National Certificate of Educational Achievement
TAUMATA MĀTAURANGA Ā-MOTU KUA TAEA

Exemplar for Internal Achievement Standard

Digital Technologies Level 1

This exemplar supports assessment against:

Achievement Standard 92005

Develop a digital technologies outcome

An annotated exemplar is a sample of student evidence, with a commentary, to explain key aspects of the standard. It assists teachers to make assessment judgements at the grade.

New Zealand Qualifications Authority

To support internal assessment

Grade: Achieved

For Achieved, the standard requires the student to develop a digital technologies outcome.

This involves describing the purpose, potential users, requirements, and specifications of the outcome. Appropriate tools or techniques of a digital technologies domain are then used to produce an outcome that addresses the requirements and specifications. The outcome must be tested to ensure basic functionality.

This student has described the purpose of the outcome as developing a modern bus stop asset for a computer game. The users are game developers. Requirements and measurable specifications are described.

Blender has been used to create the outcome, and some of the techniques used are explained alongside screenshots of the process. Addressing the requirements and specifications is seen in the outcome, as well as in the testing carried out.

Testing means the student examining their own outcome, or parts of it. This can be seen in the analysis of the first design, and in the changes made to the appearance of the model and measurements.

For Merit, the standard requires conventions relevant to the tools or techniques of a digital technologies domain to be followed. The evidence should show the student has followed conventions that relate to Blender and 3D modelling. While they have used a reference image, further examples would be expected, such as showing that they have worked on the form of the object first or used groups to organise the shapes.

For the DTO you are developing:
The DTO I am developing is a modern bus-stop asset for a computer game.

What is the purpose?
The purpose of my bus-stop that I have designed is to immerse the player in the world of the game. It needs to be a realistic looking model, placed around a map for use and for players to see as they experience the game.

Who are the potential users?
The potential users of this model are fellow developers of the game and players that will be viewing and using the model.

What are the requirements?
The requirements for my Bus-stop are that the model will be able to fit well within the scenery of the map. It will have a modern look, and have realistic textures to go with the model.
It needs to be easily recognisable as a bus stop from a long way off.

What are the specifications?
The specifications for the model is that my model can fit a player. Though it is a digital model making it to real-world measurements will ensure it has the right ratios and is easily scaled when it is put in the game. It should be 2m high, 3.5m long and 1m wide.
It should be easily recognised as a bus stop by at least 90% of those who use it.

What tools and techniques did you use in developing the DTO?
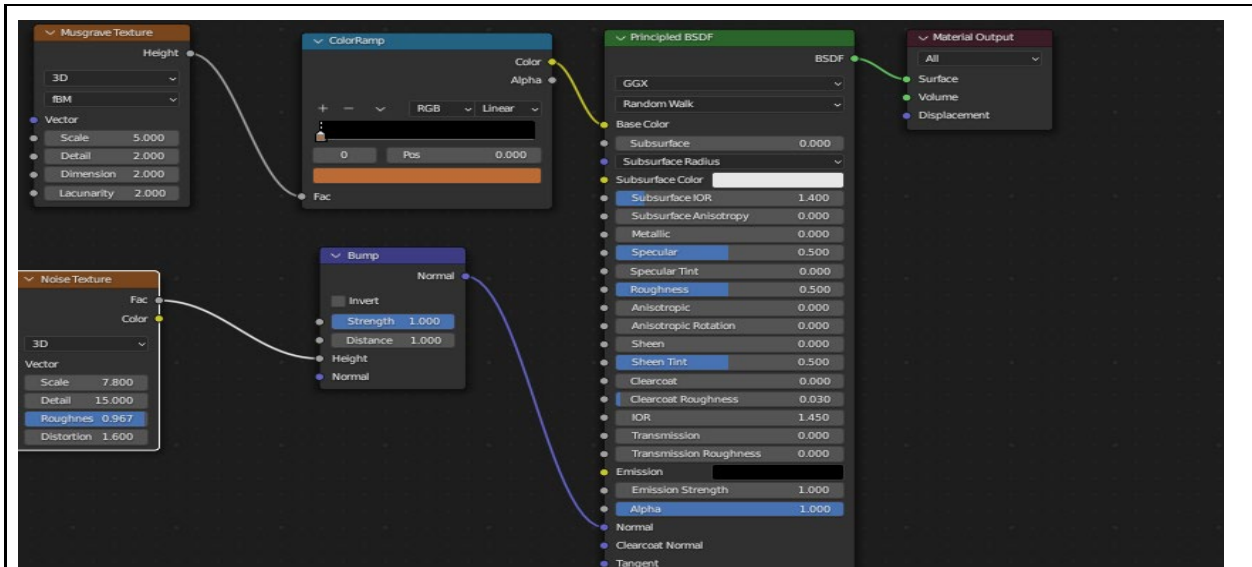I was using blender and the modelling tools within blender that I used were loop cuts, extruding and bevelling, just to name a few, I used reference images to find accurate lengths and heights for the model.
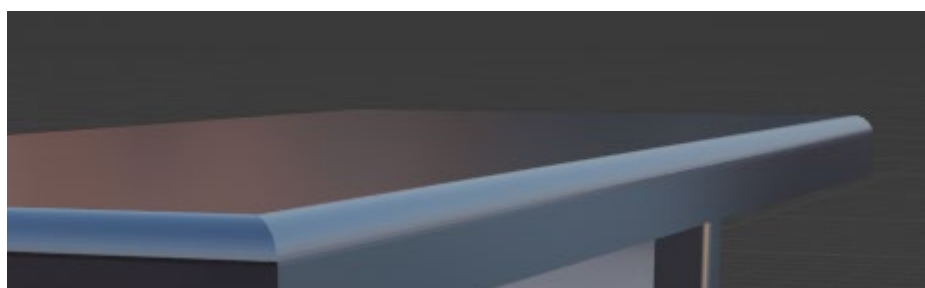
Bevelling

