border.**
- Creates space between the “boxes” of elements.
- Same abbreviation style as padding.
- Can take **negative** values to shift elements opposite direction.

```
#my-box {
   margin-top: -20px;
   margin-left: 30px;
}
```

```
#my-box {
   margin: 20px;
}
```

## BORDER STYLES

- Allow you to specify the style, width, and color of an element **border**.

```
#my-box {
    border-width: 4px;
   border-color: #000000
   border-style: dotted
}
```

- Abbreviation:

```
#my-box { border 4px dotted #000000}
```

## BORDER STYLES

- Learn more about border styles:
- https://developer.mozilla.org/en-US/docs/Web/CSS/border

## BACKGROUND STYLES

## BACKGROUND COLOR REVIEW

```
#my-box {
   text-align: center;
   color: #ffffff
   background-color: rgba(0,0,0,0.5);
}
```

## BACKGROUND IMAGES

- The property is **background-image.**
- The value is a **URL where the image lives.** (relative or absolute path)

```
#my-box {
   background-image: url(“images/kitten.jpg”);
}
```

## BACKGROUND IMAGES STYLES

- **background-repeat:** repeat/tile image horizontally or vertically; or not at all. (useful for patterns)
- **background-position:** Start at the left or right, top or bottom, center or not.
- **background-attachment:** Is it fixed or does it scroll with page?
- **background-size:** How much of the container does it cover?
- **https://developer.mozilla.org/en-US/docs/Web/CSS/background**

## BACKGROUND REPEAT

- **background-repeat: repeat-x;**

/* repeat the background horizontally */

- **background-repeat: repeat-y;**

/* repeat the background vertically */

- **background-repeat: no-repeat;**

/* don't repeat the background */

## BACKGROUND POSITION

- **background-position:** Values include both x-axis and y-axis.
- x-axis is first, y-axis is second.
- Can be **left/right top/bottom** *or* any measurement (px, %, ems, etc)

```
#my-box {
   background-position: center center;
}
```

## BACKGROUND POSITION EXAMPLES

```
background-position: center center;

background-position: left top;

background-position: right bottom;

background-position: 10px 30px;
```

## BACKGROUND ATTACHMENT

- **background-attachment: scroll**
  - background will scroll (default)
- **background-attachment: fixed**
  - background will stick fixed always

## “MAGIC” BACKGROUND IMAGE RECIPE

/* make a fill-sized, fixed image background that covers the whole container */

```
#header {
   background-image: url(“images/kittens.jpg”);
   background-repeat: no-repeat;
   background-attachment: fixed;
   background-size: cover;
   background-position: center center;
}
```

## PRACTICE TIME!

## ASSIGNMENT

- Create a 1 page website that has a header, nav, main section, and footer, all in a main container div.
- Give them each unique IDs.
- Give them all a common class for base styles.
- Add two links to the nav.
- Add a background image in the header.
- Give your nav a background color and a border.
- Give your elements "breathing" room with padding and/or margin.
- Make use of some pseudo-class styles.