MEASUREMENTS & THE BOX MODEL

THE ULTIMATE WEB DESIGNER • BRAD HUSSEY

Measurements in CSS

Pixels, Percentages, Ems & Rems!

In CSS, you use measurements a lot. Margin, padding, font size, width, height, etc. all use measurements to determine the size of a specific value. For example:

```
h1 {
   font-size: 2.4rem;
   width: 50%;
   padding: 2em;
   margin: 10px;
}
```

Measurements in CSS

Pixels, Percentages, Ems & Rems!

Here are the most common measurements used in CSS:

Unit	Description
`px`	pixels
`%`	percent
`em`	Relative to the font size of the parent element. If the parent element has a font size of 14px, then 1em = 14px
`rem`	Relative to the font size of the root element (html element). If the html element is 18px, then 1rem = 18px

The CSS Box Model

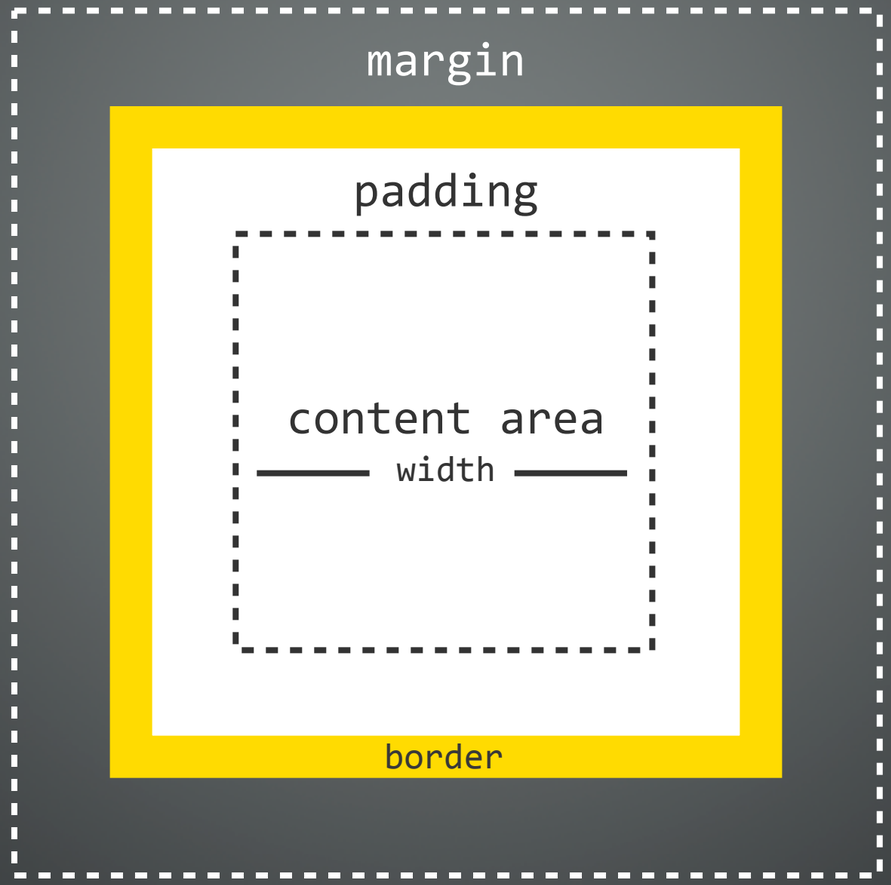
Think of all elements in HTML as appearing within a box in the layout of a page. CSS treats all elements this way.

Both block & inline-level elements occupy a box.

All boxes have margin, padding, and borders. Block-level elements have a width property, whereas inline-level elements do not.

The CSS Box Model

Here's a visual example:



Margin

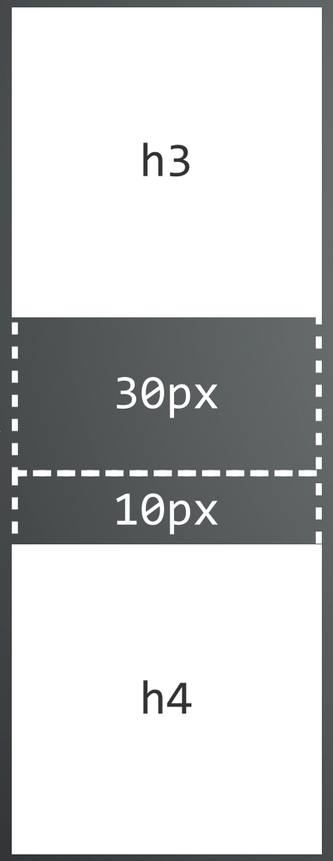
Margins live outside the box. In the example, the margin has a dashed line around it just to show the area it resides in. In the browser, margins are invisible.

Top & bottom margins overlap on adjacent elements. If you have an h3 followed by an h4, and you've defined the h3 to have margin-bottom: 30px and the h4 to have margin-top: 10px you might think this adds up to 40px but it doesn't. The two margins overlap, and the larger of the two margins are used, therefore the margin between these elements would be 30px.

