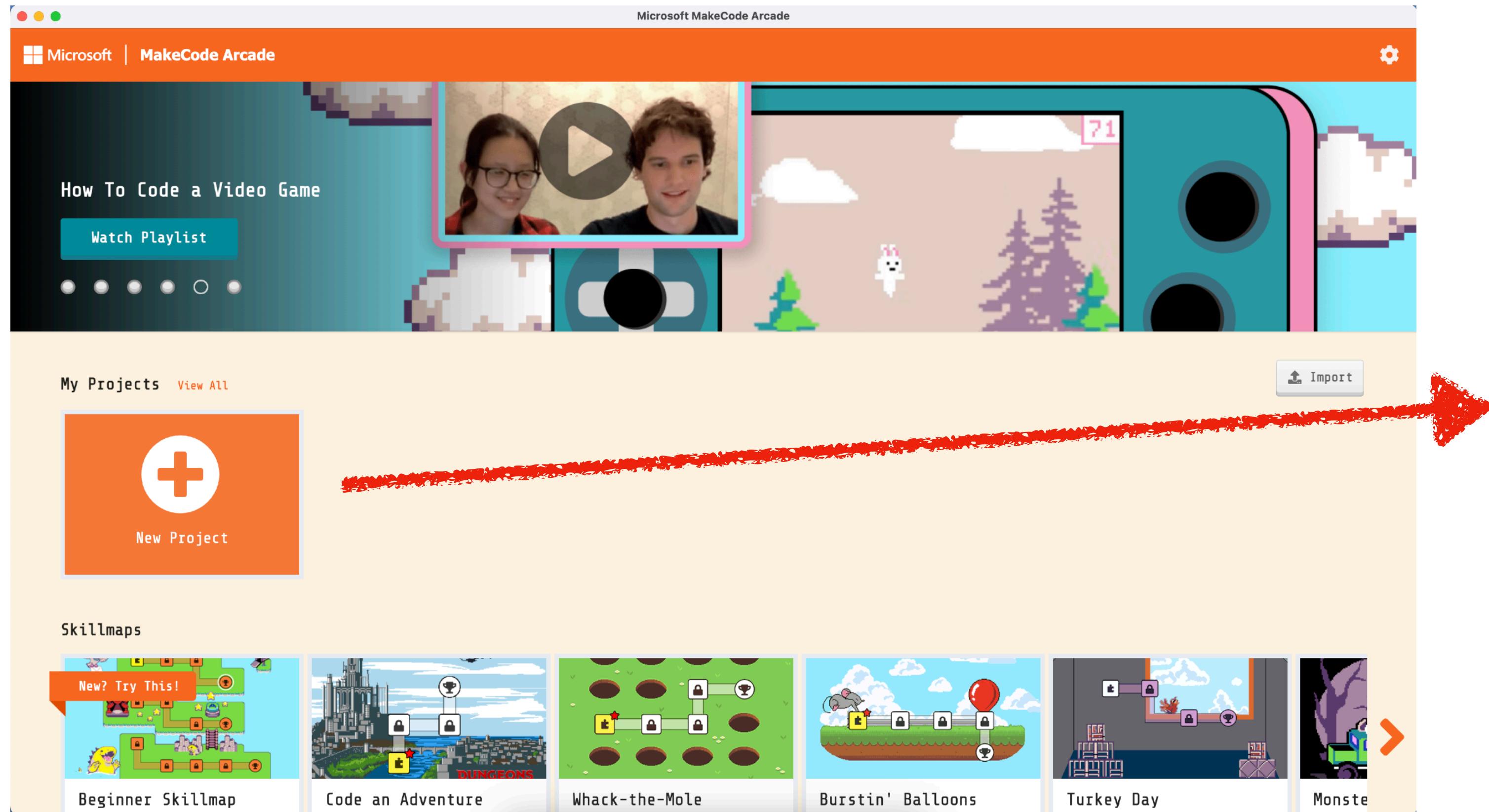


# **Space Invaders!**

**STEMLabs**

# Step 1: Create your SpaceShip



Create a Project 😍😍😍

Give your project a name.

 Code options

**Create** ✓

A modal dialog box titled 'Create a Project'. It contains a text input field with the placeholder 'Give your project a name.' and the value 'Emma's Space Game'. Below the input field is a 'Code options' link. At the bottom right is a green 'Create' button with a checkmark icon.

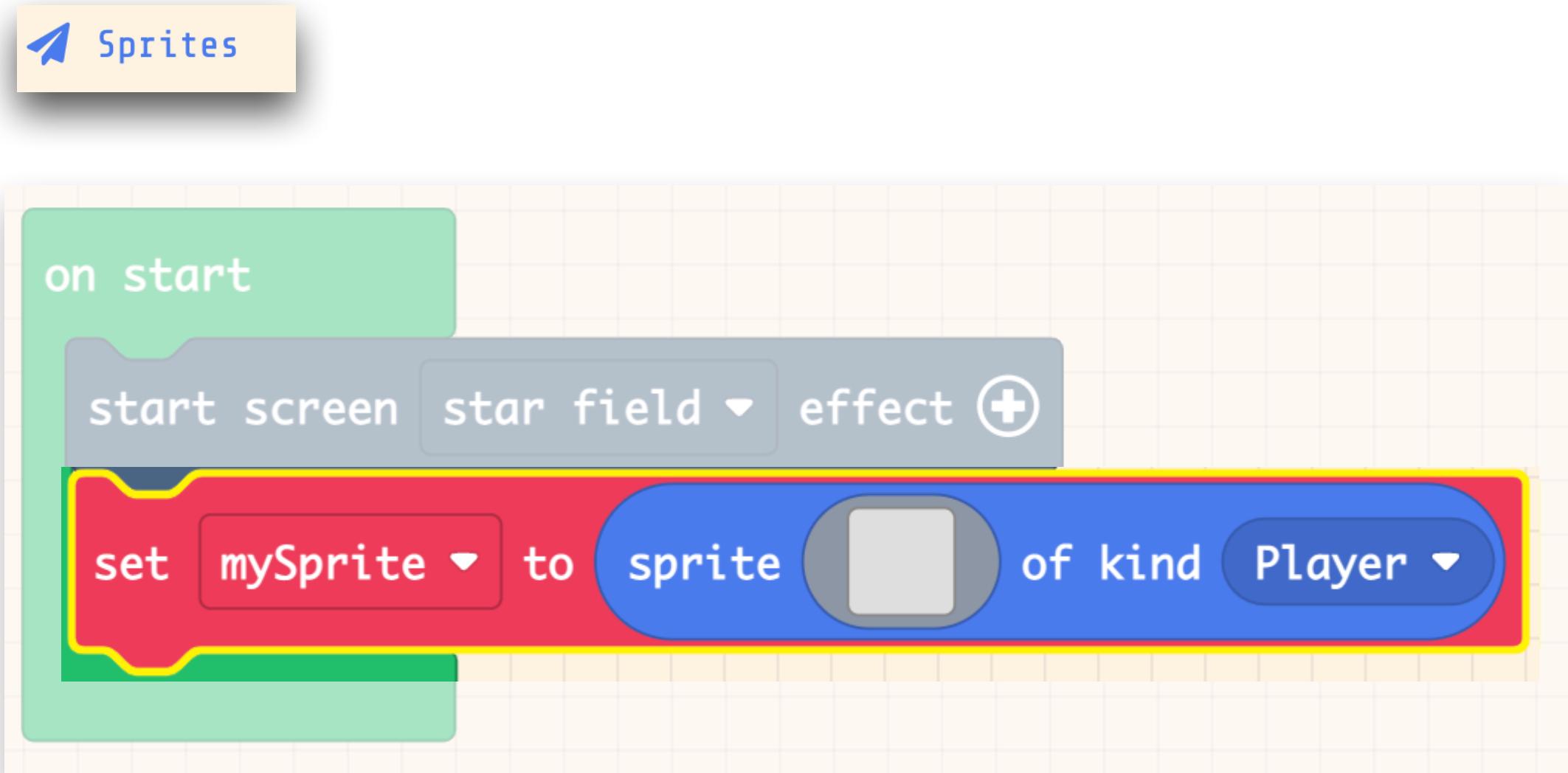
Click 'New Project' and give your project a name

# Step 1: Create your SpaceShip



1

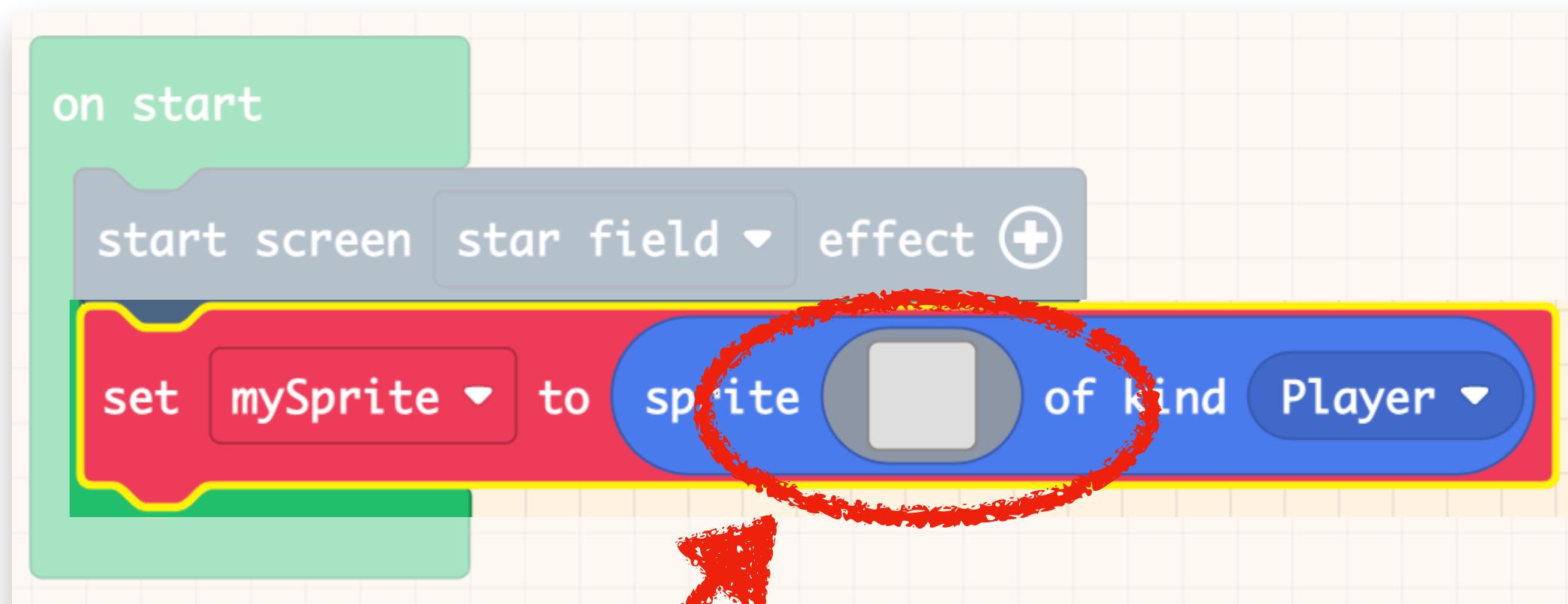
Go to the Scene menu and select the code block above  
Select 'Star field'



