Welcome!

What is your favorite video game and why?

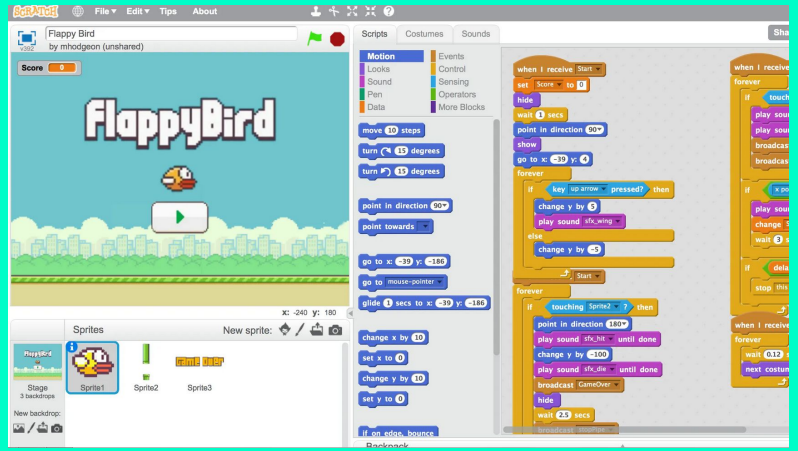
THE SCOUT LAW

A Scout is
trustworthy,
loyal,
helpful,
friendly,
courteous,
kind,
obedient,
cheerful,
thrifty,
brave,
clean,
and reverent.

Prepared. For Life.

GAME DESIGN


TICKET TO RIDE


Flappy Bird
by mhodgeon (unshared)
Score
FlappyBird
Scripts
Costumes
Sounds
Motion
Looks
Sound
Pen
Data
Events
Control
Sensing
Operators
More Blocks
Sprites
New sprite:
Stage
3 backdrops
Sprite1
Sprite2
Sprite3
New backdrop:

INTERNET SAFETY RULES

1. I will tell my trusted adult if anything makes me feel sad, scared, confused, or uncomfortable.

2. I will ask my trusted adult before posting photos or sharing information like my name, address, current locations, or phone number.

3. I won't meet face-to-face with anyone I meet in the digital world.

4. I will respect the online property of others.

5. I will always use good "netiquette" and not be rude or mean online.

Four Elements of a game - Story or Narrative

What is your game about?

Who are your characters?

What does the scenery look like?

How does story affect the way the game is played?

Four Elements of a game - Goals and mechanics

How do players win or advance in the game?

How many players?
e.g. single, 2-4, teams

How do players move or interact within the game?

Are there any restrictions?

Four Elements of a game - Aesthetics (look/feel)

What kind of scenery/location should the game include?

What kind of graphics/color scheme should your game use?

What changes can you make to improve how users see, feel, or hear the game?

Four Elements of a game - Medium/Technology

What is the format of your game?
e.g. video game, board game

What materials or equipment do you need to make the game?

Can you custom build game materials/assets?

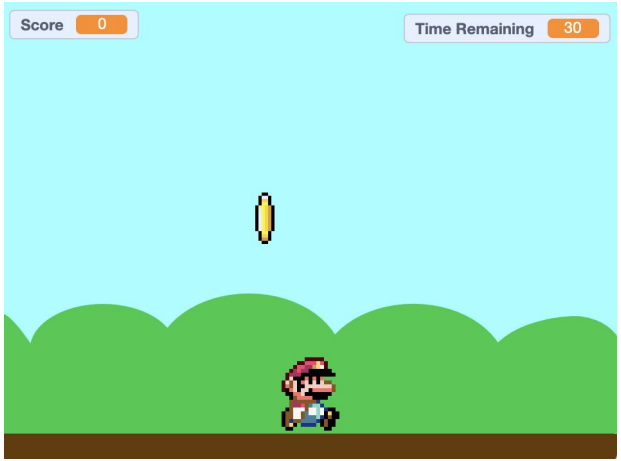
Sample game design - Mario coin collector

Story: Mario is a plumber whose goal is to save the Princess from Bowser. Help him stock up on coins before he begins his journey to earn extra lives!

