



Year 11 - Digital Technology Programme

Prepared for: Flaxmere College

Prepared by: Nathan Monk - ICT Teacher

Date: 30 May 2018

Curriculum Level: Level 6

NCEA Level: 1

Time Required: Three Terms

Total Credits Available (from all standards): 13

This programme is made up of three assessment standards: AS91877, AS91884, AS91880.



- **AS91877**
 - Subject Reference: Digital Technologies 1.1
 - Title: Develop a proposal for a digital outcome
 - Credits: 3
- **AS91884**
 - Subject Reference: Digital Technologies 1.8
 - Title: Use basic iterative processes to develop a digital outcome
 - Credits: 6
- **AS91880**
 - Subject Reference: Digital Technologies 1.4
 - Title: Develop a digital media outcome
 - Credits: 4

Overview

Using cutting edge technology to inspire students into ICT/STEM career pathways. This will be through the use of a flying drone that the students will use to develop a solution to a problem or opportunity that they choose. Examples of this project could include:

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- Aero photography and 3D modelling.
- Search and Rescue
- Product/Business Marketing
- Animal Identification

The first part of the project will be based on the following main criteria. (Please review the Marking Criteria for detailed marking of these assessments)

Stage 1 to 3 - Planning AS91877

We use planning to ensure that we meet the requirements of our customer, work within aviation law and do not breach any copyright or privacy rules. Your proposal will need to include all of the following details:

- Purpose of the Project/Flight (One or Two Paragraphs)

This is the “why” of your project and should be quite detailed. *An example could be: I intend to fly my drone over my customers address to obtain photographs. I will use these photographs to construct a 3D model of their house and section that they can use to help to market their house.*

- Outcome of Project (One or Two Paragraphs)

What is the outcome for your project? This is your desired goal/s. *Examples could include: Aerial mapping, GIS data, Aerial Photography, Animal location/audits.*

- Expected Issues/Problems (Table with Issue/s, Potential Solutions, Date Resolved, Notes, etc)

What issues do you think may occur with your project? Try to list all the things that may happen that could limit your ability to complete the task. If you present these items in a table you will be able to explain what possible outcomes may overcome them. *Examples could include: Bad weather, lack of permission from other land owners, no fly zones etc.*

- Context/End Users (One or Two Paragraphs)

What is the context (situation) in which your project is situated? Who is the customer/client?
Examples: The location of the home to be 3D modelled is 123 Anywhere Street. The client is Mr David Smith, owner of the home.

- Project Scope (List of the requirements for the Outcome)

How is the project to be delivered to the customer/client? Include the following information

- A. Requirements

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B. Specifications

C. Resources

An example could be like this: The project will be displayed as a video to the client that they can keep on their own computer. The project will be a printed set of maps showing the number of animals counted and their locations.

Research

Stage 2 is very important as it offers you a chance to adapt and improve your plan through research and feedback. Research should be carried out under the following headings:

- Legal/Compliance/Permission (This section will vary in length due to the nature of your project)

What are the legal, compliance and permission implications for your project? (Note: most of these should be identified in your Expected Issues section. However you may always add to this list if you discover additional issues.) *Some examples of legal, compliance and permissions could include: No fly areas, land owner permission, consent to film and copyright to name a few.*

- Testing and Stakeholder Feedback

Test your ideas by getting feedback from your identified end users and use the feedback to help you improve your project further. Your proposal should include evidence of this process.

- Improved Proposal

Develop an improved proposal with a set of revised specifications, requirements and resources that clearly outline what your proposed solution should achieve. This proposal needs to show clear links between the requirements, end users and resources required. It is advisable that you justify with evidence how your proposed solution meets the overall project requirements.

Evidence & Presentation

Evidence to support the proposal could be collected and displayed via a presentation, recorded video, annotated photographs or blog, but you will need to hand in a document that is your final proposal. Effective presentation methods may vary depending on the project scope. Options include, but are not limited to: PowerPoint, Word, Google Slides/Docs, Video, or Website. If you wish to use an alternative option please check with your teacher prior to starting.

