CSS Values and Units

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2 TYPES OF LENGTH UNITS

a. Relative
b. Absolute

COMPUTED VALUES

The computed value is the value that is transferred from parent to child during inheritance

The computed value of a length will be resolved to an absolute unit

It will be represented by a canonical unit of measurement — the pixel

Numbers are signed (-10) or unsigned (244) and also can be decimal (.1)

PERCENTAGES

Percentages are based on the ==parent== width

The parent could be a nested <div> or the overall viewport of the device

Unit	Name	Equivalent to
cm	Centimeters	1cm = 96px/2.54
mm	Millimeters	1mm = 1/10th of 1cm
Q	Quarter-millimeters	1Q = 1/40th of 1cm
in	Inches	1in = 2.54cm = 96px
pc	Picas	1pc = 1/6th of 1in
pt	Points	1pt = 1/72th of 1in
px	Pixels	1px = 1/96th of 1in

ABSOLUTE UNITS OF MEASUREMENT

RELATIVE UNITS

unit	relative to:
em	Relative to the font size, i.e. 1.5em will be 50% larger than the base computed font size of its parent. (Historically, the height of the capital letter "M").
ex	Heuristic to determine whether to use the x-height, a letter "x", or `.5em` in the current computed font size of the element.
cap	Height of the capital letters in the current computed font size of the element.
ch	Average character advance of a narrow glyph in the element's font (represented by the "0" glyph).
ic	Average character advance of a full width glyph in the element's font, as represented by the "水" (CJK water ideograph, U+6C34) glyph.
rem	Font size of the root element (default is 16px).
lh	Line height of the element.
rlh	Line height of the root element.

VIEWPORT UNITS

unit	relative to
vw	1% of viewport's width. People use this unit to do cool font tricks, like resizing a header font based on the width of the page so as the user resizes, the font will also resize.
vh	1% of viewport's height. You can use this to arrange items in a UI, if you have a footer toolbar for example.
vi	1% of viewport's size in the root element's inline axis. Axis refers to writing modes. In horizontal writing modes like English, the inline axis is horizontal. In vertical writing modes like some Japanese typefaces, the inline axis runs top to bottom.
vb	1% of viewport's size in the root element's block axis. For the block axis, this would be the directionality of the language. LTR languages like English would have a vertical block axis, since English language readers parse the page from top to bottom. A vertical writing mode has a horizontal block axis.
vmin	1% of the viewport's smaller dimension.
vmax	1% of the viewport's larger dimension.

RESPONSIVE

Using relative units over absolute measurements/unit allows your content to be more responsive

CSS PIXELS != DEVICE PIXELS

Since the 1980s, the PC market has determined a CSS inch to be equivalent to 96 pixels.

This calculation of pixels was directly tied to the DPI/PPI standard of Microsoft Windows for monitors at the time

THE PIXEL

When we size in mobile, we measure according to CSS pixels, not according to device pixels

> CSS pixels are logical pixels
> Device pixels are (real) physical pixels

iPhone 1 (2007)

Device Resolution
320×480

320px screen width
320px CSS width

1x density

iPhone 4 (2010)

Device Resolution
640x960

640px screen width
320px CSS width

2x density

iPhone 12 Pro (2020)

Device Resolution
1170x2532

1170px screen width
390px CSS width

3x density

REM stands for 'root em'

It represents the font size of the root element: <HTML>

Most browsers use the default: 16px

Units of measurement with the ch designation are not 'character' units.

The zero "0" character — that's the measure of one ch

THE CH UNIT

Take a look between Courier (fixed-width characters) and Georgia (variable-width)

Courier

Look, 20 characters.
abcdefghijklmnopqrst
12345678901234567890
iiiiiiiiiiiiiiiiiiii
mmmmmmmmmmmmmmmmmmmm

Helvetica

Look, 20 characters.
abcdefghijklmnopqrst
12345678901234567890
iiiiiiiiiiiiiiiiiiii
mmmmmmmmmmmmmmmmmmmm

Georgia

Look, 20 characters.
abcdefghijklmnopqrst
12345678901234567890
iiiiiiiiiiiiiiiiiiii
mmmmmmmmmmmmmmmmmmmm