Goals and Mechanics: Move and jump to collect as many coins as possible within 30 seconds.

Aesthetics: 2D, pixelated, colorful artwork.

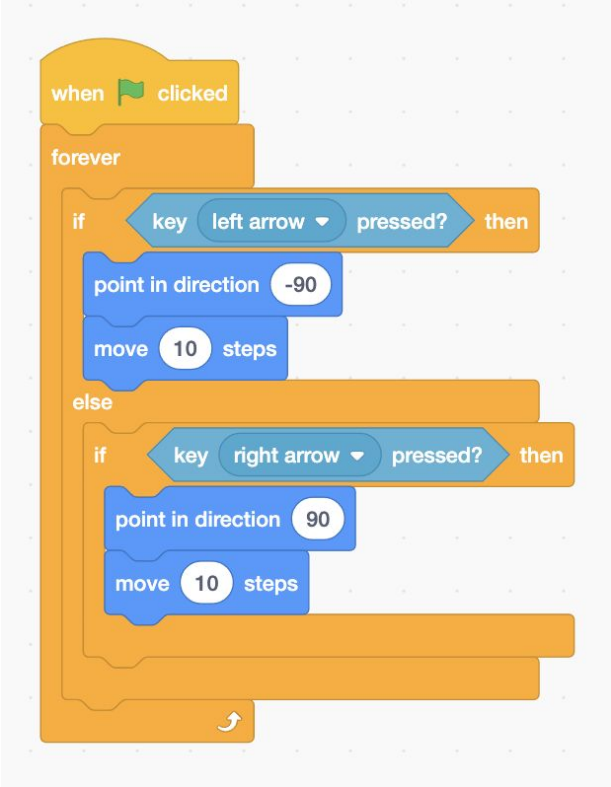
Medium/Technology: Video game, created using Scratch. Account/login required.



Player movement (running)

Moves and rotates the mario sprite when left and right arrow keys are detected.

The forever loop continuously checks for player input.



Player movement (JUMPING) + ANIMATION

Move mario up and then down to simulate a jump

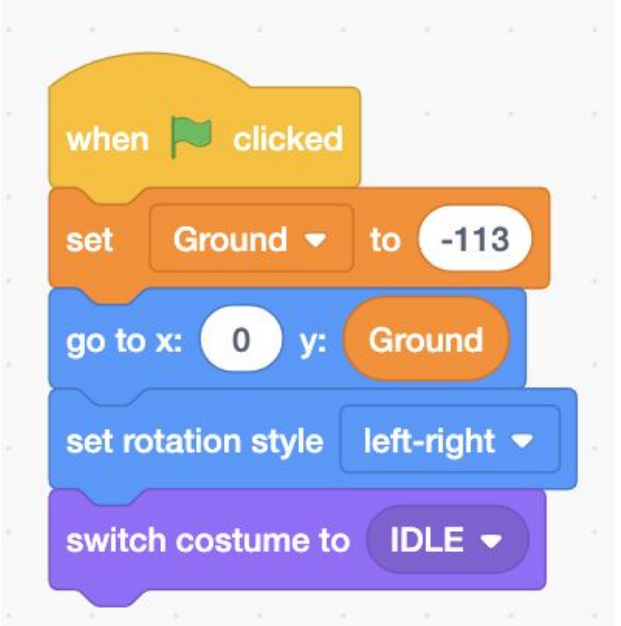
Create jump animation by switching between idle and jump ‘costumes’ in Scratch.

SETTING PLAYER STATE - USING VARIABLES

Variables are used to store pieces of information that are used by the game, like the location of the “Ground”.

At the beginning of the game, we want to make sure mario always starts off on the ground in the middle of the stage in an IDLE pose.

