

# Box Model in CSS:

## 1. Height and Width:

- Sets the height and width of the box.

```
```css
```

```
.box {  
  height: 100px;  
  width: 200px;  
}
```

## Border:

- Sets a border around the box.

```
.box {  
  border: 2px solid #000;  
}
```

## Border Width, Style, and Color:

- Defines the individual properties of the border.

```
.box {  
  border-width: 2px;  
  border-style: dashed;  
  border-color: #00f;  
}
```

## Border Shorthand:

- Combines border properties into a shorthand.

```
.box {  
  border: 2px dashed #00f;
```

```
}
```

## Border Sides:

- Sets individual borders for each side of the box.

```
.box {  
  border-top: 1px solid #333;  
  border-left: 1px solid #333;  
  border-bottom: 1px solid #333;  
  border-right: 1px solid #333;  
}
```

## Border Radius:

- Rounds the corners of the box.

```
.box {  
  border-radius: 10px;  
}
```

## Padding:

- Adds space inside the box between content and border.

```
.box {  
  padding: 10px;  
}
```

```
.box {  
  padding-left: 10px;  
  padding-right: 20px;  
  padding-top: 15px;  
  padding-bottom: 5px;  
}
```

```
.box {
```

```
padding: 10px 20px 15px 5px; /* top right bottom left */
}
```

## Margin Left, Right, Top, Bottom:

- Sets margin for each side individually.

```
.box {
  margin: 10px;
}
```

## Margin Shorthand:

- Combines margin properties into a shorthand.

```
.box {
  margin: 10px 20px 15px 5px; /* top right bottom left */
}
```

## Relative Unit in CSS:

### Percentage:

- Specifies a percentage relative to the parent element.

```
.box {
  width: 50%;
}
```

### EM:

- Relative to the font-size of the element.

```
.box {
  font-size: 1.5em;
}
```

```
}
```

Drawback of EM - Snowball Effect:

- EM can cause a snowball effect due to compounding sizing issues.

**REM:**

- Similar to EM but relative to the root element.

```
.box {  
  font-size: 1.5rem;  
}
```

## CSS Transition:

**Transition Shorthand:**

- Defines transition properties in a shorthand.

```
.box {  
  transition: background-color 1s ease-in-out 0.5s;  
}
```

## CSS Transform:

**Rotate:**

- Rotates the box by a specified angle.

```
.box {  
  transform: rotate(45deg);  
}
```

**Scale:**

- Increases or decreases the size of the box.

```
.box {  
  transform: scale(1.5);  
}
```

## Translate:

- Moves the box horizontally and vertically.

```
.box {  
  transform: translate(20px, 30px);  
}
```

## Skew:

- Skews the box in the horizontal and vertical directions.

```
.box {  
  transform: skew(10deg, 20deg);  
}
```

## Background Image and Size:

- Sets a background image and specifies its size.

```
.box {  
  background-image: url('image.jpg');  
  background-size: cover;  
}
```

## Position:

### Static:

- Default positioning, elements are positioned according to the normal flow of the document.

```
.box {  
  position: static;  
}
```

## Relative:

- Positioned relative to its normal position.

```
.box {  
  position: relative;  
  top: 10px;  
  left: 20px;  
}
```

## Absolute:

- Positioned relative to its nearest positioned ancestor.

```
.box {  
  position: absolute;  
  top: 10px;  
  left: 20px;  
}
```

## Fixed:

- Positioned relative to the browser window.

```
.box {  
  position: fixed;  
  top: 10px;  
  left: 20px;  
}
```