Extruding

Texturing – I used the node editor to create realistic materials for the model. Textures add variations that make the material look less computer generated as nothing in the real world is all exactly the same colour all over.

Reference image that I based by bus stop on. Mine has a flat roof.

What testing (you checking your DTO) did you do to make sure it met the basic functionality?

The testing I did to make sure I reached basic functionality was making sure it looked like the reference images as I developed the model and the materials. As the final product will be seen on a computer screen checking what it looks like on the screen during development was fine. I also made sure the sizes were close to the specifications as I scales the different pieces.

I also tested the best placement for the chair and windows to see how those looked best.

What improvements did you make as a result of your testing?
My first design had very sharp and rigid edges as it was made up of just a cube, but after looking at the images I realised the edges on the real bus stop were more rounded. That small detail made the model look like a computer generated model. I added a bevel to some corners to make it look less sharp and this made the model look far more realistic., I also found ideal lengths and heights for the glass and the bench.

How did these changes improve the DTOs fitness for purpose?
These changes will make the model look more realistic. When added into the game a fake looking bus stop would remind the players that they are playing a computer game and could spoil their enjoyment of the game. Having the windows in the right place and the seat at the right height will make it easier for the players to interact with the model and it will look more natural and easier to rig

What conventions did you follow?

I started my plan with some reference images and a sketch of how I want my model to look, after consulting with my team they agreed that my idea could be made with addition of feedback to make the asset look better.

What trialling (getting other people to use the outcome) did you do to develop the outcome?
I asked my friends and teacher for some feedback and constructive criticism. This helped very much as I was able to find what was most wrong with the model and what I could change by finding the similarities between friends, teachers and my team.

What improvements did you make as a result of your trialling?
The improvements I decided to make were extending the length of my design and adding a bench with rusted supports and adding dust to the windows for extra detail, another improvement I made was adding a bevelled roof to the bus stop model.

How did these changes improve fitness for purpose?

How can you show the tools and techniques you applied were effective in producing a fit-for-purpose outcome?

Grade: Merit

For Merit, the student needs to refine a digital technologies outcome.

This involves following conventions relevant to the tools and techniques of a digital technologies domain and using information from testing to make improvements to the outcome's fitness for purpose.

This student has created a website using HTML and CSS. The conventions can be seen in the naming of the files, using index.html as the main file. A folder has also been created to store images. HTML conventions have been followed, with indented code and correct tags. The website layout also follows some design conventions, such as having a logo at the top left.

Testing has been completed and changes made based on the information gathered in order to improve the outcome's functionality. For example, changing to using a grid for layout which improved the way the website works. The evidence could be strengthened by providing more examples of improvements made.

For Excellence, the standard requires the tools or techniques to be applied optimally and the outcome trialled with others to improve the fitness for purpose. While the outcome has been trialled, significant improvements have not been made. The layout of the website could be improved by adding white space into the grid and making the text more readable.

Identify the purpose, potential users, requirements, and specifications for the outcome

Identify the purpose of your outcome. How does it support or promote kaitiakitanga? OR Who is the kōrero paki for? How can you create a digital story for them? My website is about environmental problems in the Harbour of Whangamata.

Identify the **users.** Who is the audience? What do the people who will use your outcome need?
The audience is anyone who is interested and cares about looking after the Whangamata Harbour.

Identify the **requirements** and **specifications** . These are short, specific statements that are measurable - you should be able to tick them off. What does your digital story need to have, be, or do in order to achieve its purpose? What does your digital story need to have, be, or do in order to work best for the people it is intended for?

- Home, Info, Contact Page
- My website needs to be able to keep viewers entertained while talking about the Whangamata Harbour and encourage them to sign up for activities.
- Green and Blue and Brown Main Colours
- What projects we have done and what we plan on doing in the future
- How to join
- The website should support use by low vision users

Tools and Techniques used

13/06/23 - Tested my index.html and there were no errors. This only had Nav and Logo made

Document checking completed. No errors or warnings to show.

13/06/23 - Tested my style.css and there were no errors. This only had Nav and Logo made

W3C CSS Validator results for style.css (CSS level 3 + SVG)

Congratulations! No Error Found.

This document validates as CSS level 3 + SVG !

I use the grid layout is css
I use emmet abbreviations

Conventions I have followed for my outcome

Google fonts:

`<link href="https://fonts.googleapis.com/css2?family=Roboto&display=swap" rel="stylesheet">`

I have Link styling (a:hover, a:visit)
I have a logo image and a background image
I have top nav

Testing

Test your outcome throughout the development process and use that information to make improvements during the development process.

