





### **SECOND MOTION TASK**



#### Description

In this Project we will practise different programming concepts such as the sprites creation or giving them movement. Also, we will see how they interact with each other or establishing variables.

#### Goals

- Work on the sprites movement.
- Program interactions between the elements.
- Establish a score that changes depending on the situation.
- Give a speed and acceleration to the sprites.
- Create different obstacles and program their entry in scene.







# Programming guide

NEW PROJECT		
We start creating a project, we should stablish the name, for example "jumping dinosaur" and then press "create" button.	My Projects View All mi pri New Project Sector Se	
ASSETS CREATION		
Sprite Player Creation		
We create one sprite with 16 x 16 px dimensions. We create in "Assets" and then we look for a sprite that we like in "Gallery". After that we click on "Done"		
Here we have part of the assets and programming https://makecode.com/_avH01Y8kLbrP		







ASSET CREATION		
MAIN SPRITE CREATION		
We recommend using a 24x24 grid for the tRex Sprite.		
ADITIONAL SPRITE CREATION		
We recommend using a 16X16 grid for the cactus Sprite.		
We recommend using a 24x16 grid for the fly Sprite.		























With the last block of this "update", we are going to make the obstacles destroy theirselves when they get out of the scene. We will use the code below the "update"to increase our score by 1 when an obstacle is destroyed.	on game update every 1500 v ms set projectile v to projectile from side with vx pick random -200 to -120 vy 0 place projectile on top of tilemap col 9 row 5 set projectile auto destroy 0 0 on destroyed sprite of kind Projectile v change score by 1
We are going to create the variable "spawn" and we are going to drag under the autodestroy the "changes by 1" block. We will use a "if" to establish that if "spawn" is higher than 4, a new variable, "spawn2", will be set. This variable will choose a random number between 1 and 2.	change Spawn v by 1 if Spawn v v 4 then set Spawn2 v to pick random 1 to 2 e
Under the "set spawn2", we will use another "if" to set that if this variable is equal to 2, other type of projectile will appear form the right side of the scene.	<pre>set Spaw2 v to pick random 1 to 2 if Spaw2 v = v 2 then pause 100 v ms set projectile v to projectile rom side with vx pick random -120 to -150 vy 0 place projectile v on top of tilemap col 9 row 3 </pre>
INTERACTION MECHANIC	
Finally, we are going to program that if a projectile overlap with our character, we will lose the game.	on sprite of kind Player • overlaps otherSprite of kind Projectile • game over LOSE •

With this programming, we will use the sprite of kind "Player" o "TRex" to avoid the obstacles and getting points for each one avoid, trying to get as much points as possible. If we crash into with an







obstacle, we will lose the game and the game will be over.

## Glossary

**Physics**: In video games, physics refers to the behaviour of various elements within an environment. It often simulates real-world physics.

**Game Over**: The game session has ended. It usually displays scores and asks if you want to play another game.

**If**: Conditional statement that, based on the result of a logical operation, executes a sequence of instructions or skips it.

**Variables**: It is a space associated with an identifier, and that space holds a value that can be modified.

**Comparison Operators**: Operators that compare one value to another and are used within a condition.

Acceleration: The rate at which an object's velocity changes over time.

**Randomness**: The generation of numbers or events that have an equal probability of occurring.

**Rewards**: Incentives offered to players for achieving objectives.