Computing Technology Stage 5 (Year 9 or 10) – sample assessment task 1 notification

Developing apps and web software

Contents

[About this resource 2](#_Toc180657015)

[Purpose of resource 2](#_Toc180657016)

[Target audience 2](#_Toc180657017)

[When and how to use 2](#_Toc180657018)

[Task description 3](#_Toc180657019)

[Submission details 5](#_Toc180657020)

[Steps to success 6](#_Toc180657021)

[What is the teacher looking for? 8](#_Toc180657022)

[Marking guidelines 9](#_Toc180657023)

[Student-facing rubric 12](#_Toc180657024)

[Student support material 15](#_Toc180657025)

[Support and alignment 16](#_Toc180657026)

[Evidence base 17](#_Toc180657027)

[References 18](#_Toc180657028)

# About this resource

## Purpose of resource

This sample assessment task unpacks how teachers can assess students in the focus area Developing apps and web software for Computing Technology 7–10.

## Target audience

This resource can be used to support teachers with effective syllabus implementation of Computing Technology 7–10.

## When and how to use

This resource is designed for assessing students in the focus area Developing apps and web software. The resource can be adapted to suit the context of the school. This is sample assessment 1 of 2. Teachers can also refer to the sample scope and sequence and assessment schedule. The task is weighted at 20% and requires groups of students to research, develop and justify a pitch for an app or web software product.

# Task description

**Type of task**: working in pairs or small groups, research, develop and justify a 3-minute pitch for an app product.

**Outcomes being assessed**:

A student:

* selects and applies safe, secure and responsible practices in the ethical use of data and computing technology **CT5-SAF-01**
* applies iterative processes to define problems and plan, design, develop and evaluate computing solutions **CT5-DPM-01**
* manages, documents and explains individual and collaborative work practices **CT5-COL-01**
* communicates ideas, processes and solutions using appropriate media **CT5-COM-01**

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**Suggested weighting: 20%**

Work collaboratively to research, justify and pitch a mobile phone app to solve an identified problem or need.

Investigate a real-world problem or need that can be satisfied by developing a mobile application (app).

The task will include using tools to define the needs of the app, brainstorming potential ideas, seeking feedback and creating a wireframe considering inputs, storage, transmission, processes and outputs.

There are several steps involved in this task. Read each point below carefully and make sure you read the ‘Steps to success’ and the marking criteria as this will provide you with specific detail of what you are required to complete to be successful in this task.

You are required to:

1. Identify a real-world problem that can be satisfied using a mobile app.
2. Brainstorm a variety of options or ideas that would satisfy this real-world need.
3. Conduct a peer-review of your ideas.
4. Describe the input, output, transmission and storage for your chosen web app in relation to the software being used.
5. Identify functional and non-functional requirements of the app.
6. Design a wireframe of your app.
7. Develop an engaging and informative **pitch** to justify your wireframe. Create a pitch deck that clearly outlines the following:
8. The real-world problem you are addressing.
9. Your brainstormed ideas – describe how your ideas came about and how they apply to the development of your app.
10. The feedback from your peers – what did your peers tell you about your idea and how did you take their feedback into consideration?
11. Identify your final idea, explaining why you decided to go with this app.
12. Outline the input, output, transmission and storage for your app, along with the functional and non-functional requirements.
13. Show your wireframe, including the feedback you received from your peers.

**What is a pitch?**

A pitch is the act of presenting your app idea to an audience (in this case, your classmates and teacher). Your pitch needs to be persuasive because you want your audience to see that your solution to your real-world problem is beneficial and will be useful to a wider audience.

A good pitch should:

* engage your audience
* take the audience on a clear and logical journey
* leave the audience wanting to use your app.

Some suggestions when creating your pitch:

* Your pitch deck should be engaging, but not overwhelming. Avoid slides with too much text or information on them, for example, numerous animations or busy transitions.
* Use a font that is easy to read. The font type and colour should be accessible to all people. You can read more about [accessibility](https://accessibe.com/blog/knowledgebase/accessible-presentation-decks) when designing for further information.

