2

NZQA

NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD
KIA NOHO TAKATŪ KI TŌ ĀMUA AO!

COMMON ASSESSMENT TASK

Level 2 Digital Technologies and Hangarau Matihiko 2020

91899 Present a summary of developing a digital outcome

Credits: Three

Achievement Criteria		
Achievement	**Achievement with Merit**	**Achievement with Excellence**
Present a summary of developing a digital outcome.	Present an in-depth summary of developing a digital outcome.	Present a comprehensive summary of developing a digital outcome.

Type your School Code and 9-digit National Student Number (NSN) into the header at the top of this page. (If your NSN has 10 digits, omit the leading zero.)

Answer all parts of the assessment task in this document.

Your answer should be presented in 12pt Arial font, within the expanding text boxes, and may only include information you produce during this examination session.

You should aim to write between **800–1500 words** in total.

Save your finished work as a PDF file with the file name used in the header at the top of this page ("SchoolCode-YourNSN-91898.pdf").

By saving your work at the end of the examination, you are declaring that this work is your own. NZQA may sample your work to ensure that this is the case.

You may only access the digital outcome and Common Assessment Task. Internet access is not permitted.

Achievement

04

INSTRUCTIONS

Read all parts of the assessment task before you begin.

Choose any digital outcome that you developed during the year.

Type your chosen digital outcome in the space below:

App: Math Num-Paws

Begin your answers on page 3.

ASSESSMENT TASK

(a) (i) Describe your chosen digital outcome.

> My chosen digital outcome was developed in the form of an app with the purpose of accommodating numeracy skills and abilities to children who were Year 3 students.
>
> The content of my app focuses around the Sustainable Development Goal number four - Quality Education. My digital outcome is mathematically based that has a variety of subtopics ranging from addition, subtraction, multiplication, division as well as other related topics.
>
> My outcome is responsive across iOS devices such as iPads and iPhones, as majority of my stakeholders who are children from ages 6 to 8 have iOS devices, which will therefore allow for convenience and accessibility to my app.
>
> I used a software platform called Thunkable to develop my app with a method of block coding. All components that were included during the development process of my app were sourced and obtained from websites such as Pixabay, Google images and the Public Domain. Photoshop was the platform that I used to edit any images that needed to be fit and suitable to the theme of my app, as there were a variety of advanced built-in tools that enabled easy editing.

(ii) Explain the reasons for some of the decisions that you made during the development process for your chosen digital outcome, with regards to:

- the sequencing of key tasks in the development of the digital components
- the selected methods chosen to address requirements.

> **Sequencing of key tasks**
>
> Before going into the more meaty and advanced developments of my app, I made sure to do some research around the context of my app, which enabled the specification of what the issue was and how it could be resolved. Based on my research, Quality Education was a global issue around the world where people in some countries did not have the resources and equipment necessary to pursue education in their area. Therefore, this research has allowed me to identify the problem, and work towards a solution which is create a game in the form of an app where children could easily access despite the lack in resources for education.
>
> After some thorough research and investigation, I sent out surveys to my end-users to get a more in-depth idea of what my target audience would appeal to. This was done through face-to-face interviews, surveys, and gathering and collating feedback and information to further enhance my understanding and knowledge.
>
> I made a proposal document, where I identified the problem and stated a solution and the purpose of my outcome. Furthermore, I added more detail and information on the requirements and specifications of my outcome, which

allowed for a more information and understanding that enabled me to always refer back to while developing my app. I also stated how the different implications would have been incorporated into my app.

That was the complete process of my research before developing my app. I then moved onto the implementation and incorporation of design conventions and heuristics to model a prototype of my app. This was done by drawing up wireframes that were of low fidelity to develop a basic idea of what my app would look like visually. This was then refined by designing mockups that portrayed a more in-depth visual idea by was limited to only a few screens such as my home screen, settings screen and menu screen. After the final design of my mockup screens, I made sure to interview my stakeholders to get feedback on the visual aesthetics and wireframes of my app. By doing this, I was able to collect feedback that would further improve my outcome to ensure that it would be fully engaging and enjoyable.

