PICK UP YOUR RUBBISH!!!

SCRATCH 3 EDITION - TEACHERS GUIDE

AN INTRODUCTION
TO VALUES BASED
GAME DESIGN

YEARS 3 - 8
GROUPS OF 1 - 3

WHAT STUDENTS WILL LEARN

- How to add sprites from the Scratch library.
- How to design a custom sprite.
- How to add a sound from the Scratch library.
- How to use the 'When flag clicked' event.
- How to move a sprite
- How to make a sprite speak.
- How to use loops.
- How to use conditional statements.
- How to use a variable.
- How to create a game system that resets correctly for the next play through.
- How to plan out a game using a design canvas.
- Understanding our traditional values and representing these in our media.
- Sharing our stories using mixed media

Scratch components for students to learn:

- Movement
- Adding sprites
- Play sounds
- On click events
- Operators
- Loops
- IF statements
- Sensors
- Variables

What you need:

- Computer (individual or pairs)
- Pen
- Paper
- Our canvas
- Scratch code cards
- Optional – Scratch tutorial videos
- Headphones

SUGGESTED LESSON ORGANISATION

DESIGN PHASE

Use the **Beginner or Intermediate Digital Game Canvas** work through the following points.

Step 1: Topic

Games can be powerful tools to influence or change behavior in a fun engaging way.

Choose something that you want to base your game on and craft its story.
Is it Climate Change? The voyage of your family to Aotearoa NZ? Discouraging Bullying?

Step 2: Values

Using the V**alues worksheet** discuss in groups what values you connect with as a person and choose one or two you would like to see your game use.
Your game should have mechanisms in it that reflect these values

Step 3: Purpose

Games are made for a reason. What do you want your players to Think / Feel/ Experience or Do as a result of playing your game? How does this connect to your topic?

Optional: Look & Feel

Look and Feel: Using the **Game Canvas** draw how you think your game should end up. You will use this as a tool to develop your game.

SUGGESTED LESSON ORGANISATION

DEVELOPMENT PHASE

Step 1: Introduction

Ask students go to their computer stations and open a web browser (excluding internet explorer). Explain to students that they will be learning how to make a values based game using MIT's Scratch. This game is about guardianship of the land and protecting it from pollution.

Demonstrate our version of the Scratch game so that students have a good idea of what they will be creating.

Step 2: Scratch

Instruct students to open up Scratch in their browser. They can find this by googling Scratch or going to https://scratch.mit.edu/.

Then students will need to sign in by either

1. USING EXISTING ACCOUNTS: login into their Scratch accounts to save their work to the cloud.
2. USING OMGTECH! ACCOUNTS: For this exercise you can use the OMGTech! Student Accounts set up for this exercise which can be found here. https://omgtech.co.nz/gdscratch/#logins. Or;
3. SETTING UP YOUR OWN ACCOUNTS: If accounts have to be set up then run students through the sign up process. This is very simple and is a matter of following the on screen instructions. This will take and extra 10 minutes and is best done in advance of the live stream.

Step 3: Choose how to engage in the lesson with the Handouts or Video tutorials

These can be found at
Handouts: https://omgtech.co.nz/gdscratch/#Handouts
Video Tutorials: https://omgtech.co.nz/gdscratch/#Video

Note: If you are doing video tutorials we advise headphones

SUGGESTED LESSON ORGANISATION

IF VIDEO TUTORIALS

Step 1: Video tutorials

Students will follow each video tutorial (https://omgtech.co.nz/gdscratch/#Video) one after the other until they complete the game. Encourage students to finish all our videos before remixing their game. This ensures all students master the basics. Our tutorials have been labeled clearly in chronological order. Our game will serve as a base for their own game. It is recommended that the teacher checks on each student to ensure they are feeling comfortable with this method of teaching. Students can get overwhelmed with pausing and restarting videos.

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Step 2: Customising the game (IF TIME PERMITS):

Once students have completed the video tutorials allow them time to remix the game. Encourage students to create their own characters, change the maze, change the backdrop, add their own content, and create more levels for their players to explore. This time is perfect for fostering creativity and gives students an opportunity to really express themselves using this platform. Note: Students can be given this opportunity during another session if there is limited time as all games are saved to their Scratch accounts in the cloud.

Step 3: ATTENTION GRABBER: Wrap up:

Now is a perfect time to have students save their games. Ask students to log out of their accounts once their games have been saved. Remind students that they will have the opportunity to edit their games in the future as games are saved to their accounts.

