HTML/CSS Introduction

Housekeeping

- Emergency
- Bathrooms
- Breaks
- Leave by a certain time?

Hello!

A bit about me

You?

Experience

- Who has done some HTML before?
- CSS?
- **No experience needed!**

Overview

- HTML
  How markup works, basic elements, links, images, lists
- CSS
  Anatomy of a CSS rule, specificity, box model

  Types of styling we can apply, display.

  Positioning (time dependent)

  Workflow and debugging
- Build a basic web page

Tools

- Ubuntu
- Folders & files
- Atom (text editor)
- Browser (Firefox, Chrome)
- Online resources

Questions

Please ask!

Getting started + workflow

Getting started — part 1

- **Create a folder** on your desktop, and name it 'project'. We will keep today's work here.
- **Open Atom**, and close all of the tabs in it.
- **Create a new file** and add some text.
- **Save** your file. Name it *index.html*, and make sure it's in the folder we just created.

Getting started — part 2

- **In Atom**, you should see a sidebar on the left which contains your project file and folder.
  If not, navigate to ***File*** > ***Add Project Folder***
- **Reduce the size** of your Atom window, so it takes up half of your screen *(ctrl + windows key + right arrow)*.
- **Open *index.html* with Firefox**. Make it fit the other half of your screen.

Getting started — part 3

- **Alter the text** in your code editor and save.
- **Navigate to your browser** and reload the page *(F5 key, or click the refesh icon)*.

Pro tip:

In the Atom menu, navigate to ***View*** and select ***Toggle Soft Wrap***

This helps us to see long sentences easily.

⚠ Workflow only! ⚠

Currently, the browser doesn't know how to read our content.

But soon, we will use **HTML** to ***apply meaning*** to our content.

Once we've got our HTML sorted, we will use **CSS** to ***describe the presentation*** of our content.

Our set up

Is not crucial, but the half & half view is a good way to get started.

Slides


HTML

HTML:
Hypertext Markup Language

The most basic building block of the web.
It defines the meaning and structure of web content.

filename.html

Hypertext

Links that connect web pages to one another

Within a single website, or between websites

Markup Language

We use **markup** to annotate text, images, and other content for display in a web browser.

This markup determines how the computer (and other users!) interpret your content.

Semantic: relating to **meaning** in language or logic.

Example:

Imagine you are a computer.

You are supposed to use the following sentence on a webpage:

```
This is a very dangerous liquid.
```

How does the computer know to give ‘very dangerous’ strong importance?

We have to tell it — mark it up!

```
This is a [start strong importance]very
dangerous[end here please] liquid.
```

This is where the language bit comes in:

```
This is a <strong>very
dangerous</strong> liquid.
```

gives us:

This is a **very dangerous** liquid.

Getting started, again!

```
<!DOCTYPE html>
<html lang="en">

  <head>
    <meta charset="utf-8">
    <title>Browser tab</title>
  </head>

  <body>
    <!-- Content start -->
    A web page by [your name]
    <!-- Content end -->
  </body>

</html>
```

Copy this code into your file.

What is happing here?

<!DOCTYPE html>

<html>…</html>

<head>…</head>

<body>…</body>

<!-- comment --> (HTML)

Indentation — reset <head> & <body>

We’re not online

Local files

Conventions, hints, tips, etc.

- **Lower case** — file names, markup
- **Indentation** — tabs, spaces
- **Tab complete** — yay!
- **The docs** — these are your friends

Any others?

Exercise:

Start building a web page!

Learn a bit, then build a bit.

Create an online recipe book

- Home page
- Link to a recipe page

HTML elements:

Head

Contains **machine-readable** information (metadata) about the document.

Not to be confused with <header> or <heading>.

