

# MICROSOFT GAME DEVELOPMENT

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## MINECRAFT EDUCATION & MAKECODE ARCADE WORKSHOPS

CODE: **MICROSOFT-GAMEDEV - FUNDA**  
**MICROSOFT-GAMEDEV - INTM**

The Microsoft Game Development Roadmap aims to develop students' computational thinking skills and introduce the game development process. Students will be coached on game creation strategies and fundamental coding constructs using the Microsoft Makecode platform. Students will be exposed to different genre of digital games, and they will learn how to use both Minecraft Education and Microsoft Makecode Arcade to code and create fun single and multiplayer digital games.

This programme offers 2 different tracks, fundamental (16 hours) and intermediate (16 hours) which schools can choose from.

For the fundamental track, students will learn different basic game development mechanics and coding constructs on both Minecraft Education (8 hours) and MakeCode Arcade (8 hours). Students will focus on developing fun single player games on Makecode Arcade such as Space Invaders, Flappy Bird as well as single player games on Minecraft Education such as Maze Run and Zombie Defense. Our intermediate track, targeted at students who have completed the introductory workshop previously or have experience in game creation, aims to coach students to code and create more complex multi-level and multiplayer games. Students will learn to create Makecode Arcade games such as Galga, Paddles and collaborative 2v2 Minecraft Education multiplayer adventure games with NPCs.

Both Makecode Arcade and Minecraft Education are free for students to use both in school and at home. Schools/ students do not need to pay any subscription fees.

Key in <https://codesg.imda.gov.sg/infocomm-media-clubs-cca/learn/roadmaps/> or connect with us to find out more on our Microsoft game development workshop now!

In collaboration with:



Organised by:



Please reach out and contact us if you have any questions:

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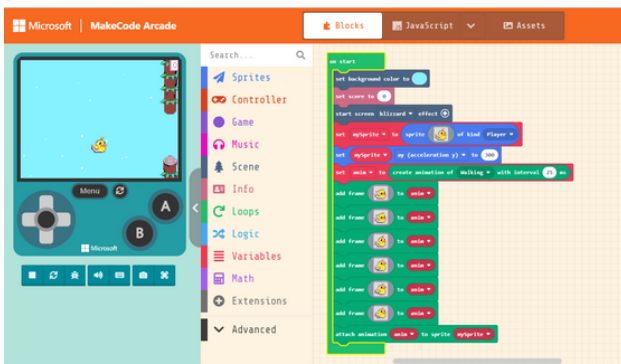
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## Workshop Outline - Fundamental

Lesson	Lesson Objective
1	Introduction to Game Development and Makecode Arcade
2	Introduction to variables, sprites and basic steps in Makecode Arcade creating a simple game
3	Introduction to motion and loops in Makecode Arcade, creating simple space destroyer game
4	Understanding how design thinking helps in game creation Makecode Arcade and creating a simple flappy bird game
5	Introduction to Minecraft Education, basic game Minecraft Education mechanics and coding of their Agent
6	Learn how to create and code an environment in Minecraft Education for their game, including using chalkboards and creating NPCs in their games
7	Learn what are functions and how to code/ create Minecraft Education obstacles and zombies as enemies in their world
8	Capstone project – Work in groups to create a game to Minecraft Education to solve a problem statement



## Workshop Outline - Intermediate

Lesson	Lesson Objective
1	Recap on Game Development and basics of Makecode Arcade, including fundamental coding contents
2	Learning what is array and using multiplayer blocks to create a simple multiplayer game (Pizza Game)
3	Learning to create background scenes and advanced functions to create racing game (Horse Racing)
4	Application of design thinking to create multiplayer game like Galga
5	Recap on Minecraft Education and introduction to multiplayer options in Minecraft Education
6	Learning how to use redstone and coding redstone for building activity and teleportation to different levels
7	Learning how to create Tower defense games and collaboratively defend against zombies.
8	Application of design thinking to create a PvP build challenge game with multi-level