



NCEA Level 2

DIGITAL TECHNOLOGIES & HANGARAU MATIHIKO

Teaching and learning programme

Web design team



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Summary of the teaching and learning programme

This programme provides a structured process for students to follow for designing and developing a website for a local company. This authentic process helps students to record the right evidence, making the evidence easy for the assessor to find. It is easy to change the context to any other web outcome; only the “authentic context” section would need to be changed.

By the end of this teaching and learning programme, students will be able to:

- apply conventions to develop a design for a web outcome
- develop the designed outcome using an iterative process of design, testing and development.

Duration

70 hours total, made up of the following:

- 20 hours (approximately) of prior learning on HTML and CSS coding skills at a level suitable to DDDO Progress Outcome 5 (Resources for this are not included.)
- 50 hours (approximately) of teaching, learning and assessment.

The big ideas

Design and development of digital outcomes is achieved through iterative processes where evidence from testing is used to inform the process. The concepts of relevant implications and relevant conventions are explored.

Alignment to the New Zealand Curriculum

DTHM – Designing and Developing Digital Outcomes: Progress outcome 5

Students will:

- independently apply an iterative process to design, develop, store and test digital outcomes that enable their solutions, identifying, evaluating, prioritising and responding to relevant social, ethical and end-user considerations.
- use information from testing and, with increasing confidence, optimise tools, techniques, procedures and protocols to improve the quality of the outcomes.

- apply evaluative processes to ensure the outcomes are fit-for-purpose and meet end-user requirements.

Links to other learning areas

This programme involves developing an authentic solution for a startup or small business. It could be used in conjunction with work in business studies or as part of an ‘enterprise’ course.

Teaching and learning pedagogy

Students independently follow a self-managed but guided project in which they are responsible for their own learning. Resources are provided for the student at each stage. The phases of the design and development cycle provide natural checkpoints at which the teacher/kaiako can expect to see student work.

This resource is designed to be used as a team project but could be used individually. The resources provided are designed to be used online, but logbooks could be printed and filled in on paper if desired.

Prior knowledge and place in the learning journey

Two tutorials are provided to upskill students with no prior experience of HTML/CSS.

No prior knowledge of iterative processes, design methodologies or development methodologies is assumed.

Resources required



There are resources provided as supplementary materials.

- A range of web browsers, which may include Chrome, Firefox and Edge
- A suitable text editor, such as Brackets, Caret, Notepad++, or a web development integrated development environment
- Students may wish to use a wireframing or prototyping tool, such as Adobe XD, but this is not required.

How might you adapt this in your classroom?



A broad context has been included in the task outline, which allows room for students to develop individual solutions. The workbook and project log have been designed to work with any web context so that they can easily be adapted to be used with other projects. This activity works best if combined with a visit to (or contact with) a local business or external client.

This assessment can be combined with other assessments or used in isolation. This project could be combined with AS91897 (Use advanced processes) by requiring students to break their outcome into components, manage their project using suitable project management tools and techniques, and discuss the use of these tools and techniques. It could also be combined with AS91890 (Conduct an inquiry) by having students carry out an inquiry process to develop a context for this assessment.

Assessment



This activity integrates assessment into the learning process and is based on a 'just in time' learning model or 'learning by doing' process. Opportunities to gather assessment data are clearly signposted, and student activities are designed to collect information about student learning as well as providing opportunities for students to put their learning into practice.