Show how you have tested your site. This should include a statement confirming that your pages validate. It should also include screenshots showing that you have previewed your site in at least two major browsers.

16/06/23 - Trying to add text, breaks the alignment of the text and image.
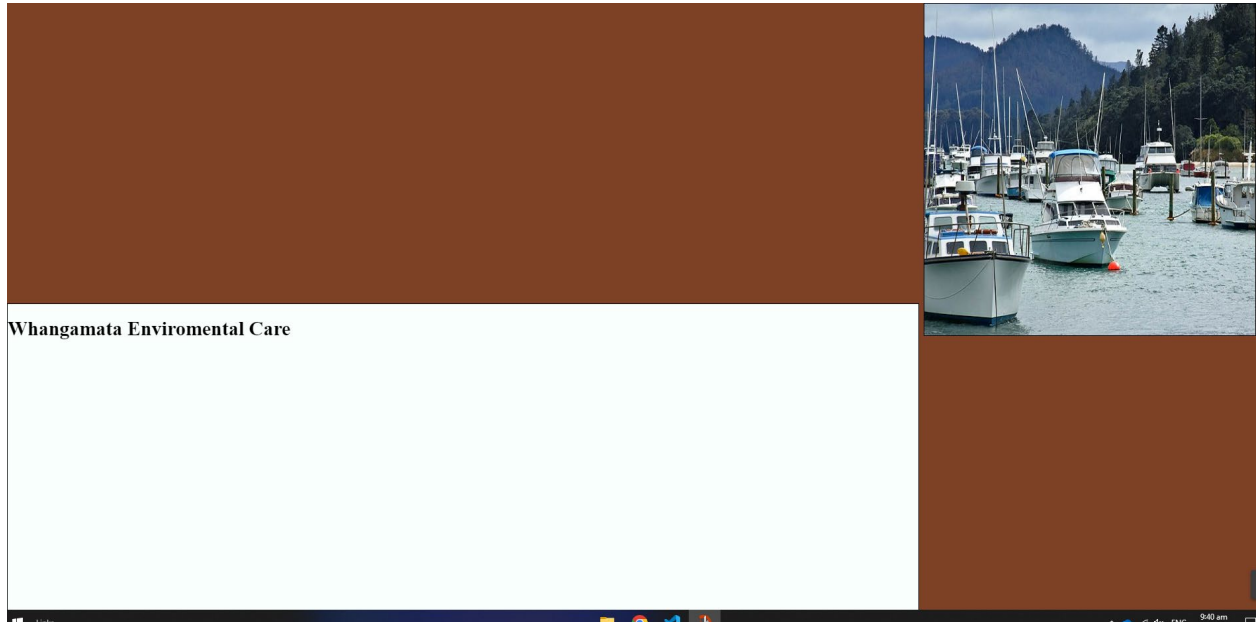
23/06/23 - I restarted my website and started doing it the grid way because it was too complicated doing it the way I was doing it.

Whangamata Environmental Care is a dedicated organization committed to preserving and protecting the natural beauty and ecological balance of Whangamata and its surrounding areas. Through their tireless efforts, they work towards sustainable practices, environmental education, and community engagement. They actively promote initiatives such as waste reduction, recycling, and responsible resource management to minimize the environmental impact of human activities. By fostering a sense of environmental responsibility, Whangamata Environmental Care plays a pivotal role in safeguarding the unique ecosystems, diverse wildlife, and pristine beaches that make Whangamata a cherished destination for locals and visitors alike. Whangamata Environmental Care actively promotes initiatives such as waste reduction, recycling, and responsible resource management to minimize environmental impact. By fostering a sense of environmental responsibility, they safeguard the unique ecosystems, diverse wildlife, and pristine beaches of Whangamata. Additionally, Whangamata Environmental Care engages in environmental education and community involvement to further their mission. They strive to create sustainable practices that preserve the natural beauty and ecological balance of Whangamata and its surrounding areas. Through their dedication and tireless efforts, they contribute significantly to the preservation of this cherished destination for both locals and visitors.

Pixabay, Wikimedia

23/06/23 - I tested my colour contrast on my navigation

23/06/23 - I tested my index.html using the grid layout

Document checking completed. No errors or warnings to show.

23/06/23 - I tested my style.css using the grid layout

W3C CSS Validator results for style.css (CSS level 3 + SVG)

Congratulations! No Error Found.

This document validates as CSS level 3 + SVG !

23/06/23 - Mr ▮▮▮▮ saw a issue with the banner so i fixed it

30/06/23 - I finished my home page

30/06/23 - Start of my news page

30/06/23 - News page is finished

WHANGAMATA ENVIRONMENTAL CARE

| home | news | contact |

Whangamata Environmental Care Launches "Plastic-Free Whangamata" Campaign to Combat Plastic Pollution

