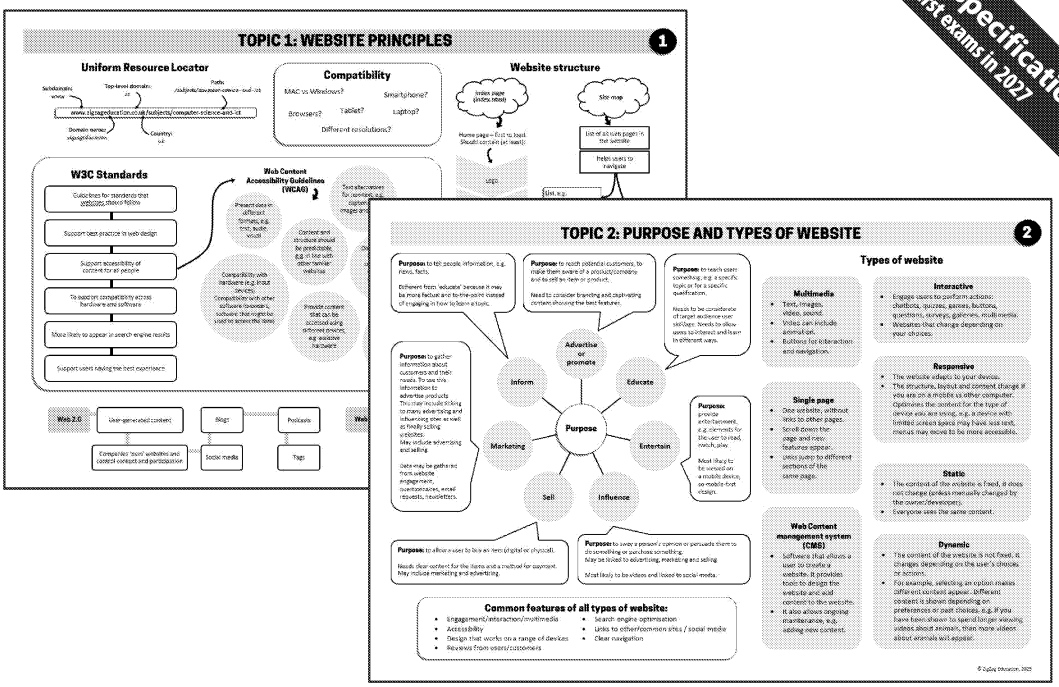
Zig Zag Education

Computing: Application Development Level 3 AAQ | OCR | H129

2025 specification first exams in 2027



Topic on a Page

for Unit F164: Web Development

Cambridge Advanced National (Extended Certificate)

zigzageducation.co.uk POD 12850

Contents

All posters are provided in both A3 and A4 formats

Teacher's Introduction

This resource is intended for use by students studying the **OCR Level 3 Alternative Academic Qualification: Cambridge Advanced National in Computing: Application Development, Unit F164 Website Development**, first teaching 2025. This is an optional external unit for this qualification and is assessed by an assignment.

It is important to always check the exam board website for any new information, including changes to the specification and sample assessment material.

The intention of this resource is to provide a condensed 'Topic on a Page' which provides an overview of the content of each topic area, which will enable students to review their learning and apply to the supplied activity sheets.

How to use this resource

The resource consists of:

- 7 A3 posters covering the topics as listed below, labelled: 1 — 7
- 7 A3 activity posters which are partially completed and provide opportunities for students to fill in gaps to show their understanding of the topics and key terms, or as a planning tool to make notes for what they will do in their assessment task. These are labelled: 1 — 7

Opportunities for use:

- Printed out and displayed on classroom walls
- Individual copies to be given to students as the topic area is delivered
- Activity sheets can be given out at the end of topic delivery to check understanding
- Used as a planning or note-making tool for the assessment task

Topic Area 1: Fundamentals of website development

1
1.1 Website principles

2
1.2 Purpose of websites
1.3 Website types

3
1.4 Web page components and structure
1.5 Search engine optimisation (SEO) techniques

Topic Area 2: Plan and design high-fidelity website prototypes

4
2.1 Planning and design considerations
2.2 Tools to plan and design website prototypes

Topic Area 3: Create high-fidelity website prototypes

5
3.1 Tools and techniques to create website structures
3.2 Techniques to source and prepare assets

