ISSUE 1 – TERM 2, 2020

T4L kids

technology 4 learning

DESIGN & SUBMIT YOUR VERY OWN VIDEO GAMES

LEARN WHY SCALE IS SO IMPORTANT IN 2D & 3D ENVIRONMENTS

The Best Apps TO DEVELOP **GAMES**

TERRIBLE TECH PUNS (YOU'LL WISH YOU'D NEVER HEARD)

How to SCREEN RECORD an Awesome PROMO!

NSW GOVERNMENT

T4L kids
technology 4 learning

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For more information and teacher notes visit
T4L.link/T4Lkids

EDITOR'S Note

HEY THERE T4L KIDS!

Welcome to T4L kids–Issue 1!

The T4L team wanted to bring some great resources to you, the kids of NSW public schools. In this issue you will develop the skills to become the creator of your very own game. We have designed these resources so that, if you are in Years 5-8, you should be able to work on them independently but you may need some help from an adult, or an older sibling.

Don't forget to share your work with us! We can't wait to see what you can create!

You have most likely received this magazine through your classroom teacher, so don't forget to thank them!

Good luck–and have fun!

Mark Greentree
Editor-in-chief

JUST JOKES

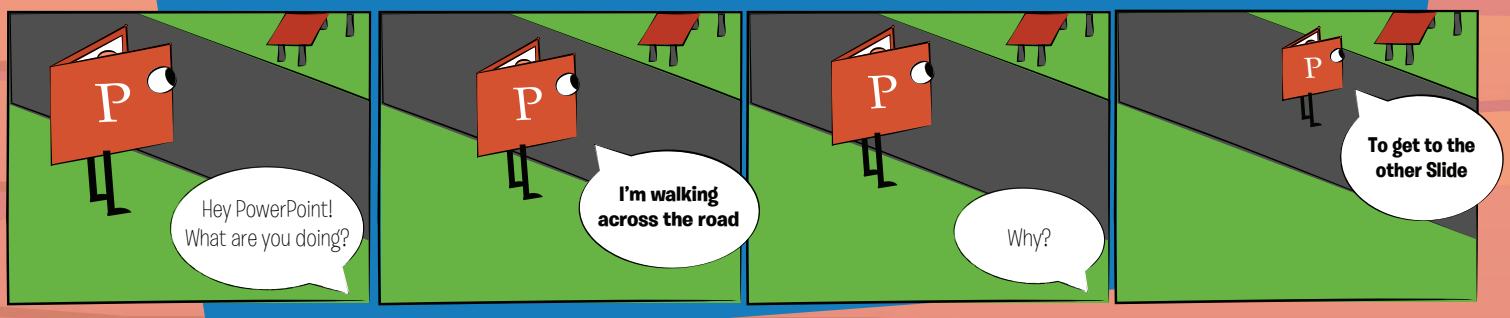
Q: What do computers eat for a snack?
A: Microchips.

Q: What is the most common lie in human history?
A: ... 'I have read and agree to the terms and conditions.'

Pun!
Never use 'Beef Stew' as a password. It's not Stroganoff!

HaHa!
We'll we'll we'll... If it isn't Autocorrect.

LoL!
You know you are texting too much when you say 'LOL' in real life instead of actually laughing!



DESIGN CHALLENGE

Do you think you have what it takes to make a fun and engaging video game? The T4L team are challenging you to make a video game and share it with your teachers, friends and the world!

All video game challenges start with a 'theme'. The theme for this challenge is SIZE. Size and scale in games are common features and are all about the relationship of size between 'things'.

Some examples of size in games include:

ZOOMING IN OR OUT

What challenges would you face as a human scaled down to the size of a blade of grass in your backyard?

MISMATCHED SIZES

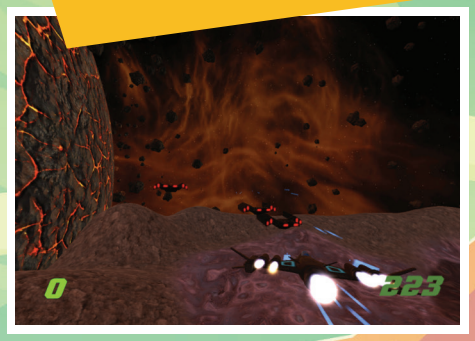
What would happen if an ant battled a T-Rex?

MEASUREMENT SIZES

Travelling light years through space or taking ant-sized steps across your classroom?

SIZE OF MICROSCOPIC THINGS

How far do the germs travel when you sneeze? You might be surprised!



SIZE SIMULATION

City building games simulate size by gradually scaling up their world. Could you scale up from a room to a house in your game?

YOU WILL NEED TO

1 CREATE

Create your game using one of the video game creation tools mentioned in this issue.

2 RECORD

Record a promotional video for your game.

3 SEND

Share it with your teacher and then send a link of your game and promo video to **stem.T4L @det.nsw.edu.au**

For even more ideas check out the sample games created by the T4L team: T4L.link/kidsgames

We look forward to seeing what you can create!

