# The Box Model

*[The video starts. Text saying "The Box Model" is shown. Below the text, an image showcasing the box model is shown. The center of the image has a box saying "Content", surrounded by another bigger box saying "Padding". A box saying "Border" surrounds the "Padding" box, and a box saying "Margin" surrounds the "Border box.]*

**Instructor:** The box model, we know that all the elements have a rectangular box around them. Each box also has a width and height, but it can also have padding, borders and margins as well. Let's take a look at all of these parts called the box model. We've covered a bit already with the width and height elements. Every element has a default width. Remember block level elements have a default width of 100%, and inline and inline-block elements will expand and contract to accommodate their content. The default height of an element is determined by its content. It will expand and contract vertically as necessary to accommodate its content. Let's look closely at padding, border and margin. The padding and margin properties are very helpful in adding space between various items on the page. This is often referred to as white space, or space without images or text. Padding allows us to set an amount of space inside the elements border. For example, our p element that we have here might look something like this with very little padding text right up to the edge. It's expanding just wide enough to include the content.

*[An image of mountains is shown. A paragraph is shown with a plain background color. The background surrounding the text is touching the edges of the text.]*

We've given the p element a background color that lies within the border of the element, padding will allow us to give that paragraph's texts some breathing room or whitespace.

*[Text changing the paragraphs padding to 40px through CSS is shown. The background surrounding the text is now bigger than the text on each side.]*

But this whitespace is still inside the border of the paragraph element with padding. The content is still the same width, but 40 pixels of padding have been added around the inside of its border. Every box has a border, even if it's not showing, as is our paragraph. Or in other words, it has a default width of 0 pixels. The border separates the padding and the margin. If we want a visible border, we're going to need three values, width, style, and color.

*[The CSS text changes. Now a line saying "border: 5px solid black" is shown. The paragraph now has a solid black border surrounding the background.]*

For example, it would look like this: border, 5px pixels, solid, black. You can give it any color or width. And there are different styles like double, dashed and dotted.

*[The word "solid" in the CSS text is replaced with "double", "dashed", and "dotted". As the text changes, the border surrounding the paragraph changes to have a double lined border, a dashed border, and a dotted border.]*

We can even round the corners with border-radius, such as border radius five pixels.

*[The CSS text now says "border-radius: 5px;". The corners of the paragraph are now rounded.]*

You could even make a circle with border-radius of 50 percent if your image was a square, we apply that to our image. Our image was a little wider than it was tall, so it makes an oval.

*[A CSS selector is selecting the mountain image. A line inside says "border-radius: 50%;". The mountain image is curved completely around the circumference, making an oval.]*

If we want space around our elements or beyond the border, we can give them margining. The margin allows us to set the amount of space surrounding an element. It's the gap between the borders of two adjacent boxes.

*[A CSS selector is shown selecting the paragraph element. A line inside says "margin: 30px;". A space between the mountain image and the paragraph appears.]*

Margin spacing will fall outside of the border. It helps to keep elements a certain distance from each other. And notice how there is now 30 pixels between the top and bottom of the image and paragraph. The browser default CSS might give a little margining or padding for certain elements. But we can always change that through CSS. Sometimes there's no background color, add no visible border. So padding and margin seem to do the same thing. But it's important to understand how the box model works with every element. It's also helpful to know the longhand and shorthand way to give values to our padding and margins. If one value is given, the value is applied to all four sides of the element.

*[A CSS selector is shown selecting the paragraph element. A line inside says "margin: 40px;". The background surrounding the paragraph expands 40px in every direction.]*

If we give two values, the first value is for the top and bottom, and the second value is for the right and left.

*[The line is changed and now says "padding: 5px 40px;". The background surrounding the paragraph expands 5 px at the top and bottom and 40px to the left and right.]*

We saw that with margin 0 auto earlier. To set unique values for all four sides, you can specify four values and they will apply in order from top, right, bottom, then left clockwise.

*[The line changes again and now says "[padding: 5px 60px 15px 40px;". The background surrounding the paragraph expands 5px at the top, 60 px to the right, 15px down, and 40px left.]*

We could also just apply padding or margin to just one side by adding a dash, top, dash, bottom, dash, right or dashed, let to either margin or padding. It's important to understand just how much room elements really take on our page. By default, when we say the width of an element is 500 pixels, for example, that doesn't include the padding and border. If we had 20 pixels of padding and a border of ten pixels on every side, the actual full width of the element is 560 pixels, 500 for the width plus 20 padding and 10 border on both sides. The box model can be changed, however, to calculate the padding and border into the overall width with the box-sizing property. For example, box sizing, border box. This is different from the default content box where the border and padding are not included. So if I wanted to have my paragraph with its padding and border to be the same width as the image, I can use box-sizing, border-box to do that.

*[The CSS changes. A line saying box-sizing: border-box;" is shown. Now the image and paragraph's border are the same width.]*

*[End of video]*