TERM OUTLINE

Specific learning outcomes (may include what will be covered) (refer to workbooks)	Duration	Learning activities (see student workbooks for details)	Resources provided Supplementary materials and workbooks are provided with this resource.
Prior learning	Up to 20 hours	<p>Students could use Prior Learning Tutorials 1 and 2 to recap the basics of HTML and CSS coding.</p> <p>Further tutorials are linked to in these documents, including:</p> <ul style="list-style-type: none"> • W3Schools Bootstrap tutorial • W3schools How To guide • W3schools W3.CSS tutorial <p>Students could also use paid tutorial sites, such as Codecademy or Code Avengers, but these may require a subscription.</p> <p>If students are using a specific prototyping tool, wireframing tool or integrated development environment, then they may need to complete a familiarisation activity provided by the software supplier.</p>	<p>Prior Learning Tutorials 1</p> <p>Prior Learning Tutorials 2</p>
<p>Design sprint</p> <p>(Follow the workbook to further explain these activities)</p>	Up to 20 hours	<p>The following activities are described in detail in the Student Workbook - Design process.</p> <p>Students use the workbook to guide their activities and record their evidence in the Project Log - Design Sprint.</p>	
Pre-sprint	2-3 hours	Investigate relevant conventions	Internet

Specific learning outcomes (may include what will be covered) (refer to workbooks)	Duration	Learning activities (see student workbooks for details)	Resources provided Supplementary materials and workbooks are provided with this resource.
Phase 1: Understand	2-3 hours (can be shortened if following inquiry)	Unpack the problem - select from the following tools: Mindmap, Brainstorm, Braindump, Brainwrite. Space, saturate and group. Value proposition canvas. Students will outline what the problem is.	VP canvas Project log POV template
Phase 2: Ideate	2-3 hours	Identify conventions to be applied. Students could do this using: Doodle design ideas (quick sketches). Crazy-8s (8 sketches in 8 minutes). Solution sketches (more detailed drawings of preferred designs).	Sketching tools Basic wireframe tool
Phase 3: Decide	2-3 hours	Explain relevant implications (complete logbook table) Decide - choose a design (group discussion) <i>(Note: it may be helpful to record discussion audio.)</i> Explain design choice	Relevant implications resource Audio recording or notes Project log
Phase 4: Prototype	2-3 hours	Generate a testable design (Draw detailed design or use a prototyping tool like AdobeXd.)	Wireframe tool or paper
Phase 5: Test	2-3 hours	Get feedback by testing prototype Carry out research into existing outcomes Refine outcome and make improvements	Wireframe tool or paper
Post-sprint	2-3 hours	Review the design process 5-minute interview with assessor (or written summary if preferred)	Audio recorder Assessor

Specific learning outcomes (may include what will be covered) (refer to workbooks)	Duration	Learning activities (see student workbooks for details)	Resources provided Supplementary materials and workbooks are provided with this resource.
Development process	Up to 30 hours	The following activities are described in detail in the <u>Student Workbook - Development Process</u> Students use the workbook to guide their activities and record their evidence in the Project Log - Development Sprints	
Development sprint 1	8-10 hours		
Phase 1: Plan	1 hour	Make notes in project log Team discussion	Project log
Phase 2: Design	1 hour	Sketch new designs Trial or model new ideas (eg, new fonts) Team discussion	Project log
Phase 3: Develop	4-6 hours	HTML and CSS Coding Image editing and curation Basic testing (viewing in browser)	Text editor or IDE
Phase 4: Review	1-2 hours	Testing This could include using HTML validator, different browsers, different devices and visual impairment simulators. Seek and record feedback on outcome so far.	Validator Browsers <u>Visual impairment simulator</u>

Specific learning outcomes (may include what will be covered) (refer to workbooks)	Duration	Learning activities (see student workbooks for details)	Resources provided Supplementary materials and workbooks are provided with this resource.
Development sprint 2	8-10 hours		
Phase 1: Plan	1 hour	Make notes in project log Team discussion	Project log
Phase 2: Design	1 hour	Sketch new designs Trial or model new ideas (eg, new fonts) Team discussion	Project log
Phase 3: Develop	4-6 hours	HTML and CSS Coding Image editing and curation Basic testing (viewing in browser)	Text editor or IDE
Phase 4: Review	1-2 hours	Testing This could include using HTML validator, different browsers, different devices and visual impairment simulators. Seek and record feedback on outcome so far.	Validator Browsers <u>Visual impairment simulator</u>