Topic Area 4: Test high-fidelity website prototypes

6
4.1 Website prototype testing

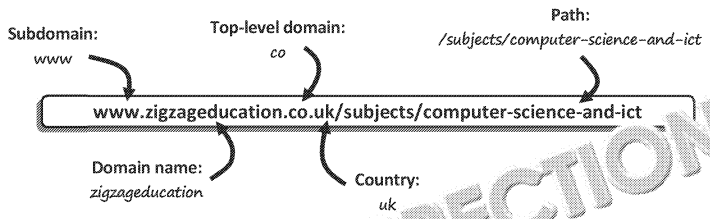
Topic Area 5: Review and improve the effectiveness of high-fidelity website prototypes

7
5.1 Techniques to review the effectiveness of website prototypes
5.2 Improvements to, and further developments for, website prototypes
- 5.2.1 Constraints and improvements
- 5.2.2 Further development opportunities

July 2025

WEBSITE PRINCIPLE

Uniform Resource Locator



Compatibility

MAC vs [illegible]s?

Smartph[illegible]

[illegible]rowsers?

Tablet?

Lapto[illegible]

Different resolutions?

W3[illegible]dards

- Guidelines for standards that websites should follow
- Support best practice in web design
- Support accessibility of content for all people
- To support compatibility across hardware and software
- More likely to appear in search engine results
- Support users having the best experience

Web Content Accessibility Guidelines (WCAG)

- Present data in different formats, e.g. text, audio, visual
- Text alternatives for non-text, e.g. captions on images and videos
- Content and structure should be predictable, e.g. in line with other familiar websites
- Do not use flashing lights or other content that can cause physical reactions, e.g. seizures
- Compatibility with hardware (e.g. input devices)
  Compatibility with other software (browsers, software that might be used to access the data)
- Provide cont[illegible]
  [illegible]d u[illegible]ng
  di[illegible]t devices, e.g. assistive hardware
- Allow users t[illegible]
  change setting[illegible]
  how they view
  content (e.g. f[illegible]
  size/style)