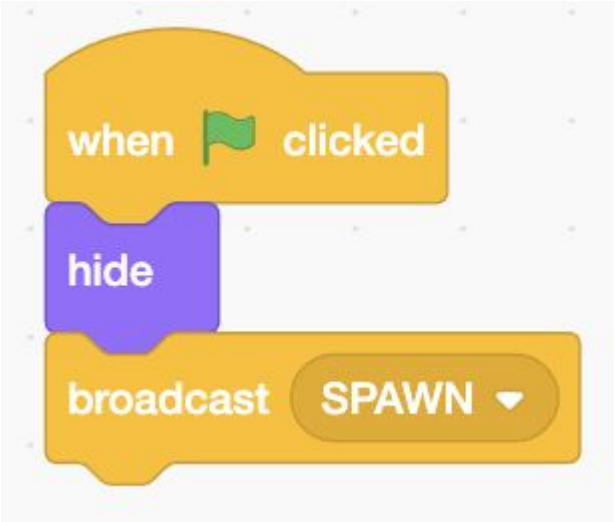
Rotation style tells the game that mario may only be rotated or flipped from left to right - as opposed to spinning.



SPAWNING A COIN OBJECT

Games frequently spawn or create new objects and enemies as a core game mechanic.

At the beginning of the game, the coin is hidden. We then signal or message the game that we are ready to spawn a new coin object, using the broadcast block.



Handling a spawn MESSAGE

Now that we've created a way to send spawn message to the game, we need to define what happens when a spawn message is received.

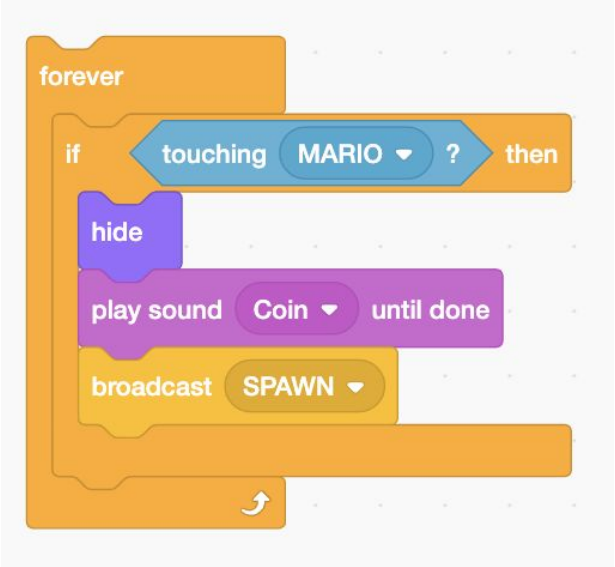
Here, we will always spawn the coin in a random position, but at the same height.

Once the coin location is set, show the coin sprite.

Handling a spawn MESSAGE (continued)

Then, add a loop to continuously check if the Mario sprite is touching the coin.

If they are touching, we want to hide the Coin, play a Coin sound, and broadcast a message to the game that we are ready to spawn a new coin.



COIN ANIMATION

As soon as a coin spawns in, we want the coin to continuously spin.

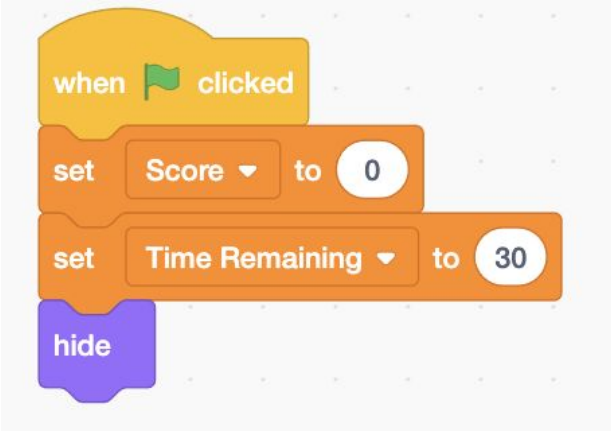
Use a forever loop to move the coin through each “costume” in the sprite sheet. The wait block is used to slow the rate of spinning.

SCORE AND TIME KEEPING

The game runs for 30 seconds and then displays a game over sprite. We'll attach the score and time keeping functions of the game to this sprite.