Whangamata, June 28, 2023 - Whangamata Environmental Care (WEC) has launched an ambitious campaign called "Plastic-Free Whangamata" with the aim of reducing plastic pollution in the coastal town. The campaign seeks to raise awareness about the detrimental effects of single-use plastics and encourage individuals, businesses, and the community at large to adopt more sustainable alternatives. Plastic pollution has become a pressing issue worldwide, and Whangamata is no exception. The town's pristine beaches and marine ecosystems have been increasingly affected by plastic waste, endangering the local wildlife and compromising the natural beauty of the area. In response, WEC has taken the lead in initiating a community-wide effort to combat this problem. The "Plastic-Free Whangamata" campaign encompasses a range of activities and initiatives designed to promote plastic reduction and encourage behavioral change. WEC will collaborate with local businesses to encourage the use of biodegradable packaging and alternatives to single-use plastics. They will also organize educational workshops and presentations to raise awareness among residents, schools, and community groups. In addition, WEC plans to install more water fountains and refill stations throughout the town to reduce the consumption of bottled water, which is a significant contributor to plastic waste. The campaign will also involve beach clean-up events, where volunteers can actively participate in keeping Whangamata's coastline free from plastic debris. "We believe that a plastic-free future is within our reach, and it starts with our community," said Emma Wilson, President of Whangamata Environmental Care. "By working together and making small changes in our daily lives, we can have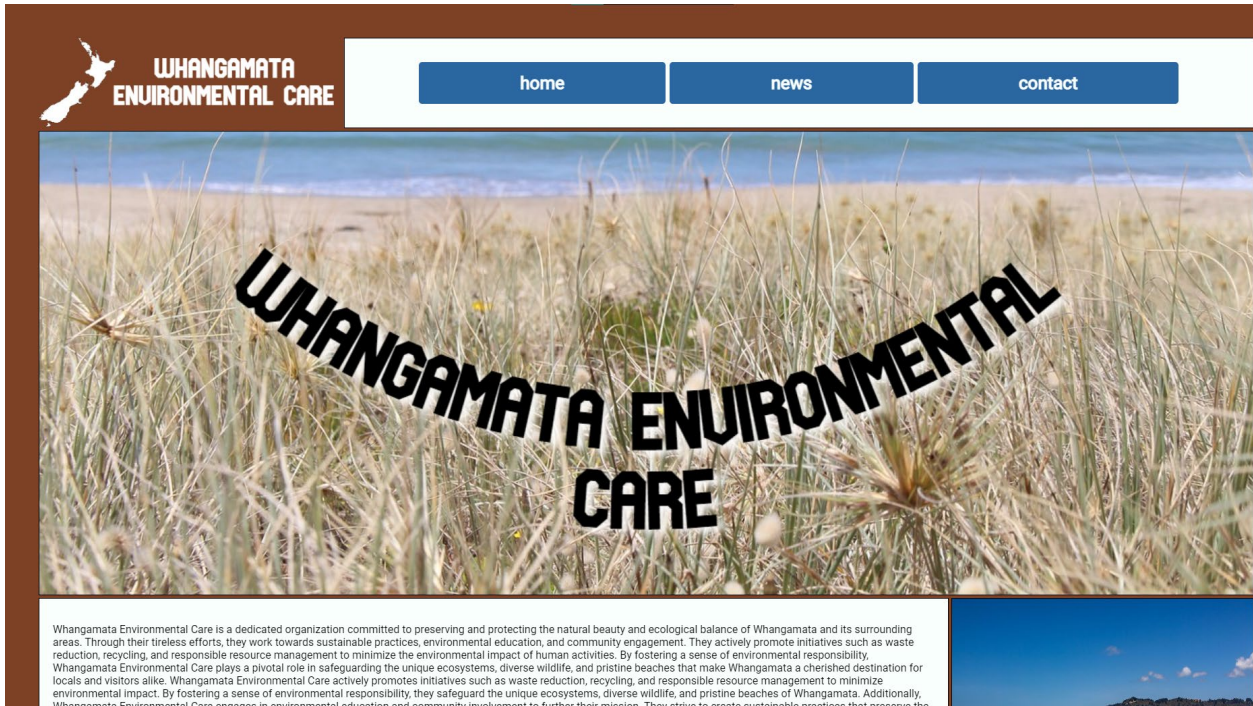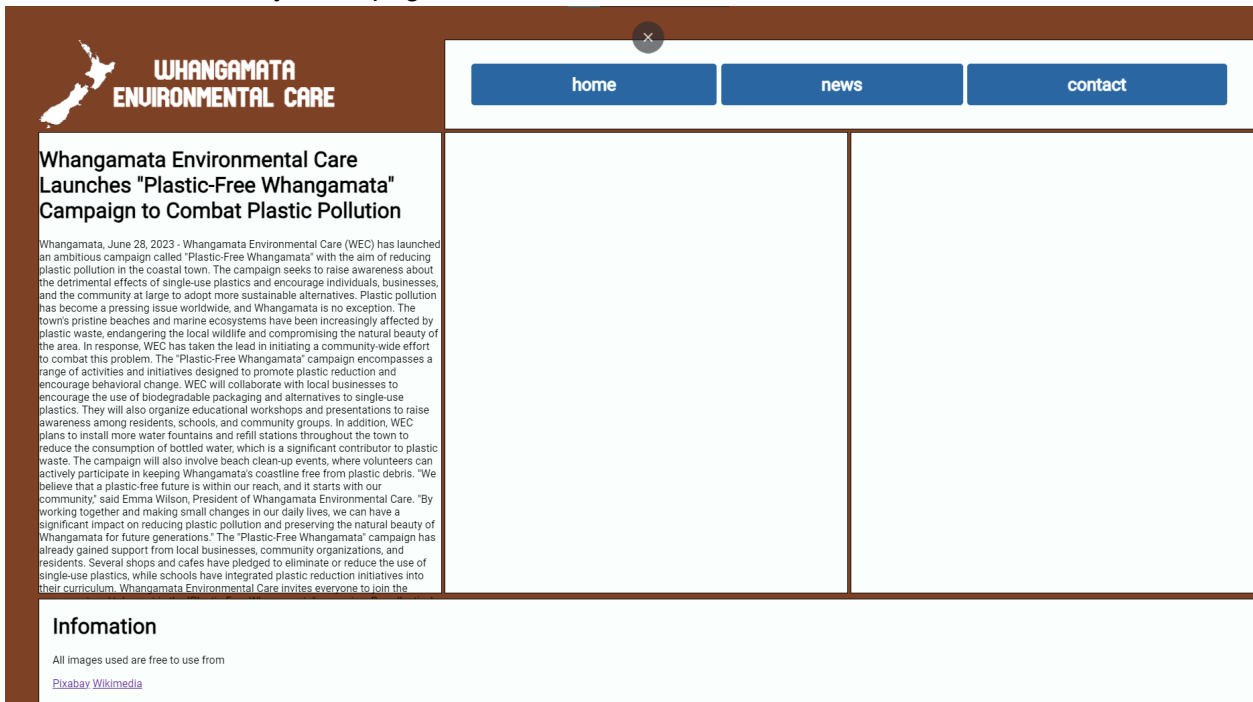 a significant impact on reducing plastic pollution and preserving the natural beauty of Whangamata for future generations." The "Plastic-Free Whangamata" campaign has already gained support from local businesses, community organizations, and residents. Several shops and cafes have pledged to eliminate or reduce the use of single-use plastics, while schools have integrated plastic reduction initiatives into their curriculum.

