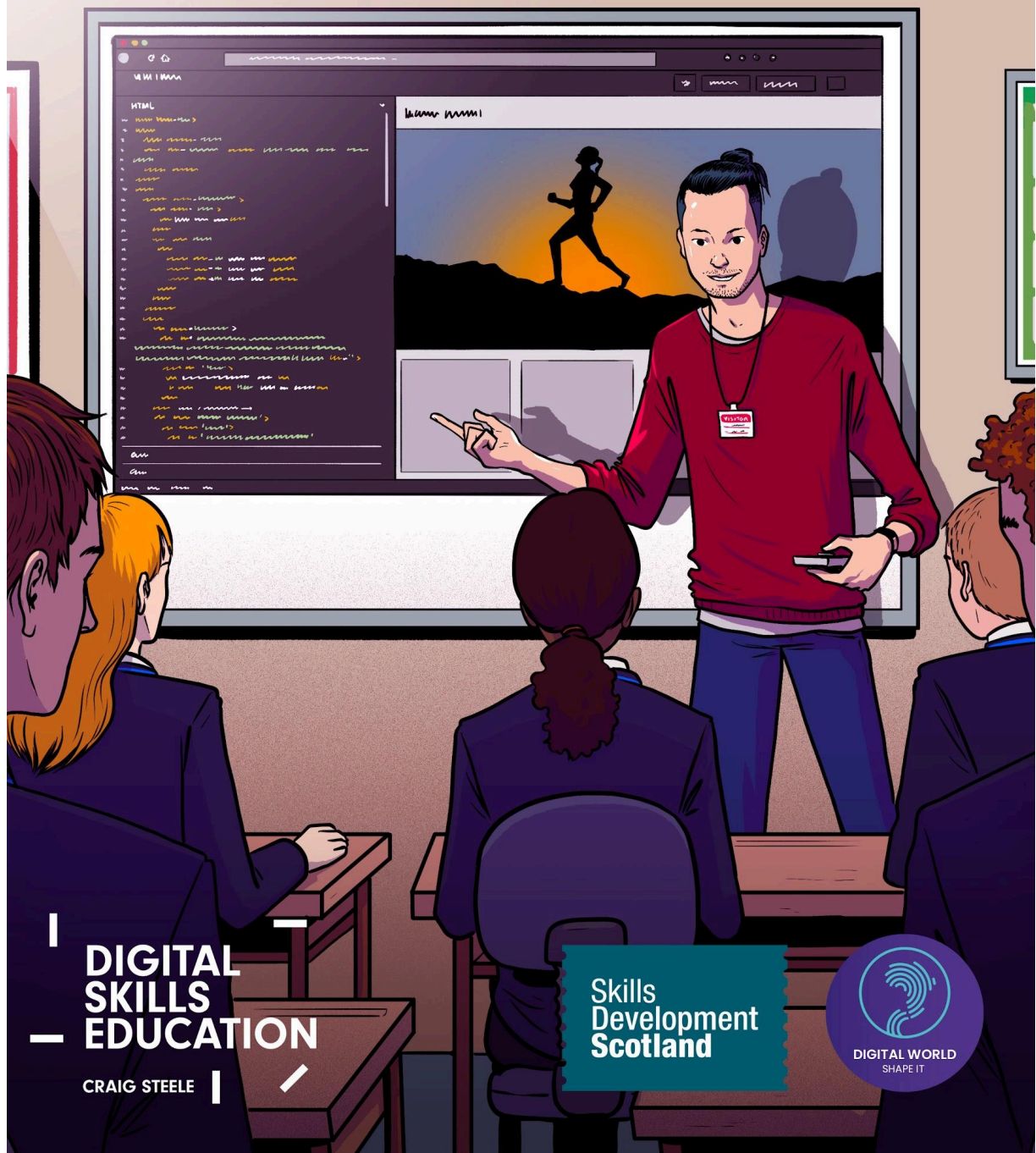# WEB DEVELOPMENT
INDUSTRY IN THE CLASSROOM

DIGITAL
SKILLS
EDUCATION

CRAIG STEELE

Skills
Development
Scotland

DIGITAL WORLD
SHAPE IT

Web development – Industry in the Classroom Lesson Plans

This document explains the structure of the lessons, as well as hints and tips for delivering the activities.

Overview

Suggested delivery order:

Lesson 1: (90 mins)
Introduction and setting the scene
Activity 1: Analyse the brief and identify requirements
Activity 2: Mock up the design of the website

Lesson 2: (90 mins)
Activity 3: Build the website using modern web technologies
Activity 4: Test the website and see if meets the client's needs

The lessons can be delivered as two double-periods, or alternatively split one activity per period.

Important – websites to unblock

To complete these activities, learners will need access to the following websites:

- Figma.com
- Codepen.com
- Digitalskillseducation.com

Learners should be using the most recent version of Chrome for the best experience.