Exercise: Head/title

1. Take a look your browser, and the text in the tab at the top.
2. In your code, within the <head> of your document, you'll see some tags like this: <title> </title>
3. Change the text between these tags. *(Suggestion: My online recipe book)*.
4. Look your browser tab again

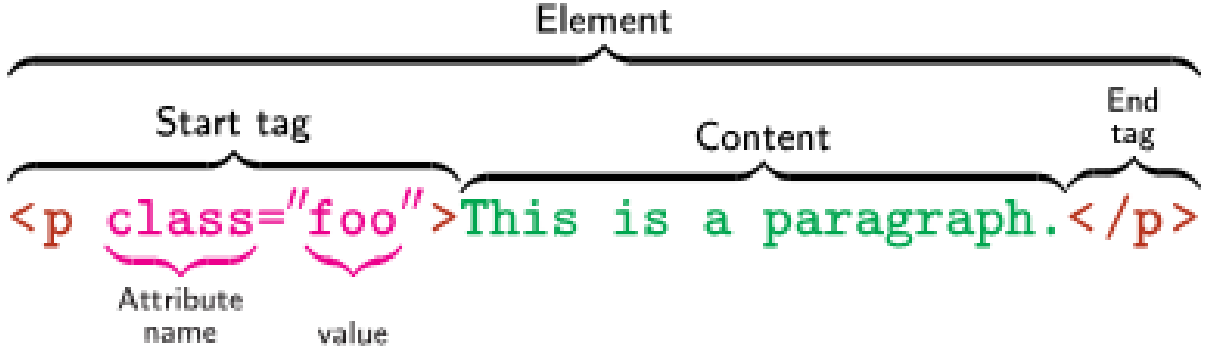
After this, we will mostly be working within the <body> tags.

HTML elements:

Text

- **Headings** — <h1>, <h2>, <h3>, <h4>, <h5>, <h6>
- **Paragraph** — <p>
- **Semantics** — , (different to <b>, <i>)
- **Line break** —
 (self-closing)
- **Span** — (non-semantic)

HTML:
The make up of an element



Note: self-closing tag. More to come on this.

Exercise: Text

```
My online recipe book
A collection of recipes I've collected over the years.
Recipes:
Guacamole recipe
A web page by [your name]
```

1. Copy the text above, paste it into the <body> of your project
2. Save your work, and take a look in your browser
3. Go back to your code, and mark up the text
   Hint: two headings, and three paragraphs
4. Look again!

By default, the browser gives us some sensibile styling

HTML elements:
Images

```
<img src="cute-cat.png" alt="cute cat plays in grass" />
```

Self-closing tag!

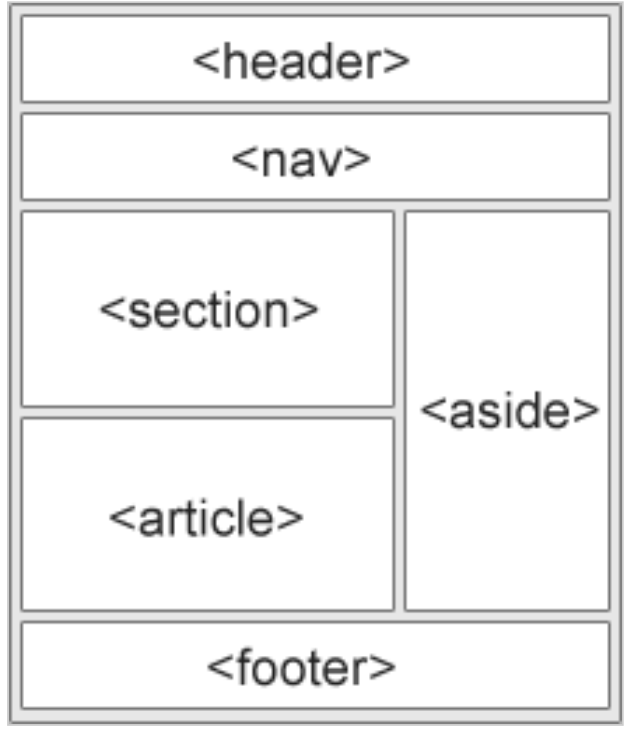
- Formats / .jpeg (.jpg) / .png / .gif / .svg
- Prepare image with design software
- Change size/presentation with CSS

Exercise: Images

1. Within your 'project' folder, create a folder called 'images'
2. Copy the image above, and save it into your images folder
3. Add the image to your code. Put it before the <h1>

HTML elements:
Parts of a web page

- <header>
- <nav>
- <main> (IE11+)
- <section>, <aside>
- <footer>
- (non-semantic)



Exercise: Parts of a web page

1. Add a <header> element — *tags around the logo*
2. Add a <footer> element — *tags around 'A web page by…'*
3. Add a <main> element — *tags around the rest of the content*

Note: these should be siblings. Think of them as blocks sitting next to each other.

```
<header>
  …
</header>
<main>
  …
</main>
<footer>
  …
</footer>
```

Debugging & inspecting

Modern browsers give us great tools for checking how our code is being interpreted.