Specific learning outcomes (may include what will be covered) (refer to workbooks)	Duration	Learning activities (see student workbooks for details)	Resources provided Supplementary materials and workbooks are provided with this resource.
Development sprint 3	8-10 hours		
Phase 1: Plan	1 hour	Make notes in project log Team discussion	Project log
Phase 2: Design	1 hour	Sketch new designs Trial or model new ideas (eg, new fonts) Team discussion	Project log
Phase 3: Develop	4-6 hours	HTML and CSS Coding Image editing and curation Basic testing (viewing in browser)	Text editor or IDE
Phase 4: Review	1-2 hours	Testing This could include using HTML validator, different browsers, different devices and visual impairment simulators. Seek and record feedback on outcome so far. Final development evaluation interview Team discussion and evaluation of development process	Audio recorder

ASSESSMENT TASK: WEB DESIGN TEAM

Curriculum key concepts	<i>Designing and developing a digital outcome (DDDO) PO5:</i> independently apply an iterative process to design, develop, store and test digital outcomes that enable their solutions, identifying, evaluating, prioritising and responding to relevant social, ethical and end-user considerations.
Achievement standard(s)	91891 - Apply conventions to develop a design for a digital technologies outcome 91893 - Use advanced techniques to develop a digital media outcome
NCEA Level	2
Credits	7
Learning time guidance	70 hours
Length guidance if appropriate	Web outcome should include links to at least 3 pages or sections and should include a range of semantic elements (eg, header, footer, navigation, section)
Due date	Teacher to insert

Achievement criteria

Achieved	Merit	Excellence
AS91891 Apply conventions to develop a design for a digital technologies outcome.	Apply conventions to develop an informed design for a digital technologies outcome.	Apply conventions to develop a refined design for a digital technologies outcome.
AS91893 Use advanced techniques to develop a digital media outcome.	Use advanced techniques to develop an informed digital media outcome.	Use advanced techniques to develop a refined digital media outcome.

ASSESSMENT TASK: WEB DESIGN TEAM

Overview

This assessment activity requires you to apply conventions to design a website and use advanced techniques to develop your design.

How will you be assessed?

You will be assessed on how successfully you follow a design and development process and how successfully you explain or justify your design choices. Two **project logs** are provided for you to record your evidence.

You may work individually or as part of a team. However, you must be able to show your own evidence to meet both standards.

Your task

You are going to design and develop a website for the following **authentic context**:

You and your team are the web design team for a local business.

You may have chosen this business yourself, been given it by your teacher, visited a real local business or set up your own business (eg, as part of a Young Enterprise scheme).

Your task is to **design** and **develop** a web interface for potential customers to find out about the business and view the different products/services that are available. Your design process will help you to determine precisely what services your web outcome will offer and who your users will be.

You will complete a design phase and development phase (assessed against different standards). As you will use **iterative processes**, you may find that there is overlap between the two phases. You will not be penalised for beginning development early or for redesigning part or all of your outcome during the development phase.

What you need to do:

You need to complete two phases. Start by reading the information below.

Phase 1: Complete the design process section using your student workbook to assist you. You will record your evidence in your project log (Design sprint).

Phase 2: Complete the development phase using your student workbook to assist you.

You will then hand in a completed web interface.

Phase 1:

Design process (assessed against 91891)

A design process resource is provided: **Student Workbook – Design Process**.

This is accompanied by a logbook for recording the evidence: **Project Log – Design Sprint**

Following this process will guide you through the steps below. There will be opportunities for you to make independent choices about the tools and techniques you use.

You must ensure that you investigate and apply **appropriate conventions**. Following the design process will help you to research these conventions and give you the opportunity to apply them in your design. You should try to **explain how your design uses conventions**.

You must ensure that you **explain relevant implications**. It is **not sufficient** just to discuss how you will address them – you must show that you understand what each relevant implication is and explain why it is relevant. You should try to **address all relevant implications**.