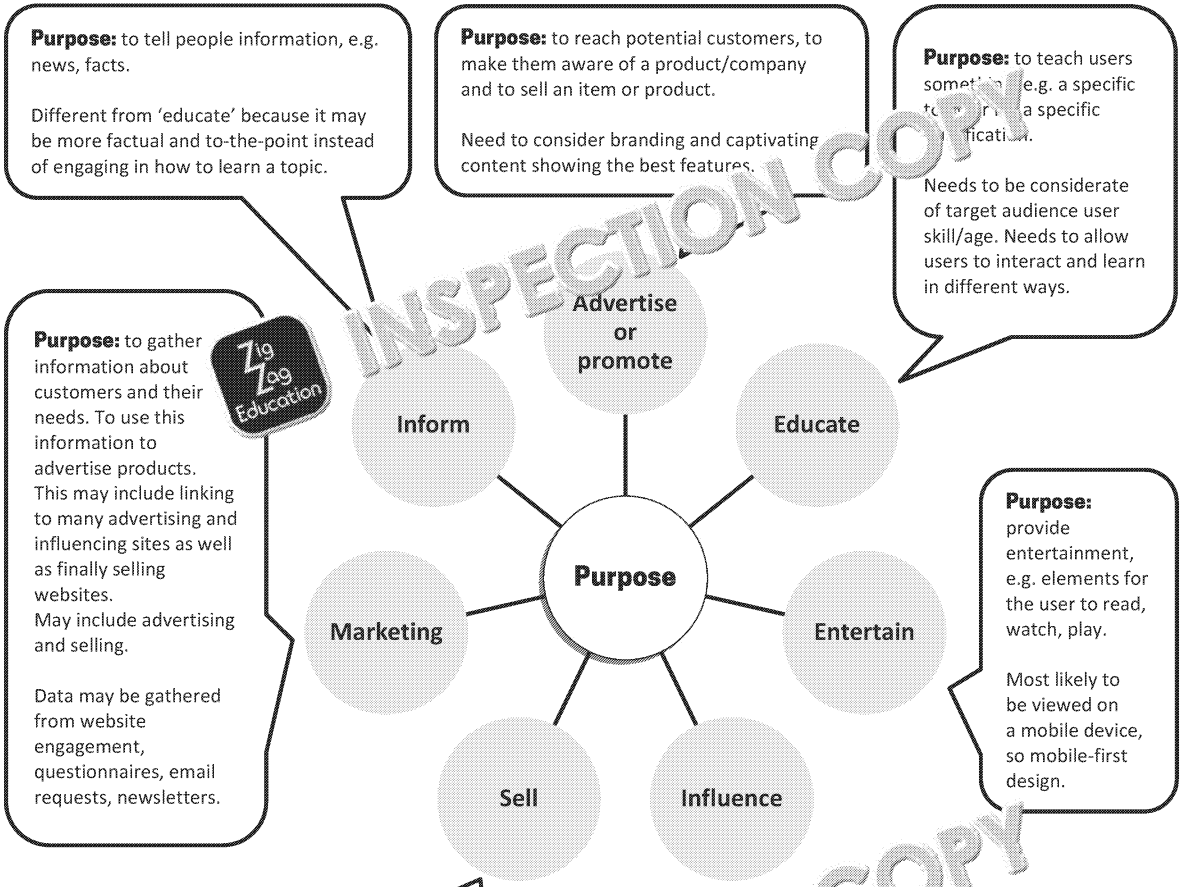
Web 2.0

- User-generated content
- Blogs
- Podcasts
- Companies 'own' websites and control content and participation
- Social media
- Tags

Web 3.0

- Dec[illegible]
  to a
- E[illegible]
  co

PURPOSE AND TYPES OF W



Purpose: to tell people information, e.g. news, facts.

Different from 'educate' because it may be more factual and to-the-point instead of engaging in how to learn a topic.

Purpose: to reach potential customers, to make them aware of a product/company and to sell an item or product.

Need to consider branding and captivating content showing the best features.

Purpose: to teach users some[illegible] e.g. a specific to[illegible] a specific [illegible]fication.

Needs to be considerate of target audience user skill/age. Needs to allow users to interact and learn in different ways.

Purpose: to gather information about customers and their needs. To use this information to advertise products.
This may include linking to many advertising and influencing sites as well as finally selling websites.
May include advertising and selling.

Data may be gathered from website engagement, questionnaires, email requests, newsletters.

Purpose: provide entertainment, e.g. elements for the user to read, watch, play.

Most likely to be viewed on a mobile device, so mobile-first design.

Purpose: to allow a user to buy an item (digital or physical)

Needs clear content for the items and a meth[illegible]
May include marketing and a[illegible]rtisi[illegible]

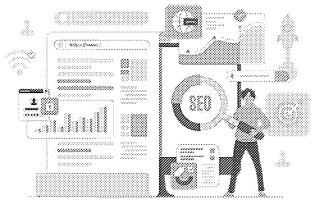
Purpose [illegible] a person's opinion or persuade them to d[illegible]ing or purchase something.
[illegible]ay be linked to advertising, marketing and selling.

Most likely to be videos and linked to social media.

Common features of all types of website:

- Engagement/interaction/multimedia
- Accessibility
- Design that works on a range of devices
- Reviews from users/customers
- Search engine optimisation
- Links to other/common sites / social media
- Clear navigation

WEBSITE COMPONENTS A



Web page structure

HTML5 (hypertext markup language 5)
- The markup language to structure web pages.
- Uses tags to structure web pages, e.g. <h1> for heading, <b> for the main body of the web page.
- Recommended by W3C.

Semantic page components
An element that makes sense to both the developer and the browser, e.g. HTML tag <title> has meaning to the developer (it's the title) and function for the browser (it has a setting for the web page title).

CSS3 (cascading stylesheets)
A language for identifying the presentation (style) of a web page. Allows a user to define rules for specific elements of a web page, e.g. the format for the HTML tag <p> can be a set font, size and style.

Forms
A form allows the user to enter data. This can include: text boxes, radio buttons, drop-down boxes, buttons.
The data may be processed **client-side** or it may be transmitted to the server to be stored or processed by the server.

Client-side scripting
Code that runs on the user's computer, usually by the browser (as opposed to server-side which runs on the server where the website is hosted).

For example, **Javascript**. The scripts allow the user to perform actions, e.g. clicking a button, and the code for the button is then run by the browser and the result is displayed.

Tags
The elements in the web page code that define the structure and content.
For example, the HTML tags <title>... </title> identify that anything between the tags should be formatted as the title.

User interactions
The ways that the user interacts with the web page. They may click on buttons or hotspots, they might enter data, select from drop-down boxes, select components to run (e.g. videos).

Navigational components – the features that allow you to move to different pages within the website.

Hyperlink – a link from one HTML document to another.