Right click on any element, choose **'inspect element'** option, or press **F12** to bring up the developer tools.

Chrome, Firefox, IE (Edge)

HTML elements:
Links

```
<a href="[path-to-file]">Link text</a>
```

```
<a href="team.html">Our team</a>
```

Our team

What does href mean? It comes from Hyperlink REFerence

HTML elements:

Links

In a sentence:

```
<p>Learn more about <a href="team.html">our team</a></p>
```

Learn more about our team

Exercise: Links

Make the logo a link to the page we are on *(index.html)*

Try in your browser: hover over the image.
The cursor should change, and the href (url) shows at the bottom of your browser.

Make the text 'Guacamole recipe' a link to *guacamole.html*

Note: Keep saving your work, and reloading your browser.

Exercise: A new page!

1. Ensure your file *index.html* is saved
2. Go to *File > Save as*, and name your file *guacamole.html* (make sure it's at the same level as index.html in the folder structure — a sibling!)
3. Update the title (browser tab)
4. Update the <h1> to say *Guacamole*
5. Remove everything else inside the <main> tags
6. Have a click around!

HTML elements: Links continued

Email link

```
<a href="mailto:toni@catalyst.net.nz">email Toni</a>
```

External site

```
<a href="https://www.wikipedia.org">Wikipedia website</a>
```

```
<a href="https://www.wikipedia.org"
target="_blank" rel="noopener noreferrer">Wikipedia website</a>
```

Note: target="_blank" opens the link in a new tab.
Adding rel="noopener noreferrer" protects your users against having the site you've linked to potentially hijacking the browser (via rogue JavaScript).

HTML elements:

Ordered list

```
<ol>
  <li>First place</li>
  <li>Second place</li>
  <li>Third place</li>
</ol>
```

1. First place
2. Second place
3. Third place

HTML elements:
Unordered list

```
<ul>
  <li>Oranges</li>
  <li>Lemons</li>
  <li>Plums</li>
</ul>
```

- Oranges
- Lemons
- Plums

Exercise: Overview

Whiteboard wireframe

Exercise:
Lists, HTML overview

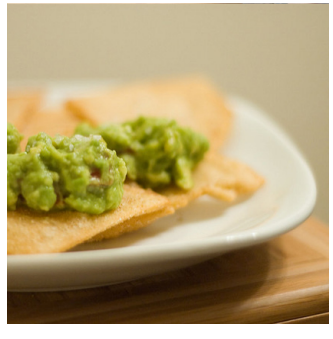
Copy the text below, and paste it under your *Guacamole* heading

