Assessment task – Narrogin Senior High School

Year level	7
Learning area	Technologies
Subject	Digital Citizenship
Title of task	Interactive Kiosk
Description of task	Part A: Research into interactive kiosk's including their examples and use. Part B: Students will plan how to create their own interactive kiosk. Part C: Students will create their own interactive kiosk.
Type of assessment	Inquiry & Design

Content description

Content from the Western Australian Curriculum	**Designing** Design, develop, evaluate and communicate alternative solutions, using appropriate technical terms and technology **Digital Implementation** Design the user experience of a digital system Create digital solutions that include a user interface where choices can be made.
Assessment conditions	5-6 lessons in class.
Resources	Computers Student Useful Information Documents

Task

Interactive kiosks are a terminal that houses an electronic device, such as a tablet, where users can interact for a variety of purposes. Examples include interactive maps in shopping centres and the ordering system in McDonalds.

This assessment task has been split into 3 components.

PART A:

In this part you will be researching interactive kiosks including their use and components.

PART B:

In this part you will be required to plan your interactive kiosk. You will use different means to present your plan, including a mind map.

PART C:

In this part you will create your interactive kiosk using Microsoft PowerPoint. Your Kiosk will need to provide detailed and accurate information with clear options for the user to choose from. The Kiosk will need to have a minimum of 5 functional buttons and an interesting design.

You will also have access to worksheets with useful information to help you.

Self-serve kiosks can be seen in supermarkets, shopping centres, airports, libraries, banks, restaurants and many other places. They might be there to provide information about a place, allow you to select a meal or even take your picture.

Note: If you need an introduction to kiosks, try a search for "YouTube interactive kiosk".

Aim: To learn about the wide variety of kiosks in use.

Task 1 – Kiosks, Kiosks, Everywhere (12 marks)

Research interactive kiosks on the internet and fill in the boxes below.

Kiosk Uses

List 7 types of kiosk.

1. *Photo Kiosk*
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

The User Interface

Draw or copy an example of a screen on an interactive kiosk.

My Favourite Kiosk

Sketch or insert a picture of a kiosk that you like the style of.

Kiosk History

Note down some facts about the history of kiosks.

Task 2 – The Advantages and Disadvantages of Using Kiosks (6 marks)

Choose three types of kiosk and find out the advantages and disadvantages of using them compared to the traditional way of getting the job done. For example, a kiosk in your favourite hamburger restaurant might allow you to design your own burger with all the trimmings, but it's not available for those who drive through. The restaurant might also charge you more for your burger so that they cover their extra costs.

1. **Kiosk example** _____

    Advantages _____

    Disadvantages _____

2. **Kiosk example** _____

    Advantages _____

    Disadvantages _____

3. **Kiosk example** _____

    Advantages _____

    Disadvantages _____

Task 3 – Kiosk Vocabulary (10 marks)

Kiosks are usually made up of a computer with a touchscreen placed inside some sort of **enclosure**. Software on the computer provides the **interface** that you interact with, usually tapping buttons and selecting from lists. There may also be a keypad, a camera, a printer or other components.

Lots of things have to be considered when building kiosks. Try and match the terms below with their explanations. Look the words up on the internet if you get stuck.

	Term				Explanation
1	Aesthetics	•	•	a	The visual elements, such as backgrounds and buttons.
2	Interface	•	•	b	Is the kiosk comfortable and easy to use?
3	Graphics	•	•	c	The design of the whole kiosk enclosure.
4	Components	•	•	d	Fixing any problems that occur with the kiosk.
5	Software	•	•	e	Is the kiosk outside? How long will it survive?
6	Ergonomics	•	•	f	The computer, touchscreen, printer and other devices.
7	Manufacturing Volume	•	•	g	The bits that the user interacts with.
8	Maintenance	•	•	h	The number of kiosks of this type that will be built.
9	Compliance	•	•	i	The programs that control the data and interaction.
10	Durability	•	•	j	Making sure that everything is legal and appropriate.

Task 4 – Sustainable Technology (7 marks)

There are many millions of kiosks in use across the world. With the introduction of self-service checkouts in supermarkets, this number is skyrocketing. As with anything that is manufactured in large numbers, it's important to think about what happens to the kiosks at the end of their lifetime.

By researching kiosks, materials, sustainability and recycling, create responses to the following issues.

a. Think about one location (e.g. a warehouse, restaurant, shop, outside a visitor centre in a national park etc.) and list the materials that might be needed in the manufacture of a kiosk. Consider the enclosure, the screen, inside the computer and so on. Also, say where each material might be used (e.g. plastic enclosure).

_____

_____

_____

b. Mention some design features that could lengthen the lifespan of the kiosk you have thought about. For example, using steel for the enclosure of a kiosk in a warehouse could protect it from being damaged by stray trolleys and reversing forklift trucks. Consider the software as well as the physical parts.

_____

_____

_____

c. After several years of use, how might a kiosk be 'refreshed' or updated, rather than scrapped?