You will need to generate **a range of design ideas**, model them, and **select an appropriate design**. You must **explain why it is appropriate**.

ASSESSMENT TASK: WEB DESIGN TEAM

To develop an **informed design**, you will need to collect **feedback** gathered from modelling on your design (this could be from teachers, kaiako, peers, end-users or others), and you will need to **use this feedback to improve your design**.

You should try to **justify** (give reasons and evidence for) how your design addresses relevant implications, end-user considerations and uses appropriate conventions. You may be given the opportunity to record this evidence in an audio interview.

Phase 2

Development process (assessed against 91893)

In the development phase, you will follow an iterative development cycle to develop, test and improve your outcome. The resource provided will guide you through the steps in this cycle: **Student Workbook – Development Process**. This is accompanied by a logbook **Project Log – Development Sprints** in which to record your evidence

You should aim to follow the cycle at least twice and probably three or four times.

You may create your own photos or illustrations, or use Creative Commons or Public Domain resources. If Creative Commons materials are used, care should be taken to ensure that the work is attributed and used in accordance with the licence that has been applied to the work.

Your website development will need to include at least **2 advanced techniques**. These are described in the guidelines below.

You will need to choose **appropriate tools and techniques** suitable for the purpose and end-users you identified in your design. (These may evolve throughout the iterative process, but you must be clear if this happens.)

Your web outcome will need to use **relevant conventions**. You will have

identified these in your design process, but you will have the opportunity to identify and apply more in the development process. These are described in the marking schedule.

You need to **explain relevant implications**, but it is assumed that you already did this in the design process. You should try to ensure your design **addresses relevant implications**.

You should try to use **efficient tools and techniques** when making your outcome. These are described in the guidelines below in appendix one.

APPENDIX ONE: GUIDELINES RESOURCE

Design process

An **informed design** is one that is **improved based on feedback**. This means that you will need to submit at least three versions of your design with clear evidence of improvement based on feedback from modelling, as well as evidence of the feedback you received. This improvement can also be counted as evidence towards a **refined design** in AS91893.

An **informed design** is one that **addresses relevant implications**, which means that you have avoided or overcome any potential negative implications (such as breaching laws or ethical rules) in your design and successfully gained positive implications (such as being aesthetically pleasing, easy to use or well-suited to your end-user).

An **informed design** includes an **explanation** of how the design **uses appropriate conventions**. You will need to not only apply the appropriate conventions but also **explain** how you did so, giving reasons for how your choices use conventions.

A **refined design** includes a **justification** of how the design uses appropriate conventions and addresses implications and end-user considerations. This means you will need to provide **reasons and evidence** of the quality of your design. This evidence might include:

- reference to feedback you received
- reference to investigation or research you did
- results of modelling or testing a prototype
- reference to how your outcome meets specific objective criteria (eg, usability heuristics).

Development process

For your outcome to be considered **informed**, you need to **apply** these conventions during the development phase to **improve the quality** of your outcome. It should be clear how the outcome was made better through applying conventions – it is not enough to simply show that conventions were applied.

Relevant conventions might include:

- website file-naming and folder conventions
- HTML and CSS code layout conventions
- semantic HTML conventions
- image type and size conventions
- conventional website visual hierarchy
- conventional design style used (eg, material design, flat design).

Advanced tools and techniques might include:

- creating or customising scripts, code or presets
 - You could create or customise JavaScript scripts or CSS styles for an image carousel, collapsible menus, hoverable buttons or responsive elements.
- using a combination of steps to manipulate or enhance elements
 - You could manipulate images using a range of tools in an image editor before using them, or use a combination of CSS styles to enhance part of the page (eg, add a drop-down with hover effects to a navigation bar).
- using a third-party library
 - You could use jQuery, Bootstrap, W3.CSS or another third-party library to create, enhance or style elements of your webpage.
- using composite effects.

