CSS

RESPONSIVE

RESPONSIVE

- Responsive Web Design is about using HTML and CSS to automatically resize, hide, shrink, or enlarge, a website, to make it look good on all devices (desktops, tablets, and phones)

RESPONSIVE LINK

- `<meta name="viewport" content="width=device-width, initial-scale=1.0">`

- @media(max-width: 576px)

  ```
  {
  .class
  }
  ```

RESPONSIVE

What is Viewport and How does it work?

- A 5 inch phone and a 27 inch screen may both be 1080x1920, meaning they have the same amount of pixels, but the pixel size is different. This is why there is a tool called PPI which means Pixels Per Inch. This measures pixel density.

- This is calculated in the `<meta name="viewport" content="width=device-width, initial-scale=1.0">` tag, using the Pythagorean theorem, and has it's the best result when it is PPI 96

- We don't have to think about this, its already preset but can be interesting to think about

Units of measurement

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RELATIVE UNITS OF MEASUREMENT

Unit	Description	Common Usage
%	Relative to the parent element	• Width
em	Relative to the font-size of the element	• Font-size • Padding • Margins • Media queries
rem	Relative to the font size of the root element of the document	• Font-size
vw	Relative to 1% of the width of the viewport	• width
vh	Relative to 1% of the height of the viewport	• Height
vmin	Relative to 1% of viewport's smaller dimension	• Width • Height
vmax	Relative to 1% of viewport's larger dimension	• Width • height

PERCENT

Width: 500px

Height: 200px

Width: 50%

Height: 75%

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REM

- REM multiplies root element font size for its calculations. Generally 1 rem is 16px 2 is 32px

- The HTML tag <html> is the root

- Most browsers have a default font-size of 16px

- If you change the settings of your browser to have larger or smaller text the rem will follow. This is why it can be beneficial to use rem (and em) for padding, margin, and font.

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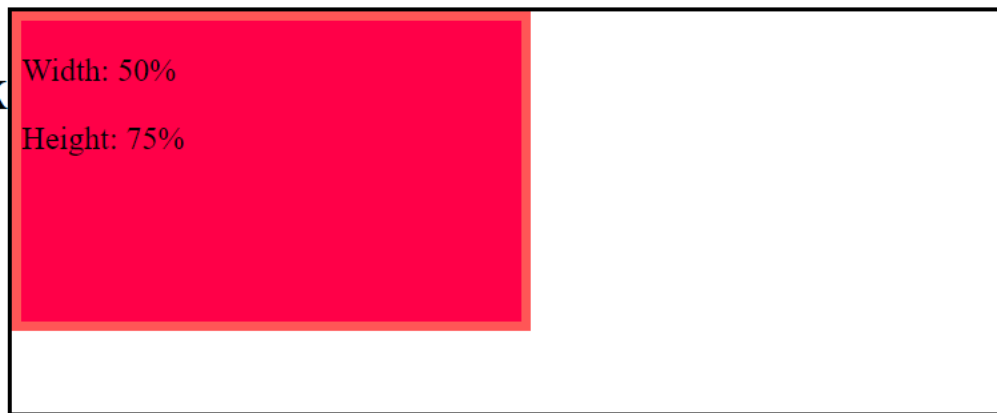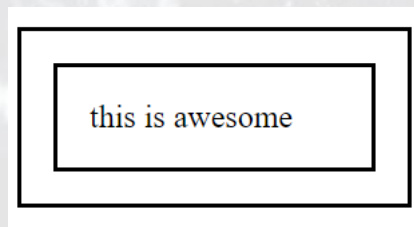WEB: WWW.ITDCANADA.CA
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EM

- EM uses its parent element to determine what to multiply by

- Lets say you have a div tag with an h2, p, and h3. you set the div to font size of 24px. Then the p tag to 1em, h2 to 1.5 em and the h3 to 1.2em. What sizes do you have?

EM & REM

1. Pixel at browser default

this is awesome

2. Very large setting

this is
awesome
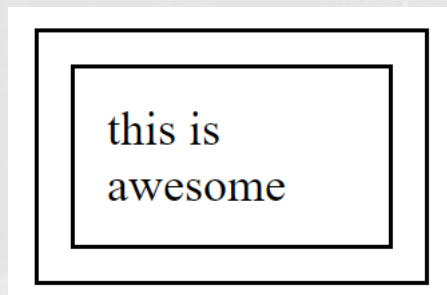
```css
.container {
    margin: 1rem;
    border: 2px solid ☐black;
    width: 18%;
    padding: 16px;
}

.container-2 {
    border: 2px solid ☐black;
    padding: 16px;
}
```

VW & VH

- By using the width we can set our box to 100%, if we did this with height:100%; it will cause a lot of problems, what we can do instead is use 100vh this will allow us to set the height to 100% of the viewport

- If we use vw for the width, we can make a child element go from 100% of the parent to 100% of the viewport

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Media Queries

MEDIA QUERIES

- A common way to create a responsive website is to use media queries.

- What is a media query?

- Basically we use them as "break points" to change style

- If screen is 1000px make background blue

- If screen is 750px make background green

- This is the easiest way to think about it, but when you use them its to prevent misplaced elements

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MEDIA QUERIES

- You can use pixels to determine the break point with pixels. And set a max or min width, I prefer max-width

```
@media (max-width: 760px) {
    .container-2{
        background-color: ■rgb(0, 145, 255);
    }
}
```

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MEDIA QUERIES

- You can use pixels to determine the break point with pixels. This allows the screen to be set a max or min width, most people use max width like in the next slide

```
@media (min-width: 760px) {


}
```

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MEDIA QUERIES

- Inside the media query you can override the element style. The one below will make the body background blue when the screen is less than 760px

```css
@media (max-width: 760px) {
  body {
    background-color: #1616f0;
  }
}
```

Media Queries

- Create a new directory in ICR120

- In external CSS Make a page with body background color red

- Make three media queries one with a max width 500px, max width 750px, max width 1000px

- Change the body background color at each break point.

Size Max

- All devices can be grouped by their width

- Mobile Phone Portrait up to 576px

- Mobile Phone Landscape up to 768px

- Tablet Portrait up to 992px

- Tablet Landscape up to 1200px

- These are breakpoints

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MEDIA QUERIES

- As we have stated, most browsers have a default font-sizes of 16 px. If the user is using a lager font size setting this can mess up our responsiveness if we are using @media(max-width: 1000px)

- So in this case what we can do is divide our max-width by 16. this way we are basin our responsiveness on font size vs px

- If our max width is 1000 we divide by 16 and get max-width:62.5 em

MEDIA QUERIES

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KEYFRAMES

KEYFRAME ANIMATION

- Keyframes allow us to make a progressive change in a style, they look a bit like media queries but have different functionality

```
@keyframes my-animation {


}
```

We define the name

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KEYFRAME ANIMATION

- We can then define at what percent the animation will progress at

```
@keyframes my-animation {
  0%{
    opacity:0;
  }
}
```
This will start at 0% then go to 100%

```
@keyframes my-animation {
  0%{
    opacity:0;
    transform: scale(0);
  }
  50%{
    opacity: 1;
    transform: scale(1.5);
  }
}
```
This will start at 0% then be fully visible at 50%

This will start at 0% get to 1.5 time the size then go back to its normal size

KEYFRAME ANIMATION

- Call the animation in the selector you want to style

```css
h1 {
    text-align: center;
    margin-top: 5em;
    animation: my-animation 2s;
}
```

```
animation: name duration timing-function delay iteration-count direction fill-mode;
```

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From the ITD Canada team!!!