Digital Solutions

Unit 1

Creating with Code

1. Introduction

    1.1 Your classroom
    1.2 Saving files on a Mac
    1.3 Creating digital mind maps

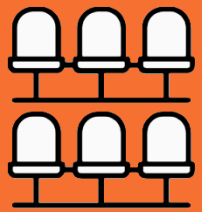
LEARNING GOALS

WALT	WILF	TIB
▪ Computer lab rules ▪ Navigating a Mac / OSX ▪ Exploring problems and investigating potential digital solutions	▪ Students will know which workstation they are assigned to. ▪ Students will discuss and reflect on the computer lab and classroom rules. ▪ Students will explore existing problems using a mind map to determine possible solutions.	▪ Technologies have been an integral part of society for as long as humans have had the desire to create solutions to improve their own and others' quality of life. ▪ Technologies have an impact on people and societies by transforming, restoring and sustaining the world in which we live.

1.1 Your Classroom

- Computer Lab Rules

- Classroom Rules



- Seating Plan

WALT

- Computer lab rules
- Classroom rules
- Navigating a Mac/OSX
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WILF

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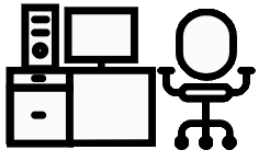

Computer Lab Rules

- Bags at the front of the room only
- No food or drink in the labs – water bottles in bags
- Respect the equipment – we are not the only class
- Keep your workstation tidy
- Use only your assigned computer
- Computers should be used for classwork only
- Chairs are not transportation devices
- Do not twist monitors for your neighbours to see
- Do not adjust display settings

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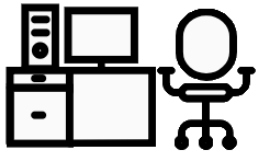

Entry Procedure

- Do you have the correct equipment at your assigned workstation (check numbers match)
- You must notify your teacher of any issues immediately
- Unplug mouse and use the same cable to connect the keyboard

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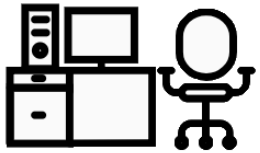

Exit Procedure

- Unplug keyboard and attach cable to upside down mouse. This should be how you found the workstation when you arrived.
- Make sure all equipment at your workstation have the same number.

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Classroom Rules

- Arrive on time
- Raise your hand before speaking
- Listen to others and participate in **class** discussions
- Listen to directions
- Stay on task
- Bring all required materials
- Record all due dates to ensure work is always submitted on time – calendar, diary etc

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Required Equipment

- Pencils
- Ruler
- A4 Botany book
- iPad
- USB (optional)

You may use a Mac laptop if you prefer but note that you will still be responsible for the care of the equipment at your assigned workstation.

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Course Outline – Semester 1

- Term 1
  - User interfaces
  - Introduction to Xcode
  - Swift revision
  - **Assessment – FIA1: Technical proposal**
- Term 2
  - User interfaces
  - App design
  - Xcode
  - **Assessment – FIA2: Digital solution**

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Course Outline – Semester 2

- Term 3
  - Data
  - SQL
  - Introduction to SQLite
  - Apps with data
  - **Assessment – FIA3: Digital solution**
- Term 4
  - Advanced Xcode application building (get keen!)
  - **Assessment – FIA4: Exam**

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Activity 1

Write a paragraph about one of the provided technology quotes. In your response explain why you chose that particular quote and your thoughts on technology in society.

We live in a society exquisitely dependent on science and technology, in which hardly anyone knows anything about science and technology."

Carl Sagan

"Technology is nothing. What's important is that you have a faith in people, that they're basically good and smart, and if you give them tools, they'll do wonderful things with them."

Steve Jobs

"Any sufficiently advanced technology is indistinguishable from magic."

Arthur C. Clarke

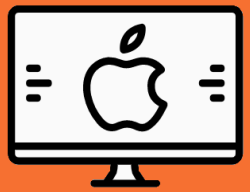
"The advance of technology is based on making it fit in so that you don't really even notice it, so it's part of everyday life."

Bill Gates

"Getting information off the Internet is like taking a drink from a fire hydrant."

