COMP 1017

Day 13
The Box Model

Let's do a quick review of CSS selectors!

ID

class

specificity

element selector

class selector

multiple element selector

descendant selector

!important

The Box Model

Nobody puts baby in a box!

Has anyone ever noticed that when you're in the Element Inspector, everything you mouse over is in a bunch of boxes?
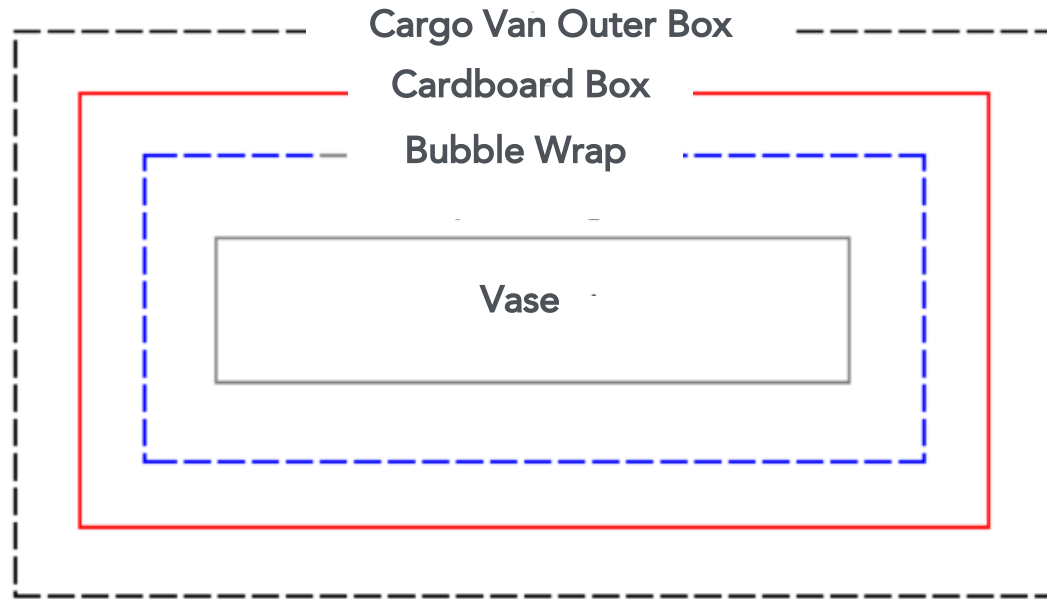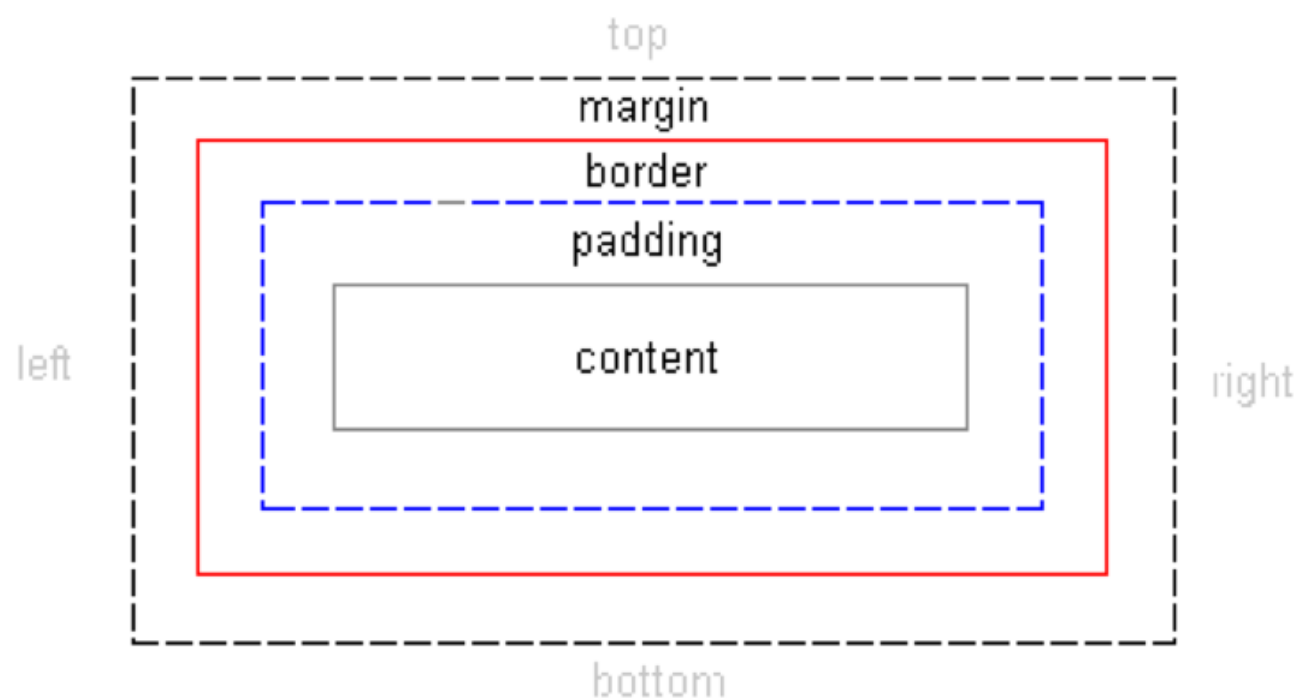
That's, uh … that's because it is.