**What does it mean to be persuasive or write in a persuasive way?**

When an author is writing in a persuasive manner, their aim is to present a viewpoint to the reader using evidence and facts to accept their argument. In this task, you will write in a persuasive manner to convince potential buyers or investors to use your app solution.

**Links to support:**

* [What is a Pitch Deck?](https://www.pitchvest.com.au/post/what-is-a-pitch-deck)
* [The secret to successfully pitching an idea (4:46)](https://www.youtube.com/watch?v=l0hVIH3EnlQ).

## Submission details

Students can submit their work digitally and complete a 3-minute presentation or video to pitch their app idea.

# Steps to success

Table 1 – assessment preparation schedule

|  |  |
| --- | --- |
| Steps | What I need to do |
| Outline a real-world problem or need that can be satisfied using a mobile app | * Research a variety of possible problems and needs
* Outline the chosen real-world problem or need that can be satisfied using a mobile app
* Identify the needs of the user
 |
| Brainstorm a variety of ideas for the chosen real-world problem or need | * Brainstorm multiple ideas
* Consider the following when creating ideas
* Does it meet the problem or need?
* How easy is it to create or produce this web app?
* What are the time requirements to produce?
* Does your group know how to make this on the designated web app software? If not, what learning will have to be done to be able to create it?
 |
| Peer-feedback on brainstormed ideas | * Seek peer-feedback on all ideas
* From the feedback, choose one final idea that will be the focus
 |
| Input, output, transmission, processes and storage | * In a table, describe the input, output, transmission, processes and storage for the chosen web app in relation to the software being used, and the problem or need
 |
| Identify functional and non-functional requirements | * Specify both the functional and non-functional requirements of your app, including stating the purpose of a system, describing user cases and developing test cases of inputs and expected outputs
* For example: functional requirements which may include user security such as authentication, verification emails to users, usability, user requirements and business requirements
* Non-functional requirements may include speed of subscription or purchase cost, user motivation or engagement
 |
| Wireframe | * Create a wireframe of your chosen idea, including
* what it will look like and what input, output and processing will occur
* mock graphical user interface designs, colour, images and screen elements.
* Conduct a peer-review (feedback) for your wireframe
 |
| Pitch | * Develop an engaging and informative pitch deck communicating all sections of the task including the final idea and wireframe that is no more than 3 minutes in length
* Peer-feedback should be given on each wireframe
* Work collaboratively
 |

# What is the teacher looking for?

The teacher is looking for a thorough understanding and application of the app development process, starting from identifying real-world problems or needs that can be addressed through a mobile app, to creating a comprehensive wireframe and pitch.

The teacher is looking for creative ideas for the chosen problem or need and the application of peer-feedback to improve the final idea that is communicated well within the pitch.