2

Go to the Sprites menu and drag in the code block above

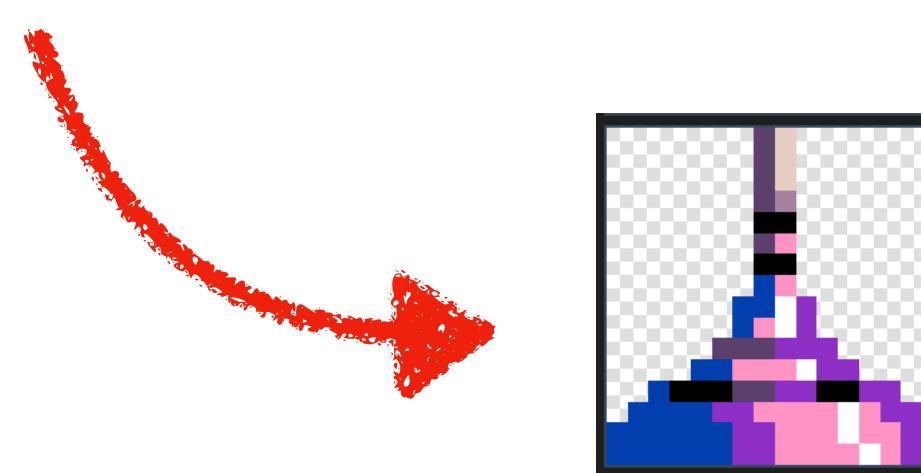
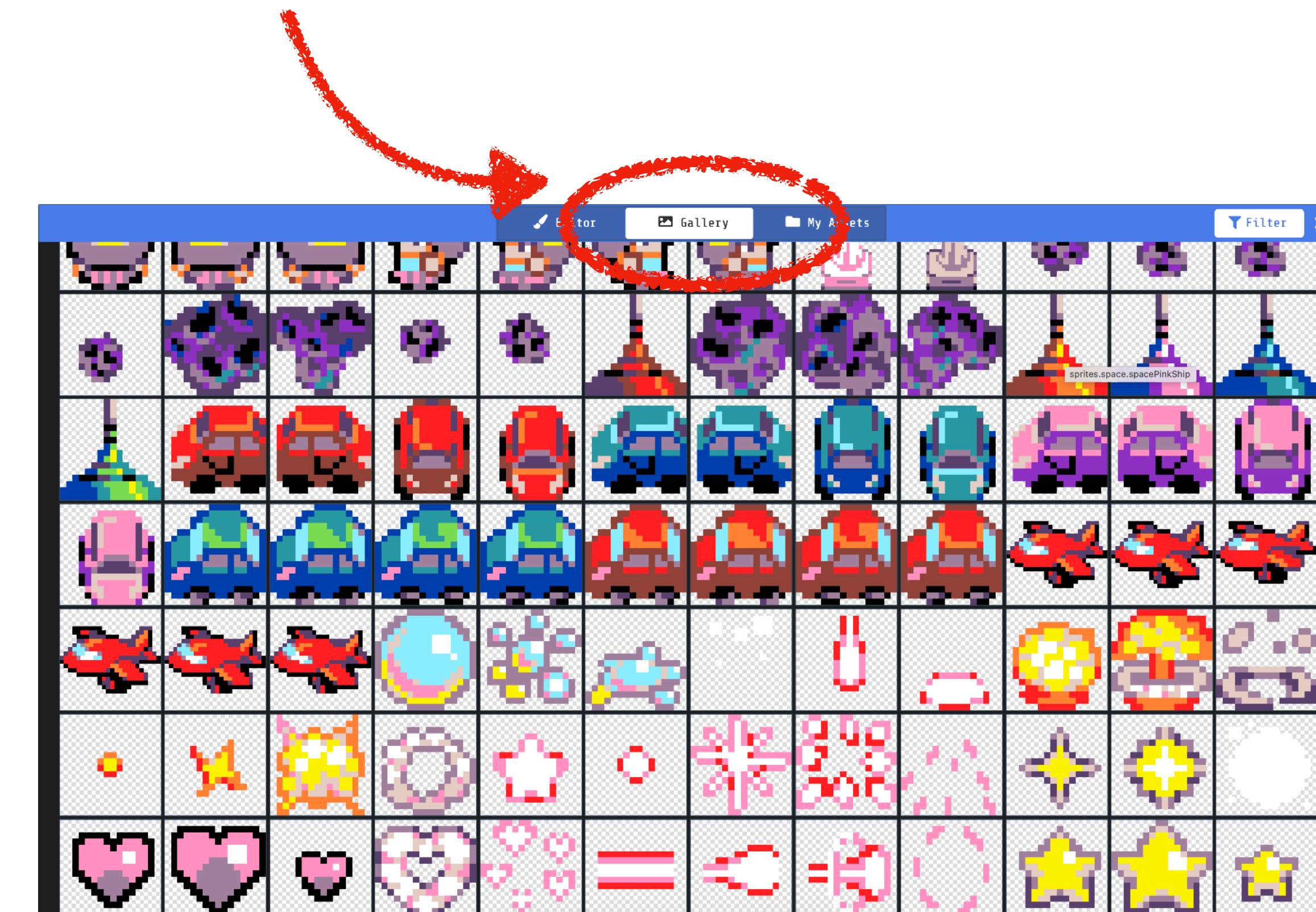
## Step 1: Create your SpaceShip