Whangamata Environmental Care Launches "Green Schools" Program to Foster Environmental Awareness

Whangamata, June 28, 2023 - Whangamata Environmental Care (WEC) is proud to announce the launch of their new "Green Schools" program, aimed at fostering environmental awareness and education among local schools. The initiative seeks to empower students to become active participants in sustainability efforts and to inspire them to make positive changes in their communities. The "Green Schools" program will provide participating schools with resources, workshops, and educational materials to incorporate environmental themes into their curriculum. Students will have the opportunity to engage in hands-on activities such as planting native trees, creating composting systems, and conducting waste audits. The program will also organize field trips to local natural areas, allowing students to learn about the importance of biodiversity and ecosystem conservation firsthand. Whangamata Environmental Care believes that educating young minds about environmental issues is crucial for building a sustainable future. By instilling a sense of responsibility and stewardship in students, the organization hopes to create a lasting impact on the community's environmental practices. "We are thrilled to launch the 'Green Schools' program and partner with local educational institutions to nurture a generation of environmentally conscious individuals," said Sarah Thompson, Communications Coordinator at Whangamata Environmental Care. "By empowering students to take action and make sustainable choices, we believe we can drive positive change and create a greener future for Whangamata." The program has already garnered significant interest from several local schools, with educators recognizing the importance of environmental education in shaping well-rounded and responsible citizens. Participating schools will have the opportunity to collaborate with WEC on various environmental initiatives, including waste reduction campaigns, energy conservation projects, and community clean-up events. Whangamata Environmental Care encourages other schools in the area to join the "Green Schools" program and be part of the collective effort to promote sustainability and conservation.

Local Community Comes Together for Whangamata Environmental Care's Beach Cleanup Event

Whangamata, June 28, 2023 - In a remarkable display of community spirit and environmental stewardship, Whangamata residents joined forces with Whangamata Environmental Care (WEC) for a highly successful beach cleanup event. The initiative, aimed at preserving the pristine coastline of Whangamata, attracted a large number of volunteers who dedicated their time and effort to make a positive impact on the local environment. Under the bright sunshine, volunteers of all ages gathered at the Whangamata beach armed with gloves, trash bags, and an unwavering enthusiasm to protect their beloved natural surroundings. The event kicked off with an inspiring speech by WEC President, Emma Wilson, who highlighted the importance of collective action in tackling the issue of marine debris. With a shared goal in mind, participants combed the shoreline, meticulously collecting and disposing of various forms of litter, including plastic bottles, cigarette butts, and discarded packaging. The community's dedication was evident as they tirelessly worked together, demonstrating their commitment to a cleaner and healthier environment for both locals and visitors alike. Whangamata Environmental Care's beach cleanup event not only helped in removing harmful debris but also served as an educational platform. Volunteers engaged in conversations about the detrimental effects of plastic pollution on marine life and ecosystems. The event fostered a deeper understanding of the importance of responsible waste management and the need for sustainable practices. "This beach cleanup event was an incredible success, thanks to the unwavering support and enthusiasm of our community," said Emma Wilson. "By coming together, we have shown our commitment to preserving the beauty of Whangamata and protecting our marine environment. It is heartwarming to witness the power of collective action and the positive change we can create when we work together."

Infomation

30/06/23 - My contact page is finished

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WHANGAMATA ENVIRONMENTAL CARE

(×)

| home | news | contact |

Contact Form

Please leave your name, contact details and a message.