Hotspot – an area on a website that can be clicked on and something will happen, e.g. part of an image that when clicked will change the image.

Navigation bar – the menu bar that has links to other pages within the website. This may be a bar along the top, or a button that then drops down the options.

Libraries/frameworks – pre-written code that can be imported into a program. In this case, pre-written website features that you can use. These are often efficient, and time has been taken to develop and test them.

There are different frameworks depending on how you are building the website. For example:
- **HTML** frameworks will include HTML structures such as layouts and designs.
- **CSS** may include features for responsive designs or preset style definitions.
- **JavaScript** may include actions that can be performed, e.g. processing, calculations, include other languages such as SQL to manage databases.
- **Hypertext pre-processor (PHP)** – PHP allows for interaction with external databases (and other systems). Libraries can include pre-written functions/methods, predefined toolbars and debuggers.

Animation techniques
Different types of animation can be used on websites.

Using a **hotspot**, when you hover over an area something moves.
Animated backgrounds or images in the website.

Animated elements that start when you click a button.

Responsive design features – the web page changes depending on how it is being accessed.

Compatibility (browser, device) – different browsers have different features and render the web page in a different way. A website can detect the browser being used and change accordingly. Different devices have different screen resolutions and interaction methods (smartphone vs PC), the site can detect how it is being accessed and change its formatting and tools accordingly.

Fluid grid – this is used to design the different layouts/structures, the grid changes depending on how it is being viewed.

Media queries / break points – used to state how part of the page should be displayed depending on how it is viewed (or if it shouldn't be displayed).

Relative sizing – the elements have a size that is not set, it changes depending on how it is viewed, e.g. a table is narrower or wider.

PLANNING A WEBSIT

User requirements
- What do the people who are going to use the website need?
- What information/data do they need?
- Do they need a responsive design?
- How does this come from the **purpose** of the website?

Navigation system
- What method or methods will be used to navigate the web page?
- Hyperlinks, hotspots, drop-down menu, menu bar.
- How will this change for a responsive design?

Plugin
- An extension or application that has already been built that you can use in your website.
- A common plugin is [illegible] to social media feeds or payments.

House style
- What are the formatting requirements for the organisation or client? Needs to be consistent with other material in the organisation.
- What colours do they [illegible] colour codes, e.g. RGB value correct shade.
- What fonts do they use Bold? Italics?
- What images and text do they use? How do they use phrasing? Do they write formally?

Assets
- This is the content an [illegible] fr[illegible] text, sound, im[illegible] file type[illegible] ation (i[illegible] file type, [illegible] orm[illegible] at data will be [illegible], ho[illegible] will it be validated, where [illegible] be processed?).
- These need to be identified before the site is made to make sure the site has space and positions for them.
- Other planning decisions may need to change depending on the content.

[illegible]ent [illegible]ments
- [illegible]at does the person/organisation that hired you to make the website need?
- What is the purpose of the website? Is it for influence or marketing?
- What type of website will it be? Will it need to be interactive with multimedia? Is it dynamic or static?
- Who is the target audience? This could be a specific group of people, or a specific age group. It could be people who like a specific thing or who work for a specific area.
- Content of website – what does the client need to have included in the website? This may be general points or specific.

Considerations

Interactive components
- How will the user interact with the website, and what will happen when they do interact?
- Will you use buttons that the user clicks and something happens?
- Media controls – e.g. starting and stopping videos.
- User input fields in a form.
- Rollovers – when you move a cursor over an element something happens.
- Hyperlinks, hotspots to link to other pages or make events happen.

W3C Compliance
- How are you going to make sure your website meets WCAG? What accessibility features are you going to have?
- How will these features be included? Where will they be included? How are they selected?
- How will these choices affect the design and how the responsive design works?

Responsive design features
- What type of device are people most often going to be using? Laptop? Mobile device? What elements will need to change depending on this device choice?
- Is it just the size and layout, or will content also need to change depending on device of screen?

Search engine optimisation
- What are the keywords you need to include? What do other similar sites use, and how do [illegible] affect their ranking?
- What tags do you need [illegible]
- What metadata [illegible]ed to [illegible]lude?

Hosting requirements

The website will need to be stored (hosted) on a web server. This is where requ[illegible]e w[illegible] be sent and processed, and where the web pages are returned to the user from. The choice will depend on the:
- cost (e.g. monthly cost, cost per number of visitors)
- location (where it is stored, different countries hav[illegible] DPA structures)
- security (does the data being stored need to be [illegible] Is [illegible]sonal/private data that needs high security?)
- domain name (what domai[illegible] are [illegible] multiple domains that are similar that can be used?)