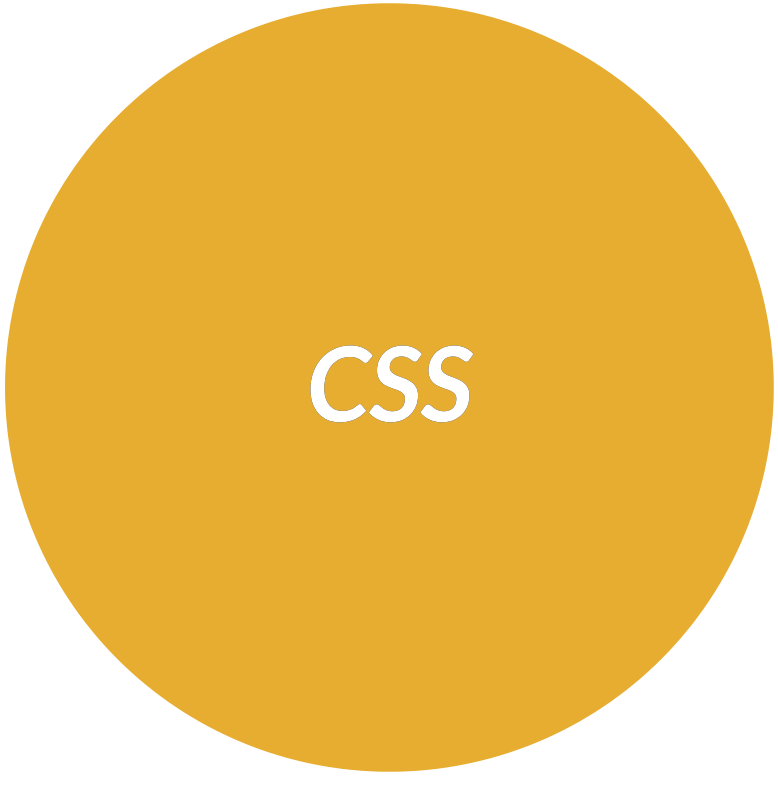
```
Guacamole is an avocado-based dip, spread, or salad first develo
Recipe
Quick and easy, this guacamole takes only 10 minutes to prepare.
Ingredients
2 cloves garlic, peeled
1 teaspoon kosher or sea salt
3 ripe avocados
Juice of 1 small lime
```

Use the mark up we've looked at today to assign **meaning** to our additional content.

Exercise: Checklist & extra

1. Add a guacamole image.
2. Is there anywhere you can add emphasis tags?
3. Add external links to wikipedia for *kosher salt* and *mortar and pestle*.
4. Have a browse at the Mozilla HTML element documentation




CSS

Cascading Style Sheets (CSS)

A language used for describing the presentation of a document written in a markup language.

filename.css

CSS

We're using it to **Style** the page

It's separate from the HTML (is its own **Sheet**)

It's **Cascading***

*We'll get to this part soon

HTML

Content

CSS

Presentation

Museum of New Zealand Te Papa Tongarewa

Open every day 10am—6pm
(except Christmas Day)

Free entry
Charges apply to some short-term exhibitions and activities

55 Cable Street, Wellington

- Visit Toro mai
  - Plan your visit Whakaritea tō toronga
  - Exhibitions Ngā whakaaturanga
  - Events Ngā kaupapa motuhake
  - Guided tours He haerenga ārahi
  - Book tickets Whakarite tiketi
  - Venues Wahi
- Discover the collections Tūhuratia ngā kohinga
  - Collections Online
  - Blog
  - Read, watch, play Kōrero, mātaki, purei
- Learn Ākona
  - For educators Mā te pouako
  - For museums and galleries Mō ngā muhiama me ngā whare toi
  - Research Rangahau
  - Guides to caring for objects Tiaki Kohinga, Tiaki Taonga
- About Mō Te Papa
  - Contact us Whakapā mai
  - News He pānui
  - What we do Ā mātou mahi
  - The collections Ngā kohinga taonga
  - Repatriation Karanga Aotearoa
  - Touring exhibitions Ngā whakaaturanga poi haere
  - Past exhibitions Ngā whakaaturanga o mua
  - Jobs Tūranga mahi
  - Te Papa Press
  - Press and media Papāho
  - Media sales and licensing Te hohoko papāho me te manatā
  - Our building Tō mātou whare
- Shop Wharehoko
- Support & join Tautokotia, kuhu mai
  - Our membership programme – Friends of Te Papa Te hōtaka mema – Ngā Hoa o Te Papa
  - Te Papa Foundation
  - Corporate partnerships Hononga kaipakihi
  - Support from trusts and foundations Ngā hoa whakawhirinaki ā-pūtea

Search Search

- Facebook
- Twitter
- Instagram
- YouTube

MUSEUM OF
NEW ZEALAND
TE PAPA
TONGAREWA

Open every day 10am—6pm
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Free entry
Charges apply to some short-term exhibitions and activities