Mitch Kapor

1.2 Saving and locating files on a Mac



- Mac File Systems

- Save and Locate Files

- Formatting a USB

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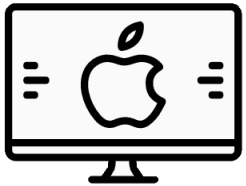

Mac File Systems

A file system determines how data is stored and retrieved. As a general rule the type of operating system (Windows, OSX) will determine which file system should be used.

While reading files from drives with different file systems is usually fine, writing to this drive is only possible if it is formatted with a file system that is compatible on both Mac and Windows.

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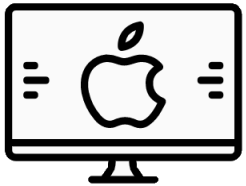

Mac File Systems

We will be working in a Mac Lab for Digital Solutions but you may still need to access and work on files on a PC at home. This means the file system on your USB or external hard drive needs to work in both a Windows or Mac environment.

When formatting your USB drive for school it is important to copy all existing files to another location first. Formatting a drive will **erase** all files on the drive **permanently**.

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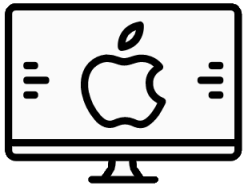

Mac File Systems

Platform	Year	Official Name	Abbreviation
Mac	1998 – 2017	Mac OS Extended	HFS+ HFS Plus
Mac	2018 ->	Apple File System	APFS

Windows and Mac Compatible File System

Platform	Year	Official Name	Abbreviation
Windows	2006	Extended File Allocation Table	exFAT

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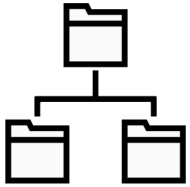
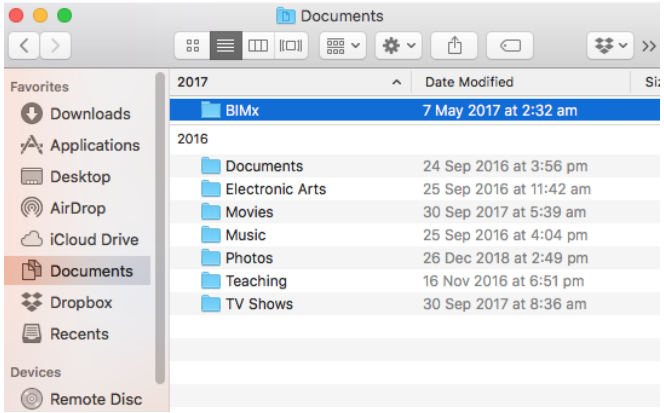


Save and Locate Files

1. Locate and open Finder on your Mac
2. Explore your available folders.

The bar at the bottom of your Mac is called the dock. The dock can be customised with applications of your choice



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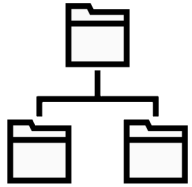