SUGGESTED LESSON ORGANISATION

IF HANDOUT TUTORIALS

Step 1: Handouts

We have developed a set of Scratch cards that students can follow to build their game. Each card builds upon the last card and breaks down the code for students. Print these out and hand them out to groups of students. Scratch cards can be printed double sided on A4 paper. We recommend that these cards are printed in colour due to Scratch's colour coordinated user interface. These cards are bundled with this lesson plan. https://omgtech.co.nz/gdscratch

Step 2: Follow Cards:

Students will follow all Scratch cards until they have created a complete game. Each card is order chronologically.

Step 4: Customising the game (IF TIME PERMITS)

Now is a perfect time to have students save their games. Ask students to log out of their accounts once their games have been saved. Remind students that they will. Have the opportunity to edit their games in the future as games are saved to their accounts.

Step 4: ATTENTION GRABBER: Wrap up

Now is a perfect time to have students save their games. Ask students to log out of their accounts once their games have been saved. Remind students that they will have the opportunity to edit their games in the future as games are saved to their accounts.

EXTRA FOR EXPERTS
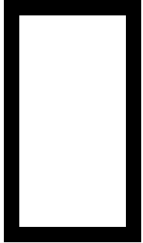
- Try adding more rubbish. You will need to change the variable code so that it accepts this new number as the correct amount of rubbish to collect.
- Try adding a second level (tricky).
- Try adding a hidden level that only you know where it is triggered from
- Try adding a sound when the player successfully collects a single piece of rubbish.

Recap / Reflection

- How did we reflect our chosen value in our game?
- How could we represent other values into our software and games?
- What would you add to the game to improve it?
- What new Computational Thinking concepts do we know?

THE EDUCATIONAL BIT

Playing and building games as part of your curriculum can really bring unexpected benefits in terms of skill and knowledge. They are a great way to develop creativity and a sense of being entrepreneurial. But they also develop logic skills very well - most games are based on rules and those rules need to hang together logically.

While designing the games, they will touch on many aspects of the new Digital technologies curriculum as well!

English Curriculum

Depending on what level of text you encourage your students to include in their games and game design canvas, this activity could cover the objectives for up to Level 4 (Writing), specifically when considering the audience of their Game, they can use either the instructional documentation, or the text within the game to show how they understand how to shape their text for different purposes and audiences.

You could include examples of how instructional writing is different from narrative writing, and how the choice of certain language is more appropriate in different situations.

Arts Curriculum

As they are designing and publishing the Game and all of its assets, this can be used to cover objectives for up to Level 3 (Visual Arts).

A Game is a specific context where the practical knowledge of how to create different assets in a digital format can help them to describe their own ideas and communicate what they need to.

Social Sciences Curriculum

Through this activity the students explore Identity, Culture, and Organisation through looking at the Values systems of those people from Aotearoa NZ; and our Pacific Neighbors. We specifically explore Maori; and other Indigenous Peoples; and exploring how you can use this to influence people

We also explore Place and Environment through focusing on important global topics

THE EDUCATIONAL BIT

Digital Technologies Curriculum –
Designing And Developing Digital Outcomes

Through this activity students will start to explore the digital outcomes strand of the curriculum exploring the specific concepts of

How to add sprites from the Scratch library.
How to design a custom sprite.
How to add a sound from the Scratch library.
How to plan out a game using a design canvas.
Understanding our traditional values and representing these in our media.
Sharing our stories using mixed media

They are working on elements across Progression Outcomes 1 and 2.
Students develop knowledge and skills in using different technologies to create digital content for the web, interactive digital platforms and print. They construct digital media outcomes that integrate media types and incorporate original content.

Digital Technologies Curriculum –
Computational Thinking

Through this activity students will start to explore the computational thinking strand of the curriculum exploring the specific concepts of

How to use loops.
How to use conditional statements.
How to use a variable.
How to create a game system that resets correctly for the next play through.

They are working on elements across Progression Outcomes 2, 3, and 4
In authentic contexts and taking account of end-users, students decompose problems into step-by-step instructions to create algorithms for computer programs. They use logical thinking to predict the behaviour of the programs, and they understand that there can be more than one algorithm for the same problem. They develop and debug simple programs that use inputs, outputs, sequence and iteration (repeating part of the algorithm with a loop).
Using the three building blocks of programing: sequence, selection, and iteration