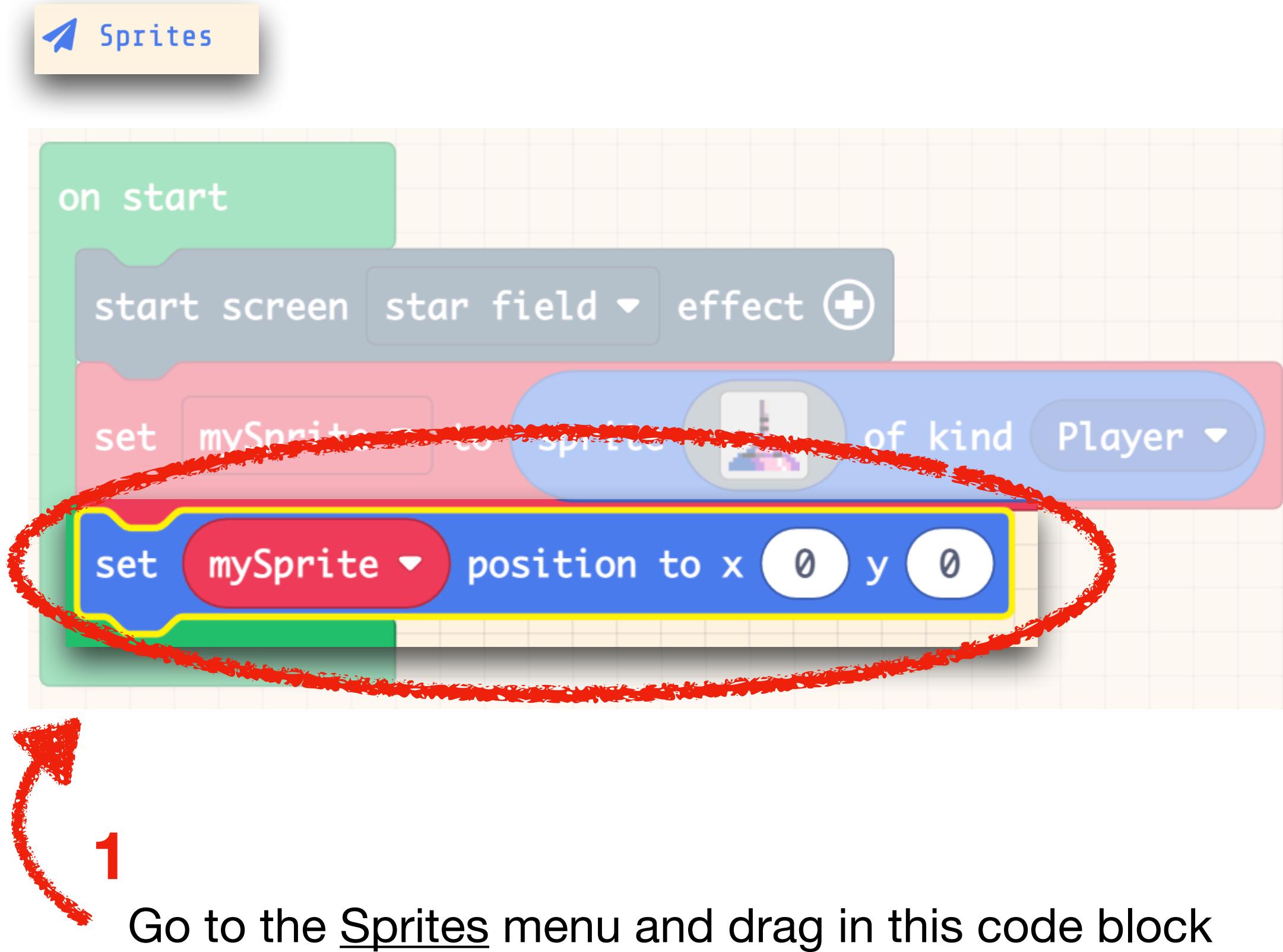
1  
Click the grey box

2

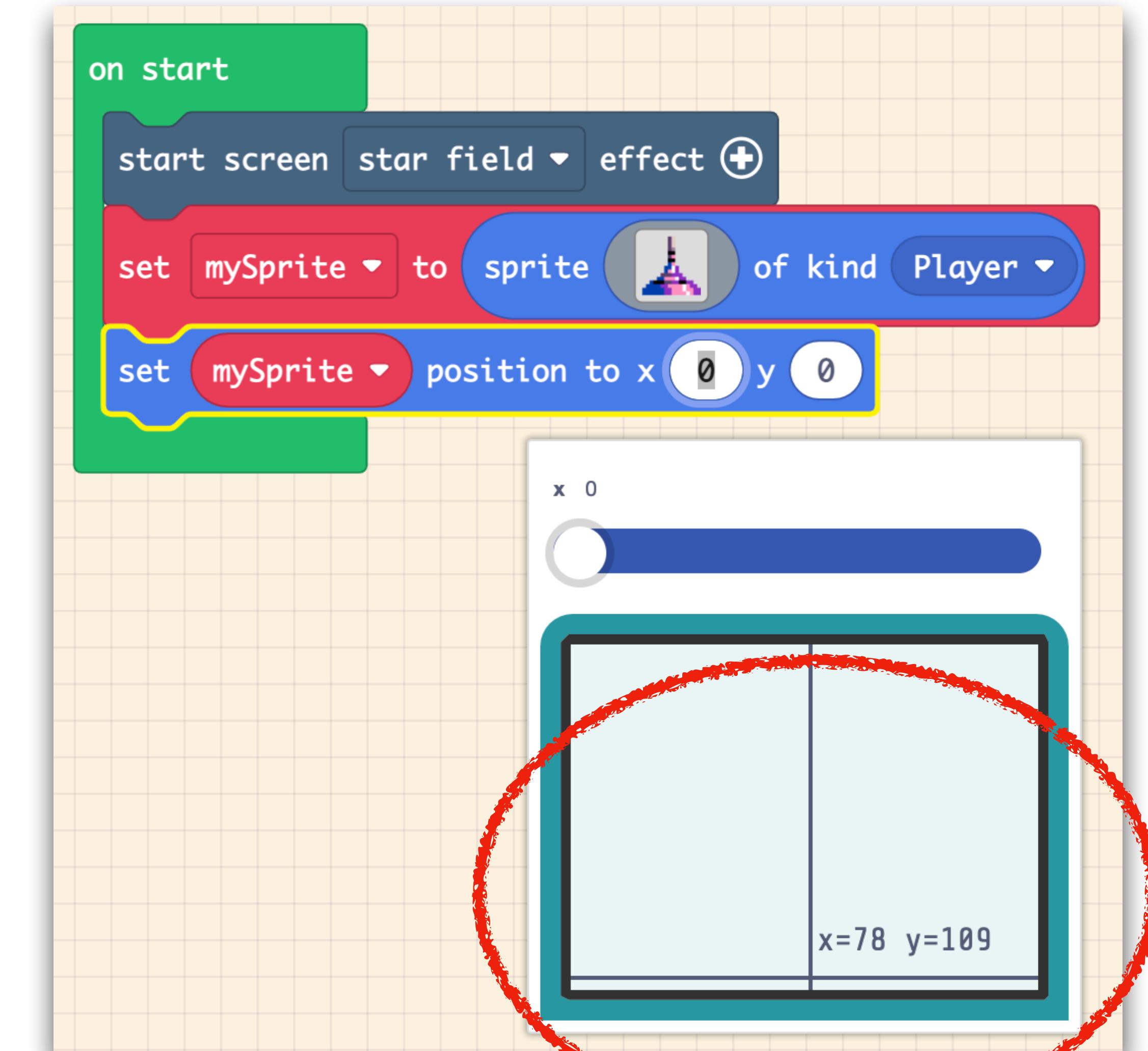
Click Gallery and select a spaceship gun



# Step 1: Create your SpaceShip

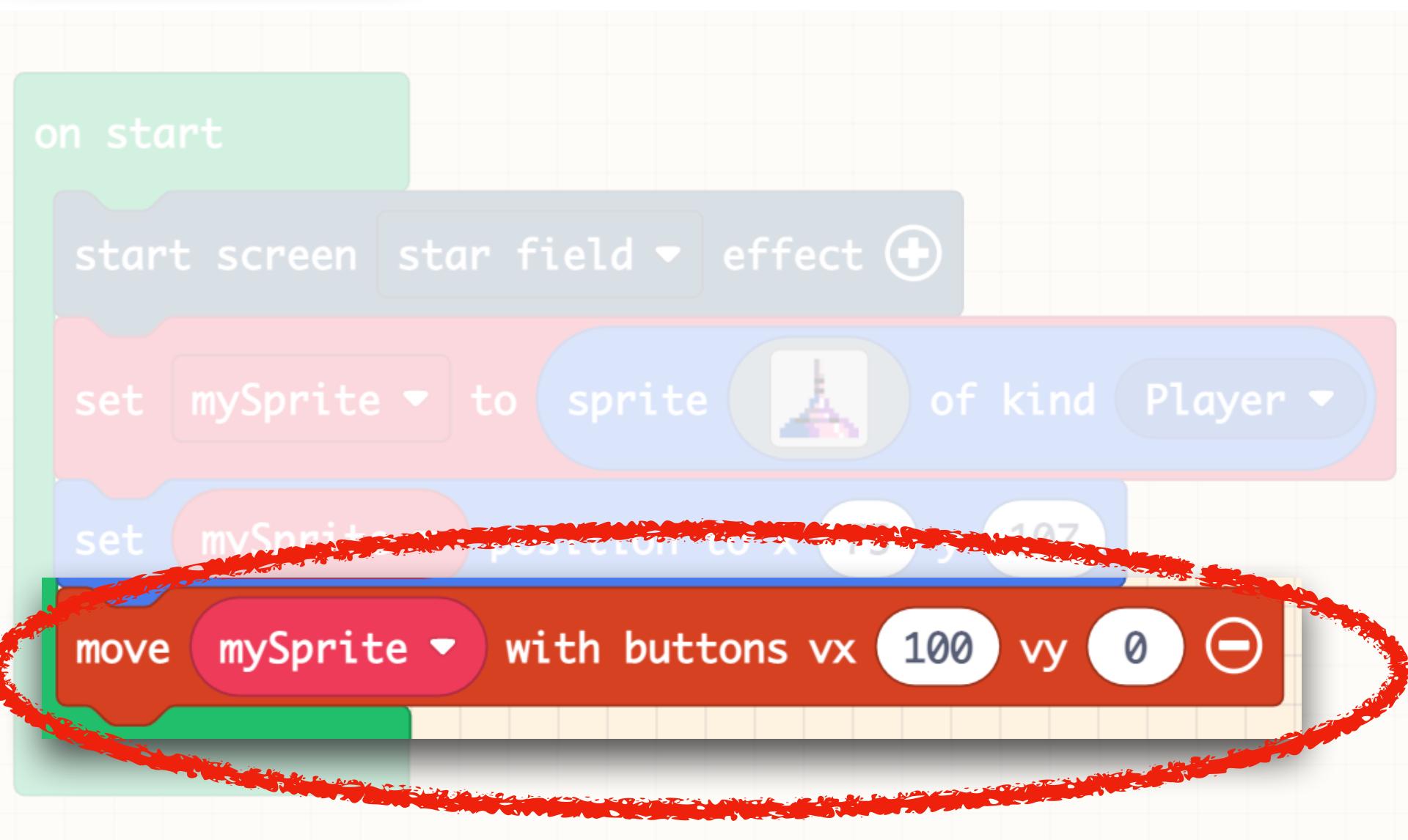


- 2 Set the position to the bottom and middle of the screen



# Step 1: Create your SpaceShip

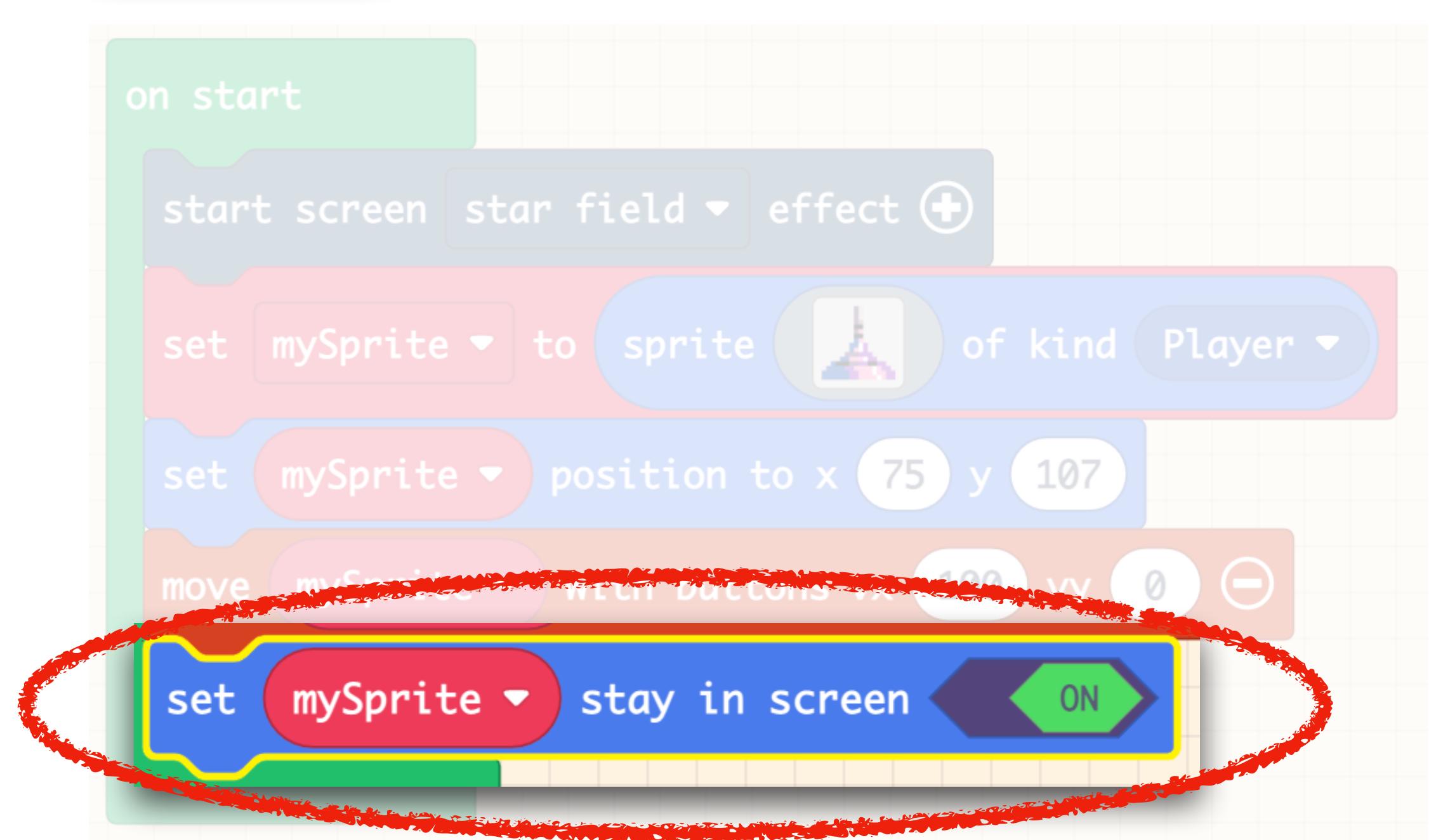
Controller



1

- Go to the Controller menu and drag in this code block
- Click the + icon and set the numbers to 100 and 0