After interviewing the stakeholders, I managed the grasp the idea of what images they wanted to be in the app and how they wanted to be laid out as. I searched for images on the internet and made sure to edit them in preparation for the development of the component so of my app, in this way, there would be no unexpected additional tasks that needed to be done during the development and creation process of my app. By doing this, I was able to achieve a smooth and seamless working technique as no tasks were disrupted during the development of my app.

Before moving onto the technical and advance development of my app, I used a task organizer and manager to make sure that I was on track and up to date on my day to day tasks to enable a smooth flow and less stress and frustration. I used agile project managements such as Gantt charts which outlined what tasks I was going to do each lesson of the day and how much time was to be allocated for each screen (feature of my app). By incorporating Gantt charts into the development process of my app, I was able to organize time slots for tutorials for the enhancement of my knowledge and understanding on the use of the platforms for the development of my app, as well as time for testing, coding, evaluating and troubleshooting my app. I incorporated the use of a Kanban board, to remind myself of what needed to be done, what was done and what was in the process of being completed.

During the process of creating my final outcome, I had a number of screens that were to be developed. This was done by focusing on the placement of my images, buttons, and other components within the screen, and readjusting or adding any rows and columns within my screen to make sure that it was placed where I wanted it to be. After adding all my components, I then moved onto coding which was a bit of a struggle. However, I watched YouTube video tutorials and used Google to enhance my understanding. After every screen was semi-completed, I made sure to test them regularly so that they were functional.

Requirements

Functionality of app

I made sure my app was functional by testing them on iOS devices such as the school iPad and my iPhone. They were successfully responsive, as rows and columns components were automatically adjusted to the size of the device.
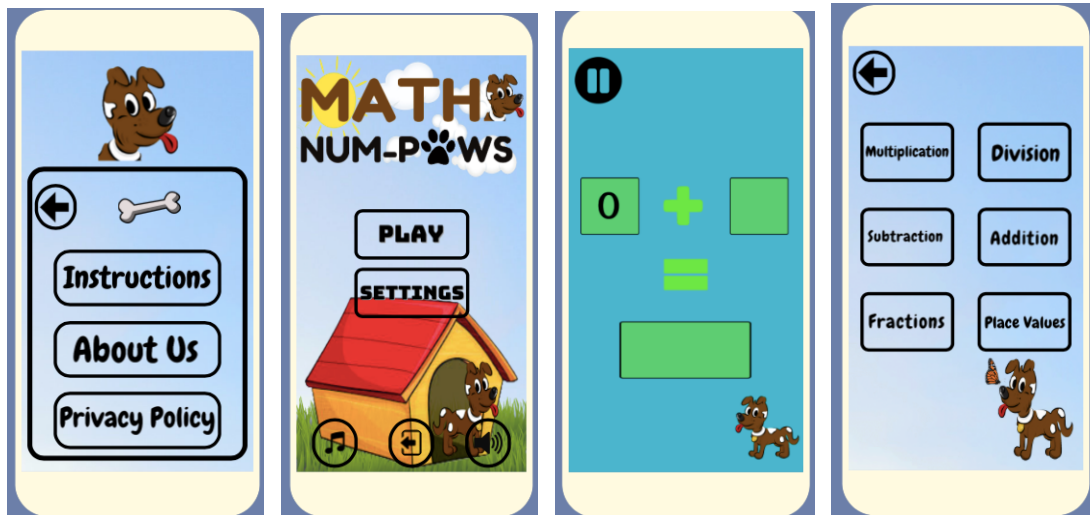
I made sure that my app was easy to navigate around by placing repetitive buttons such as the back button to allow for easy navigation and accessibility. Through this the end-user is able to play and engage in my app seamlessly without frustration.

I made sure that my images had the adequate size and resolution to ensure a fast loading time for my app. This would enable full user experience without any lagging or disruptions within the app.

I made sure that all the components in my app i.e. buttons had a purpose and were not unnecessarily there. I made sure that they were coded accurately and fit for purpose, so that they were interactive.

Appeal to target audience

I created a mood board that consisted of a variety of color schemes, images, logos and font types. By doing this, I was able to give the stakeholders and idea of what my app would look like visually with all the colors and images. I had a variety of color schemes, all involving the stakeholder's favorite colors, however, this was narrowed down after an interview with them where they chose one to two color schemes. I went for bright colors with a combination of little moderate dull colors so that my app wasn't overly bright nor too dull and gloomy.

