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To be completed by candidate:

NSN:	School Code:

COMMON ASSESSMENT TASK

Level 2 Digital Technologies and Hangarau Matihiko 2025

91899 Present a summary of developing a digital outcome

Ngā Kaiako o Hangarau Matihiko Aotearoa
DIGITAL TECHNOLOGIES TEACHERS AOTEAROA

DERIVED GRADE

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-91899.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.

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2025 DERIVED GRADE EXAM ONLY

INSTRUCTIONS

The task in this assessment requires you to discuss a digital outcome you developed within the past 12 months.

You must illustrate your answers with three images (JPG or PNG) you have prepared in advance:

- a single image of the digital outcome (e.g. a website, a magazine spread, an electronic device)
- a single sample image of a digital component of the outcome in the software used to create it, for example:
  - the HTML/CSS for a website in a text editor (e.g. VS Code, Notepad++)
  - the 'layers' view of a vector or raster graphic (e.g. in Inkscape/Illustrator, GIMP/Photoshop)
  - the source code for controlling an electronic device (e.g. in Arduino C, PBasic)
  - the CAD/CAM file for a 3D model (e.g. in Blender, Fusion 360, SketchUp)
  - the source code for an application in a suitable text editor (e.g. VS Code, Replit).
- a single image of your development process (e.g. agile development, a planning chart).

During this assessment, you may access only the three images you have prepared in advance. You may not access your digital outcome, any other online or paper resources, or the internet.

If you developed your digital outcome as part of a group, you must write about your role and specific contributions to the project.

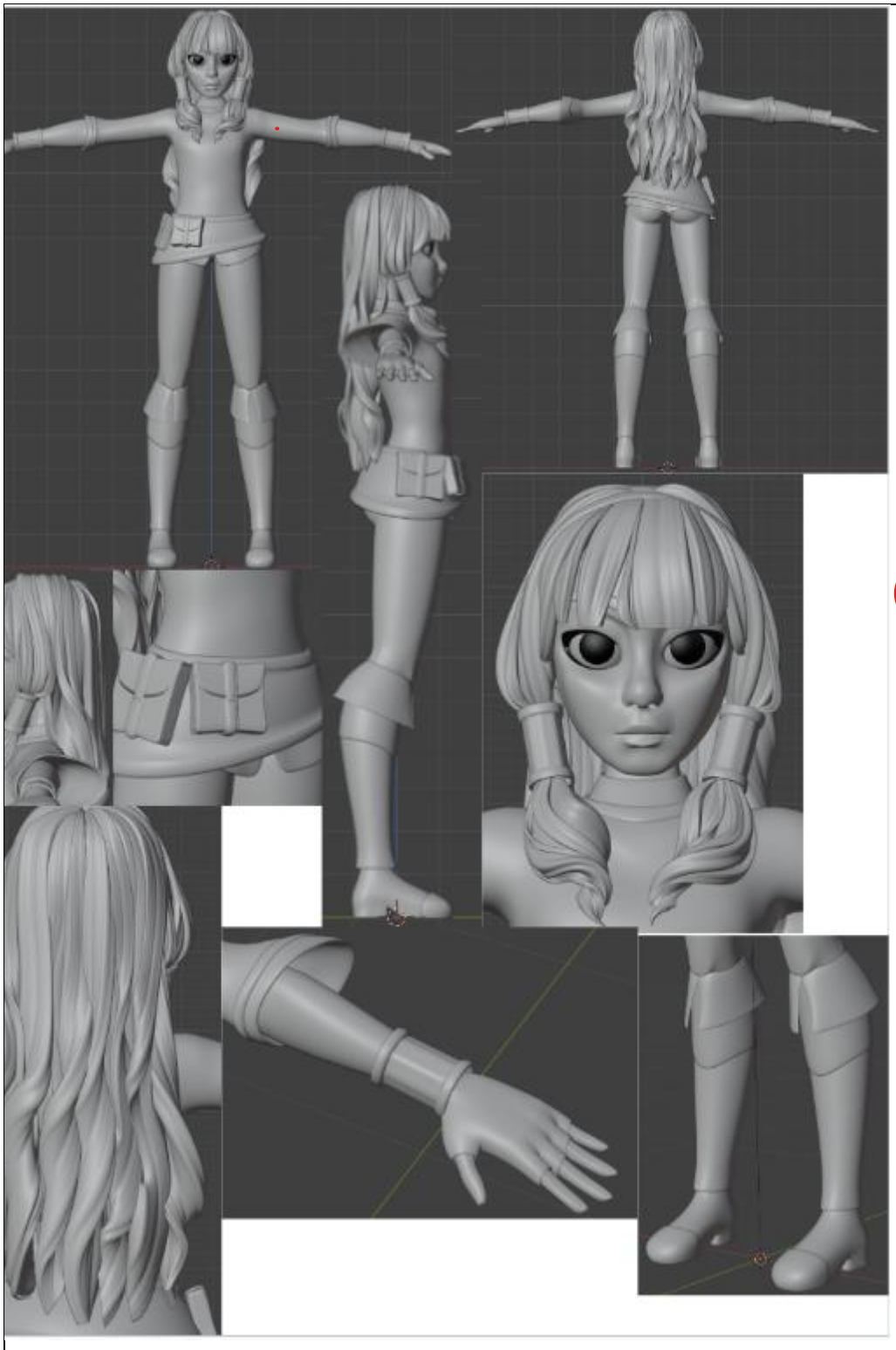
Read all parts of the task before you begin.