Your assessment

	Merit	Distinction
P1: Describe the client and user requirements for the website prototype.	**M1: Explain** the Libraries/Frameworks required for the website prototype development.	**D1: Justify** the Search Engine Optimisation techniques to be used in the website proto[illegible]
P2: Explain the hosting requirements for the website prototype.		
P3: Create a design of the website structure, navigation system and a content overview.	**M2: Explain** how the house style for the website prototype is appropriate for the client requirements.	**D2: Assess** website prototype design choic[illegible] to W3C and accessibility compliance.
P4: Create a design of the webpage template(s) to show the page layout and the house style.		
P5: Identify assets required for the website prototype.		

CREATING A WEBSITE PRO

Technical skills

Visual design environment: software that lets you create and manipulate the website. Visual that lets you move and change elements without emphasis on the code.

You can then edit the code as well to refine it or add more features.

Scripting environment: software that lets you write the HTML, CSS, JavaScript and PHP scripts. These will include features such as debugging, keyword highlighting, prompts.

CSS: creation of stylesheets for **f** **ng** t re then applied to each **web page**. Identify forma ng f **con** . title colour, font style, size.

Box model se in and border around each HTML element. Sett e, v e the text appears in the box, whether there is a line der, t s e border, etc. This allows separate sections to be r d consistently.

Template creation: create a structure for a web page e.g. formatting, tables, navigation. This is then duplicated for each page and edited with Used for consistency.

Interactive features and controls: create the buttons or other ways to interact with the web page. Check consistency of formatting with the design and functionality.

Responsive design fe a **template** with **CSS** to make sure your web page is responsive to different browsers, devices, resolutions, etc. Using the template will ensure consistency and each page does not need creating individually.

Libraries and frameworks: import the libraries and frameworks into your project and **template** where appropriate. Use the functions or modules and test them in **preview**.

Form controls: add the form elements for users to complete, add the text boxes, drop-down lists, radio buttons and buttons for control. Test these in **preview** mode to make sure they function as required.

Search engine optimisation (SEO): add the keywords and metadata required to support SEO. Incorporate these into the HTML **templates** and **responsive design features** so they are consistent.

Preview and publishing: throughout the development, preview what the web page(s) will look like and how each feature works. Make sure these are thoroughly tested before publishing the final site.

Na
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-
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Your assessment

Pass	Merit	Distinction
P7: Create an appropriate website structure for the website prototype.		
P8: Prepare assets appropriate for use as components in the websit prototype.		
P9: Create the interact navigational componen appropriate for the web prototype.	**Imp ent** W3C and sibility compliance in the ite prototype.	**D3: Implement** appropriate Search Engine Optimisation (SEO) techniques in the website prototype.
P10: Create the website prototype using web authoring software tools.	**M5: Implement** appropriate responsive design features in the website prototype.	**D4: Use** appropriate Libraries/Frameworks to create the website prototype.
	M6: Use Cascading Style Sheets (CSS) to implement an appropriate and consistent style in the website prototype.	

Folder structu

T de ame. Subfolders. Meaningfu sets lder for each web page.

Where is the home page (**index.html**) locate immediately?

How do the web pages in the **site** link togeth related to your folder **structure**?

For example:

Root
----index.html
----assets
---- images
---- videos
----css
----web pages
---- introduction.html
---- newProducts.html

TESTING A PROTOTYP

Technical testing:
- Test each element that you have added individually and combined.
- Does every piece of HTML/CSS/JavaScript/PHP you use work?
- Do forms take the required input and produce the required output?

Viewpoint testing:
- Test the website as a whole to see if it is useable. This may involve test subjects or users.
- Can the website be navigated?
- Do the features work?
- Do the responsive design features work with different browsers and devices?

Test plan: identify before you start
- Identify the
- Identify the
- Identify differences between
- Identify any the range

Testing types

...ing:
- One or more users use the website to make sure that it functions.
- You may watch the users interacting and/or ask for their feedback.
- The users need to test all elements of the website, navigating between pages and watching how they interact with the site.

Iterative
Use

Check other

What to test?

How does the **content display**? Does it fit the screen? Is content visible?