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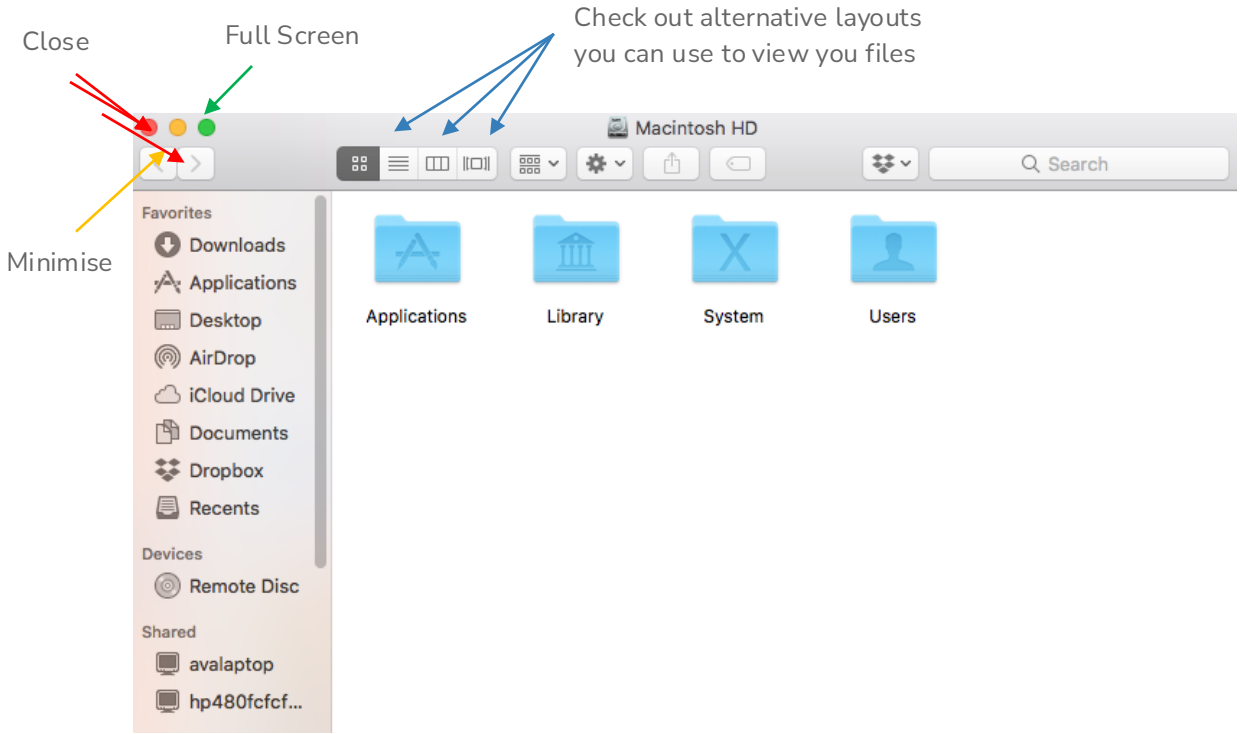

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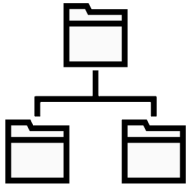

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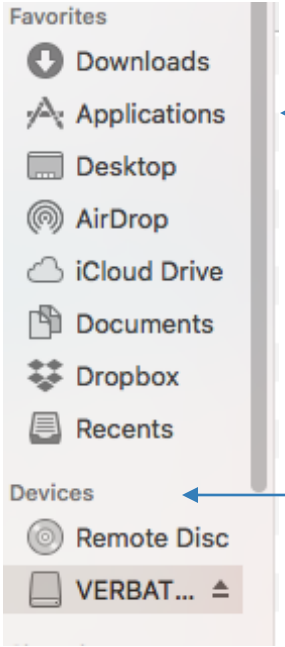

Applications can be located and run from this location

USB devices can be located and accessed here.

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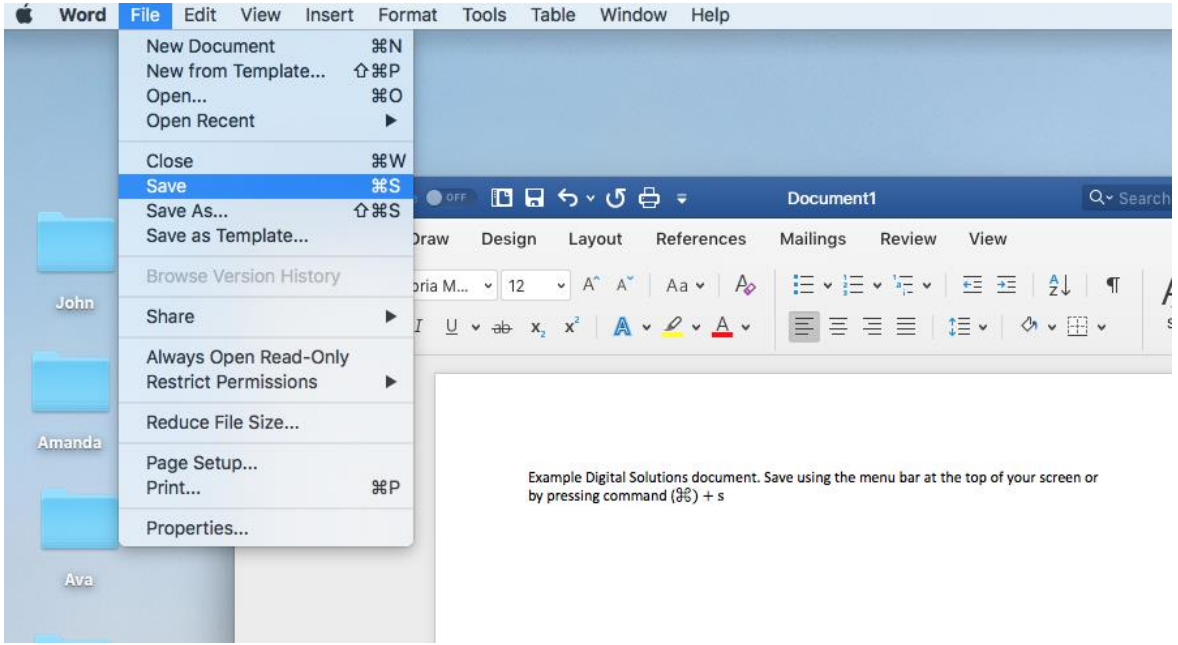
Save and Locate Files