em units for **font-size** will be relative to the font-size of its parent

em units on other properties than font-size will be relative to the font-size of the current element. (em can be used anywhere)
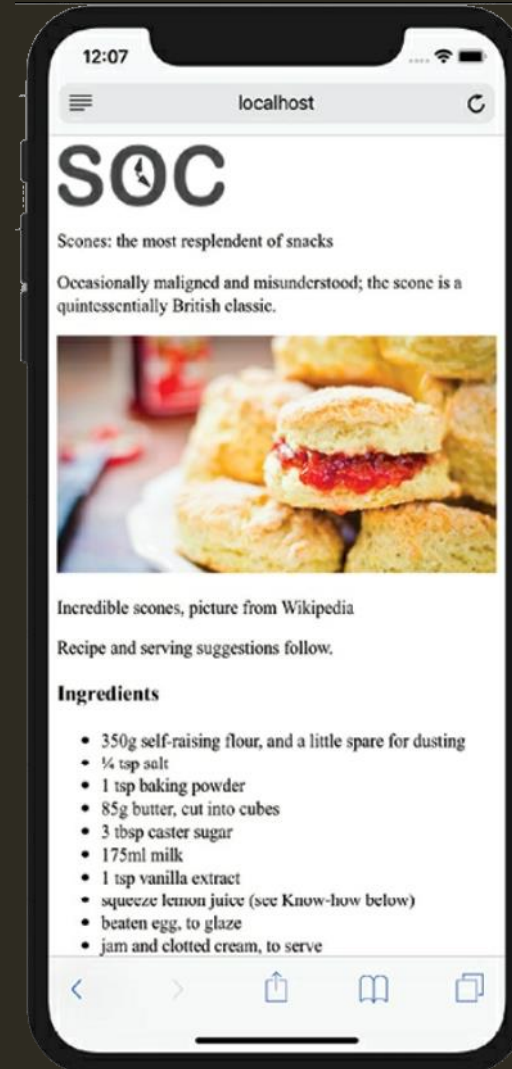
EM UNIT
PARENT OR ELEMENT

Remember: when em units are used on `font-size`, the size is relative to the font-size of the parent. When used on other properties, it's relative to the font-size of the element itself.

Most times, images are not sized where you want them to be.
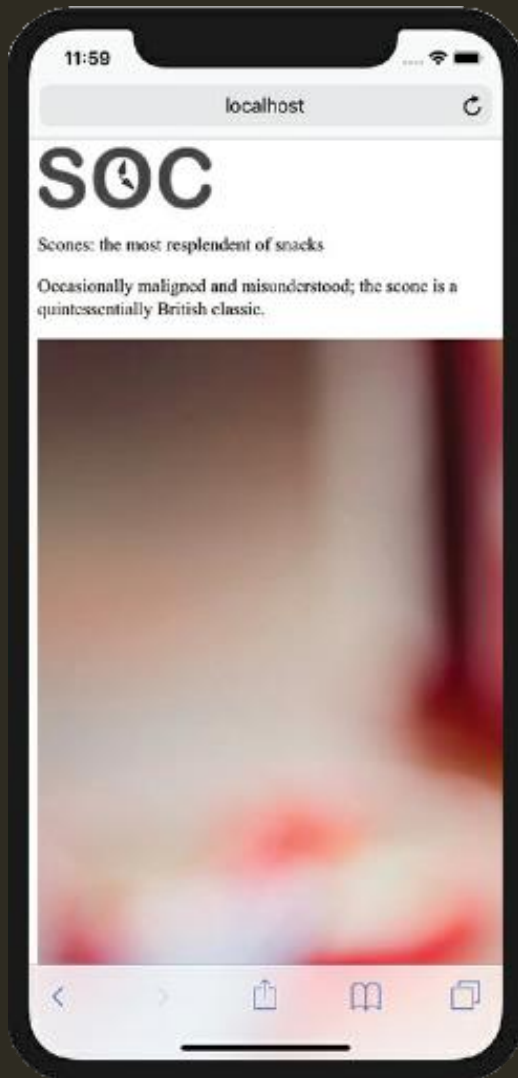
```
img#soc {

    max-width: 100%;

}
```
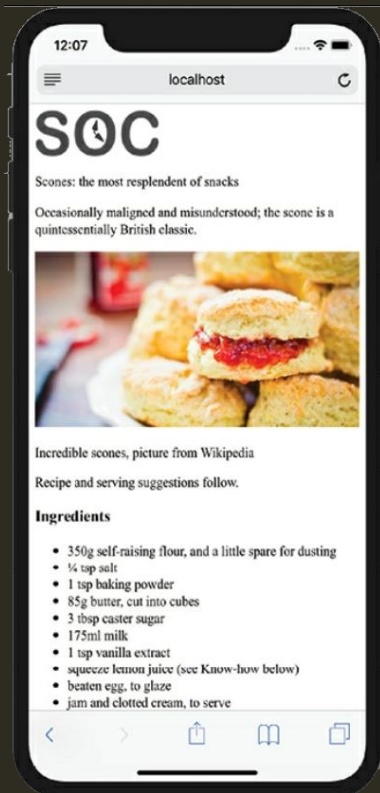
max-width stipulates an image should grow to a maximum of 100% of their containing size.

width

Will allow the image be grow larger than its original size. Typically, you do not want that to happen

Remember, test in portrait and landscape mode on your test phones.

Media Queries

media queries adjust the layout depending upon the screen width