Marking Sheet - AS91877

| Evidence/Judgement for Achievement/Paetae | Evidence/Judgement for Achievement with Merit/Kaiaka | Evidence/Judgement for Achievement with Excellence/Kairangi |
|---|---|--|
| <p>The student has developed a proposal for a digital outcome which involves:</p> <ul style="list-style-type: none"> * the proposed outcome statement including problem and/ or issue, scope , purpose, context <p>The student has</p> <ul style="list-style-type: none"> - outlined the proposed outcome statement (problem/issue, scope, purpose, context) - Provided an outline of what the proposed digital outcome is and how a problem/issue statement, the purpose of the digital outcome and where the digital outcome will be used. <p>For example (partial evidence): <i>"I am going to fly a drone over a farmers paddock to help count the number of sheep. This will be used to help the farmer on really hilly areas that are hard for him to reach on foot..."</i></p> <ul style="list-style-type: none"> * the requirements (including specifications) <p>The student has:</p> <ul style="list-style-type: none"> - outlined the requirements that will make this project successful - Provided a relevant list of the requirements to make the outcome fit for purpose. <p>For example (partial evidence):</p> <ul style="list-style-type: none"> - <i>Includes information on why a particular drone is needed.</i> - <i>Maps showing no-fly zones or other restricted airspace.</i> | <p>The student has developed an informed proposal for a digital outcome which involves:</p> <ul style="list-style-type: none"> * using feedback and research to improve the proposal <p>The student has improved the proposal after feedback. They have gone through and iterative development process and used other's feedback to make informed improvement to their proposal.</p> <p>For example (partial evidence): <i>"After talking to Airways about flying the drone during the night I have realised that I would be breaking the law. I have now moved the flight time to during daylight hours..."</i></p> <ul style="list-style-type: none"> * ensuring the proposal shows clear links between the requirements, customer/client and proposed outcomes <p>The student has:</p> <ul style="list-style-type: none"> - ensured the proposal shows clear links between the requirements, customer/client and proposed outcomes - Shown consideration for the customer/client's needs and available resources (i.e. time/ expertise etc) and the context in their development of their proposal. Their proposal clearly addresses the problem, issue, purpose or context. <p>For example (partial evidence): <i>"Due to my inexperience in drone flying I have asked for assistance from the teacher to help me pilot the drone..."</i></p> | <p>The student has developed an effective proposal for a digital outcome which involves:</p> <ul style="list-style-type: none"> * justifying, with evidence, that the proposal meets the overall project requirements <p>The student has:</p> <ul style="list-style-type: none"> - justifying, with evidence, that the proposal meets requirements - Provided more than their own opinion, refined their proposal based on the feedback of others, and provided justification for the changes made. They provide evidence of meeting the overall requirements. <p>For example (partial evidence): <i>"...although the customer liked the idea... the customer suggested... as a result the project will now include... this addition will help to really get the project completed. ...it should be an effective strategy because.... this approach should be successful because..."</i></p> <p><i>The examples above are indicative samples only</i></p> |

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| <p>* the end users The Student has stated who their customer/client's are and outlines some expectations based upon evidence from research. For example (partial evidence): <i>"This project will help the farmer identify how many sheep are in fields that are difficult to access..."</i></p> <p>* The resources required (for example, people, equipment, timeframe estimate) The student has: - outlined the resources required (people, equipment, time) - listed the resources required for the digital outcome, outlined what they are, and why they are needed. For example (partial evidence): <i>I will need to access Office 365, and Google Maps/Earth at school. I will also need to learn how to pilot the drone...</i></p> <p><i>The examples above are indicative samples only</i></p> | <p><i>The examples above are indicative samples only</i></p> | |
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Stage 4 & 5 - Log of Iterative Processes AS91884

This part of the project requires the use of basic iterative processes (a repeating cycle of testing and analysis) to help develop a digital outcome. Students will need to keep (and present) development logs of iterations for their testing and project. To begin with, they should decompose (break down) the project into increasingly complex versions for each iteration. They should think of what functions or processes are required and how to develop this in a sensible staged way. **(An example could be: Simple flight patterns progressing to complex).**

Each iteration should contain evidence of:

- Planning (At least two paragraphs)
 - A basic written plan of what the project should achieve in each iteration and how this could be achieved

(An example could be: Flight plans, diagrams, or simple written descriptions).

- Development (At least two paragraphs)
 - Writing the processes in a consistent format, including comments.

(An example could be: “I will be testing the drone flying pattern by developing flight plans that start simple and become more complicated as each stage is tested....”)