_____ Switch account

Not shared ☁

*Indicates required question

Full Name *

Your answer

Email *

Your answer

Mobile Number *

Your answer

Message *

Your answer

About Us

Whangamata Environmental Care: Promoting Sustainability and Conservation in Our Community** Whangamata Environmental Care (WEC) is a dedicated organization working tirelessly to promote sustainability and conservation in the beautiful coastal town of Whangamata. With a mission to preserve and protect the natural environment for future generations, WEC has become a driving force in fostering a sense of responsibility and stewardship within the community. Founded in 2005, Whangamata Environmental Care has been at the forefront of various environmental initiatives, aiming to create awareness, educate, and inspire action. Their work covers a wide range of areas, including habitat restoration, waste management, water conservation, and climate change adaptation. One of WEC's flagship projects is the Whangamata Dune Restoration Program. Recognizing the importance of dune ecosystems in preserving coastal biodiversity and mitigating erosion, the organization has been actively involved in restoring and enhancing the local dune systems. Through community-led planting events and ongoing monitoring, WEC has successfully revitalized several dunes, creating a haven for native flora and fauna. WEC also places a strong emphasis on waste management and reduction. They collaborate with local businesses and residents to promote recycling, composting, and responsible waste disposal practices. Their educational campaigns highlight the importance of reducing single-use plastics and encourage the use of sustainable alternatives. Additionally, WEC organizes regular beach clean-up initiatives, mobilizing volunteers to keep Whangamata's pristine coastline free from litter and debris. Recognizing the imminent challenges posed by climate change, WEC actively advocates for climate resilience and adaptation strategies. They work closely with local authorities and organizations to promote sustainable land use planning, advocate for renewable energy solutions, and encourage the adoption of environmentally friendly practices. Education plays a vital role in WEC's efforts, and they regularly host workshops, seminars, and educational programs to engage the community and raise awareness about environmental issues. These initiatives aim to empower individuals with the knowledge and tools necessary to make sustainable choices in their everyday lives. Whangamata

30/06/23 - Validated all my html

index.html

Document checking completed. No errors or warnings to show.

news.html

Document checking completed. No errors or warnings to show.

contact.html

Document checking completed. No errors or warnings to show.

30/06/23 - Validating my css

style.css

Congratulations! No Error Found.

s

30/06/23 - Testing on different browsers
Chrome

Edge

Trialling
Trial your outcome with others and use that information to make improvements.

████ - it is very easy to use, simple but informational and I am always aware of what's happening.

Teacher ████ -

 Home:

- Navigation - Add capital letters on words ---> I added capital letters to the words in the navigation
- Split into paragraphs ---> I added <p> tag
- I like big splash header
- Colours work well
- Hover works well

News:

- Split into paragraphs ---> I added <p> tag
- Same info in each area, consider splitting in 3 columns
- Maybe consider adding image to add interest to page ---> I added 3 images

Contact:

- Contact page works. Able to submit messages

████ - i like how the images show whangamata and the info page it shows a lot, i just think u need a heading before ur paragraphs

Screenshots of outcome files – partial evidence.

📁 images
🌐 contact.html
🌐 index.html
🌐 news.html
📄 style.css

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-
      scale=1.0">
    <link rel="stylesheet" href="style.css">
    <link rel="preconnect" href="https://fonts.googleapis.com">
    <link rel="preconnect" href="https://fonts.gstatic.com" crossorigin>
    <link href="https://fonts.googleapis.com/css2?
      family=Roboto&display=swap" rel="stylesheet">
    <title>Whangamata Enviromental Care</title>
</head>
<body>
    <div class="wrapper">
        <div class="box logo"> <!-- Logo -->
            <img src="images/logo.png" alt="Whangamata Enviromental
              Care Logo" width="100%">
        </div>
      <div class="box nav"> <!-- Navigation -->
        <a href="index.html">HOME</a>
        <a href="news.html">NEWS</a>
        <a href="contact.html">CONTACT</a>
      </div>
      <div class="box banner">
        <img src="images/Banner.png" alt="Whangamata Environmental
          Care Banner" width="100%" height="100%">
      </div>
      <div class="box main">
        <h1>Whangamata Enviromental Care Info</h1>
        <p>Whangamata Environmental Care is a dedicated organization
```

```css
body {
  font-family: 'Roboto', sans-serif;
  font-size: 16px;
  background-color: #7D4126;
  padding: 50px;
  margin: auto;
}

/* Grid setup */
.wrapper {
  display: grid;
  grid-template-columns: 1fr 2fr 1fr;
  grid-template-rows: auto;
  grid-template-areas:
      "logo    nav      nav"
      "banner banner   banner"
      "main    main     side"
      "footer footer   footer";
  gap: 4px;
}