Lesson 1 (approx 90 mins)

Introduction and setting the scene (10 mins)

The teacher should welcome the industry volunteer to the class.
This is the time for the industry volunteer to introduce themselves and their job. A few sentences are enough at this point - throughout the activities they'll be naturally occurring moments to talk more about the skills and experience of working in the web development industry.

Explain that learners will team up to learn web design and development skills. Through a series of practical activities, learners will understand what it's like to work in the web development industry and use industry tools to complete practical tasks.

The teacher and volunteer will take on the role of the client - Yaldi Athletic.

Activity 1: Define the scope (35 mins)

The teacher and industry partner will play the part of the client, and will come to the agency (the class) with a problem they need solved - they want to increase the sales in their athletic clothing company.

Learners will be playing the part of the design agency, and will work with the client to figure out a technical solution to this real-life problem.

In groups of three or four, learners will name their own web design agency and work together to write a specification of the work which will be done.

This is a good opportunity for the industry volunteer to share their own experience working with clients. This helps learners understand the importance of a clear specification to the success of a project. You could give an example of a time when you helped a client express what they wanted.

Running the activity:

The class should work in small teams of no more than four. The teacher and the industry partner should introduce the client brief and talk through what the client is looking for.

Give each learner a copy of the **Activity 1 - Email from the client/design brief** and the **Activity 1 - Project Specification Worksheet** document.

Ask the learners to read the email and brief and fill out the project specification worksheet using the information from the email and the brief.

Remind them to ask questions if they are not sure how to fill out the document, as some terms may be new to them. Just like in real life, some details may be unclear or omitted from the client brief. As the representative of the client, you can tell them what Yaldi Athletic wants if it's unclear.

The key considerations are:
- Yaldi Athletic is a sportswear company targeting a young audience
- The key outcomes are
  - To raise brand awareness of Yaldi Athletic (let people know they exist)
  - To show off some of Yaldi Athletic's products to customers in an attractive way
  - To help customers get in touch and order products by email
- Restrictions are
  - A simple, one page website is sufficient as the client doesn't have much money
  - No e-commerce (online shop) functionality is required

It is important that learners understand that the client-agency relationship goes both ways, the developer is not simply expected to do as they are told, they should challenge the client and make the project better.

The teacher and volunteer should walk around the classroom, helping learners as they plan their brief and challenging their design decisions. The key here is to help learners understand why they are choosing a certain solution, and whether it is appropriate for the brief.

Tips:

- Let learners have fun creating a name for their web development company - but encourage them not to take too long or they won't finish in time. For those struggling they could shorten their first names and add "Design" at the end e.g. CraigDanielDavid Design

- Help learners to start thinking like designers, looking for new solutions rather than just blindly implementing client instructions

- If there is time, learners can research online to find websites by similar brands - what design decisions do they make, and how do they solve these same problems?

- Help learners understand that design is not just about aesthetics, but about helping people achieve specific goals

After all teams have finished completing the Project Specification document, go around the class and discuss their answers. It may be helpful to give hints about appropriate solutions to the client's end-user requirements.

Some examples of possible solutions:

End user requirement	Example functional requirement
Learn about the Yaldi brand	- Include client's logo and name - Include text/copywriting to introduce client and their company
Learn about products available and their prices	- Include photo gallery of products - Feature photos/videos of products - Include descriptions of products - Show prices of products
Get in touch with Yaldi	- Include contact form - Display contact details (email, phone, address) posted on site - Feature social media links

Finish the activity by signing the contracts of each group on behalf of the client and thus agreeing to carry out the work..

Talking points:
- It's common for businesses to use templates for agreements. You could give examples of times you've helped to put together a contract, and why these are important.
- Give an example of a project you worked on that had a confusing or non-existent specification - how did it go?
- There are many different possible solutions to the problems the client is facing. For instance, the issue of 'I want customers to get in touch' could be solved by setting up a contact form, or just by using an email address. Why might one solution be preferred?

Activity 2: Produce a mockup (35 mins)

In their groups, learners will put together a mockup based on the client brief.

Using an industry-standard design tool (Figma), they will design mockups of the website for Yaldi Athletic.

The industry volunteer can share some of their experiences working with design, perhaps sharing some candid details of how the design process actually works in practice, with examples from their career. For example, they might talk about a recent design they worked on that they're proud of.

Running the activity:

Tell the class they are going to create a design based on a wireframe. Give each learner a copy of **Activity 2 - Yaldi wireframe.**

A wireframe is a type of low-fidelity design which shows the visual layout of a web page, but doesn't include high-fidelity details like images, colours, shadows or font choices. Working with the wireframe as a guide, the learners will put together a visual design in Figma by dragging in pre-made design elements.