How **easy** is the website to **use**? Can it be navigated? Is it intuitive? Can the forms be completed and understood?

Do the **hyperlinks** work? Do they go to the correct pages?

Test with **multiple viewpoint sizes,** e.g. different levels of zoom and accessibility features

Test on **multiple devices**. Does it change as intended?

Test in **multiple browsers**. Does it work the same in each?

Do the **interactive elements** function? Are the actions as intended?

Does the **navigation** system work? Do all of the options appear on every page consistently?

...ges correctly with ...ntent and formatting?

Is the **content readable**? Is the font style size and colour appropriate and legible?

Your assessment

Pass	Merit	Distinction
P6: Describe how the website prototype will be tested.	**M3: Justify** the appropriateness of the testing.	
P11: Test the website prototype and document results.		

REVIEWING AND IMPROVING A

Search engine optimisation (SEO):
- What SEO techniques did you implement?
- Did these work? How high does your prototype appear when published?

Suitability for client:
- Compare the prototype to the client's original requirements systematically.
- Which have you met? Which are not yet met? Why have they not been met?

Suitability for user:
- Compare the prototype [illegible] requirements systematically.
- Which have you met?
- Which are not yet met? Why have they not been met?

Accessibility:
- What accessibility features have been u
- Do these features wo fully and correctly?
- What additional features could be added?
- Compare to WCAG.

[illegible]wing the effectiveness

Device independence/compatibility:
- Does the prototype work on different devices?
- Does the prototype work on different browsers?
- What elements do not work as well as expected?
- Were there any errors? Any content that could not be displayed or understood?

Responsive design:
- Does the prototype change depending on the system/browser/resolution?
- What features did you add to support the responsive design? Did these work?

What extra content or features could be included in the website?
This could be text, images, videos/animations, sound.

What additional user interactivity could be included?
This could be adding forms, buttons that perform actions, choices that affect content.

Further development opportunities

What payment gateways / processors could [illegible] future developmen
- How can the website be used to [illegible] inc[illegible] to allow for purchases?
- What of thos[illegible] co[illegible]d?
- Wha[illegible] to the website?

[illegible]other hosting considerations need to be made?
- the current potential host sufficient?
- Is there enough storage and throughput?
- Are there opportunities to expand if needed?
- Do you have enough control?

Le

Li fra

S

Domain name the domain na change it to? W Are there othe should be purc

SEO – what c improve the S keywords you use these? Will you do m keywords? Wi design or acce

Security – wh including or im increase the se

Your assessment

Pass	Merit	Distinction
P12: Assess the suitability of the website prototype for meeting the requirements.	**M7: Analyse** test results documenting any required remedial action.	**D5: Discuss** potential improvements and further development opportunities for the website prototype.

ACTIVITY POSTER

WEBSITE PRINCIPLE

Uniform Resource Locator

www.zigzageducation.co.uk/subjects/computer-science-and-ict

[redacted] Uniform Resource Locator

Compatibility

MAC vs [redacted]s?

Smartph

[redacted]rowsers?

Tablet?

Lapto

Different resolutions?

W3 [redacted]dards

Guidelines for standards that websites should follow

Support best practice in web design

Support accessibility of content for all people

To support compatibility across hardware and software

More likely to appear in search engine results

Support users having the best experience

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Present data in different formats, e.g. text, audio, visual

Text alternatives for non-text, e.g. captions on images and videos

Compatibility with hardware (e.g. input devices). Compatibility with other software (browsers, software that might be used to access the data)

Content and structure should be predictable, e.g. in line with other familiar websites

Provide content that can be access[redacted] e.g. [redacted]ware

[redacted]w u[redacted] cha[redacted]ettings or how they view the content (e.g. font size/style)

Do not use flashing lights or other content that can cause physical reactions, e.g. seizures

Select a website and ide[redacted] the ways it meets WCAG and how it could improv[redacted]