/* Grid styling */
.box {
  border: solid 1px #000;
  padding: 20px;
  background-color: #FAFFFD;
}
```

Grade: Excellence

For Excellence, the student needs to enhance a digital technologies outcome.

This involves applying tools or techniques optimally to produce a fit-for-purpose outcome and using information from trialling with others to improve the fitness for purpose.

This student has initially trialled the outcome with others in their class and gathered feedback. Additional trialling was completed with multiple people when the outcome was closer to completion. Changes were made based on the feedback, such as changing the sign on the petrol pump.

Blender and related techniques have been used optimally to ensure a realistic, high-quality 3D object that is suitable to be used as an asset in games. For example, UV unwrapping has been used to ensure textures are applied accurately.

For the DTO you are developing:

What is the purpose? The purpose of my petrol pump that I have designed and developed is to provide more texture to the game as the player traverses the map, finding these scattered across various locations. Its purpose is also to create a flexible and robust asset for my friend's associates' game that can be manipulated in different ways very easily.

Who are the potential users? Some of the potential users are the people who decide to download the game as they would be the ones seeing the petrol pump. However, before that happens, one of my friend's associates that are responsible for looking over assets will be deciding whether the petrol pump meets the requirements for the game. After this, another person, most likely in charge of asset placement, needs to place the petrol pump in gas stations scattered across the map, so they could also be defined as potential users.

What are the requirements? The requirements are that the petrol pump should be easily recognised as a petrol pump, the colour scheme needs to stay nice and simple, the petrol pump needs to look modern like one in real life and the petrol pump should have most of the components that a real petrol pump would have.

What are the specifications? The specifications will be that 90% of people will be able to recognise it as a petrol pump from a quick look at an image of it.
The simple block colour scheme will use 2 different main colours.
There will be 4 hoses on the pump, 2 on each side.

What tools and techniques did you use in developing the DTO? As I was using Blender, some of the tools and techniques I was using included bevelling, UV unwrapping, using curves, image textures, advanced textures, loop cuts and using images to find the colour of objects, and using images as references for my DTO.

Example of bevelling
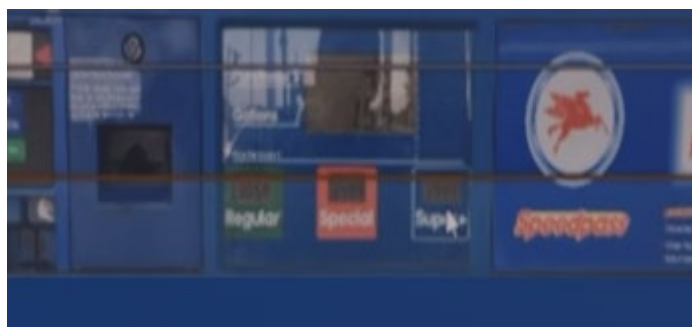
Example of UV unwrapping

Example of curves
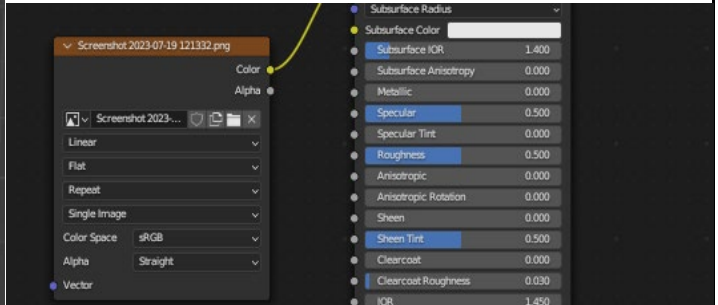
Example of image texturing

Example of advanced texturing
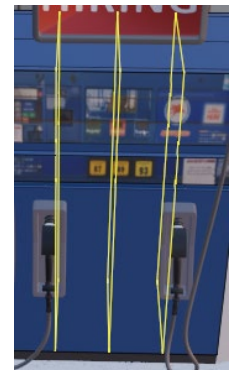
Example of loopcut

Example of reference imaging, this is my reference and an early development of my model

What testing (you checking your DTO) did you do to make sure it met the basic functionality?
Most of the testing I did as part of the basic functionality was just to do with things like the locations of components and what they looked like. I tested multiple designs for the way I was making the funnels/tubes that petrol was travelling through. In the end, I decided to use a NurbsPath curve because it's a really easy curve to use to change the curvature of the tubes. The thickness of the pipe could also be easily changed by altering the depth of the bevel in the geometry panel of the curve rather than having to remake the pipe if it needed to be thicker.
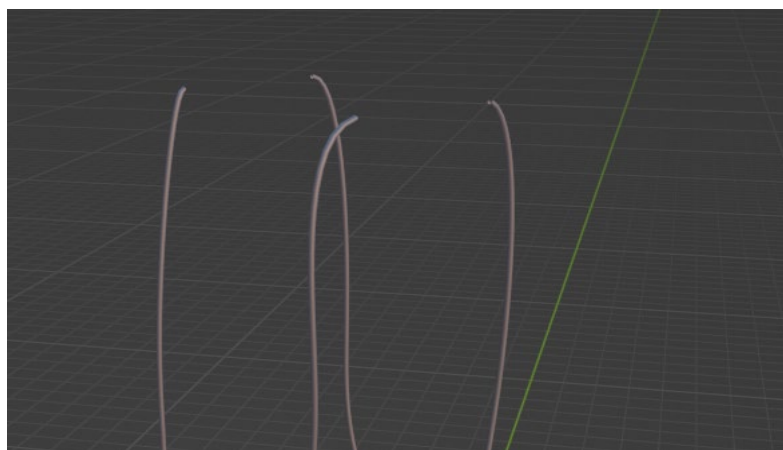