Give each learner a copy of **Activity 2 - Design Guide (for learners)**, this will show them how to use Figma to create their high-fidelity design.

Give each learner a copy of **Activity 2 - Yaldi.fig** mockup. They will need to upload this file from their computer to edit the design in Figma.

The class should work individually or in their teams from Activity 1. On the computer, they should log on to the Figma website (https://figma.com) and log in to the editor.

Give each learner a copy of the **Images folder** which contains a bundle of images they can choose from to use in their design.

Tips:

- For more information about working with the Figma design tool, see Figma's help page here: **https://tinyurl.com/figmahelp**
- As the client, the teacher and volunteer can give feedback and support to participants as they work with Figma and learn how to work with its interface. Different designers working on the same project will often turn out totally different results, so there is no definitive 'correct' way to perform this design task
- If there is time, encourage learners to explore beyond the images and colours and fonts included on the design document
- With design, less is often more. Encourage learners to use few colours, images and fonts to make their designs focused and comprehensible
- For design inspiration, learners may find it useful to explore some of the designs published on these sites:
    - https://www.siteinspire.com/
    - https://dribbble.com
    - https://www.awwwards.com/websites/
- In the next activity (Activity 3) learners will build their designs as full webpages using existing code samples. Remind students to keep their design close to the wireframe.

Talking points:

- Talk about what tools you use to make mockups and what it's like to work with design as a part of your job
- If you can, show the learners an example of a mockup you've used on a real-life project
- Using mockups and wireframes save time during the implementation phase. Producing wireframes is quicker and cheaper than mockups, and mockups are quicker and cheaper than implementation with HTML and CSS. Wireframes are a useful way to explore ideas quickly without spending too much time on the details

Figma accounts:

For your convenience we have set up some accounts for Figma. Students should not change the passwords for these logins. It might be better for you to login on their behalf, thus keeping the passwords a secret.

- Email: sdswebdev1@gmail.com
  Password: webdev2020
- Email: sdswebdev1+b@gmail.com
  Password: webdev2020
- Email: sdswebdev1+c@gmail.com
  Password: webdev2020
- Email: sdswebdev1+d@gmail.com
- Password: webdev2020

Figma alternative - Adobe XD

If you don't have access to Figma, we have also produced an Adobe XD version of the design which is available in your design folder.

You can install Adobe XD for free by visiting the Adobe website:
https://www.adobe.com/products/xd.html

XD should feel familiar if you've worked with a graphics program before, but to familiarise yourself with Adobe XD and how it works, you may find it useful to explore the 'Getting started' tutorials on the XD website, which will guide you through all the concepts needed for this activity:
https://helpx.adobe.com/xd/tutorials.html

Lesson 2 (approx 90 mins)

Activity 3: Build the website (35 mins)

In their groups, learners will work together to build their completed designs as working webpages.

Learners won't need to work from scratch - they will adapt existing example code to match their design, adding the correct colours, images, fonts and other details they included on their mockups during Activity 2.

The teacher and industry volunteer can share their knowledge about HTML and CSS and help learners to solve problems they encounter during development.

Running the activity:

Tell the class they are going to develop the design they produced in the last activity. The task is to take the picture they drew (the mockup) and turn it into a working webpage that can be viewed in a browser.

Learners don't need to be experts with HTML and CSS, as most of the activity will involve changing colours, fonts and images to match their design.

The class should work in their teams from Activity 2. Ask the learners to open the Codepen example and click the 'Fork' button at the bottom of the screen to copy the example into their own Codepen account.

https://tinyurl.com/sdswebdev
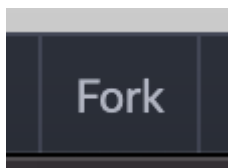
Learners should try to make their webpages look as close as possible to the mockups they produced in Activity 2. This could involve:

- Replacing existing images with the images used on the design
- Using CSS to change the colours, fonts to match the mockup

- Updating text to something suitable (Add real product names instead of 'product name', name their web design company in the footer etc)

The **Activity 3 – CSS and HTML Cheat Sheet** includes code examples for common changes learners might make. It's useful to consult this if they are stuck on making a particular change.

The class teacher and industry volunteer should walk around the class helping learners make their webpages match their mockups. They may need assistance working with CSS and HTML if they are unfamiliar with how to change colours, fonts, padding etc.

