CSS Units of Measurement

CSS units are used to express length for widths, margins, font-sizes, etc. It is usually a number followed by a unit of measurement like px, em, or the percent sign. When coding unit measurements there is no space between the number and the unit. And you might see values of zero where a unit is omitted.

Some units are absolute meaning they are always the same size regardless of the page size. px or the pixel unit of measurement is an example of an absolute measurement. Other units are relative meaning their size can change based on something else like the page or font size. em or % are relative unit measurement examples. Relative units will scale better between different devices. This means for example if we give an image a percentage value for example 100% width then it would be 100% for that part of the page on a phone, tablet, laptop, etc. The width would change depending on what device they were using to render the page. This is called responsiveness. Whereas if we gave that image a unit measurement of 800px it would be a fixed size on all those devices. So relative measurements scale better and are good for responsive web pages.

The default browser font size is 16px but you can change that default for the entire page by setting a font size on the <body> element. And the child elements will inherit their parent body element's font size.

em is also a relative measurement. Ems allow you to change the size relative to the size of the text in the parent element. em can be used on more than just fonts though you can use it for margins, padding, line-height etc. But it's still going to be based off the inherited font-size. If you always want to base your measurements off the root or font-size in the body regardless of the immediate parent's font size, you can use rem or 'root' em instead of em. 1em would mean 100% of the default font size and 1.5 em would be one and half times bigger or 150% and 2em would be twice the size, and so on.

There are also other types of units of measurement like vw and vh for viewport width and viewport height referring to the width and height of the user's device. W3schools.com has a more complete list https://www.w3schools.com/cssref/css_units.asp of units of measurement. We will mostly be using pixels, percentages, and em for this course.

Remember we talked about all elements having an invisible box around them. They are sized just big enough to hold their contents. We can adjust the size of these boxes with the width and height properties. Notice how this banner or hero image is quite large, it is actually going off the screen and we don't even see the right part of it. We can change that width to 100% so it will now take 100% of the size of its parent container and not default to however many pixels the image was. We can also set widths on any element such as this div. Because right now it has no content it has no height. We can set a height to make it taller. We can also set a max-width or min-width. This is different from width because with pages that expand and shrink with the user's screen such as percentages and ems there comes a time when a device might be so small

that the page is not legible anymore or a screen so large that the page or element width appears much too big. Use max-width to ensure there is a set point when it shouldn't grow anymore and min-width to set a point where it won't appear too narrow. So, for example we can make sure that at a certain point the main section doesn't get larger than 1500px for example. It's always a good idea to check your site on different devices to make sure it looks good.