Make sure you use the menu bar in OSX environments to save and open files.



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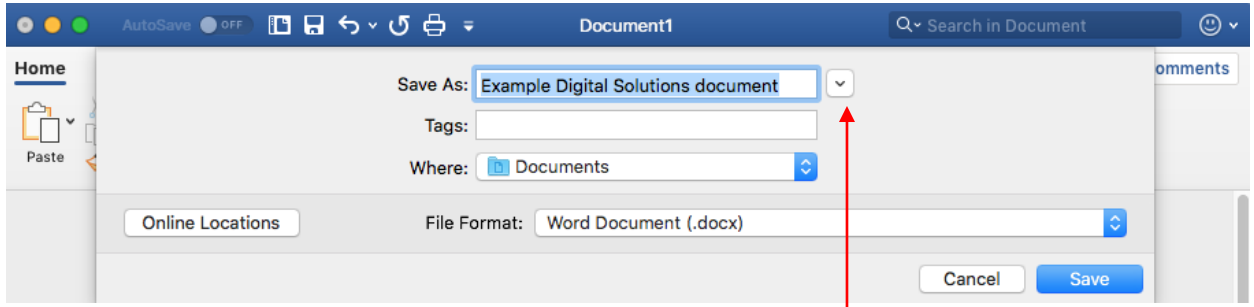

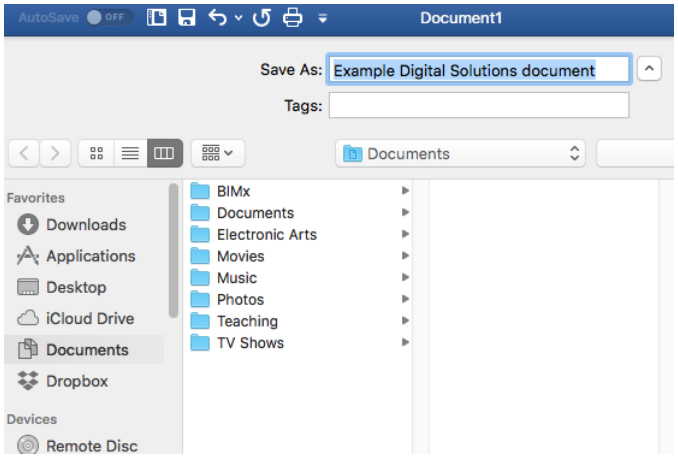

Click on the arrow here to expand your view and navigate to a save location of your choice