APPENDIX ONE: GUIDELINES RESOURCE

Data integrity and testing procedures include:

- naming your files appropriately
- organising your files and folder appropriately
- keeping backups
- submitting the correct files in the manner required by your assessor
- testing with a colour blindness or visual impairment simulator
- proofreading (of code and the completed outcome)
- testing functionality in a browser
- testing the website in multiple browsers
- getting feedback from users or other usability testing
- *validating your HTML and CSS code*
- *asset management (eg, using an asset management tool to manage versions or collaborate)*
- *optimisation of media assets (eg, using an image optimiser)*
- *commenting your HTML and CSS*
- *ensuring that the data is relevant to the purpose and end user and accurate.*

You also need to **explain the relevant implications**. If you successfully completed the design sprint, then you will have already done this.

To be an **informed outcome**, you will need to **address the relevant implications**.

To create an **informed outcome**, you need to **use information from testing procedures to improve the quality of the outcome**. This means you need to provide evidence of:

- a. the information you got from testing procedures (eg, screenshots, feedback)
- b. the way this was used to improve the outcome
- c. versions of the outcome (and screenshots of it) before and after the changes.

For your outcome to be considered refined, it needs to be a high-quality outcome.

In addition, a **refined outcome** must show **iterative improvement throughout the design, development and testing process**. This means that you need to follow the design cycle through at least 3 times, showing improvement at each stage.

A **refined** outcome is produced using **efficient procedures**. Procedures in *italics* above are considered to be *efficient*.

ASSESSMENT SCHEDULE

AS91891 APPLY CONVENTIONS TO DEVELOP A DESIGN FOR A DIGITAL TECHNOLOGIES OUTCOME

Programme 7: Web design team

Credits: 3

Final grades will be determined on a holistic judgment of the evidence against the achievement criteria.

CRITERIA	JUDGMENTS	COMMENTS
<i>Teacher note: All of the page numbers and phases below relate to the Student Workbook.</i>		
Apply conventions to develop a design for a digital technologies outcome	Holistic: a design must be developed that applies conventions .	
describing the purpose of the outcome and the requirements of the end-users	Phase 1: Understand POV statement (or alternative) must describe purpose (ie, give more detail than simply identify) and must describe requirements of (identified) end-users. <i>For example: Customers of Taranaki Youth Mountain Guides, who are young people aged 16-20 years typically resident in the Taranaki region, need to work out the cost of guided mountain trips and check their availability.</i>	
investigating and applying relevant conventions	Investigating - Pre-sprint stage At least 3 links or conventions referred to or evidence of involvement in group discussion. Teacher observation could be recorded. Applying - Must be evident in (some) designs in Phase 2 or Phase 4. May be labelled by student. Evidence might be found in Phase 5 or Post-sprint interview.	

CRITERIA	JUDGMENTS	COMMENTS
generating and modelling a range of design ideas	<p>Phase 2: Ideate</p> <p>At least 3 different 'solution sketches' should be drawn. Other parts of ideation could be incomplete. If 'doodle ideas' and 'crazy-8s' are done well enough to be considered 'models', then 'solution sketches' not required.</p> <p>There needs to be a clear distinction between design sketches and modelling.</p> <p>Design is about formulating ideas. Modelling is checking those ideas for functional and aesthetic features. For example, could be a mockup or Hi fidelity sketch.</p> <p>If modelling is not done then the model can not be used for feedback for Merit</p>	
selecting a design for the purpose of the outcome and explaining the appropriateness of the design	<p>Phase 3: Decide</p> <p>Student is clear about which design they selected.</p> <p>Reasons for choosing design must be explained. Evidence could also be found in prototype labels (Phase 4), explained changes (Phase 5) or interview (Post-sprint).</p> <p><i>For example: My design is appropriate because the layout is minimalist; this makes it easy to use as there isn't lots of unnecessary stuff in the way.</i></p>	
explaining relevant implications	<p>Phase 3: Decide (also Post-sprint interview)</p> <p>Student must explain (ie, give reasons for) most implications that are relevant. Explanation must be linked to student outcome and not abstract or generalised.</p> <p>It is not sufficient to only explain how they will be addressed.</p> <p><i>For example: Intellectual property means ideas that are owned, like copyright, trademarks and patents. The copyright of an image is owned by the creator, so the images in my design will need to be licensed for re-use or be used with permission. I will also need to protect my own intellectual property rights because otherwise my work could be copied and sold by someone else.</i></p>	