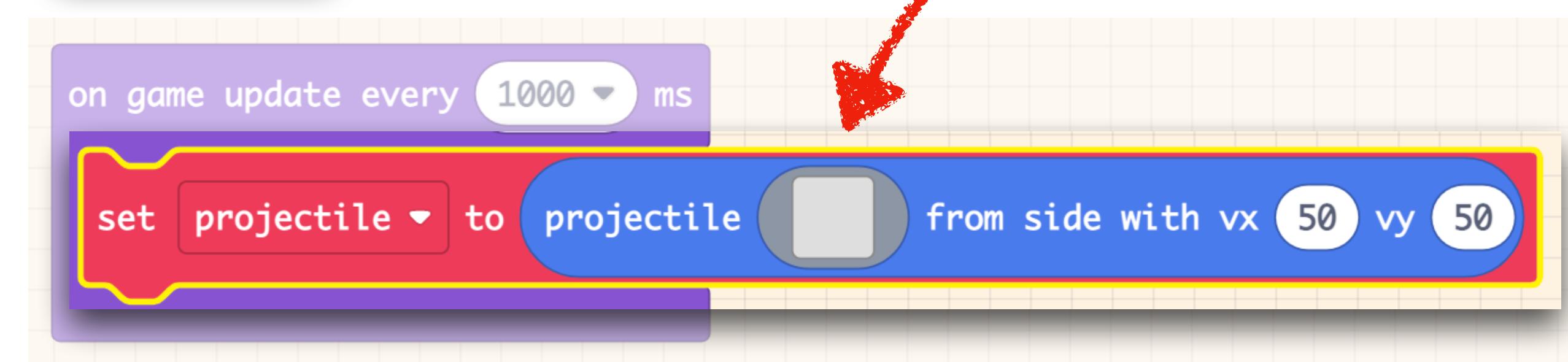
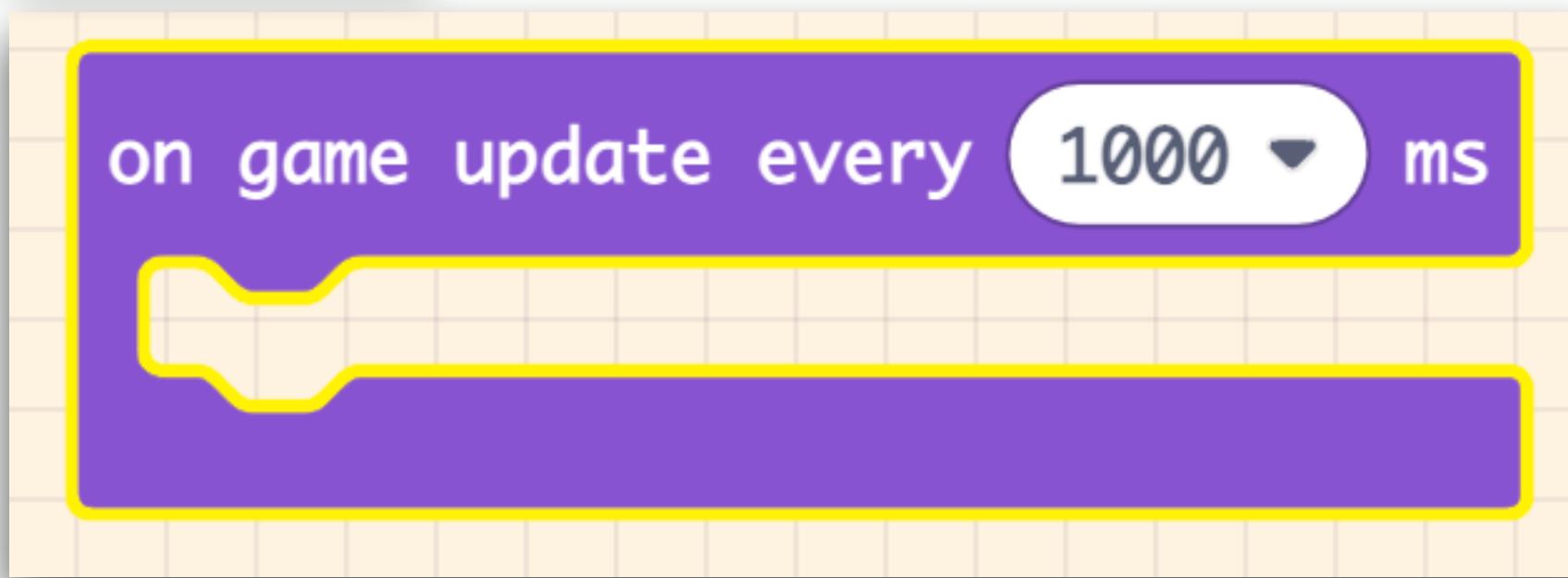
Sprites



2

- Go to the Sprites menu and drag in this block

## Step 2: Create falling asteroids



1

- Go to the Games menu and drag in this code block
- Set the time to 1 second (1000 milliseconds)



3

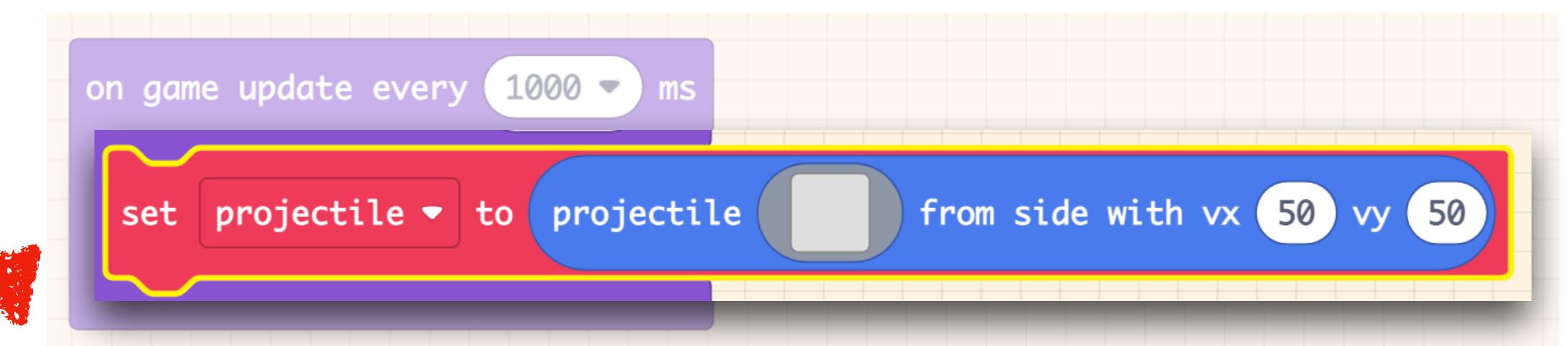
- Click the dropdown and rename the variable to asteroid

## Step 2: Create falling asteroids



1

- Go to the Games menu and drag in this code block
- Set the time to 1 second (1000 milliseconds)



2

Go to the Sprites menu and drag in this block

## Step 2: Create falling asteroids

3

Click the dropdown and rename the variable to asteroid

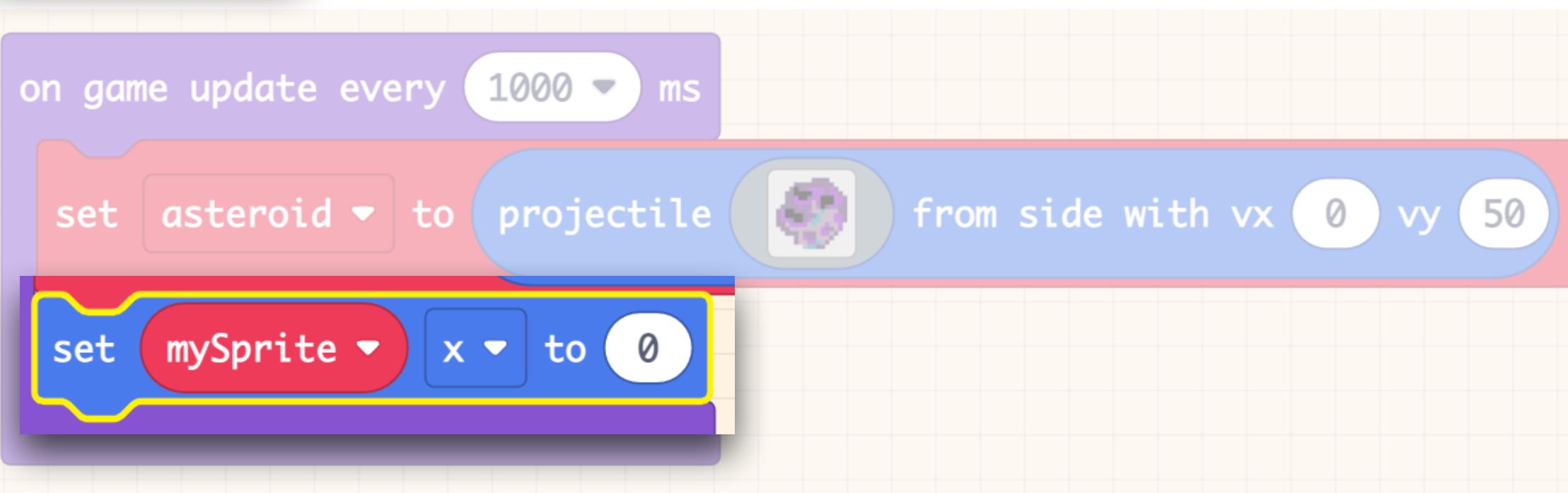


4

- Click the great box and choose an asteroid image or draw your own
- Set the co-ordinates to 0 and 50