Web 2.0

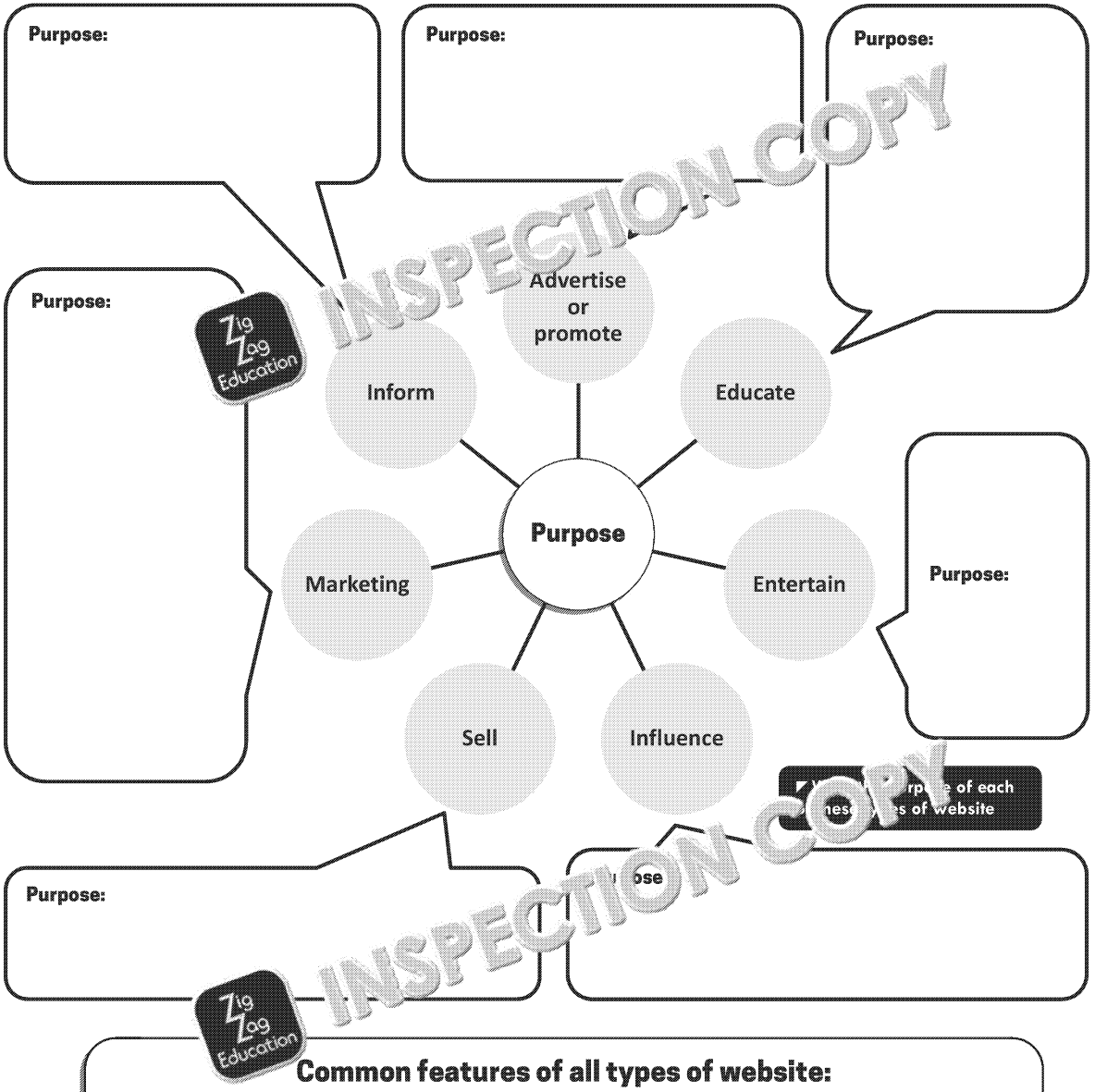
Write the key features of web 2.0

Web 3.0

Write the key features of web 3.0

ACTIVITY POSTER

PURPOSE AND TYPES OF W

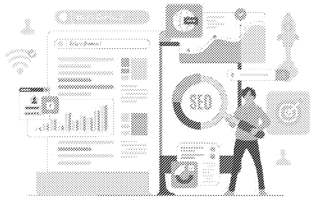


Common features of all types of website:

- Engagement/interaction/multimedia
- Accessibility
- Design that works on a range of devices
- Reviews from users/customers
- Search engine optimisation
- Links to other/common sites / social media
- Clear navigation

ACTIVITY POSTER

WEBSITE COMPONENTS A



Web page structure

Complete the descriptions of components of web page structure

Semantic page components

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A language for identifying the presentation (style) of a web page. Allows a user to define rules for specific elements of a web page, e.g. the format for the HTML tag <p> can be a set font, size and style.