Initially, my idea was to go with a more girly themed outcome, however during one of my interviews with the stakeholders, they didn't seem too enthusiastic about the idea and kept mentioning animals. So, I changed the theme to animals specifically a dog because majority of the girls voted for it. I made sure to incorporate images that were appropriate and suitable for them.

I had a variety of fonts that were added onto my mood board, however they were not very fitting nor legible for my target audience, so I narrowed it down to three main fonts and one of them being comic sans as it was easily readable for my stakeholders especially since they were year threes.

Content Quality

I made sure that any texts within my app was legible by having students with special abilities and students who were healthy to read what was in the screen. Successfully, they were able to read the same font style which confirmed the legibility of that font which was comic sans.

Any sentences, phrases or paragraphs were checked prior to stakeholder feedback to ensure profession. I made sure to look at similar solutions that had instructions or phrases similar to what I wanted to incorporate in my app so that it sounded concise and easy for the end-user to understand. I made sure that they were all grammatically correct and spelt correctly as well.

I made sure that anything that was not made originally by me or sourced from the internet with intellectual property was referenced and acknowledged. This was to prevent any forms of infringement against any privacy laws and to make sure that my app was pure and free from any form of breach.

(b) (i) Identify at least two of the requirements of your chosen digital outcome and discuss how you addressed them.
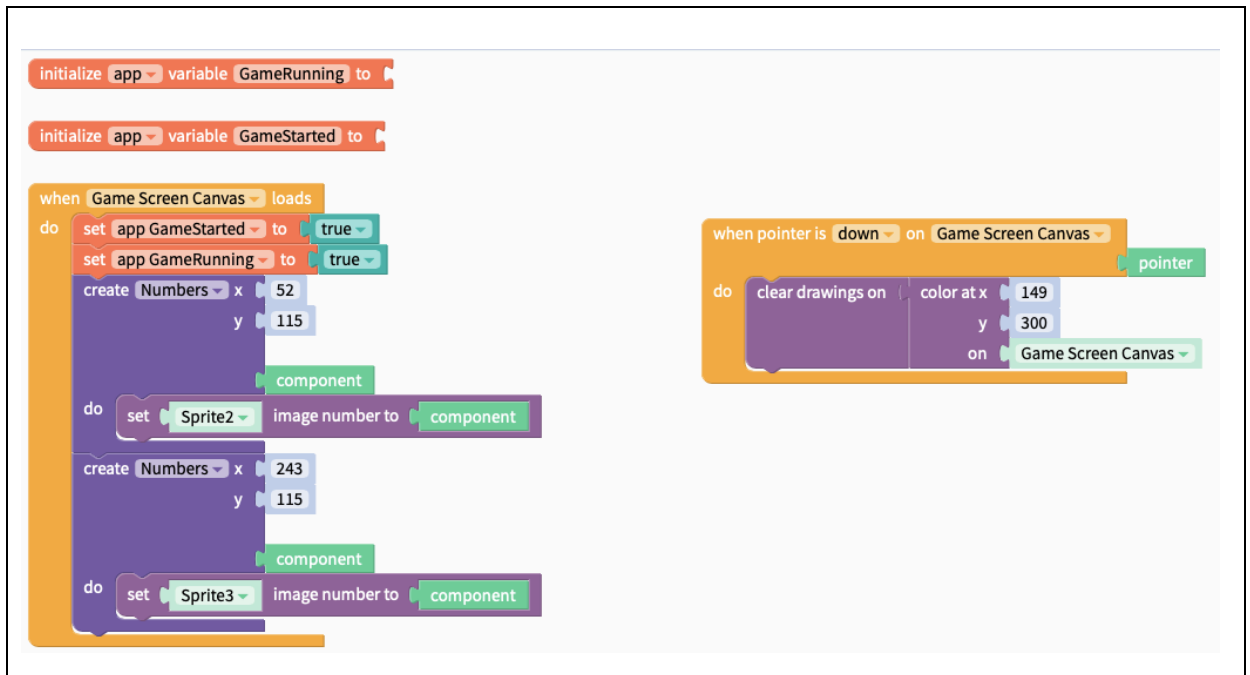
(ii) Discuss how your chosen digital outcome addressed TWO of the following relevant implications:
- legal
- accessibility
- intellectual property
- health and safety.