ASSESSMENT SCHEDULE

AS91891 APPLY CONVENTIONS TO DEVELOP A DESIGN FOR A DIGITAL TECHNOLOGIES OUTCOME

Programme 7: Web design team

Credits: 3

CRITERIA	JUDGMENTS	COMMENTS
Apply conventions to develop an informed design for a digital technologies outcome	Overall outcome must be informed .	
using feedback gained from modelling to improve the design	<p>Phase 5: Test</p> <p>There must be evidence that feedback was collected based on modelling (eg, written feedback recorded) and evidence that the design was improved (ie, improved modelling submitted) and evidence that improvement was based on feedback.</p> <p>If changes to design obviously reflect feedback given, no need for further evidence.</p> <p>Otherwise student must explain changes (Phase 5, part 4) or refer to them in an interview.</p> <p>Evidence could also come from first Development sprint.</p>	
explaining how the chosen design uses appropriate conventions	<p>Evidence could be found in any of the following:</p> <p>Phase 2, part 1</p> <p>Phase 3, part 3</p> <p>Phase 4 (annotations)</p> <p>Phase 5, part 4</p> <p>Post-sprint interview</p> <p>Student must explain (ie, give reasons for) use of appropriate conventions.</p> <p><i>For example: I chose a material design scheme because it is minimalist and follows well-known conventions, making it easy to use. It works well on mobile devices, making it accessible. My end-users are young people who primarily use mobile devices.</i></p>	

ASSESSMENT SCHEDULE

AS91891 APPLY CONVENTIONS TO DEVELOP A DESIGN FOR A DIGITAL TECHNOLOGIES OUTCOME

Programme 7: Web design team

Credits: 3

CRITERIA	JUDGMENTS	COMMENTS
addressing relevant implications and end-user considerations	<p>It must be clear how student has addressed Relevant Implication (RI) and end user consideration (EUC), but it is not necessary for student to have described or explained how. Must be a minimum of two RI and EUC addressed.</p> <p>Evidence might include:</p> <ul style="list-style-type: none"> • addition or removal of features specifically to address a RI or EUC • judgment by assessor that specific features address RI or EUC • explanation by student of how their outcome addresses RI or EUC. 	

CRITERIA	JUDGMENTS	COMMENTS
Apply conventions to develop a refined design for a digital technologies outcome	Overall, design must be refined (ie, good parts added or accentuated and bad parts removed or reduced).	
justifying how the chosen design addresses implications, end-user considerations, and uses appropriate conventions	<p>Student must justify (ie, give reasons and evidence for) how outcome does all these things. Evidence could be reference to feedback, research or group discussion, links to outcomes or advice, evidence from testing or modelling.</p> <p><i>For example: I chose a material design scheme because my testing showed it was the best choice. Design 2 had the most positive feedback for both usability and aesthetics. In group discussion, we agreed that using material design made our design more minimalist, which makes it easy to use, and that a skeuomorphic (real-world) design could confuse our younger users.</i></p>	

Final grades will be determined on a holistic judgment of the evidence against the achievement criteria.