# Marking guidelines

Table 2 – assessment marking guidelines

|  |  |
| --- | --- |
| Grade | Marking guideline descriptors |
| A | The student:* demonstrates thorough research of multiple real-world problems or needs and clearly outlines the chosen problem or need
* generates multiple innovative and relevant ideas and effectively considers all relevant aspects of each idea, seeking peer-feedback and using it in their final idea
* clearly and comprehensively describes the input, output, transmission, processes and storage for the chosen web app, demonstrating a deep understanding of the problem or need
* clearly and comprehensively specifies both functional and non-functional requirements, including detailed purposes, user cases and test cases
* applies appropriate processes to create a detailed and visually appealing wireframe, effectively demonstrating input, output and processing for the chosen idea
* selects relevant data, media, and processes to effectively communicate information relating to all sections of the task, including the final idea and wireframe, within the 3-minute time limit.
 |
| B | The student:* demonstrates appropriate research of multiple real-world problems or needs and outlines the chosen problem or need
* generates relevant ideas and considers relevant aspects of each idea, seeking and using peer-feedback in their final idea
* describes the input, output, transmission, processes and storage for the chosen web app with a good understanding of the problem or need
* specifies both functional and non-functional requirements, including purposes, user cases and test cases with some detail
* applies appropriate processes to create a clear and visually understandable wireframe, demonstrating input, output and processing for the chosen idea
* selects relevant data, media, and processes to effectively communicate information relating to all sections of the task, including the final idea and wireframe, within the 3-minute time limit.
 |
| C | The student:* demonstrates some research of real-world problems or needs and outlines the chosen problem or need with limited detailed context
* generates some relevant ideas and considers some relevant aspects of each idea, seeking and using some peer-feedback in their final idea
* outlines the input, output, transmission, processes and storage for the chosen web app with a sound understanding of the problem or need
* specifies both functional and non-functional requirements with some detail and clarity
* applies processes to create a wireframe, demonstrating input, output and/or processing for the chosen idea
* attempts to select relevant data, media, and processes to communicate information relating to the sections of the task, including the final idea and wireframe, within the 3-minute time limit.
 |
| D | The student:* demonstrates basic research of real-world problems or needs and identifies the chosen problem or need
* generates a few ideas, with limited innovation or relevance and considers aspects of each idea
* provides a basic description of the input, output, transmission, processes and storage for the chosen web app, showing a basic understanding of the problem or need
* specifies some functional and non-functional requirements
* uses processes to create a wireframe, which lacks clarity and does not effectively demonstrate input, output and processing for the chosen idea
* selects some relevant data, media, and processes to communicate information relating to sections of the task, but the communication is not effective.
 |
| E | The student:* demonstrates very limited research of real-world problems or needs and identifies the chosen problem or need
* generates minimal ideas, with very limited innovation or relevance, and considers very few aspects of each idea, with very limited use of peer-feedback
* provides a very basic description of the input, output, transmission, processes and storage for the chosen web app
* specifies very basic functional and non-functional requirements
* attempts to use some processes to create a wireframe, but it lacks clarity and does not effectively demonstrate input, output and processing for the chosen idea
* selects limited relevant data, media, and processes to communicate information relating to sections of the task, but the communication is not effective.
 |

# Student-facing rubric

Table 3 – rubric for assessment

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Criteria | Limited | Basic | Sound | High | Outstanding |
| Outline the problem or need for the mobile app | The student demonstrates limited research of real-world problems or needs and identifies a chosen problem or need. | The student demonstrates basic research of real-world problems or needs and identifies a chosen problem or need. | The student demonstrates sound research of real-world problems or needs and provides some outline of the chosen problem or need with context. | The student demonstrates thorough research of multiple real-world problems or needs and outlines the chosen problem or need linking to the context. | The student demonstrates extensive research of multiple real-world problems or needs and clearly outlines the chosen problem or need. |
| Brainstorm ideas and peer-feedback | The student generates no ideas or relevant input and does not seek or use peer-feedback in their final idea. | The student generates some ideas but considers very few aspects of each idea, with basic use of peer-feedback in their final idea. | The student generates relevant ideas and considers some relevant aspects of each idea, seeking and using some peer-feedback in their final idea. | The student generates several innovative and relevant ideas and considers most relevant aspects of each idea, seeking and using peer-feedback in their final idea. | The student generates multiple innovative and relevant ideas and effectively considers all relevant aspects of each idea, seeking peer-feedback and using it in their final idea. |
| Input, output, transmission, processes and storage | The student briefly outlines the input, output, transmission, processes and storage for the chosen web app. | The student provides a basic description of the input, output, transmission, processes and storage for the chosen web app, showing basic understanding of the problem or need. | The student provides a sound description of the input, output, transmission, processes and storage for the chosen web app, showing some understanding of the problem or need. | The student thoroughly describes the input, output, transmission, processes and storage for the chosen web app with a good understanding of the problem or need. | The student clearly and extensively describes the input, output, transmission, processes and storage for the chosen web app, demonstrating a deep understanding of the problem or need. |
| Functional and non-functional requirements | The student briefly outlines functional and non-functional requirements. | The student outlines some functional and non-functional requirements, lacking detail and clarity. | The student outlines functional and non-functional requirements lacking detail and clarity. | The student thoroughly describes both functional and non-functional requirements, including purposes, user cases and test cases. | The student clearly and extensively describes both functional and non-functional requirements, including detailed purposes, user cases and test cases. |
| Wireframe | The student creates a limited wireframe. | The student uses limited processes to create a wireframe, but it lacks clarity and does not effectively demonstrate input, output and processing for the chosen idea. | The student applies some processes to create a wireframe, demonstrating input, output and processing for the chosen idea with limitations. | The student applies appropriate processes to create a clear and visually understandable wireframe, effectively demonstrating input, output and processing for the chosen idea. | The student applies appropriate processes to create a detailed and visually appealing wireframe, effectively demonstrating input, output and processing for the chosen idea. |
| Pitch deck | The student selects limited relevant data, media and processes to communicate information within the 3-minute time limit. | The student selects data, media and processes to communicate information relating to sections of the task, but some of the communication is unclear. | The student selects some relevant data, media and processes to communicate information relating to sections of the task, within the 3-minute time limit. | The student selects relevant data, media and processes to communicate information relating to all sections of the task, including the final idea and wireframe, within the 3-minute time limit. | The student selects relevant data, media and processes to effectively communicate information relating to all sections of the task, including the final idea and wireframe, within the 3-minute time limit. |