Legal

The legal implications were addressed by making sure that I followed the copyright laws and privacy act. This was done by having a Privacy Policy screen that addressed how personal information would be handled. Furthermore, I made sure to mention how private and confidential information was addressed by making sure that no one was culturally or sexually denigrated. I made sure that there were no false allegations or information that was not referenced and acknowledged that are within my app.

Health and Safety

I made sure that the implication of health and safety was addressed by incorporating necessary features and components in my app such as notifications or pop-up quotes of how a certain posture helps with health, as well as inspirational quotes that link screen time and limiting it to prevent eye problems and addiction. By doing this, it'll decrease the likelihood of long term and short-term damages to the human bodies and mental health.

(c)   You followed a development process to achieve your chosen digital outcome.

(i)   Evaluate the decisions you made in the development process for your chosen digital outcome.

I made sure to look at outcomes that were similar to my app (similar solutions). By doing this, I was able to have an idea of the possibilities of what my app could be like. I made sure that the solutions that I looked at were most engaging, aesthetically pleasing and appealing. These solutions successfully carried out their purpose and had very positive feedback and reviews, and this was an indication that my app could be probable to be as engaging, appealing and successful as well.

I decided on using Thunkable as my main software platform developer because it had more built-in tools that were more advanced and allowed for more usability as opposed to App Inventor which was my second alternative. Thunkable had pre-tutorials as well that was adequate enough to build a basic foundation of the understanding of the platform. Furthermore, Thunkable was free and was an online platform that didn't require to take up storage as I was running low on storage on my laptop. It also saved my work automatically which reduced stress and anxiety of losing my work. Another positive thing about Thunkable was that I was able to make multiple copies immediate as opposed to having to do it all over again which saved so much time and effort.

For my editing tools, I decided on using Photoshop as my main platform for editing photos. Although, I struggled to familiarize and get used to it in the beginning, I used a variety of resources such as YouTube videos, Google and my father who is an experienced editor to enhance my understanding on how to use it. Furthermore, it had more built-in tools as opposed to GIMP which was my second alternative of an editing platform. Photoshop compared to GIMP had more resources such as basic tutorials that allowed for easy and quick understanding on the basics of how to edit and remove backgrounds of an image. I also made majority of the file type for my images .png as transparent backgrounds were ideal for my images, and I was able to just edit and add in certain images that were fit for that particular main image.

I used After Effects to create my animation although Photoshop also had the tools for it, I found After Effects to be easier. After Effects also had tutorials for beginners that were quick and concise which developed and furthered my understanding on how it functioned and what specific tools were needed for what. After every animation, I used another platform called Media Encoder to convert all my animations to .gif. I decided on a .gif because it was the required file type for it to function on Thunkable, any other file types wouldn't have worked.

I also used Canva as another editing platform. I used this platform as an initial editing device as it was simple and quick. It also had images that were free and could be sourced from which was quick and less time consuming. Canva was also an online platform that was free as well and didn't consume any storage in my laptop.

(ii) Discuss what you could have done differently for the digital components to improve your chosen digital outcome.

To improve the digital components of my digital outcome, to ensure minimalist design and optimal work efforts, I could have used a more effective agile project manager. By doing this I am able to be more organized and manage my time more efficiently and effectively.

Another thing that I could have done differently was to have regular stakeholder interviews and feedback that would have enabled better gathering and collation of feedback. By doing this, I am able to work towards something that is more specified and defined. Having regular visits at least two to three times a week would have been more ideal as I would have maximized the use of resources around me for a more impactful and engaging outcome.

Lastly, I would also improve on maximizing the use of my resources such as teachers, friends and other peers for more feedback to ensure a more confirmed and stable honest opinion towards my app.

Achievement Exemplar 2020

Subject	Digital Technologies		Standard	91899	Total score	04
	Grade score	**Annotation**				
	A4	The candidate chose a digital outcome and explained the decisions made relating to the sequencing of key tasks, as well as methods used to address the requirements.				