_____

_____

d. Find out about some of the problems caused by throwing waste materials into landfill.

_____

_____

_____

e. Write about some of the issues with recycling the materials used to make electronic devices. What happens to the hazardous waste? Which countries deal with this?

_____

_____

_____

f. Discuss how some of the materials might be recycled once the useful lifetime of a kiosk is over.

_____

_____

_____

g. Are there any parts of the kiosk that cannot be recycled or put to good use after the kiosk's lifetime?

_____

_____

Assessment 2: Part B
Planning an interactive kiosk.

/33

Task 1 – Your Initial Kiosk Ideas

(14 marks)

The first task is to decide on what your kiosk will be for. Some possibilities are shown below, but you can choose anything appropriate. Keep your ideas reasonably simple – you can always expand them later.

- An information booth for a town, shopping centre or museum.
- A shop kiosk that lets the user browse items and sends them to the right department.
- A help guide in a factory, car repair shop or anywhere else that instructions are needed.
- A ticketing kiosk that allows the user to browse options and select a ticket.
- For programmers – a self-service checkout which lists items, totals prices or performs some other functions.

Now, address the following questions. Answer each of these questions underneath.

a. What type of kiosk will yours be? What will the subject be? What will it do? Try and be precise e.g. don't just say 'a map of a store'; talk about the type of store and some of the things it might sell.

b. Who will use your kiosk? What do you think the average age of the users might be?

c. Where will the kiosk be placed? Is it indoors or outside? Are there any special things you would have to consider if you actually built it?

d. List a few of the screens that will be included. What will they show? How will the user navigate between these screens?

e. Have you any thoughts about the design features of your kiosk interface e.g. colours or images that you like, styles that would suit the users etc.? Try and describe some of these.

f. What might the actual kiosk enclosure be like? Sketch out some ideas showing what it might look like if you could build it. Remember that these are just initial thoughts; you might change your mind later.

g. *Extension: Will your kiosk need to remember any information from the user e.g. a list of items clicked, or perhaps calculate the total cost of products selected? This is possible in PowerPoint but you will need to do some programming. Programming is not covered in this project but we will show you where to put your code if you have these skills. If you have no experience with programming, then it would be better to design an interface that doesn't perform calculations. Check your ideas with your teacher.*

Task 2 – A Mind Map
(5 marks)

Create a mind map of your ideas. This is the first stage in breaking down the problem into small parts. Try and group your ideas wherever possible.

Note: There are no perfect solutions here – just think through as many of the tasks that will need to be completed as you can and work through each in detail.

If you haven't used **bubbl.us** (brief instructions on the right). Otherwise, just use a blank space on the next page to do your mind map.
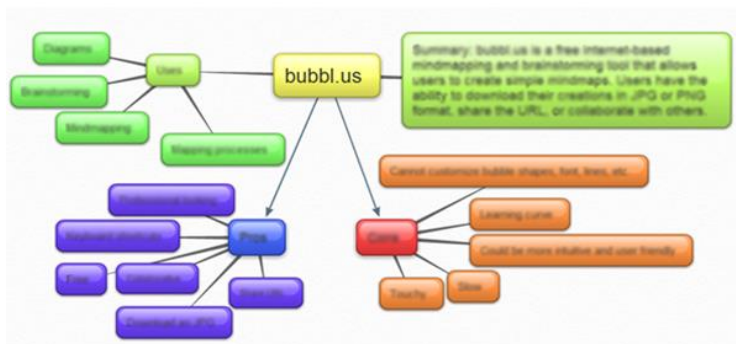
A brief overview of bubbl.us

Full instructions are included in our *Algorithms and Computational Thinking* resource.

a. Go to www.bubbl.us and sign up for a free account.

b. In the new mind map that opens, click, drag, add and delete boxes until you have an idea about how it all works. Drag the background to move all the objects together.

c. Export your finished mind map as an image and place it below.

Task 3 – Ordering Tasks
(5 marks)

At this point, it would be easy to jump in and scratch together some sort of solution for your kiosk. However, we are going to work in a way that will teach you how to cope with much larger and more complicated projects in the future.

The list below shows a set of tasks that you might complete whilst working on your kiosk interface. Study the list and put them in the order that you think they should be carried out.

a. Test all possible paths through your user interface and fix anything that doesn't work.

b. Design your user interface, selecting colours, background images, buttons etc.

c. Look at templates and other ways to save time and make your interface appear professional.

d. Learn how to set up interactive screens in your kiosk software (whether PowerPoint or otherwise).

e. Evaluate your finished product, perhaps getting feedback from someone who works in the business or your teacher.

f. Share your ideas with another class member and get some feedback from them about how you might proceed.

g. Decompose the problem fully and make a plan. So far, you've just created a mind map.

h. Build your user interface based on all the ideas and feedback you have received.

i. Consider users with limited physical abilities or those who speak different languages.

Use this information to continue adding ideas to your mind map.