Margin

For example:

You think this would happen. But it doesn't.



The smallest margin is absorbed into the larger margin

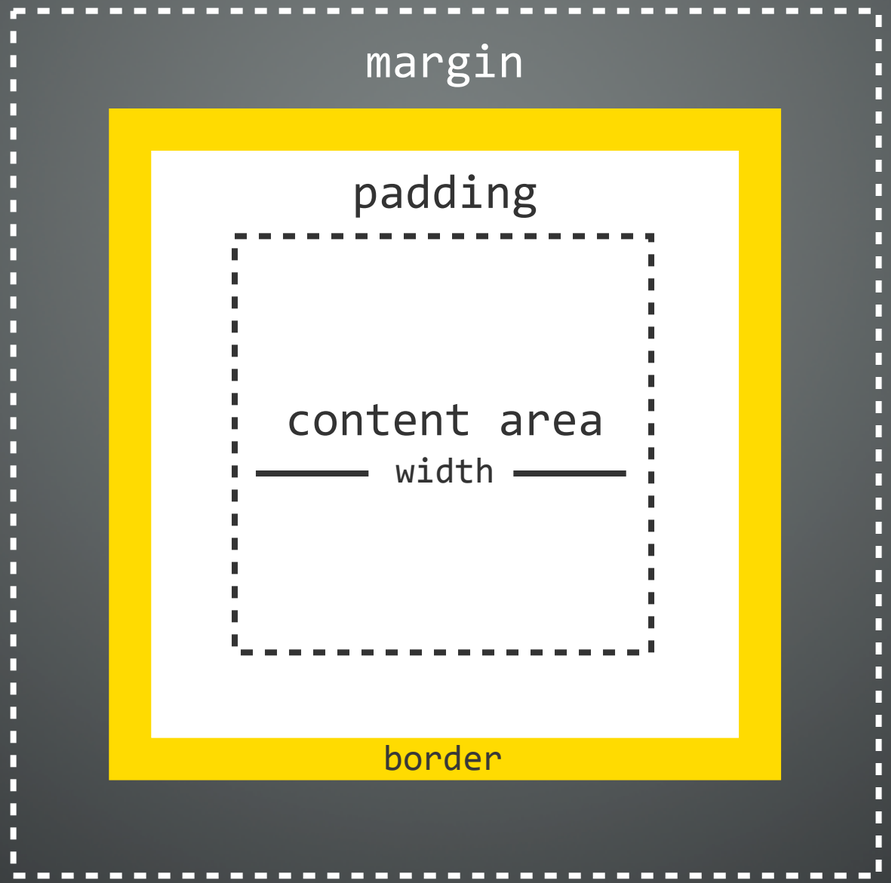
Note: This only happens on top & bottom margins, not left and right margins!

Inline Elements & Margin

Inline elements do not display vertical margins. However, they do display left and right margins.

Padding

Padding resides within the box. So, you can see that the background colour in the example is the same in the content area and the padding area.



Using Margin & Padding

To add margin & padding in CSS, all we have to do is define the size of the margin on all four sides of the box. Here is an example:

```
margin-top: 10px;
margin-right: 10px;
margin-bottom: 10px;
margin-left: 10px;
```

Using Margin & Padding

Note that all four values consist of a measurement (10) and a unit (px) with no spaces between them. In the previous example, we declared all sides of the box to have the same values. We can write the previous example in a much simpler way:

```
margin: 10px;
```

Using Margin & Padding

If any of the values are equal to `0px`, we can skip writing the unit, like so:

```
margin: 0;
```

Using Margin & Padding

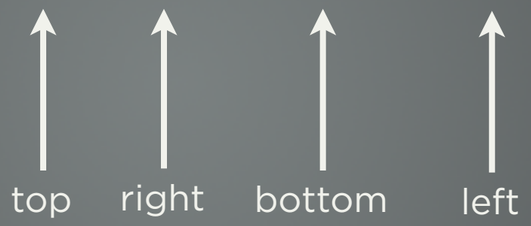
Another way of writing our margins & padding more efficiently is like so:

```
margin: 0 10px 20px 30px;
```

Using Margin & Padding

Remember the order of the values:

```
margin: 0 10px 20px 30px;
```



Using Margin & Padding

In some cases, you can use two values:

```
margin: 0 10px;
```

Using Margin & Padding

And three values:

```
margin: 0 10px 20px;
```

Using Margin & Padding

All of the previous techniques apply to defining padding and borders as well.

Borders

These guys are a little different, though. Borders don't only have a border-width, they also have a border-style property, and a border-color property. Only the border-style property is required. Here's how you declare them:

```
border-style: solid;
border-width: 4px;
border-color: #333;
```

Borders

What if all sides have the same style, width and colour?
There's a shorthand for that!

```
border: solid 4px #333;
```

Borders

You can also create variations in the border properties by overriding some properties with more specific declarations:

```
border: solid 4px #333;
border-bottom-color: #fc3;
```

Since the second border declaration comes later in the stylesheet than the first declaration, the CSS overrides the bottom border colour of #333 with #fc3 instead.

YAY!

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