Tākaro - Computer Game Creation

https://aotawhiti.school.nz/games/arcade.html

Week 4 onwards.

We are aware many of you would like to work on your own project. Once you have completed one project from the tasks below you can start working on your own project individually or in a group.

The tasks are:

1. Space Invaders
2. Ao Tawhiti Runner
3. Pixel Art Character Creation
    - Make a pixel art fantasy character version of yourself (32 pixels high)
        - https://www.pixilart.com/draw/32x32-f23e1bdef415ea5
        - https://dinopixel.com/
4. Play and finish Colossal Cave[1] : https://grack.com/demos/adventure/
5. Complete at least 10/22 levels of Untrusted: https://alexnisnevich.github.io/untrusted/
6. Try making a game on a different platform such as: https://editor.gdevelop.io/

Submit evidence of each task here:
https://docs.google.com/forms/d/e/1FAIpQLSdM9weqYRugOI3Aih16NyBgdjLoocT1tMmZvVNvyYEiRW2IXA/viewform

Introduction to coding basics.

- JS programming
    - https://javascript.info/first-steps
    - https://tio.run/#javascript-v8
    - https://onecompiler.com/javascript

[1] https://en.wikipedia.org/wiki/Colossal_Cave_Adventure

Other Text Based Adventures

https://aotawhiti.school.nz/textbasedadventure/
Play https://writtenrealms.com/game
Follow the tutorial https://writtenrealms.com/worlds/4

Week 3 - Ao Tawhiti Runner.
Today we would like everyone to complete a small 'dino runner' style game. Please put on hold any other projects you currently have on the go and complete this first.
The best one we will hide as an easter egg on the school's website, so please make it match the theme and have some sort of Ao Tawhiti branding / styling. AT-Brand-Guidelines-2016.pdf

We would like you to try using javascript. If that seems overwhelming then make the game in Scratch.

To start with **javascript** try getting ChatGPT to help:
Example: https://chat.openai.com/share/845f8d4e-a7be-460d-bd79-de59def4b4bb
(warning - chatGPT can be very helpful but it often mis-understands. You may need to clarify things, like you need the obstacle to keep reappearing, or that you want a game written in javascript using the Canvas)

You can use a basic text editor to program, codepen.io has a good online HTML/CSS/JS one.

Before you submit it you must get one of the LA's to to ok it.
We will be checking to make sure it is sufficiently refined in terms of:

- Design
- Gameplay
    - Progression
    - Usability (check it works on cellphone as well as laptop)
    - Has some sort of score system.
    - Mechanics - things look to move well like they do in the real world.

Submit your final version here:
https://docs.google.com/forms/d/e/1FAIpQLSdM9weqYRugOI3Aih16NyBgdjLoocT1tMmZvVNvyYEiRW2IXA/viewform

See some of the submitted games here: https://aotawhiti.school.nz/games/arcade.html

We are all starting out with Space Invaders as a really simple game to program then we will move onto other options once everyone has some fundamental skills.

For **Week Two** - We would like people to arrange themselves in the correct space based on these criteria

- **3.C - Just beginning with scratch**
    - First time at game creation, or you did not participate last time.
    - Space Invaders Tutorial: **https://www.101computing.net/space-invader-in-scratch/**
- **3.6 Novice - Advanced Space Invaders in Scratch.**
    - Go here if you finished or pretty much finished a space invaders game in scratch
    - This week, finish your game and add some extra features.
- **3.5 Rookie - Javascript.**
    - Go here if you are ready to make a Space invaders game in javascript.
    - **Space Invaders basic version to modify:** https://codepen.io/derekthatcher/pen/abQKdLd or https://aotawhiti.school.nz/games/invaderbasic/ (save this fill to modify)

Write you name on the whiteboard in your room.

Submit your game here
https://docs.google.com/forms/d/e/1FAIpQLSdM9weqYRugOI3Aih16NyBgdjLoocT1tMmZvVNvyYEiRW2IXA/viewform

Week one:

- **3.C Noob - If programming seems too overwhelming - try scratch:**
  - **Space Invaders: https://www.101computing.net/space-invader-in-scratch/**
  - For advanced scratch check out www.youtube.com/griffpatch
- **3.6 Novice - moving on from scratch - Beginners Javascript.**
  - If you have never programmed and would like to start then following this Khan Academy course: https://www.khanacademy.org/computing/computer-programming/programming is a great starting point, it covers basics and you can code in a browser. It is focused on learning to make games too.
  - If you have coded a little before or the khan course is too slow for you, I suggest using this reference guide and trying to complete all the levels on the following two games: https://alexnisnevich.github.io/untrusted/ -classic interactive game using javascript. http://play.elevatorsaga.com/ - harder game using javascript.
  - Basic HTML Games - https://codepen.io/derekthatcher/pen/oNooXpO duplicate and modify this pen (you will need your own codepen account) and follow the instructions written in comments in the code.
  - **Space Invaders basic version to modify:** https://codepen.io/derekthatcher/pen/abQKdLd or https://aotawhiti.school.nz/games/invaderbasic/ (save this file to modify)
- **3.5 Rookie - 2D javascript games**
  - **Break out:** https://developer.mozilla.org/en-US/docs/Games/Tutorials/2D_Breakout_game_pure_JavaScript, https://aotawhiti.school.nz/games/brick/
  - Phaser: :https://developer.mozilla.org/en-US/docs/Games/Tutorials/HTML5_Gamedev_Phaser_Device_Orientation
  - **Space Invaders:https://betterprogramming.pub/create-the-classic-space-invaders-game-af087786d63b, https://aotawhiti.school.nz/games/invader/index.html**

- **3.4 Ace - 3d games**
  - https://playground.babylonjs.com/
  - https://gamemaker.sandbox.game/#/en/a
  - Own project.

Glossary

Noob - This is the starting level where someone is new to game creation and has limited experience or knowledge. They may be just beginning to explore programming, design, or other aspects of game development. Noobs are still learning the basics and may need guidance from more experienced creators.

Novice - The novice level is a step above being a noob. At this level, individuals have gained some foundational knowledge and skills in game creation. They have started to grasp concepts and techniques, and can now create simple games with assistance. Novices are eager to learn and improve their abilities.

Rookie - At this level, someone has progressed from being a novice and gained more confidence in their game creation skills. They have a better understanding of game design elements and can create more complex games independently. Rookies are still learning and growing but have advanced beyond the beginner stage.

Ace - The Ace level represents a significant leap in skill and expertise. Aces have honed their game creation abilities to an impressive level, demonstrating exceptional talent and proficiency. They have developed a deep understanding of game design principles, programming techniques, and other aspects of game development. Aces are known for creating impressive and engaging games that showcase their advanced skills. They are often sought after for collaborations and recognized as rising stars in the game development community.

Prodigy - A prodigy is someone who has shown exceptional talent and skill in game creation. They have a natural knack for programming, design, or other aspects of game development and have achieved a high level of expertise at a young age.

Future options to investigate.

Box2d

Godot
Unity
Unreal engine
https://mamendes.github.io/3d-tic-tac-toe/

2d 3d mixup.

Make 2d versions of 3d games or 3d versions of 2d.

Use chat GPT to make a game!

https://gamemaker.sandbox.game/#/en/a

3d models
www.figuro.io