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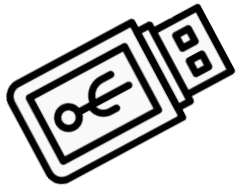
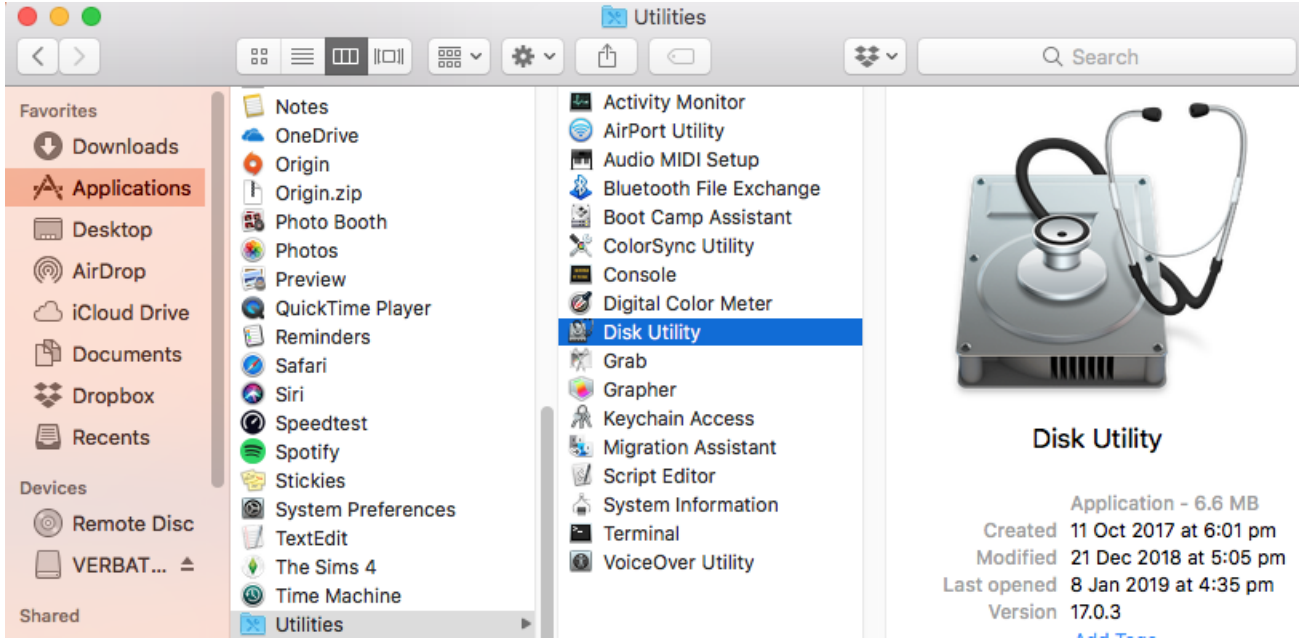


Formatting a USB

Open the application *Disk Utility* (not accessible at school)



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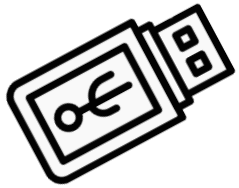
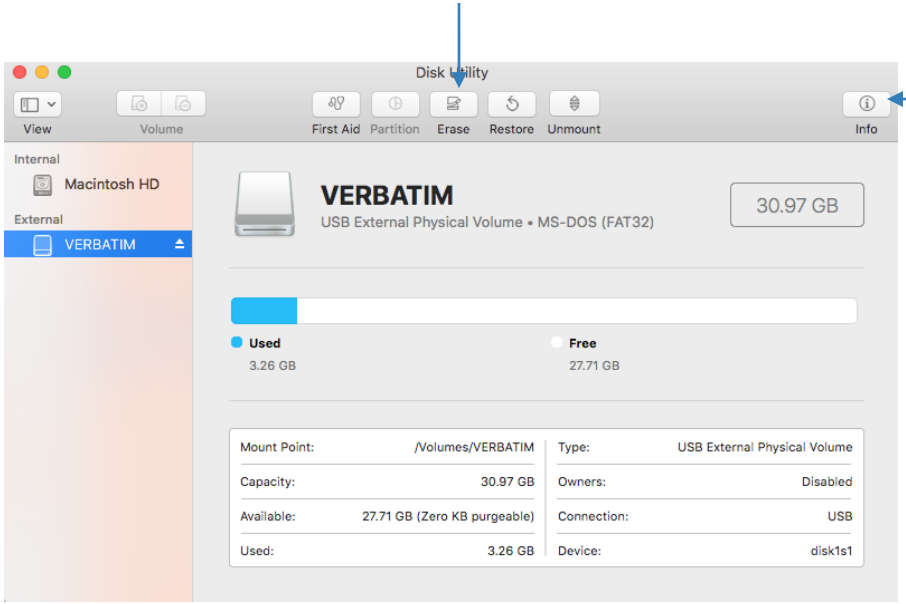


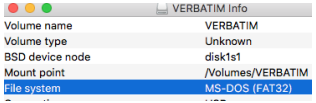
Formatting a USB

2. If your USB is in an unsuitable format you will need to format and erase the USB drive. This will erase all files on the drive so remember to back it up first. IMPORTANT: Make sure you have selected the correct drive to erase.