CRITERIA	JUDGMENTS	COMMENTS
Use advanced techniques to develop a digital media outcome	Holistic: The completed media outcome is developed using at least 2 advanced techniques.	
using appropriate tools and techniques for the purpose and end users	<p>Outcome is complete and is suitable for purpose and end-users.</p> <p>Student chose which software applications to use, what file types to save as, etc.</p> <p>Tools or techniques must include at least 2 advanced techniques, eg, creating or customising scripts, code or presets; using a combination of steps to manipulate or enhance elements; using a third-party library; using composite effects.</p>	
applying appropriate data integrity and testing procedures	<p>Phase 4: Review completed at least once</p> <p>Minimal website testing should include evidence that student tested:</p> <ul style="list-style-type: none"> • that all links function correctly and images load • information provided is accurate and relevant for the purpose and end user • that website displays properly in more than 1 browser • text should be spell-checked and proofread. <p>It is not necessary for all errors to have been identified or fixed.</p>	
using relevant conventions for the media type	<p>At least 2 conventions must have been used correctly:</p> <ul style="list-style-type: none"> • HTML and CSS code layout conventions • semantic HTML conventions • image type and size conventions • conventional website visual hierarchy • conventional design style used (eg, material design, flat design). 	

CRITERIA	JUDGMENTS	COMMENTS
explaining relevant implications	<p>Student must explain (ie, give reasons for) most implications that are relevant. Explanation must be linked to student outcome and not abstract or generalised.</p> <p>It is not sufficient to only explain how they will be addressed.</p> <p>Evidence is from Design sprint: Phase 3: Decide</p> <p><i>Accessibility means making sure the website can be accessed using any browser on any device and making sure it can be read by people with different abilities. This is important for my website because ...</i></p>	
Use advanced techniques to develop an informed digital media outcome	<p>Holistic: the digital outcome must be informed.</p>	
using information from testing procedures to improve the quality of the outcome	<p>There must be evidence of improvements made to the outcome and changes made must be based on information from testing.</p> <p>If the development cycle has been completed at least twice, then this should be evident from Phase 4 > Phase 1 > Phase 2 > Phase 3.</p>	
applying relevant conventions to improve the quality of the outcome	<p>There must be evidence of improvements made to outcome and changes made must relate to relevant conventions.</p> <p>See Phase 1 and Phase 2 in each design cycle:</p> <p>Students should have documented conventions they were trying to apply.</p> <p>Changes must actually be made to completed outcome (Phase 3).</p>	

CRITERIA	JUDGMENTS	COMMENTS
addressing relevant implications.	<p>No explanation is required, as this should be evident from the completed outcome. However, student notes in Phase 1, Phase 2 and Phase 4 could signpost evidence. If the design has been followed, evidence could be found in design sprint.</p> <p>Evidence could include:</p> <ul style="list-style-type: none"> • outcome has evidently been made highly usable • IP implications have been addressed (eg, copyright declaration, images attributed) • functionality has been improved (eg, images optimised, glitches fixed). <p>The outcome must meet expected relevant implications (eg, if website breaches copyright law, is unusable, does not function properly in common browser, is culturally inappropriate or has links to local files, then these are not met).</p>	
Use advanced techniques to develop a refined digital media outcome	<p>Holistic: outcome must be refined: high quality, poor parts must be removed or reduced and good parts must be added or accentuated.</p>	
iterative improvement throughout the design, development and testing process to produce a high-quality outcome	<p>Development cycle should have been completed at least 3 times, but if improvement was shown in the design sprint, then 2 times is sufficient.</p> <p>It must be clear that cycles of improvement have been made, showing evidence of redesign, redevelopment and retesting.</p> <p>Students must have documented the process.</p>	
using efficient tools and techniques in the production of the outcome	<p>Most of these tools or techniques should be evident in most parts of the outcome:</p> <ul style="list-style-type: none"> • management of assets (eg, versions controlled and back-ups made) • using stylesheets (correctly named external CSS used) • commenting (HTML, CSS and, if appropriate, JS commenting) • reusing objects, styles and/or frames (efficient use of ID and class in HTML) • HTML and CSS validation procedures (screenshots of validation with evidence of fixes) • optimisation of media assets (images optimised). 	