HOW DO I CREATE VIDEO GAMES?

You want to create your own video game but don't know where to start? Let's take a look at how to begin!

the PLAN

THE PLAN

Before you start creating your game you should begin with an idea and a plan! Every game is made up of five core game design elements.

1 ENVIRONMENT

The look and feel of the game come from its environment, space and scale.

2 OBJECTS

These are the parts of your game like the player avatar, blocks, buttons and enemies.

3 GAMEPLAY

These are the actions in the game that determine what the player is doing, like jumping, collecting, avoiding objects or solving puzzles.

4 GOALS

These are the achievements to ultimately win or lose the game.

5 RULES OF PLAY

Rules guide the player on the mechanics and goals and are usually introduced early in the gameplay.

So, consider these questions when planning your game:

What will the game environment look like?

What objects will the player use in the game?

What will the player do?

How do they win?

What are the rules of the game?

MAKE A VIDEO GAME

STEPS TO SUCCESS

START

1 DESIGN IT
Consider the five core game design elements.

2 LEARN IT
Choose a platform and watch tutorials to learn more!

3 BUILD IT
Start small. Build out and refine your game as your skills grow.

4 TEST IT
Get a friend to test your game. Did they offer some suggestions?

5 SHARE IT
Screen record yourself playing the game.

FINISH

Send your game to your teacher. Post a link in your online learning space for your classmates to play.

Make a cool promo video (show your teacher before sharing it!). Send your game and video to stem.T4L.

SIX SUPER APPS TO CREATE YOUR GAMES

Tynker

www.tynker.com

Tynker is a fantastic visual programming game design platform. You can use Tynker online in the browser or through an app.

Ask your parents to sign in with your student Google account (@education.nsw.gov.au) or ask your teacher to apply for the educator account through the **stem.T4L learning library**.

Platforms: browser on PC or Mac, app on iPad or Android

Level: Beginner & Intermediate

Unity

Platforms: PC or Mac

Level: Advanced

unity.com

Unity is a very powerful 3D and 2D cross-platform game engine that is used by professional and amateur game designers. If you're under 13 ask your parents to create an account so you can install Unity for free at home. At school, ask your teacher to install it through 'UDM'. Unity will take a little longer to learn but could set you up for an amazing career in game development.

code.org

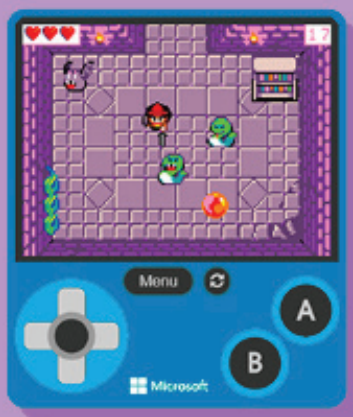
studio.code.org/projects/public

There are lots of easy to follow courses and lessons on the code.org website. These fun lessons are a mix of visual and text-based programming. Most of the site is used to learn coding concepts but it also has an app and game lab for creating unique games. Ask your parent's permission to create an account.

Platforms: Browser on PC, Mac, iPad or Android

Level: Beginner

MakeCode Arcade



arcade.makecode.com

Use MakeCode Arcade to build retro arcade games (like the old pixellated ones!) for the browser and handheld consoles. You can build 2D games in your browser using visual coding blocks or JavaScript code.

Platforms: Browser on PC, Mac, iPad or Android

Level: Intermediate

CoSpaces Edu

cospaces.io/edu/

CoSpaces Edu is a website that allows you to create 3D or virtual reality games. You can create your games in the browser or on an app. Ask your parents to sign in with your Google account (@education.nsw.gov.au) to use the free version or ask your teacher to sign up for the **pro** version on the **stem.T4L learning library**.

Platforms: browser on PC or Mac, app on iPad or Android

Level: Intermediate

Minecraft Education

education.minecraft.net

Minecraft Education Edition is the more powerful version of Minecraft. It has added features that allow you to code the Minecraft universe! Use NPC's, teleport blocks, Code Builder and redstone mechanics to turn your Minecraft creations into a whole new experience. You can **download it** from Microsoft.

Platforms: PC (Windows 10), iOS or Mac

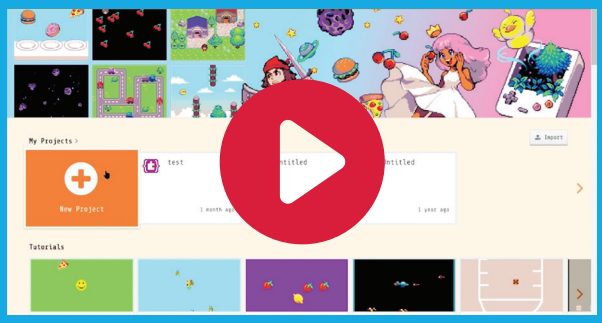
Level: Intermediate

the TOOLS

You can't create a video game without a game engine to construct them. Two of the easiest game engines to get started with video game creation are Tynker and MakeCode Arcade.