1. Select the USB drive and then click on the info button to reveal file system information.

FAT32 or EXFAT are suitable for sharing files between OSX and Windows.



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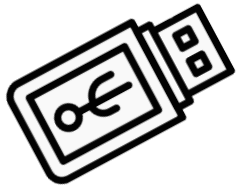

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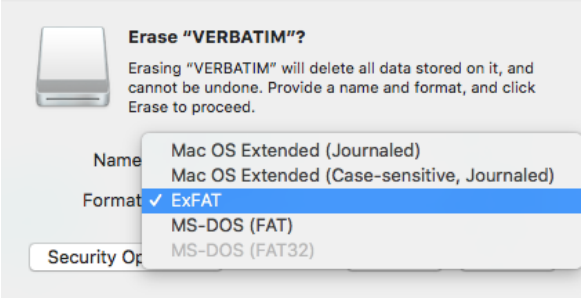
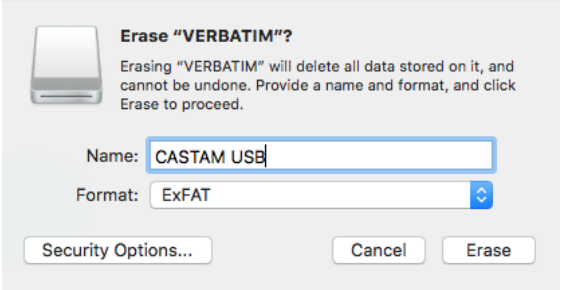


3. Select the file system you would like to use. ExFAT is preferable.



4. You can rename you USB drive to something more meaningful if you choose.

Please see your teacher if you are unable to format your drive or to discuss alternative methods of accessing your work at home.

1.3 Creating Digital Mind Maps

- Mind Maps

XMind

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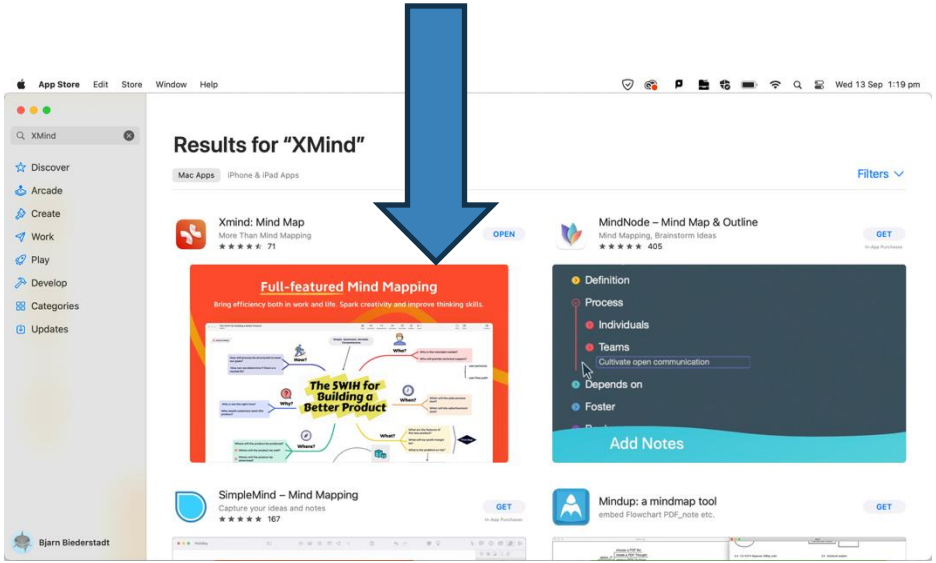
XMind Mind Maps

https://xmind.app

We will be using XMind for all of our mind maps year 11 and 12.