Once learners have finished building their web pages, then can save their work locally by clicking the 'Export .zip' button at the bottom right of the screen.
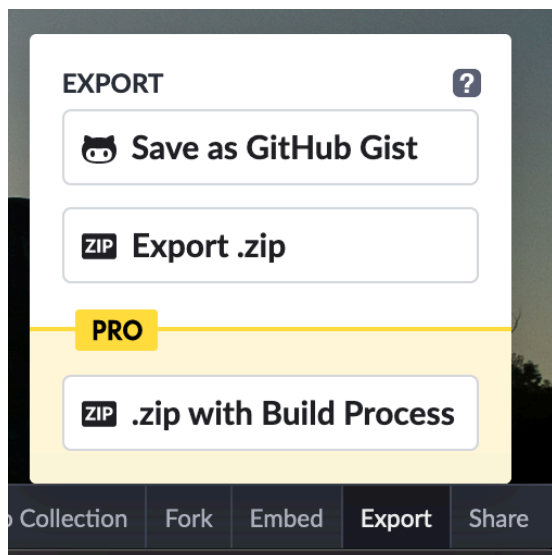
Codepen accounts:

For your convenience we have set up some accounts for Figma. Students should not change the passwords for these logins. It might be better for you to login on their behalf, thus keeping the passwords a secret.

- Email: sdswebdev1@gmail.com
  Password: webdev2020
- Email: sdswebdev1+b@gmail.com
  Password: webdev2020
- Email: sdswebdev1+c@gmail.com
  Password: webdev2020
- Email: sdswebdev1+d@gmail.com
  Password: webdev2020

Tips:
- Remind the learners to read the comments in the code, as these will give valuable hints on how to make the changes
- Are there any common issues which multiple learners are stuck on? Perhaps share a solution on the classroom projector for the whole class to benefit from. Many issues will be caused by learners typing HTML or CSS incorrectly, so it is helpful to check their syntax and spot mistakes
- We have used CSS's flexbox feature in the Codepen example instead of floats or tables. You can learn about Flexbox here: https://css-tricks.com/snippets/css/a-guide-to-flexbox/

Talking points:
- The industry volunteer can share some of their experience working with designs and implementing them in real life situations - is it challenging to interpret a design? What changes happen between the design and development phase?
- Talk about the tools that you use to write code and build websites. Resist the temptation to criticise the limitations of tools available in schools as this is alienating
- What web browsers are learners used to using online? Mobiles, tablets, laptops etc. Modern web development means catering for all kinds of devices (responsive design)
- Why might it be useful to separate design and development into two separate phases? Is it faster or slower to make big visual changes during design vs development? What might happen if you spent all the budget on design and left no money for development costs?

Activity 4: Test the website and see if it meets the client's needs (35 mins)

It's finally time to present the website to the client! In their groups, learners will present their work to the client and the rest of the class (using the classroom projector) and explain how they came to make their design and development decisions. What challenges did they face? Does their final product meet the client's needs?

The teacher and industry volunteer, acting as the client, can ask questions to understand the learners' ideas and see if their design and developed version meets the needs of the client as stated in the brief.

The industry volunteer can share some of their experiences making websites and apps, and give encouragement and feedback to the learners.

Running the activity:

First, hand out a copy of **Activity 4 – Worksheet** and instruct learners to answer the questions about how their web design project went.

Once they have finished filling out their evaluation worksheets, Invite each group of learners to present their work to the class. Ask them to introduce themselves with their web design company name ('We are Foxtrot Web Design Ltd') and to explain their work.

Ask them these questions:
- What did you aim to do with the design?
- Tell us how your webpage meets the client's brief.
- How do you feel about the final webpage? What might you have done differently?

As a reminder, here are the client requirements for the webpage:

The key considerations are:
- Yaldi Athletic is a sportswear company targeting a young audience
- The key outcomes are
  - To raise brand awareness of Yaldi Athletic (let people know they exist)

- - - To show off some of Yaldi Athletic's products to customers in an attractive way
    - To help customers get in touch and order products by email
  - Restrictions are
    - A simple, one page website is sufficient as the client doesn't have much money
    - No e-commerce (online shop) functionality is required, the client will consider this at a later date

Encourage the class to ask questions and give each group a round of applause after sharing their work.

After the group presentations, the industry volunteer will individually present each learner with their signed Certificate of Achievement to recognise their learning.

Finally, round off the lesson with an informal chat with the industry volunteer and the class to answer any questions or give them an insight into what it's like working in this area.

Talking points:
- What routes are there (formal and informal) into a career in the web development industry? The industry volunteer can share how they got into the industry. How does their company hire new people?
- There are many different kinds of careers available in the tech sector - it's not just a career for techies, there are all kinds of roles. Mention other jobs at your work, such as project management, design, sales and marketing, client support etc. See digitalworld.net for more information.

Tips:
- The industry volunteer can share their own experience of sharing final products with clients - demos can often be unpredictable!
- Encourage learners to share what they made and make sure you give them compliments on their efforts

Next steps:

- Visit Digitalworld.net to learn about the many career opportunities available for learners in the technology industry - even if you're not particularly 'techy' or good at maths.
- Try playing with WordPress, a free content management system that makes it easy to build customisable websites. You can install easily using Local: https://localwp.com/