Forms

HTML5 (hypertext markup language 5)

- The markup language to structure web pages.
- Uses tags to structure web pages, e.g. <h1> for heading, <body> for the main body of a web page
- Recommended by W3C

Client-side scripting

Tags
The elements in the web page code that define the structure and content.
For example, the HTML tags <title>…</title> identify that anything between the tags should be formatted as the title.

User interactions
The ways that the user interacts with the web page. They may click on buttons or hotspots, they might enter data, select from drop-down boxes, select components to run (e.g. videos).

Navigational components – the features that allow you to move to different pages within the website.

Hyperlink –

Hotspot –

Navigation bar –

Libraries/frameworks – pre-written code that can be imported into a program. In this case, pre-written website features that you can use. These are often efficient, and time has been taken to develop and test them.

There are different frameworks depending on how you are building the website. For example:

- **HTML** frameworks will include HTML structures such as layouts and designs.
- **CSS** may include features for responsive designs or preset style definitions.
- **JavaScript** may include actions that can be performed, e.g. processing … allo… include other languages such as SQL to manage databases.
- **Hypertext pre-processor (PHP)** – PHP allows for interaction with external databases (and other systems). Libraries can include pre-written … interaction methods, predefined toolbars and debuggers.

Animation techniques

Responsive design features – the way the web page changes depending on how it is being accessed.

Compatibility (browser, device) –

Fluid grid –

Media queries / break points –

Relative sizing –

ACTIVITY POSTER

PLANNING A WEBSIT

Write down what needs considering in each of these

User requirements

Navigation system

Plugin

Assets

ent r ments

House style

Considerations

Interactive components

W3C Compliance

Responsive design features

Search engine optimisation

Hosting requirements

Your assessment

	Merit	Distinction
P1: Describe the client and user requirements for the website prototype.	**M1: Explain** the Libraries/Frameworks required for the website prototype development.	**D1: Justify** the Search Engine Optimisation (S techniques to be used in the website prototy
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P4: Create a design of the webpage template(s) to show the page layout and the house style.		
P5: Identify assets required for the website prototype.		

ACTIVITY POSTER

CREATING A WEBSITE PRO

Complete the descriptions of the technical skills

Technical skills

Visual design environment:

Template creation:

Responsive design

Form controls:

Search engine optimisation (SEO):

Scripting environment:

CSS: cr... ...ts for **formatting** that are then applied ... identify formatting for **content**, e.g. title colour, ... style, size.

Box model:

Interactive features and controls:

Libraries and frameworks:

Nam...

Preview and publishing:

Folder structu...

Top le... ...name. Subfolders. Meaningfu... ...A fo... ...r for each web page.

... is the home page (**index.html**) locate... immediately?

How do the web pages in the **site** link togeth... this related to your folder **structure**?

Add an example of a folder structure for a website

For example:

Your assessment

Pass	Merit	...on
P7: Create an appropriate website structure for the website prototype.		
P8: Prepare assets appropriate for use as components in the we... prototype.		
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	M6: Use Cascading Style Sheets (CSS) to implement an appropriate and consistent style in the website prototype.	

ACTIVITY POSTER

TESTING A PROTOTYP

Add three types of testing and a description of each

Test plan:

Testi
type

What to test?

How does the **content display**? Does it fit the screen? Is content visible?

How **easy** is the website to **use**? Can it be navigated? Is it intuitive? Can the forms be completed and understood?

Do the **hyperlinks** work? Do they go to the correct pages?

Test with **multiple viewpoint sizes,** e.g. different levels of zoom and accessibility features

Test on **multiple devices**. Does it change as intended?

Test in **multiple browsers**. Does it work the same in ea

Do the **interactive elements** function? Are actions as intended?

Write three more items to test

Your assessment

Pass	Merit	Distinction
P6: Describe how the website prototype will be tested.	**M3: Justify** the appropriateness of the testing.	
P11: Test the website prototype and document results.		

ACTIVITY POSTER

REVIEWING AND IMPROVING A

Add descriptions of how you will review each element

Search engine optimisation (SEO):

Suitability for client:

Suitability for user:

Accessibility:

Reviewing the effectiveness

Device independence/compatibility:

Responsive design:

Further development opportunities

Add four further development opportunities

Your assessment

Pass	Merit	Distinction
P12: Assess the suitability of the website prototype for meeting the requirements.	**M7: Analyse** test results documenting any required remedial action.	**D5: Discuss** potential improvements and further development opportunities for the website prototype.

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Domain name

SEO –

Security –