Navigate to the App Store on your iPads



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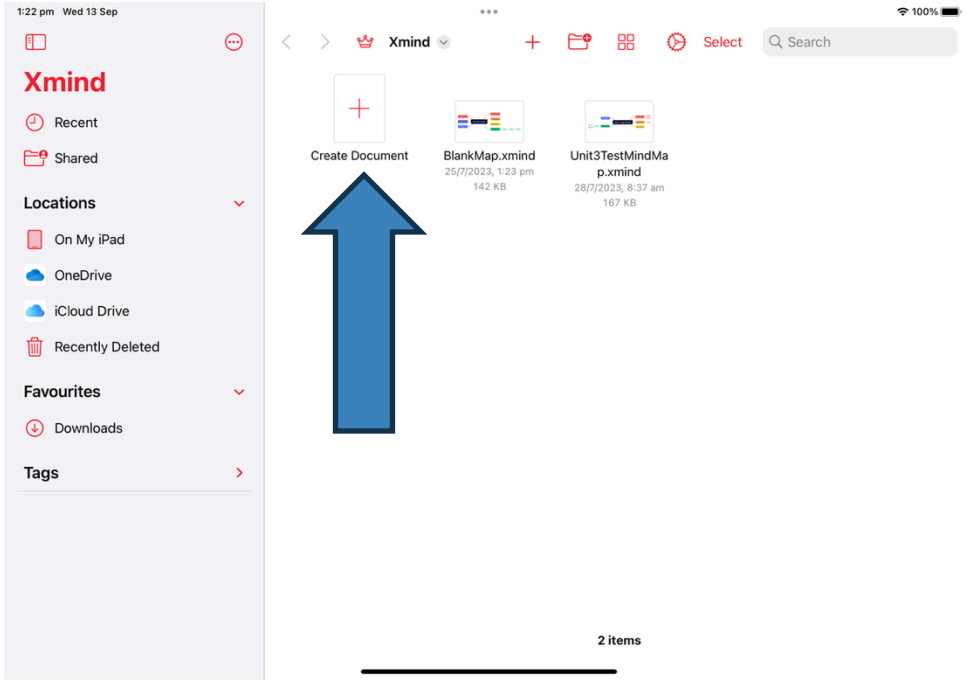
XMind Mind Maps

For Xmind – You will NOT need an account.



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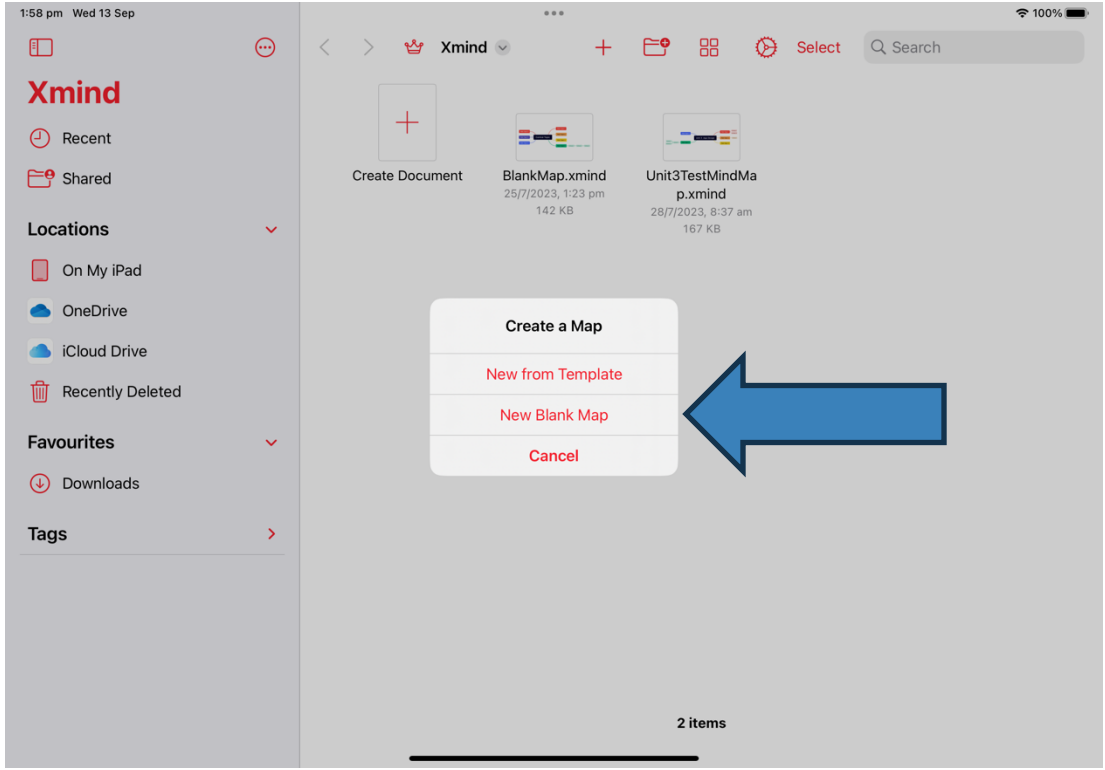