55 Cable Street, Wellington

VISIT
Toro mai

DISCOVER THE COLLECTIONS
Tūhuratia ngā kohinga

LEARN
Ākona

ABOUT
Mō Te Papa

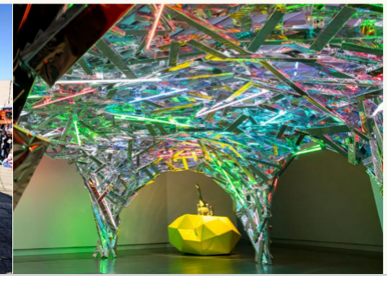
SHOP
Wharehoko

SUPPORT & JOIN
Tautokotia, kuhu mai

Search

Terracotta Warriors: Guardians of Immortality – Tickets now on sale

Get up-close to some of China's ancient imperial icons this summer. Opening Sat 15 Dec.



Working with HTML

HTML

```
<p>Text</p>
```

```
<footer>
  <p>Text</p>
</footer>
```

CSS

```
p { ... }
```

```
footer { ... }
```

A simple CSS rule

```
p {
  color: green;
  font-weight: bold;
}
```

A simple CSS rule

```
p {                          /* selector */
  color: green;              /* rule */
  font-weight: bold;         /* rule */
}
```

Exercise: Create style sheet

1. Within your 'project' folder, create a new folder called 'css'
2. In Atom, create a new file and name it *styles.css*
3. Save it inside the *css* folder.
4. Add a CSS rule:

```
body {
  background-color: yellow;
}
```

It’s not working!

Exercise: Connect a style sheet

In the <head> (metadata) section of your HTML document:

```
<link href="[filename]" rel="stylesheet">
```

Note: not in the <header>!

Make sure to add it to both of your html files

What can we do with CSS?

All sorts! Here are a few things we can adjust:

- Borders
- Padding
- Margins
- Widths

- Rounded corners
- Opacity
- Font size, weight, color*
- Background color*

*color!

Exercise: Have a play

Colours: Hex, name, or rgba(0, 0 ,0, 1)

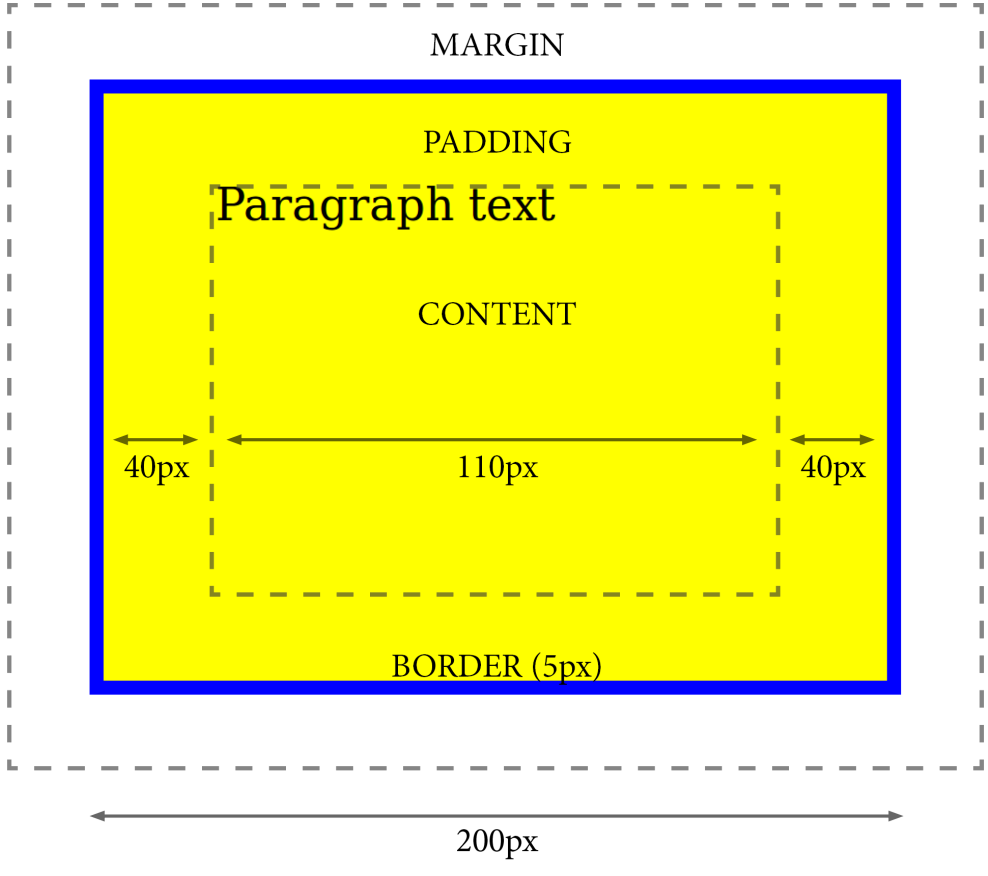
Colour tools:

- Google 'colour picker' for values
- Colour contrast checker tool: https://webaim.org/resources/contrastchecker/

Exercise: Base styles

- **body:** remove margin, change font-family, change line-height. Remove background color
- **<a>:** Change color. Change the colour when hovered over.
- **<header>**: Set light background colour and give some padding
- **<main>**: Set left and right margins
- **<footer>**: Set dark background colour, apply padding, make sure you can read the text

Box model


MARGIN
PADDING
Paragraph text
CONTENT
40px
110px
40px
BORDER (5px)
200px

Exercise: Box model

- In *index.html*, give the h2 a class of *exercise*
- Type the following into your *stylesheet*:

```
.exercise {
  background-color: yellow;
  padding: 30px 40px;
  width: 200px;
  height: 150px;
  border: 5px solid blue;
  margin: 30px;
  box-sizing: border-box; /* see note* */
}
```

* Tells browser to account for any border and padding in the values you specify for an element's width and height. This typically makes it much easier to size elements.

Shorthand options

When declaring sizes, we can:

```
margin-top: 10px;
margin-right: 20px;
margin-bottom: 10px;
margin-left: 20px;

margin: 10px 20px 5px 15px; /* [top] [right] [bottom] [left] */
margin: 10px 20px 5px;      /* [top] [right + left] [bottom] */
margin: 10px 20px;          /* [top + bottom] [right + left] */
margin: 20px;               /* [all values are the same] */
```

Inline, block and inline-block

Note: examples use the same HTML

Display: inline

```
<p>Text with <a href="#">link</a> <a href="#">link</a> inside</p>
<p>Text without</p>
```

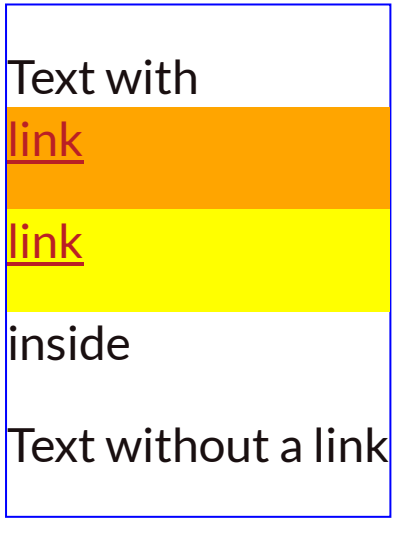
```
a {
  display: inline; /* note: default */
  padding-bottom: 20px;
}
```

Text with link link inside

Text without a link

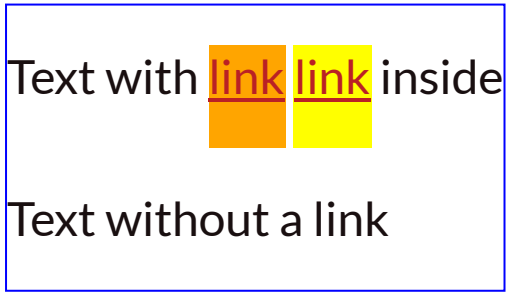
Display: block

```
a {
  display: block; /* change */
  padding-bottom: 20px;
}
```



Display: inline-block

```
a {
  display: inline-block; /* change */
  padding-bottom: 20px;
}
```