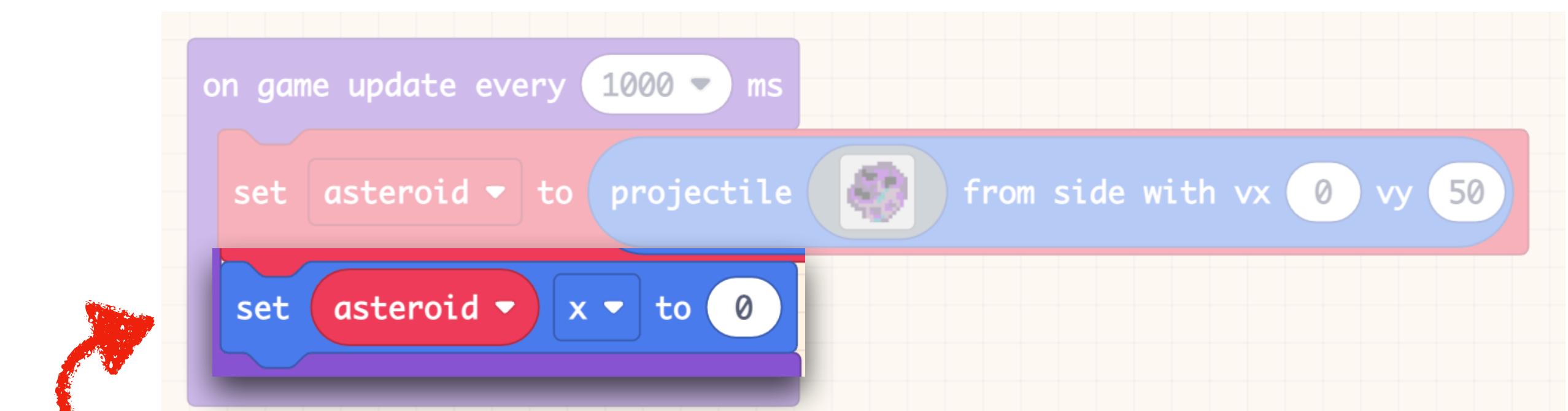
## Step 2: Create falling asteroids

Sprites



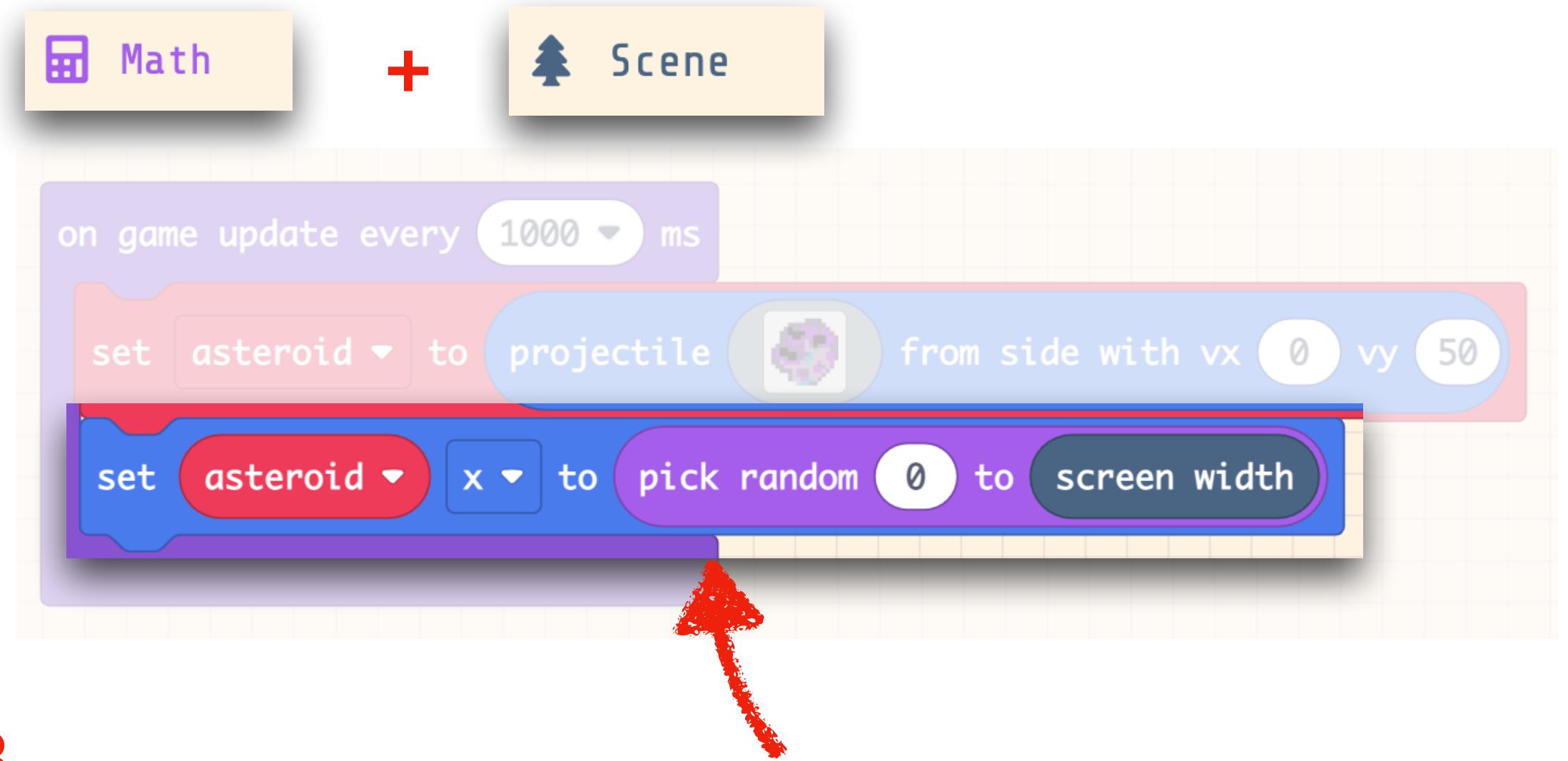
1

Go to the Sprites menu and drag in this block



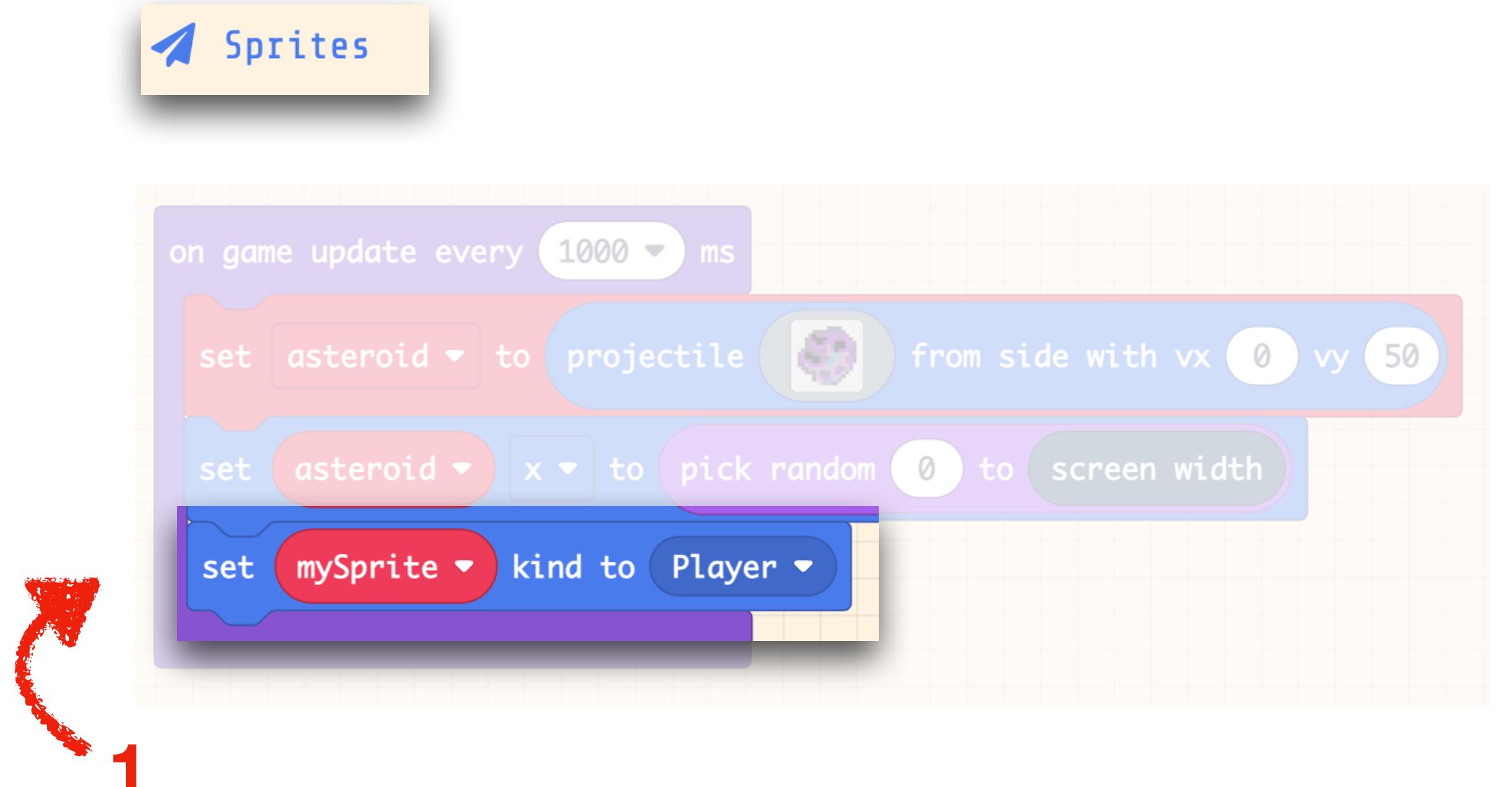
2 Click the dropdown and select your asteroid variable

## Step 2: Create falling asteroids



- 3
- Go to the Maths menu and drag in the 'pick random' code
  - Go to the Scene menu and drag in the 'screen width' code

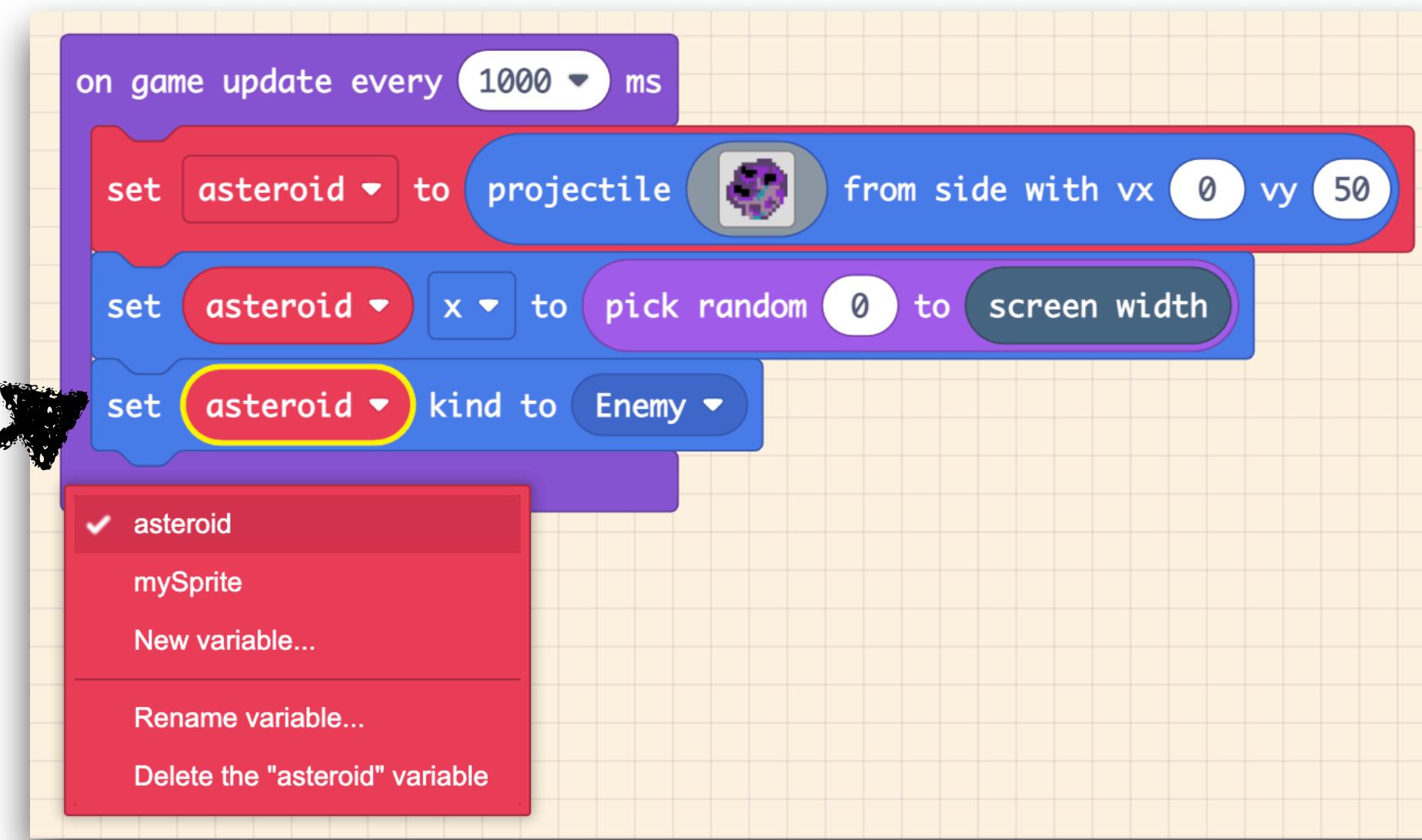
## Step 3: Make the Asteroids become the enemy