# Student support material

* Teacher resource with scaffolds, templates and graphic organisers for completing the task
* Teacher resource with additional information to support student understanding
* Program of learning

# Support and alignment

**Resource evaluation and support**: all curriculum resources are prepared through a rigorous process. Resources are periodically reviewed as part of our ongoing evaluation plan to ensure currency, relevance and effectiveness. For additional support or advice, or to provide feedback, contact the contact the TAS curriculum team by emailing TAS@det.nsw.edu.au.

**Differentiation:** further advice to support Aboriginal and/or Torres Strait Islander students, English as an additional language or dialect EAL/D students, students with a disability and/or additional needs and High Potential and Gifted (HPG) students can be found on the [Planning programming and assessing 7–12](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/planning-programming-and-assessing-7-12) webpage. This includes the [Inclusion and differentiation 7–10 advice](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/planning-programming-and-assessing-7-12/inclusion-and-differentiation-advice-7-10) webpage.

**Assessment**: further advice to support formative assessment is available on the [Planning programming and assessing 7–12](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/planning-programming-and-assessing-7-12) webpage. This includes the [Classroom assessment advice 7–10](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/planning-programming-and-assessing-7-12/classroom-assessment-advice-7-10-). For summative assessment tasks, the [Assessment task advice 7–10](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/planning-programming-and-assessing-7-12/assessment-task-advice-7-10) webpage is available.

**Explicit teaching:** further advice to support explicit teaching is available on the [Explicit teaching](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching) webpage. This includes the CESE [Explicit teaching – Driving learning and engagement](https://education.nsw.gov.au/about-us/education-data-and-research/cese/publications/research-reports/what-works-best-2020-update/explicit-teaching-driving-learning-and-engagement) webpage.

**Consulted with**: Curriculum and Reform and subject matter experts

**Alignment to system priorities and/or needs**: [School Excellence Policy](https://education.nsw.gov.au/policy-library/policies/pd-2016-0468), [Our Plan for NSW Public Education](https://education.nsw.gov.au/about-us/strategies-and-reports/plan-for-nsw-public-education).

**Alignment to the School Excellence Framework**: this resource supports the [School Excellence Framework](https://education.nsw.gov.au/policy-library/policies/pd-2016-0468) elements of curriculum (curriculum provision) and effective classroom practice (lesson planning, explicit teaching).

**Alignment to Australian Professional Teaching Standards**: this resource supports teachers to address [Australian Professional Teaching Standards](https://educationstandards.nsw.edu.au/wps/portal/nesa/teacher-accreditation/meeting-requirements/the-standards/proficient-teacher) 5.1.2, 5.4.2.

**Creation date:** 2024

# Evidence base

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