Exercise: Display

- In *index.html*, give the link a class of *exercise*
- Add a *display* property to make the link accept the vertical values

More CSS: Floats

We want to 'float' this image so the text reflows around it. We can float things either to the left or the right. We need to be careful though, floated elements don't sit in the page properly any more. Read about 'clearfix' to learn about this.

```
img { float: left; margin: 0 20px 10px 0; }
```

More CSS: Pseudo selectors

```
a:hover          /* link is interacted with, but not clicked */
a:active         /* link is being activated */
a:visited        /* link has been visited */

p:first-child    /* select the first paragraph (child) */
p:last-child     /* select the last paragraph (child) */
```

More CSS: Positioning

```
static  /* default */

relative

absolute

fixed
```

Let's get more specific

There are different ways of referring to a specific element or elements on the page.

In the HTML, we give elements either a **class** or an **ID** (or both!).

```
<p>Paragraph which needs different styling</p>
<p>Paragraph which is standard</p>
```

```
<p class="intro">Paragraph which needs different styling</p>
<p>Paragraph which is standard</p>
```

Now we can refer to the class name in the CSS

For a class, we use a period:

```
.intro {
  font-size: 20px; /* note: default is 16px */
}
```

A class can be used more than once

Using a class

```
<p class="intro">Paragraph which needs different styling</p>
```

To refer to a class, we use a period:

```
.intro {
  font-size: 20px;
}
```

A class can be used more than once

Using an ID

```
<p id="elephant-info">Elephants are big</p>
```

To refer to an ID, we use a hash:

```
#elephant-info {
  color: green;
}
```

An ID is unique — it can only be used once.

HTML

```
<p>Text</p>
```

```
<input id="vote">
```

```
<p class="time">Text</p>
```

```
<p class="time new">Text</p>
```

CSS

```
p { ... }
```

```
#vote { ... } /* unique */
```

```
.time { ... } /* resuable */
```

```
.time.new { ... }
```

Inheritance and specificity

The great thing about CSS is that we can stack the selectors.

Let's say we have this HTML:

```
<p>Blah blah <a href="#">first link</a> blah</p>

<p class="fact">Blah <a href="#">second link</a> blah</p>
```

And we want to make only the second link green

Let’s make a rule for that...

```
.fact a { color: green; }
```

This will only affect 'a' tags that are contained within elements that have the 'fact' class.

What happens if we also have a rule to make all the links blue?

```
a { color: blue; }
```

Most specific wins

The most specific rule will always be applied where possible

But the ordering of CSS rules **is** important

If two (or more) rules are equally specific, the lowest (bottommost) rule wins

Note:

- **Class selectors**
  are more specific than element selectors

- **ID selectors**
  are more specific than class selectors

Exercise



- Remove *'exercise'* class from your HTML
- Add guacamole image above the guacamole link
- Add add two more items: sourdough and pie (image and link)

  Note: the new links won't go anywhere, but you can add these in later

& stacking CSS selectors

Guacamole recipe

Sourdough recipe

Pie recipe

- Add a around each item set
- Give the div a class of *'recipe'*, and use CSS to style it (as above)
- Add styles the content of the *.recipe* divs

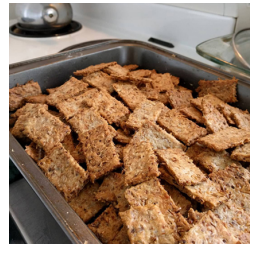
The docs

developer.mozilla.org — CSS syntax/properties/selectors

Extra

- Add additional html pages and links
- Add a description list to a recipe page (Serves, Cook time, etc.)
- Try CSS float, position, and pseudo selectors
- Have a play on CSS Diner





Going forward

- Practise
- Content comes first
- Use docs
- Use browser developer tools (F12)

Resources

- **HTML elements**
  https://developer.mozilla.org/en-US/docs/Web/HTML/Element
- **CSS syntax/properties/selectors**
  https://developer.mozilla.org/en-US/docs/web/CSS/Reference
- **Browser support**
  http://caniuse.com/
- **Colour contrast checker**
  https://webaim.org/resources/contrastchecker/

freedom to innovate