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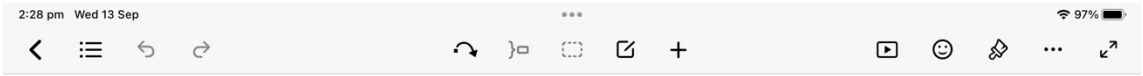
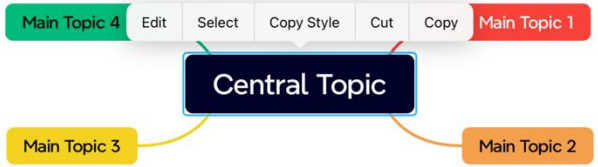
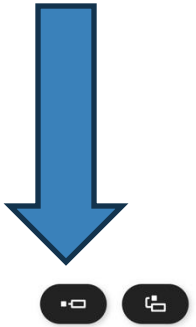




This button adds Branches and Topics to the Central Topic



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Activity 2

Part A

Create a new document in XMind and work out how to:

- Name your diagram “My First Diagram”
- Add a branch to your diagram with the title “Flora”
- Add another branch to your diagram with the title “Fauna”
- Split the Fauna branch into four more branches named birds, mammals, reptiles and other
- Split the the Flora branch into two branches named trees and flowers
- Add some data at the end of the branches e.g. cat, parrot, iguana, rose etc.
- Xmind will automatically adjust the Textboxes and lines of the branches of your mind map diagram.
- Delete the branch named other
- Add pictures to enhance your diagram, you will need to resize some images.

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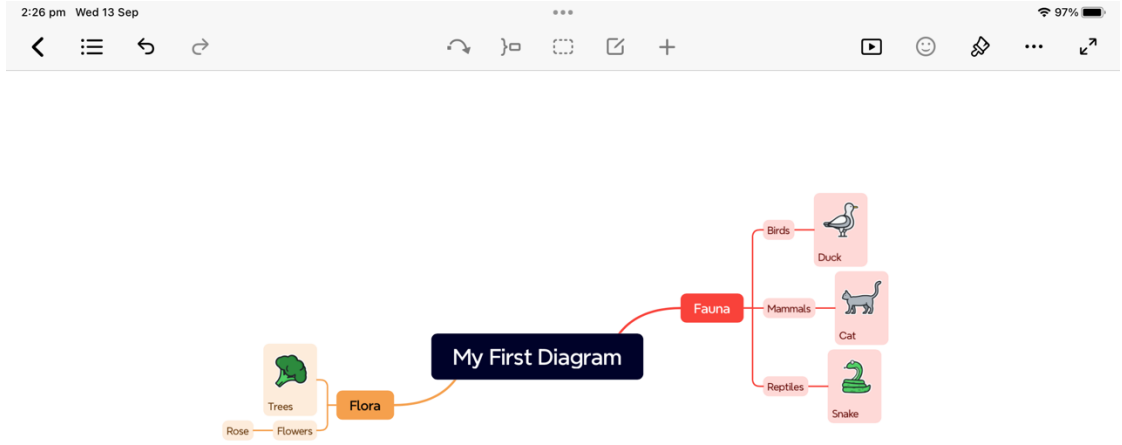
- Students will investigate real life problems using a mind map.

Activity 3

Part B - Download the completed diagram as a PDF and save to your iPad



WALT

- Computer lab rules
- Classroom rules
- Navigating a Mac/OSX
- Exploring problems and investigating potential digital solutions.

WILF

- Students are assigned a workstation and will adopt responsible behaviours in the computer lab.
- Students will navigate the OSX operating system and create folders to save their work.
- Students will investigate real life problems using a mind map.

Activity 4

Part C

- Create a mind map to help you become the best possible version of yourself.
- Make sure you include things you do well and things that you need to improve.

Save your completed mind map using the following formats:

- Xmind File
- PDF
- PNG (best for adding to a word document)