- Trialling (Table of testing)
 - Students should have a clear idea of what they are trialling in each iteration.
 - Students could record this information in a written paragraph, test table or annotated screenshots.

(Examples could be: Table showing what each stage of testing was, what the outcome for each stage was and any notes/comments on each stage.)

Project Evaluation

- Evaluation (Paragraph/Short Video)
 - Students should have a written paragraph, or short video clip, outlining how successful their processes were at achieving their objectives and what their next steps would be.

AS91884 - Marking Criteria

| Evidence/Judgement for Achievement/Paetae | Evidence/Judgement for Achievement with Merit/Kaiaka | Evidence/Judgement for Achievement with Excellence/Kairangi |
|--|---|--|
| <p>Use basic iterative process to develop a digital outcome.</p> <p>The student:</p> <ul style="list-style-type: none"> * plans a digital outcome to address a problem, need, opportunity or interest <p>For example (partial evidence): <i>They research the type of suitable flight patterns for the required task. They have taken into account legal and moral implications of their planned flight.</i></p> <p>The student:</p> <ul style="list-style-type: none"> * develops the digital outcome by decomposing the project <p>For example (partial evidence): <i>They have decomposed their basic project into components that need to be developed and tested.</i></p> <p>The student:</p> <ul style="list-style-type: none"> * trials components of the outcome in an iterative manner <p>For example (partial evidence): <i>They have tested the process for a basic flight. They next plan additional steps/functions. Each step becomes more complex. The testing process is visible with their development log.</i></p> <p>The student:</p> <ul style="list-style-type: none"> * test that the project functions as intended <p>For example (partial evidence): <i>At each stage, the student tests the functionality of the project. This is evidenced within their development log.</i></p> <p>plan</p> | <p>Use basic iterative processes to develop an informed digital outcome which involves:</p> <p>The student:</p> <ul style="list-style-type: none"> * uses information from testing and trialling to improve the outcome. <p>For example (partial evidence): <i>Digital photographs have been provided of the testing process at each stage.</i></p> <p>The student:</p> <ul style="list-style-type: none"> * trials multiple techniques/tools and selects those which ensure the outcome functions as intended <p>For example (partial evidence): <i>They have trialled two different techniques for flying a flight plan and has selected the most suitable choice.</i></p> <p>The student:</p> <ul style="list-style-type: none"> * addresses any implications <p>For example (partial evidence): <i>They have addressed the fact that permission must be gained from land owners for flying overhead even if digital imagery is not being used or taken. They have ensured that their flight meets all relevant local and national rules/guidelines for drone flights, and if needed permission from Airways NZ has been granted.</i></p> <p><i>The examples above are indicative samples only</i></p> | <p>Use basic iterative processes to develop a refined digital outcome.</p> <p>The student:</p> <ul style="list-style-type: none"> * applies information from the planning, testing and trialling of components to develop a high-quality outcome <p>For example (partial evidence): <i>Evidence has been provided that their planning, testing and trialling has allowed them to develop all components and information to a high quality. Their outcome functions as intended and has no obvious errors in functionality or presentation of the information. Evidence gained from trialling is thorough and organised testing has been integrated into the outcome in an ongoing manner to ensure the outcome is of high quality, including aesthetics, functionality and usability. The student has clearly addressed any ethical, moral and/or legal issues that arose during planning.</i></p> <p><i>The examples above are indicative samples only.</i></p> |

| Evidence/Judgement for Achievement/Paetae | Evidence/Judgement for Achievement with Merit/Kaiaka | Evidence/Judgement for Achievement with Excellence/Kairangi |
|---|--|---|
| <p>The student: * describes any legal or moral implications their project may have</p> <p>For example (partial evidence): <i>They have researched the legal and moral implications for their project such as copyright, no-fly zones and privacy.</i></p> <p><i>The examples above are indicative samples only</i></p> | | |

Stage 6 & 7- Develop a digital media outcome AS91880

You are now going to create a digital media outcome to showcase your work from the two previous assessment standards. This will be in the form of a website and may be used for an information kiosk for an exhibition, or as a standalone outcome.

Your website should include the following:

- A home page explaining what the site is about (e.g. “This site showcases the use of Drones to capture images to assist with...”)
- Topic pages, each describing a specific part of your process such as planning, testing, outcomes
- A “Further Information” page detailing links for anyone wishing to know more about the topics
- Easy to use Navigation (i.e. users can navigate to anywhere in the site, without having to use the ‘back’ button).