1

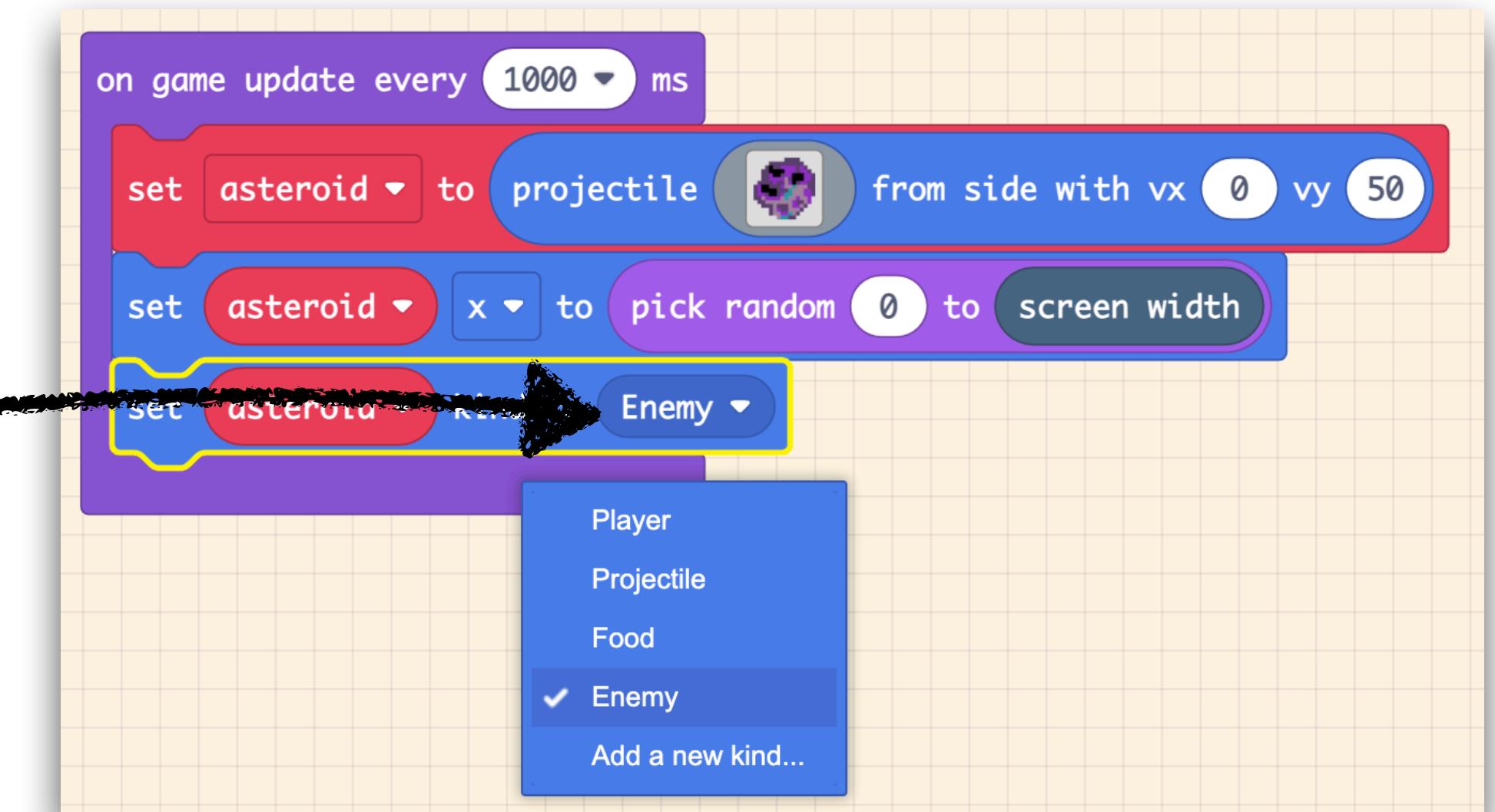
Go to the Sprites menu and scroll down to the 'overlap' section

## Step 3: Make the Asteroids become the enemy



2

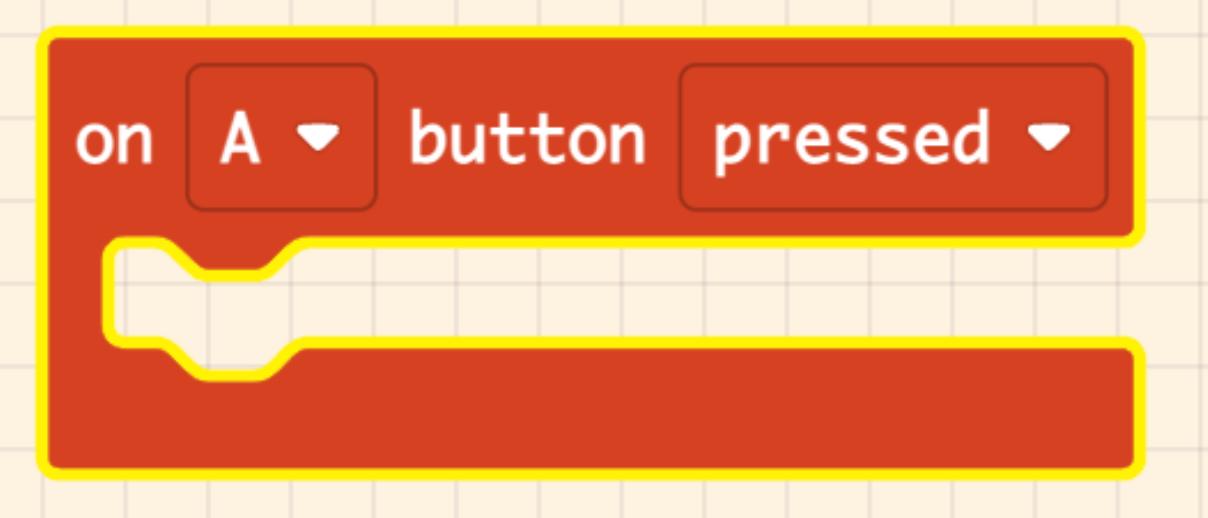
- Select your 'asteroid' variable in the first box