Order of Tasks

Task 4 – Requirements and Constraints
(9 marks) (Question a: marks; Question b: 4 marks)

A common way of breaking down a project into manageable pieces is to think of the requirements and constraints.
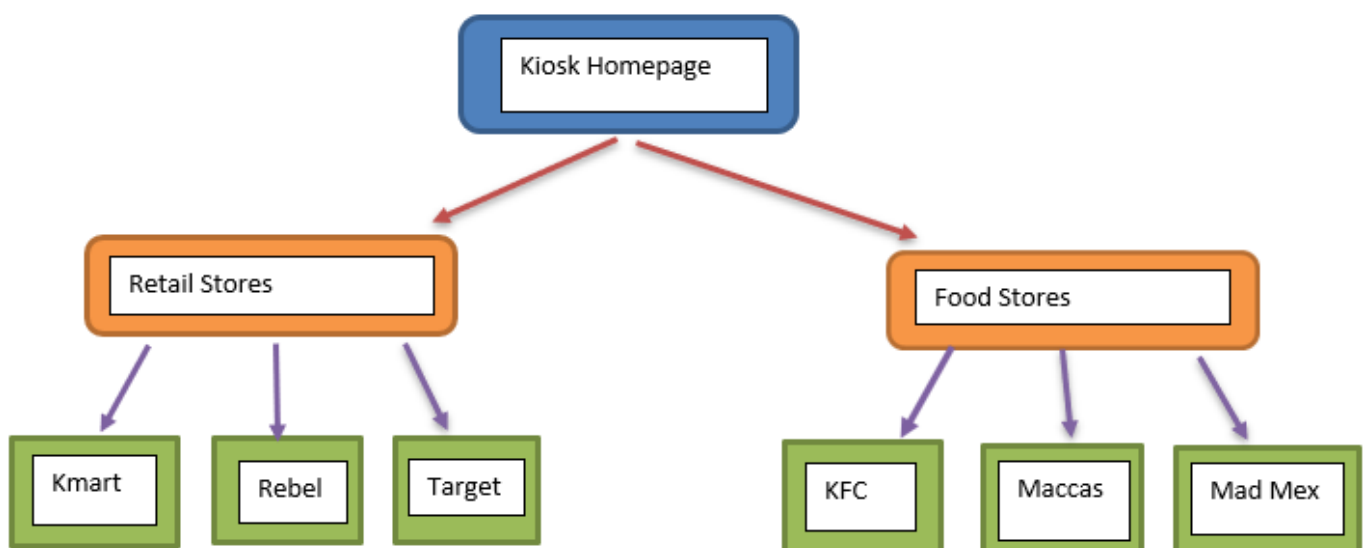
Requirements	*These are the things that you want to achieve in your final product. You want to make sure that these are done well.*
Constraints	*These are the problems that you have to overcome in order to complete the project successfully.*

a. There is a bit of jargon to get your head around here. Try and match the terms below to their definitions. Use the internet to help if required.

	Term				Definition
1	Requirements	•	•	a	How your interface looks.
2	Constraints	•	•	b	Any money that might need spending.
3	Functionality	•	•	c	Considering different types of users.
4	Visual Design	•	•	d	All the problems that you need to overcome.
5	Longevity	•	•	e	Making your interface easy to use.
6	Technical	•	•	f	All your goals for the completed project.
7	Economic	•	•	g	What your kiosk interface actually does and how it works.
8	Social	•	•	h	How future-proof your kiosk interface is.
9	Usability	•	•	i	The software and hardware that you need.

b. Create a tree diagram like the one shown below. You could use bubbl.us, Microsoft Word online or any other suitable application. Continue to fill in details through as many levels as you can. You may organise your boxes in any way that shows the branching structure of your kiosk. Split the diagram up if you can't fit it on a single page.

Yr. 8 Kiosk Task (25%) Marking Guide/Rubric

Task ↓ & Marks Allocation →	0 – 1	2	3	4	5	Total
Interactive Kiosk Research						**/35**
Kiosk Project Plan						**/ 33**
Kiosk PowerPoint Information	Provides limited information on their kiosk (1 mark) Provides no information (0 mark)	Provides basic information on their kiosk..	Provides basic information by giving limited options for the user to choose from.	Provides substantial information by giving clear options for the user to choose from.	Provides very detailed, comprehensive and accurate information by giving clear options for the user to choose from.	**/ 5**
Kiosk PowerPoint Navigation	One action button working correctly (1 mark) No action button/ text box for action button but not working (0 mark)	Two action buttons working correctly	3 action buttons are working correctly	Most action buttons are working correctly.	All action buttons are working correctly making navigation running smoothly.	**/ 5**
Kiosk PowerPoint Presentation	Minimum effort made to make presentation visually appealing in terms of colour (1 mark) No effort made to make presentation visually appealing (0 mark)	Minimum effort made to make presentation visually appealing in terms of colour and text size	Overall presentation with use of colours, type of text used and text size is basic	Overall presentation is adequate with use of colours, type of text used and text size	Overall presentation is visually appealing to the user with use of colours, type of text used and text size.	**/5**

Total Marks _____ / 83