MakeCode Arcade

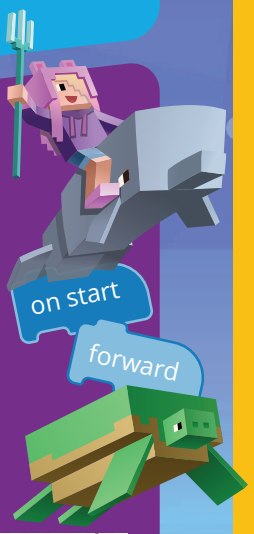
MakeCode Arcade is a free game engine that runs in the web browser. You can create retro 2D pixel games using either JavaScript or visual programming blocks. Check out the video to see how easy it is to create with MakeCode Arcade!

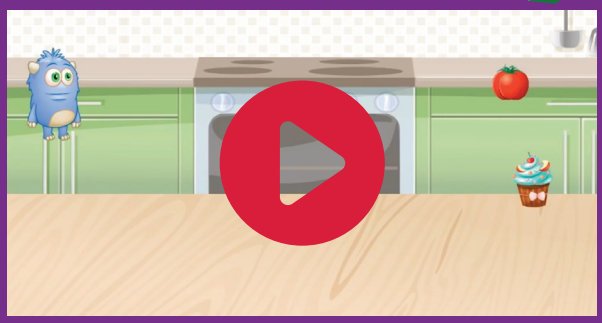


arcade.makecode.com

TYNKER

Tynker is a 2D game engine that allows you to quickly use the visual programming blocks to create stunning games. Use the built in sprites or create your own to start your beautiful looking 2D games.





www.tynker.com

the PLAYTEST

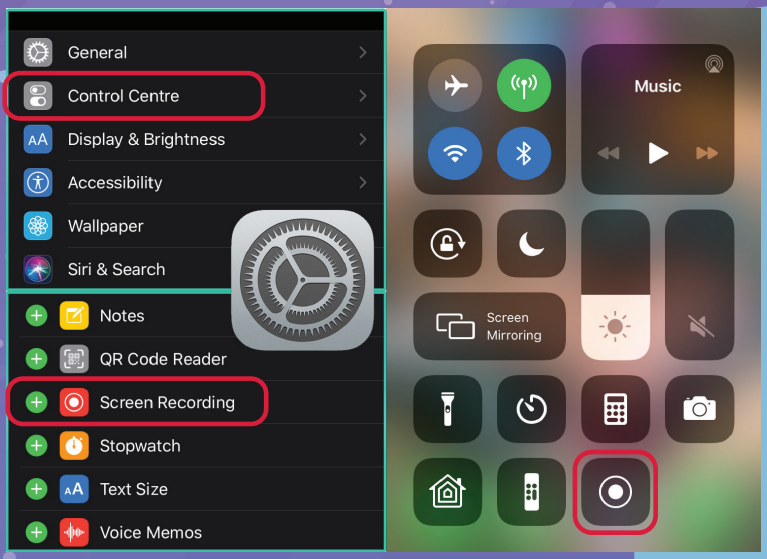
How do you know you have made a fun game? Every game needs to be tested to make sure that it is fun, challenging enough (but not too much) and that there are no 'bugs' in the game.

Find some friends, family or teachers to test your game before releasing it to the public. Ask them questions with the core game design concepts in mind, such as;

- Was the concept of the game clear?
- How did the game space make you feel?
- Were the rules easy to follow?
- Was the game challenging enough?
- Did it feel 'balanced'?
- What did you find fun?
- What could be improved?

SCREEN RECORDING

On iOS



Apple have made Screen Recording on iPads and iPhones so simple. To record your screen:

1. Go to Settings > Control Center > Customize Controls, then tap the + next to Screen Recording.
2. Open Control Center, tap the ◉ (hold the icon to allow sound to be recorded), then wait for the three-second countdown.
3. To stop recording, open Control Center, tap ◉ or the red status bar at the top of the screen, then tap Stop.
4. Go to Photos to see your screen recording.

For more on screen recording on an iPad, watch **Eric's video**.

SCREEN RECORDING WITH WINDOWS

Laptops and computers using Windows 10 also have an easy option for screen recording. To record your screen:

1. Open the app you want to record, e.g. Makecode Arcade or Unity.
2. Press the Windows Key and the 'G' key G at the same time.
3. Check the 'Yes, this is a game' checkbox to load the Game bar. Check this for any app, not just games.
4. Click on the start recording button ● (or Win+Alt+R).
5. Stop recording by pressing the stop button ■ on the red recording bar at the top-right (or Win+Alt+R again).
6. The recording saves automatically in the Videos folder in a subfolder called 'Captures'.

THREE QUICK TIPS

1 Trim your videos. Both iOS and Windows devices allow quick 'trimming' of the video recordings. Trim the beginning and the end to remove the boring parts.

2 Allow your voice to be heard. Have you got a good microphone? Make sure it's plugged in and selected! Don't forget to speak loud and clear when capturing your voice.

3 Practice makes perfect. Showcasing the perfect moment in your game is best done when you've practised beforehand.