3

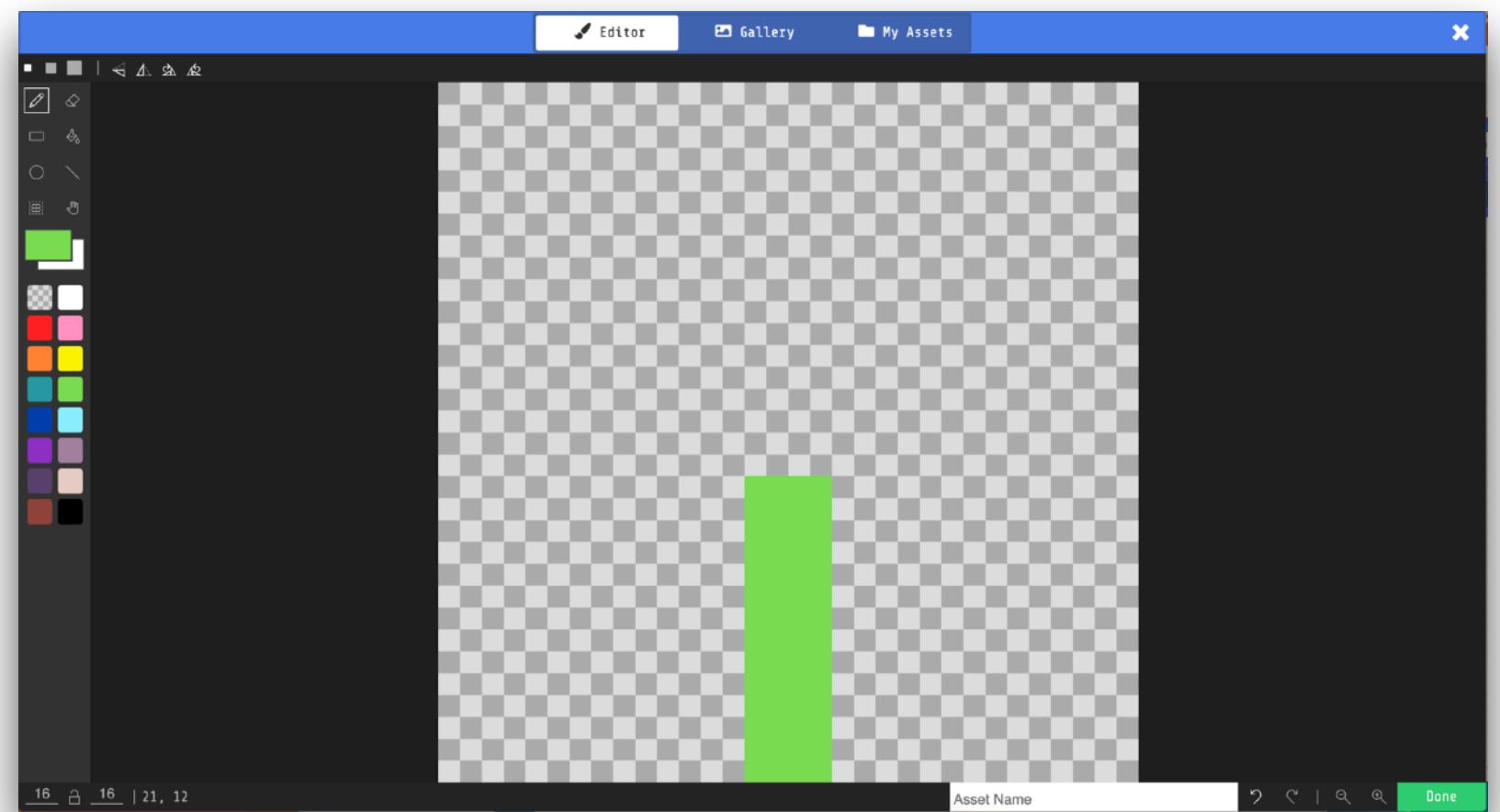
- Select 'Enemy' in the second box

## Step 4: Shoot lasers at the asteroids



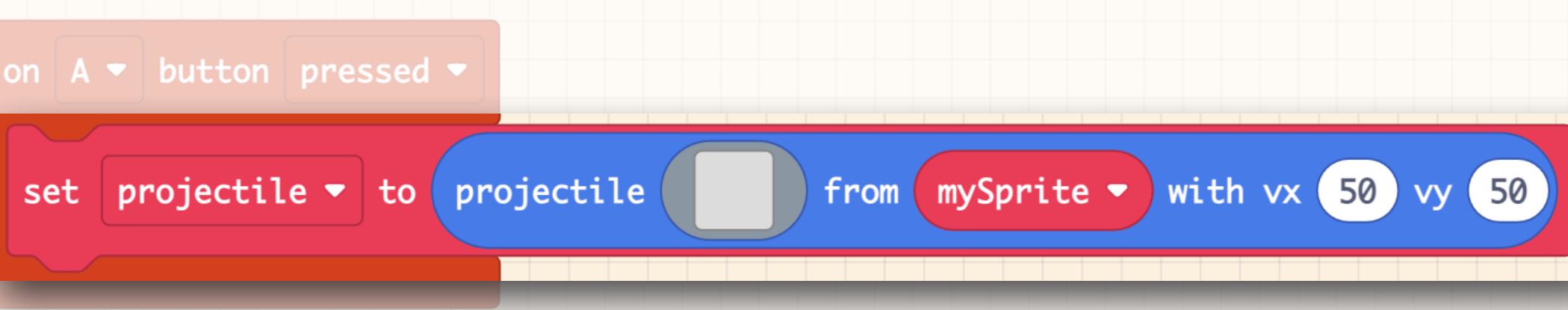
1

Go to the Sprites menu and drag in this code



3

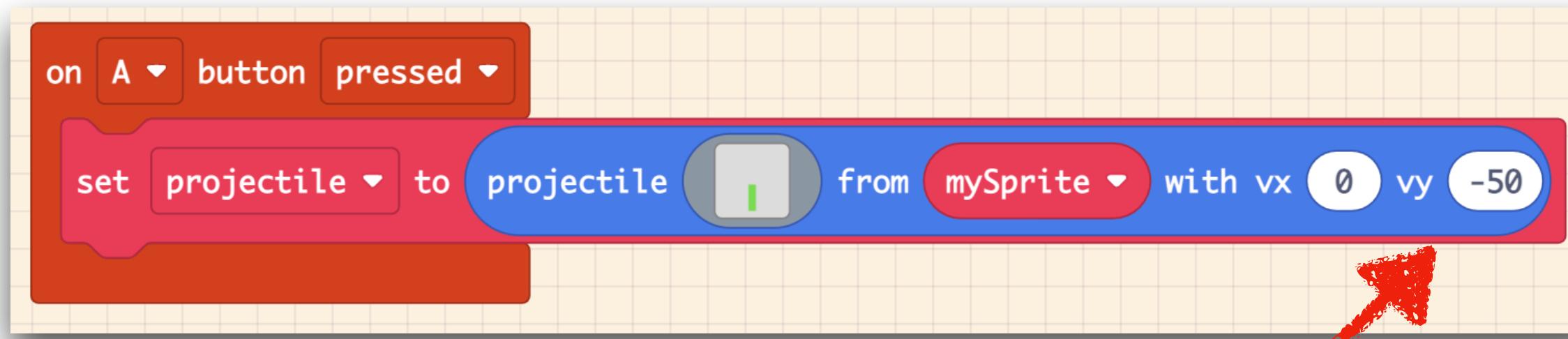
Draw your own laser bullet



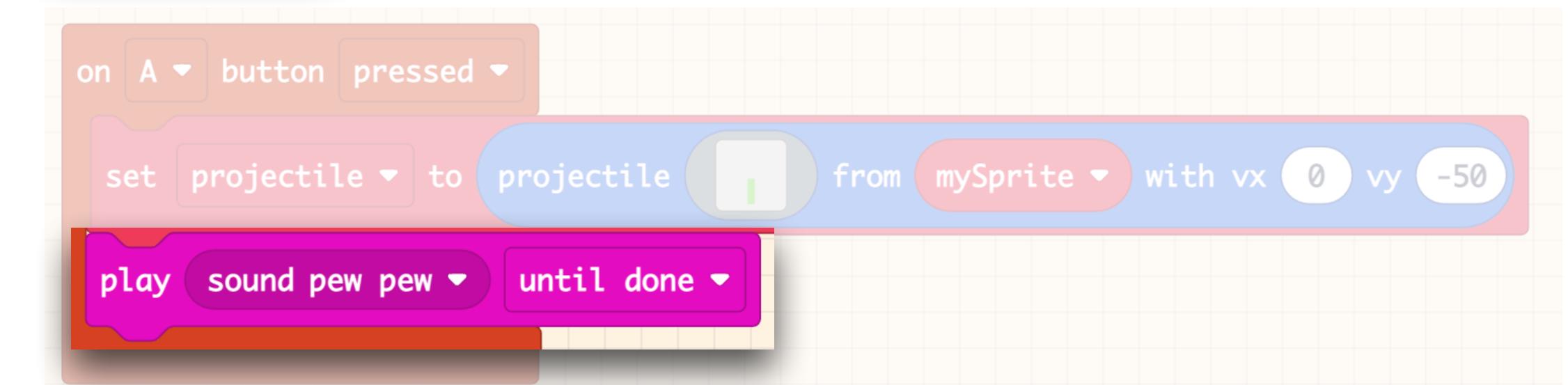
2

Go to the Sprites menu and drag in this code

## Step 4: Shoot lasers at the asteroids



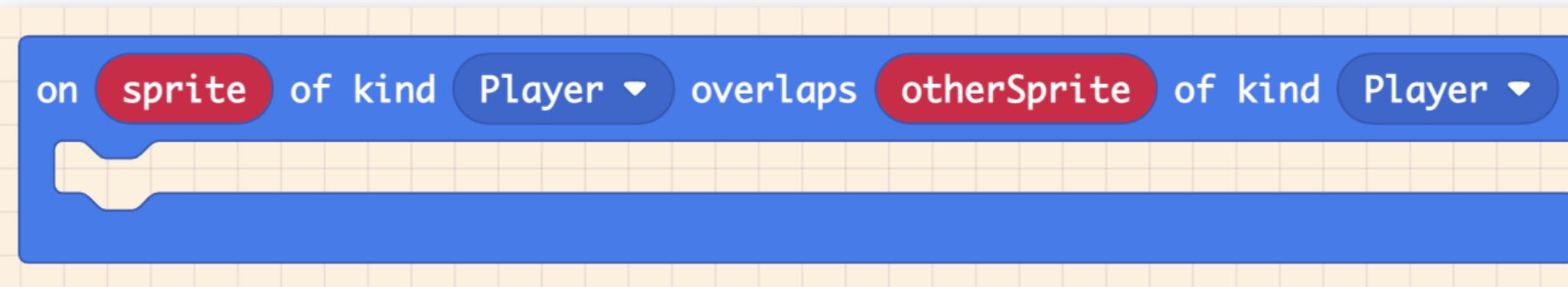
- 1 Set the co-ordinates to 0 and -50 so that the laser bullets move up the screen



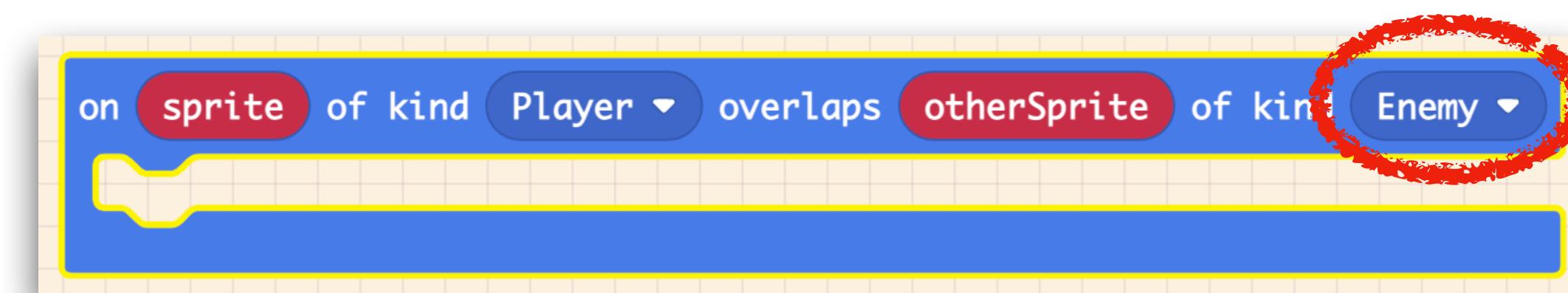
- 2
  - Go to the Music menu and drag in this code
  - Select the 'pew pew' sound

## Step 5: Program the ‘Game Over’ when an asteroid touches your spaceship

Sprites



- 1 - Go to the Sprites menu and scroll to the ‘overlap’ section  
- Drag in this code

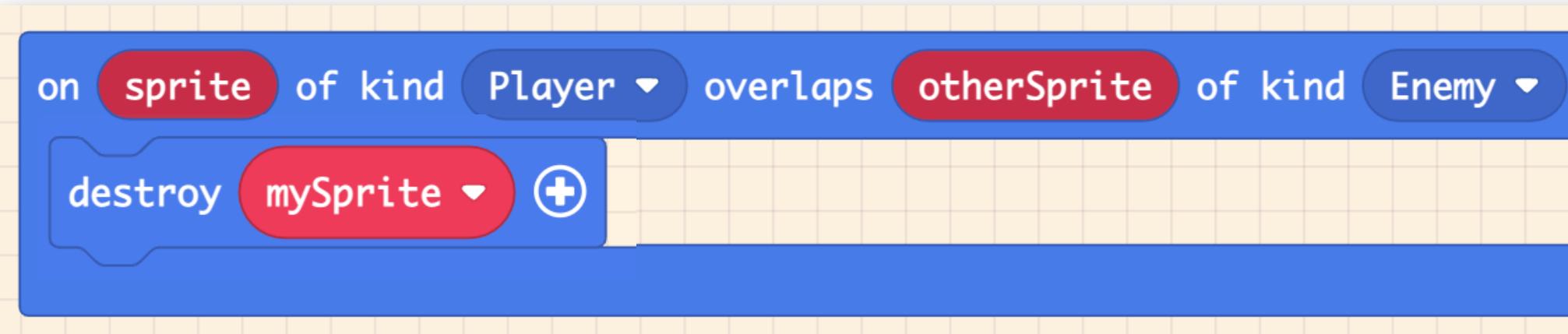


- 2 Change the second box from ‘Player’ to ‘Enemy’