You will be assessed on how well:

- you apply appropriate tools, techniques and design elements in developing your digital media outcome
- you apply an iterative development process to improve and refine your digital media outcome
- your digital media outcome has synthesised information from your planning, testing, and trialling to improve the quality of the outcome
- you have described and addressed relevant implications in your final digital media outcome

Final Submission

- Portfolio evidence gathered as you have completed the task that provides evidence of planning, trialling and testing your outcome. This could include planning documents, sketches, annotated photographs, screen dumps, diagrams, short video clips, or code, or other evidence agreed prior with your teacher. It is expected that will submission will be integrated into your website, but this does not have to be the case
- The final digital product.

AS91880 - Marking Criteria

| Evidence/Judgement for Achievement/Paetae | Evidence/Judgement for Achievement with Merit/Kaiaka | Evidence/Judgement for Achievement with Excellence/Kairangi |
|--|--|---|
| <p>Develop a digital media outcome.</p> <p>The student:</p> <ul style="list-style-type: none"> * uses appropriate tools, techniques and design elements for the purpose and end users of the outcome <p>For example (partial evidence): <i>The student looked at website design tools and chose the most appropriate for the project. They have added both text and graphical element. They may have failed to show any evidence of refinement of the outcome through regular testing and further development.</i></p> <ul style="list-style-type: none"> * applies appropriate data integrity and testing procedures in the development <p>For example (partial evidence): <i>The student proofread all text and ensured it all displayed on the web page. They have tested the website to ensure that all the links work and that the graphics display correctly on the school's computers or on their own device.</i></p> <ul style="list-style-type: none"> * describes implications that are relevant to the outcome <p>For example (partial evidence): <i>The student spoke to the customer/client to confirm their own perceptions of the project. The student recognises that is unethical to use copyrighted graphics/video/works.</i></p> | <p>Develop an informed digital media outcome.</p> <p>The student:</p> <ul style="list-style-type: none"> *uses information from testing procedures to improve the quality of the outcome <p>For example (partial evidence): <i>The student tested readability and legibility of the the on the web pages weight various font and colour pairing and made a selection based upon feedback and testing with a range of users. The student tested the website on a range of browsers and found that it did not display properly in one of the browsers, so they researched a solution and updated their CSS.</i></p> <ul style="list-style-type: none"> * addresses relevant implication in the outcome <p>For example (partial evidence): <i>The student spoke to some community members to test whether their own perception of the project was understandable. They used the feedback to improve upon their communication of their ideas. They have ensured all local references are spelled correctly and that their image have appropriate privacy sign-offs if required, and have not infringed upon anyone else's intellectual property.</i></p> | <p>Develop at refined digital media outcome.</p> <p>The student:</p> <ul style="list-style-type: none"> * has shown iterative improvement throughout the development and testing process <p>For example (partial evidence): <i>The student has iteratively improved their planned navigation menu after testing with users and across a range of devices. They improved element of the layout and information after final testing and feedback from their school community. They kept comprehensive evidence of multiple increasingly refined versions of their outcome.</i></p> <ul style="list-style-type: none"> *applies design elements effectively <p>For example (partial evidence): <i>The student has carefully designed their outcome, carefully considering design elements. Evidence provided through iterative testing of composition, form, texture, pattern, and colour balance and harmony.</i></p> <p><i>The examples above are indicative samples only.</i></p> |

| Evidence/Judgement for Achievement/Paetae | Evidence/Judgement for Achievement with Merit/Kaiaka | Evidence/Judgement for Achievement with Excellence/Kairangi |
|--|--|---|
| <p><i>They have recognised that colour contrast will affect the usability of the website. However, the student may not have chosen the best solution to address the considerations of could have more fully addressed these considerations.</i></p> <p><i>The examples above are indicative samples only</i></p> | <p>They have address the technological requirements of the presentation , such as the fact that users may be viewing the website on different browsers and/or devices and have tested the outcome to ensure functionality across browsers, devices.</p> <p><i>The examples above are indicative samples only</i></p> | |

Final grades for each standard will be decided using professional judgement based on a holistic examination of the evidence provided against the criteria in the Achievement Standards.