ASSESSMENT TASK

Name the type of digital outcome you created (i.e. website, app, magazine, animation, etc.)

A 3D model of my original character Mirra

(a)(i) Insert the image you prepared of your finished outcome (what the end user sees).



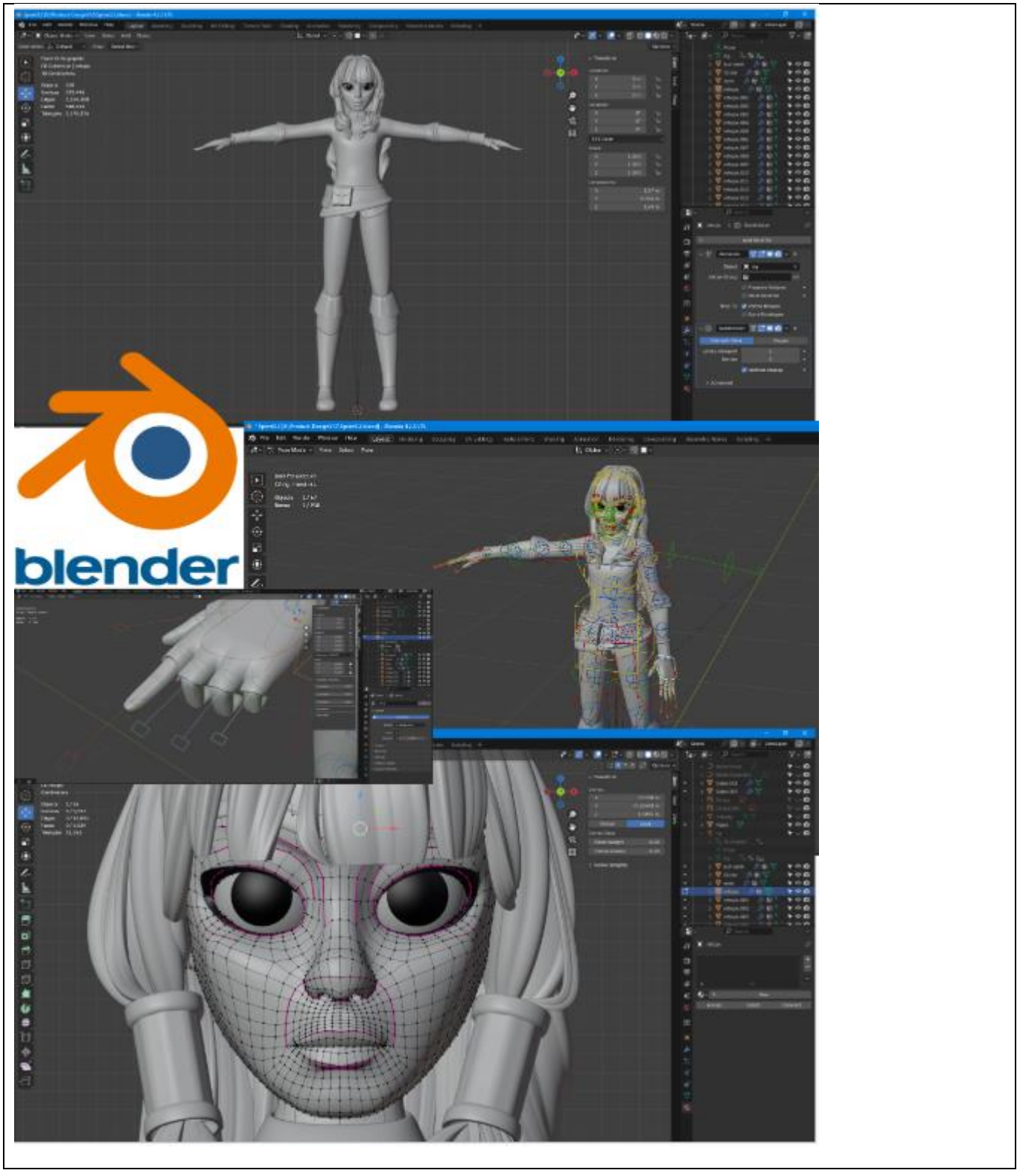
This is similar to below can you put a render in of your model so it doesn't look the same.

