Y8 - Developing for the web

Unit introduction

In this unit, learners will explore the technologies that make up the internet and World Wide Web. Starting with an exploration of the building blocks of the World Wide Web, HTML, and CSS, learners will investigate how websites are catalogued and organised for effective retrieval using search engines. By the end of the unit, learners will have a functioning website.

Overview of lessons

Lesson	Brief overview	Learning objectives
1 Website building blocks	We use web pages every day without questioning how they work. This lesson looks behind the curtain to help learners start to understand how web pages are constructed using HTML tags, and how they can be modified to start to resemble the websites they are accustomed to. Learners will begin by considering the power of automation for repetitive tasks, before delving into some practical web page formatting activities using HTML tags. Firstly, they will practise formatting sections of text to improve readability. Learners will then modify tags to change their appearance in a document, to make them different from the defaults provided.	• Describe what HTML is • Use HTML to structure static web pages • Modify HTML tags using inline styling to improve the appearance of web pages

2 Words are not enough	It is said that a picture paints a thousand words. Web pages that only use text are not going to be read for long on a screen. The use of images on web pages is important as it can bring them to life and help improve the reader's experience. Learners will begin by recapping the important fundamentals of web page design, specifically the use of tags and their modification. They will explore the structure and operation of the img tag and understand how they can be used to 'add' images to web pages. To consolidate the learning of the first two lessons, they will also try to replicate a given web page design to see if they can use what they have learnt in the most effective way.	• Display images within a web page • Apply HTML tags to construct a web page structure from a provided design
3 Taking shortcuts	Computer scientists shouldn't work too hard! The benefit of using a computer is that it is a device that allows the easy editing of content. It is not like writing an essay on a sheet of A4 where any small mistake or change requires the work to be reproduced again. Computer scientists like to find efficient ways to automate what they do and in this lesson learners will see that CSS is a more efficient way of styling HTML documents. Learners will begin by recapping how formatting is controlled using inline HTML formatting. They will appreciate that this approach is time consuming and allows inconsistencies in design to manifest. Learners will start to experiment with using CSS to format tags in a HTML document. They will then progress on to applying their own formatting schemes to work they have already created. As they become more experienced in the structure of CSS learners should look to extend their knowledge by researching the numerous attributes that can be controlled by CSS.	• Describe what CSS is • Use CSS to style static web pages • Assess the benefits of using CSS to style pages instead of in-line formatting

4 Searching the web	Like artists, web developers create works of art that they want people to see. There is so much content on the World Wide Web, that making sure your web page stands out can be difficult. Consider how people get to web pages. The start of the journey is usually a search engine, which people use to search for a few keywords and pick something from the list. The problem is, that list usually contains millions of different pages. In this lesson, learners will consider how web pages are found and catalogued, ready for people to search for them. By considering how search engines find and rank web pages, they will learn how they can make their designs appear towards the top of search engine lists, so that more people will view what they have created.	• Describe what a search engine is • Explain how search engines 'crawl' through the World Wide Web and how they select and rank results • Analyse how search engines select and rank results when searches are made
5 Tightening the web	Search engines index a huge number of web pages against an equally large number of possible search terms. Finding useful information therefore is quite tricky. If we understand how to control what we search for more carefully, we have a higher chance of finding what we want and what may be more useful than the other millions of web pages we could look at. In this lesson learners will investigate advanced search techniques. They will understand how search operators can be used to combine or exclude search terms to either expand or narrow search results. They will practice using these terms for specific purposes and then build on the work from the last lesson to create a new page that can be used to summarise their learning from this lesson. They will also learn how to hyperlink web pages into a complete website allowing navigation between the pages that they create.	• Use search technologies effectively • Discuss the impact of search technologies and the issues that arise by the way they function and the way they are used • Create hyperlinks to allow users to navigate between multiple web pages

6 Navigating the web	In this lesson learners will begin by creating a web page to summarise their learning over the entire unit by creating an additional 'How to' web page, they will follow this up by adding navigation to all pages of the website. By reviewing what they have created they will also be refreshing their memories for a summative assessment of their learning at the end of the lesson.	• Implement navigation to complete a functioning website • Complete summative assessment

Curriculum links

National curriculum links

- Create, reuse, revise, and repurpose digital artefacts for a given audience, with attention to trustworthiness, design, and usability.