Every single element on a web page is rendered as a box.

Each box has four different parts:

1. content
2. padding
3. border
4. Margin

Remember the cargo van and cardboard box with a vase wrapped in bubble wrap analogy I've been using?

Cargo Van Outer Box

Cardboard Box

Bubble Wrap

Vase

top

left

right

bottom

margin

border

padding

content

- – – – margin edge
- ——— border edge
- – – – padding edge
- ——— content edge

We've already got content mastered, so let's focus on the other three parts.

Margin

White Space

The margin is the space around an element.
It can be used to push and pull elements around in the layout.

Pushes the cardboard box away from the walls of the cargo van.

Margins can be controlled by:

➜top (margin-top)
➜right (margin-right)
➜bottom (margin-bottom)
➜left (margin-left)

… or, you can just control all sides with a single property.

```
margin: 5px 10px 5px 10px;
```
- The order is top, right, bottom, left.

```
margin: 5px 10px;
```
- The order is top-bottom, right-left.

```
margin: 5px 10px 15px;
```
- The order is top, right-left, bottom.

```
margin: 30px;
```
- All margins will be 30px.

Border

The Space Around

The border is the line between margin and padding.

It's the cardboard in the cardboard box.

By default, the border has a width of zero, but we can make it thicker.

We can also control the style (pattern) and its colour (color).

The longhand declarations look something like this …

```css
border-style: none|solid|dotted|dashed|double; /* etc. */

border-width: thin|medium|thick|1px;

border-color: red|#E51400|rgb(229,20,0)|rgba(229,20,0,100);
```

But we can simplify it…

```css
border: 1px solid red;
```

As with margins, you can also target each side of the border.

```css
border-top: 1px solid red;

border-right: 1px solid red;

border-bottom: 1px solid red;

border-left: 1px solid red;
```

Padding

The Space Within

Padding is the space around the element, inside of the border.

This is the bubble wrap.

Padding behaves in a very similar way to margins.

Padding can be controlled by:

➜ top (padding-top)
➜ right (padding-right)
➜ bottom (padding-bottom)
➜ left (padding-left)

… or, you can just control all sides with a single property.

padding: 5px 10px 5px 10px;

- The order is top, right, bottom, left.

padding: 5px 10px;

- The order is top-bottom, right-left.

padding: 5px 10px 15px;