Name the main software you used to create the digital component of your outcome (i.e.

Fusion360, Blender, VS Code etc.)

Blender

(ii) Insert the image you prepared of a digital component of your outcome in the software used to create it.



(iii) Insert the image of your development process that you have prepared.

Describing Your Digital Outcome and Development Decisions

(b)(ii) Describe the digital outcome you developed. What is it? What is its purpose? Who is it for? What are its key features and functionalities?

The digital outcome I have designed and developed is a 3D model of my original character Mirra. The 3D model looks like a girl with bright wavy pink hair wearing fantasy/medieval clothing. My purpose was to create a 3D model of character with clean retopology and rigging/bones so that it can be used for animation and or as a game model. It was made for people who like my art style and don't know/don't want to create their own models. This meant the key features of my outcome must be a 3D mode, aesthetic, have clean mesh, and have extensive enough rigging.

(ii) Explain TWO key decisions made during development that relate to any of the following:

- **Tools and techniques:** What software, programming languages, platforms, or design methods did you choose and why?
- **Consultation with subject-matter experts:** Did you consult anyone with specific knowledge or expertise? If so, who and how did their input influence your decisions?
- **Testing and trialling with particular people or groups:** How did you test or trial your outcome in its early stages, and with whom? What did you learn from this?

Decision one: Tools and techniques / Consultation with subject-matter experts / Testing and trialling *(highlight the one you have chosen)*

Tools and techniques:

For my project I chose to use the program Blender because it is a software I am familiar with, having used it to create other projects, and the reason I started using it was because it is a free open source program considered the go to for users wanting to create anything 3D.

Going deeper two important tools and techniques I used in Blender to create my outcome was the sculpting tool, and the twisting tube technique. The sculpting tool in Blender is a way for user to model a 3D object organically, I used this tool extensively when creating my product to change the basic shapes the circles and rectangles into a human character shape. The line tube tool can be used to create hair strands because the easy way they can be manipulated. This was very important for my product as a large part of my character's design was focused on her bright wavy pink hair, so the line tube tool has a technique where it can be twisted giving the effect of curly/wavy hair.

Decision two: Tools and techniques / Consultation with subject-matter experts / Testing and trialling *(highlight the one you have chosen)*

Consultation with subject-matter experts:

I started my project with about 4 weeks of designing and planning on how exactly I was going to go about creating my 3D character. I did a lot of research on how experts designed and developed similar projects of creating 3D models from preexisting character designs. What I learned was that even though everyone has a different art style and therefore a different work approach they still separated the project into 4 parts: Basic shape creation, so putting in circles and squares/rectangles together to have a ruff shape of the design. Sculpting those basic shapes into a more human appearance. Cleaning up the messy mesh aka doing the retopology and then adding bones/rigging to mesh. This

part is only done if the person is planning an animation/using the model in many different poses. And lastly the details, so for my project this is the eye brows and eye lashes, hair, clothes, and colours. I thought adding all the details would take the longest but because of the care put into making the mesh clean with a small vertices count making the clothes was very easy.

With the detailed plan I had when beginning my project I didn't waste time and ~~was lost~~, overall making my product into exactly how I imaged it would be.

by following a structure used by industry experts and knew what to do)

Addressing Requirements and Implications

This section will require you to to focus on how the aesthetics, functionality, cultural and/or ethical, sustainability and/or future-proofing, usability, and end-user considerations were considered during development of the digital outcome.

Obvious implications	Implications that affect the user directly	Less obvious and/or wider implications
Aesthetics Functionality	Usability End-User Considerations	Sustainability / Future-proofing Cultural / Ethical

(c)(i) Name one of the most important requirements of your digital outcome.

That my 3D model of my character must be aesthetically pleasing.