To do this, we will create a **Score** and **Time Remaining** variable and always reset them at the beginning of the game.

The game over sprite also starts as hidden.

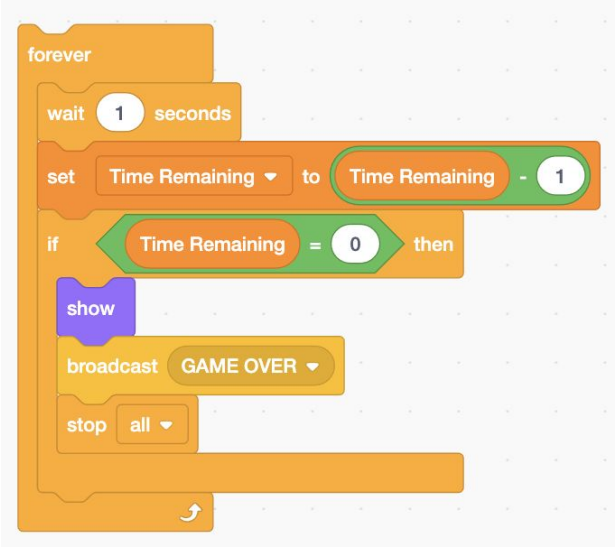


SCORE AND TIME KEEPING

We also want to add a forever loop that continuously waits for a second and counts down on the timer by 1.

Once there is no time remaining, we show the game over sprite and broadcast a **GAME OVER** message to the game.

The stop all block tells the game to stop running any code blocks for the game over sprite.



Handling a game over message

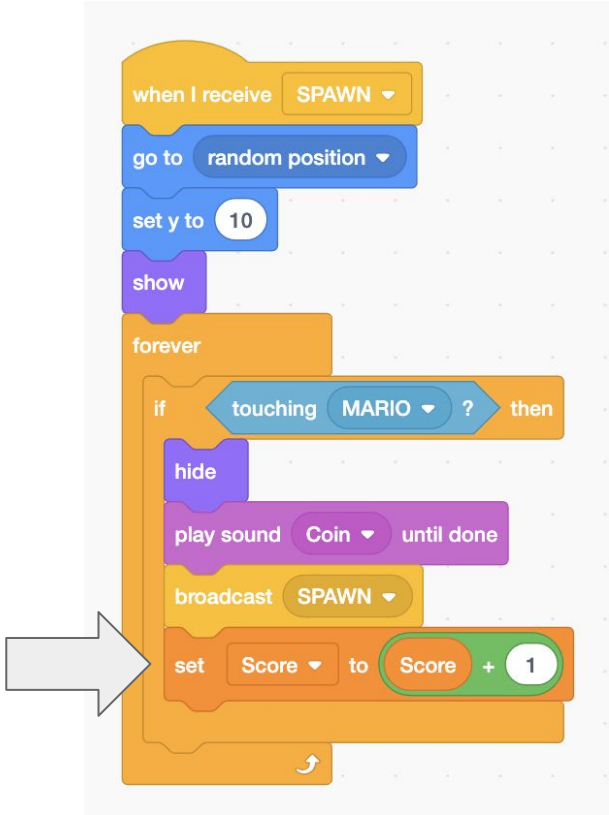
When the coin sprite receives a game over message, we hide the coin and stop all code blocks for the coin.

Handling a game over message

When the mario sprite receives a game over message, we set him to the IDLE pose, place him on the ground, and stop all code blocks for the mario sprite.

Keeping score

Lastly, we add a block to add one point to the score each time mario touches a coin sprite.



HOMEWORK - COMPLETE YOUR GAME

Add finishing touches to your game and teach a family member or friend how to play your game.

Challenge: swap out backgrounds, sprites, or change up the game mechanics. Game designs using a physical medium such as board games and card games are also acceptable

SCOUT OATH

On my honor
I will do my best

To do my duty
to God and
my country

and to obey
the Scout Law;

To help other
people at all times;

To keep myself
physically strong,
mentally awake,
and morally straight.

CUB SCOUTS