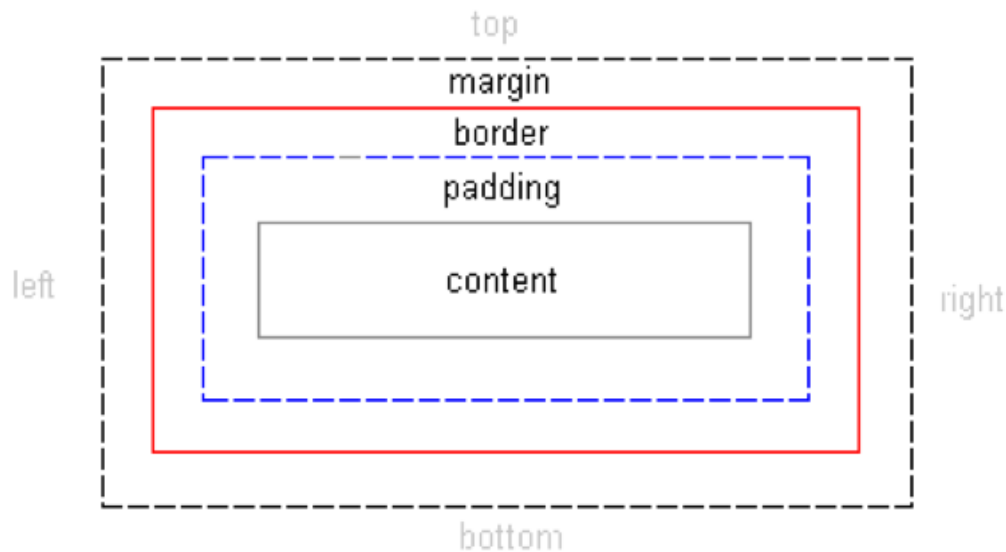- The order is top, right-left, bottom.

padding: 30px;

- All padding will be 30px.

Widths & Heights
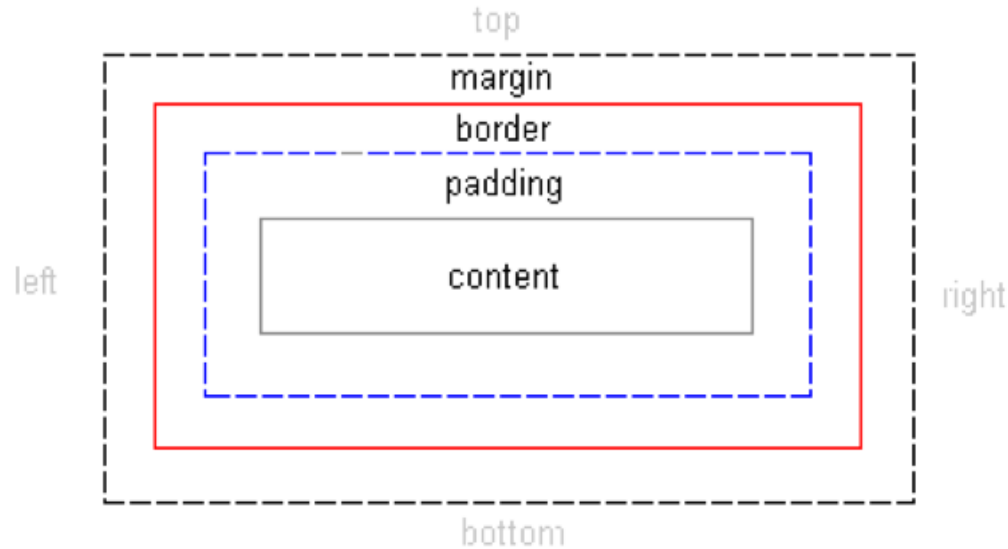
And now for some light maths.

When it comes to element sizes, it's important to note that all parts of the box model contribute.

A box's total width includes:

margin-left + border-left + padding-left + content width +
padding-right + border-right + margin-right

A box's total height includes:

border-top + padding-top + content height + padding-bottom
+ border-bottom
Note: typically we let the content dictate the height.

Supplemental Readings

http://kamleshshrestha.com.np/css-box-model/

https://torquemag.io/2018/06/css-box-model/

https://hackernoon.com/css-box-model-45ecf4ac219e

https://developer.mozilla.org/en-US/docs/Learn/CSS/Introduction_to_CSS/Box_model

https://codepen.io/carolineartz/full/ogVXZj