(ii) Name the implication (*choose from one in the table above*) that best relates to the requirement named above in (i)

Aesthetics

(iii) Discuss in detail how your digital outcome addressed the specific requirement named in (i), keeping in mind the implication you identified in (ii). Provide specific examples of the steps you undertook and how you implemented these to meet this particular requirement and implication.

My project is entirely based on creating a 3D model of one of my own originally create characters. It is created to be a character model that can be used in animation and or gameplay, if it is not pleasing to the eye then why created it? This requirement of the outcome being aesthetically pleasing easily pairs along with Aesthetics implication, aka the is it nice to look at? implication. As an artist who already does a lot of 2D art and has done a lot of research and some 3D art I do consider that I know if something looks good and have some ideas of how to translate a 2D character design into a 3D model. The steps I took were to make sure that the model was aesthetically pleasing was to follow my character design sheet I made for my 2D design closely but changing somethings so that the 3D model Mirra look like the same character as 2D Mirra but being free with the small things like the exact clothing she is wearing. The biggest design must I made sure to stick closely to the 2D design was is Mirra's hair, if the hair is not bright wavy pink is it really Mirra? Mirra's hair being pink is very important for the prettiness of the rest of the

end user considerations -

model is that the colours of everything else are either there to completement or contrast the pink, making the hair the center of the design.

Overall, I think I succeeded in design and creating my outcome into an aesthetically pleasing 3D character model. The 3D hair strands are wavey, the medieval clothing does give the effect that Mirra is fantasy character and not just someone who died their hair, the 3D model's face does translate that even though she has pink hair she isn't a child, an the colours tie it all together.

dyed.

(iv) Name ANOTHER implication (choose **another implication** from the provided list that represents a *different type of consideration*) that you had to consider during the development of your outcome

The 3D model must have mesh rigging/bones

(v) Name a different requirement of your digital outcome that relates to the implication named above (iv).

End-User Considerations

(vi) Discuss in detail how your digital outcome addressed the specific requirement named in (v), ensuring you explain how the implication you identified in (iv) was considered and implemented. Provide specific examples of the steps you undertook and how you put these into practice to meet this particular requirement and implication.

My digital outcome fulfills the requirement I set that the 3D model has have rigging. The quick explanation on what rigging is when the mesh is given points where the can turn and rotate, like if they had bones and joints. Rigging is used when posing character models or doing animation because it is the best and easiest way to manipulate a 3D mesh into shape/pose that look natural. This is important for my end-users because if I want people to be able to use my character model, giving them the proper rigging is a must. The steps I undertook in add in rigging was to take my sculpted mesh and clean it up by changing where the vertices into perfect rectangle/square shapes. This also had the effect of reducing the vertices count making the model much easier to load for low end computers. This process how cleaning up the mesh is called retopology, and only after the retopology is done can the bones be added. I completed this requirement and this can be seen in the image I prepared of a digital component where I moved the character model's arm and fingers.

Specifics - what is rigged so it can be animated?

Evaluating Development Decisions and Future Improvements

(d)(i) Reflect on the overall development process of your digital outcome. Think about the strengths, weaknesses, and overall effectiveness for a key decision you made, and judge:

- the direction this decision took your digital outcomes development in
- whether it helped, challenged or constrained making your project in depth and detailed
- what unique or significant opportunities came from this decision
- what insights you gained and the overall impact this decision had on your development process

I used the Agile Development style when designing and developing my 3D character, which is when you split up your project time into 4 sprints and at the end of every sprint you consult with others your progress. I spent the first sprint only on designing and planning on how exactly I was going to go about creating my 3D character. I was worried about overscoping, a problem where you plan too much things to create/do and are unable to finish your work. So, by knowing that each sprint was ruffly about 4 weeks long and the 4 parts of my project I split then into tasks and wrote then into Trello board where I could easily see exactly what had been done and what needed to be done. The detailed plan I had made it so that when beginning my project, I didn't waste time being lost I got straight into it. This helped me greatly, especially when starting the details, I didn't miss anything like the small bags Mirra has attached to her belt. Going back to the fact that at the end of every sprint when did feedback with others, this helped me know if I was on track with my progress and to know if others thought I should add something to the design

(ii) Looking back at your project, name at least two key decisions you made that you would do differently now. For each decision, explain *what* specific changes would you make, *why* you would change it, and *how* the change would improve your digital outcome referencing the impact it would have on the outcome's aesthetics, functionality, cultural/ethical considerations, sustainability/future-proofing, usability, or end-user experience.

have you got any ideas?

merit

need to answer the last 2 questions fully to have the opportunity for Excellence. Overall some good examples and specific detail :)