I spent a lot of time developing the petrol nozzle. In the end, out of the designs and my friend's colleagues had in mind, we decided on this one that used a collection of a bunch of different parts that were all put together to create the nozzles. This is a small detail on the pump but it was important to get it right.

What improvements did you make as a result of your testing? At first, I had just used a cylinder to create a tube for the petrol pump, but because of the testing, I decided on a curve so I could change what it looked like instead of having one set shape. For the petrol nozzle, I started with a few different designs like ones with and without the coil, but in the end, I decided on this one with the coil as the coil added some nice extra detail and the shape of the end of the petrol nozzle lined up with the tube that transported the gasoline which is a nice touch.

How did these changes improve the DTO's fitness for purpose? These changes helped to make the DTO more flexible so when my friend's associates add it to the game, they are very easily able to change parts of it to make it suit the game better. Instead of having to manually make a transporter tube, they can easily manipulate it to change the look and to line it up with the nozzle.

What conventions did you follow? Once of the main conventions when modelling real things is to use reference images to make sure the dimensions of the model match the world objects rather than trying to model them from memory.
Another convention is to label the different meshes and materials with names that clearly identify then to make it easier to find the part or material you are looking for.
A design convention I followed was Big/Medium/Small where you get the big shapes done first then do finer and finer detail in stages. This stops you wasting time modelling a small part that might not fit in with the overall design

What trialling (getting other people to use the outcome) did you do to develop the outcome? I had a few of the people in my class check out the petrol pump and give me feedback on its overall look as I developed the model and materials. When it was closer to being finished I rendered an image of the pump and showed it to lots of people around school and at home to make sure it was recognisable as a petrol pump.

What improvements did you make as a result of your trialling? The only improvements I made were to with the petrol funnels and the Now Hiring sign. They noticed after having a good look at the petrol funnels that they didn't completely line up at the top of the petrol pump. This was easy to change due to using curves.
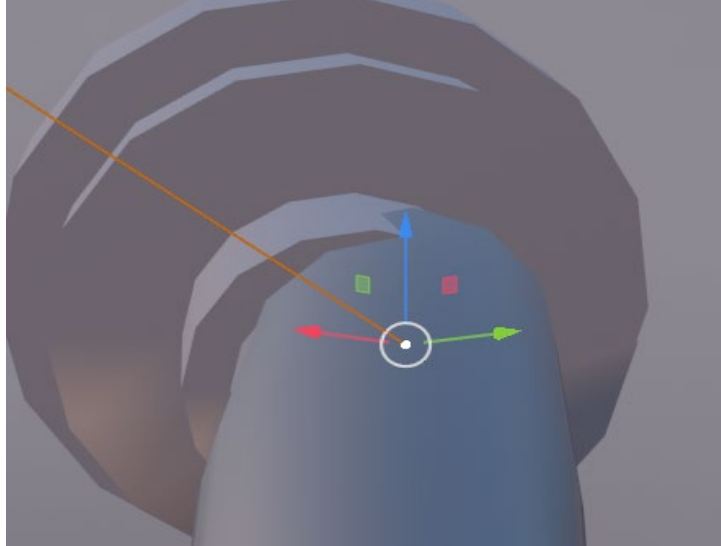
This is where it didn't line up, so I made sure to make it look as lined up as possible.

They also thought that the original Now Hiring text was a bit bland so changed it to an image and made it slightly too big, like it was a cheap paper sign that as being squashed into the frame on the pump.

Original sign and the improved one

How did these changes improve fitness for purpose?

I feel that the new sign gave the game a lot more texture than the other sign. Changing the funnel to be lined up at the top has also helped to keep the DTO looking realistic. These were small changes, but these details were picked up when I showed the model to the target audience. Making these changes will help the players immersion in the game and not have them wondering why the pipe doesn't quite connect to the top of the pump.

How can you show the tools and techniques you applied were effective in producing a fit-for-purpose outcome? The tools and techniques I used were effective in producing this outcome and can be shown by the detail and finished look they gave to my DTO. They make it look like a real-life petrol pump and they provide a lot of extra detail/texture to the model.

Image textures add realism
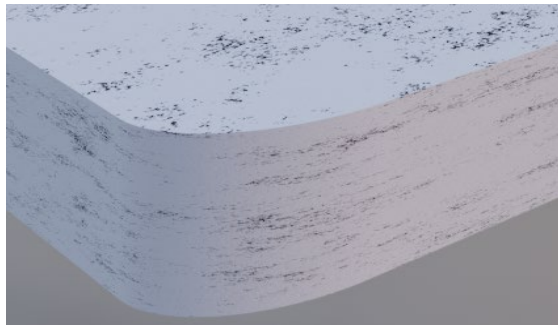
Procedural textures wrap around the model
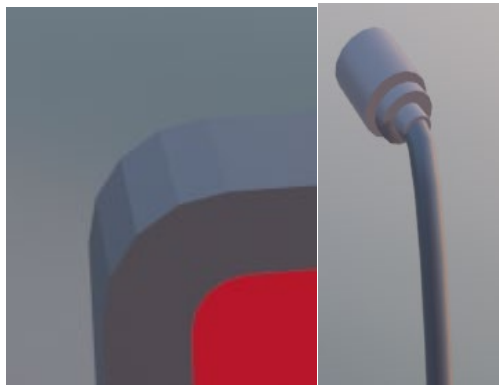
Detailed modelling adds to the high-quality feel of the model