## Step 5: Program the ‘Game Over’ when an asteroid touches your spaceship

Sprites

3

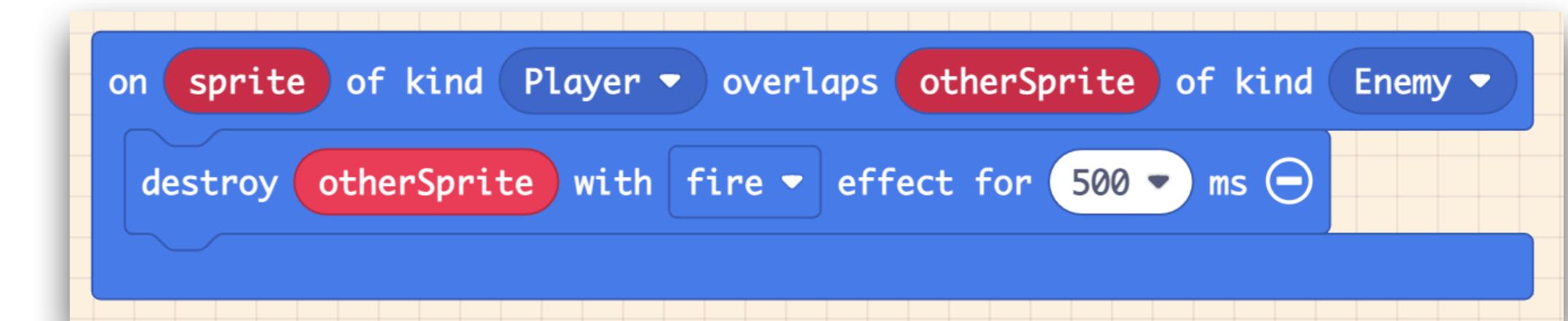


Drag in this code block



4

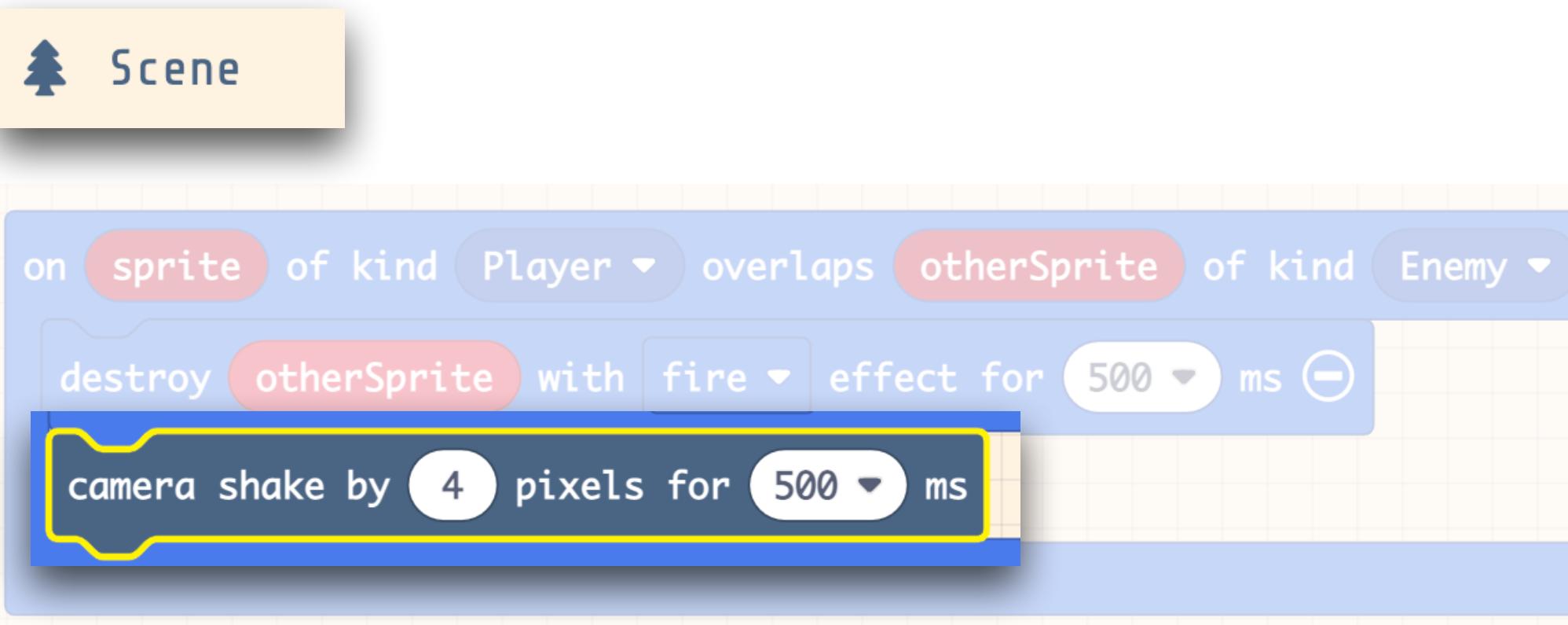
- Drag the 'otherSprite' block into the destroy code block
- Click the + icon



5

- Select 'fire' as the effect

## Step 5: Program the ‘Game Over’ when an asteroid touches your spaceship



6

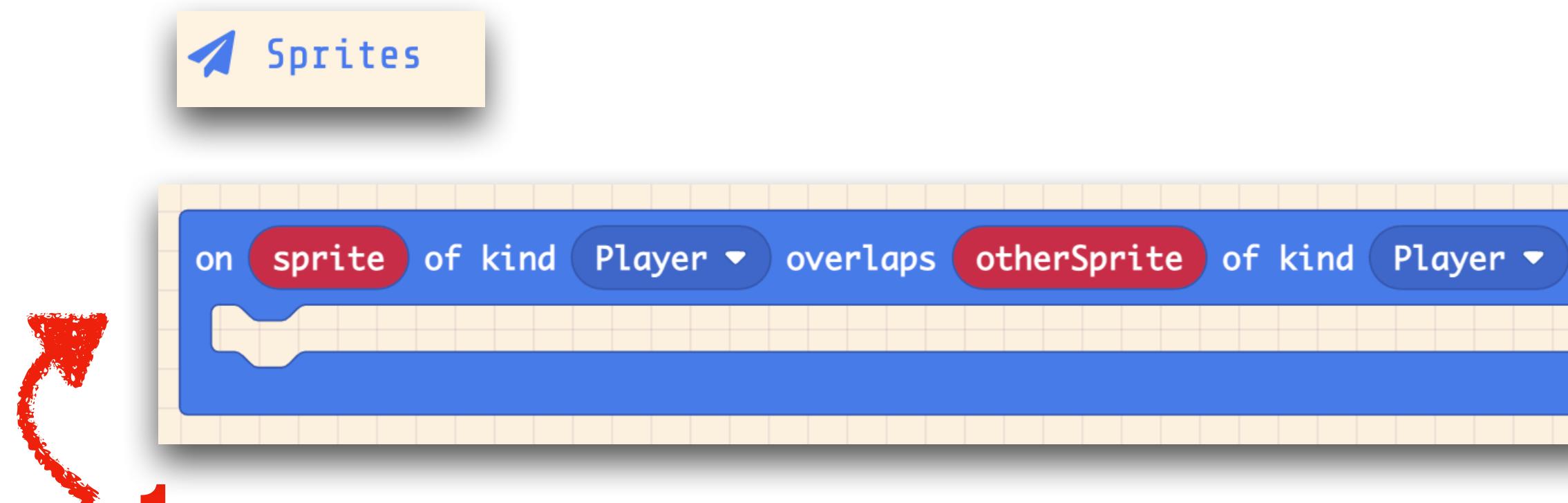
Go to the Scene menu and drag in this code block



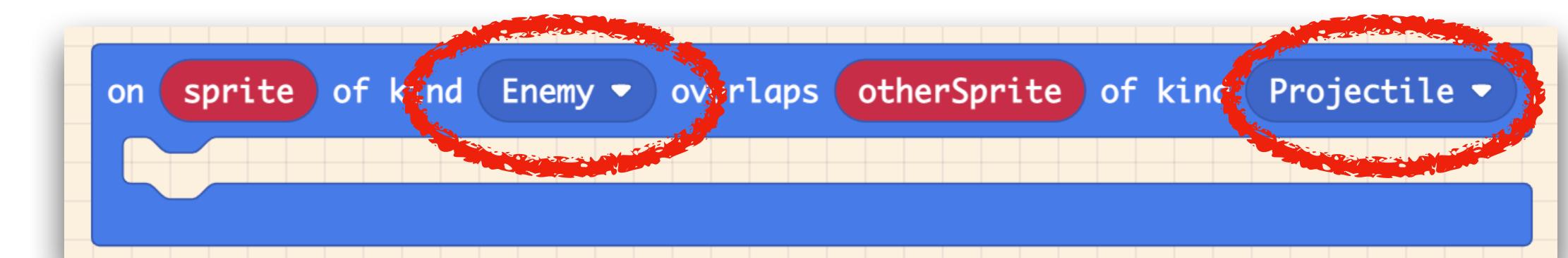
7

Go to the Info menu and drag in this code block

## Step 6: Program what happens when a laser hits an Asteroid

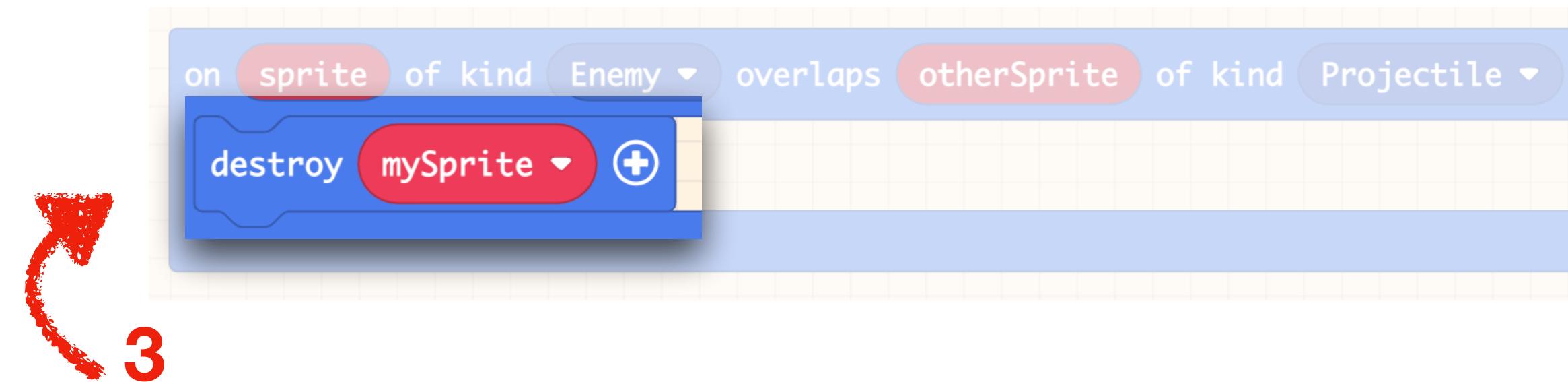


- 1
  - Go to the Sprites menu and scroll to the 'overlap' section
  - Drag in this code



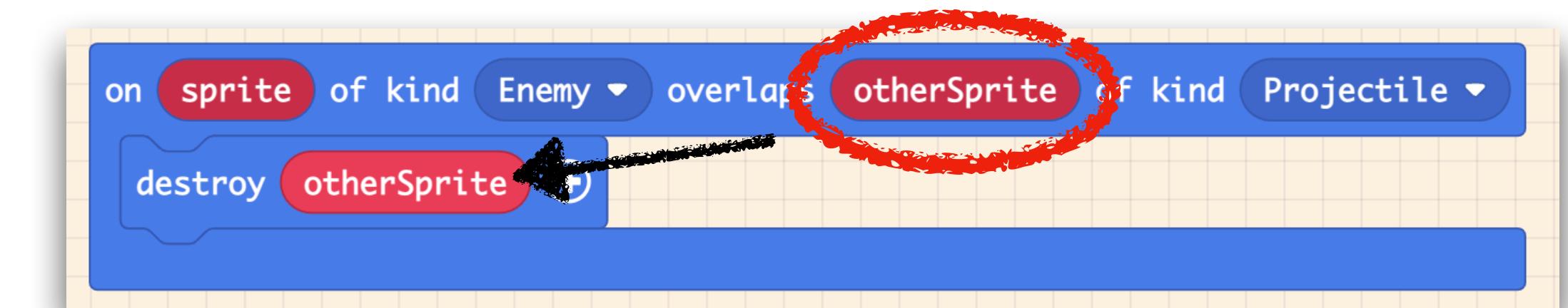
- 2
  - Change the boxes to 'Enemy' and 'Projectile'

## Step 6: Program what happens when a laser hits an Asteroid



3

Drag in this code block

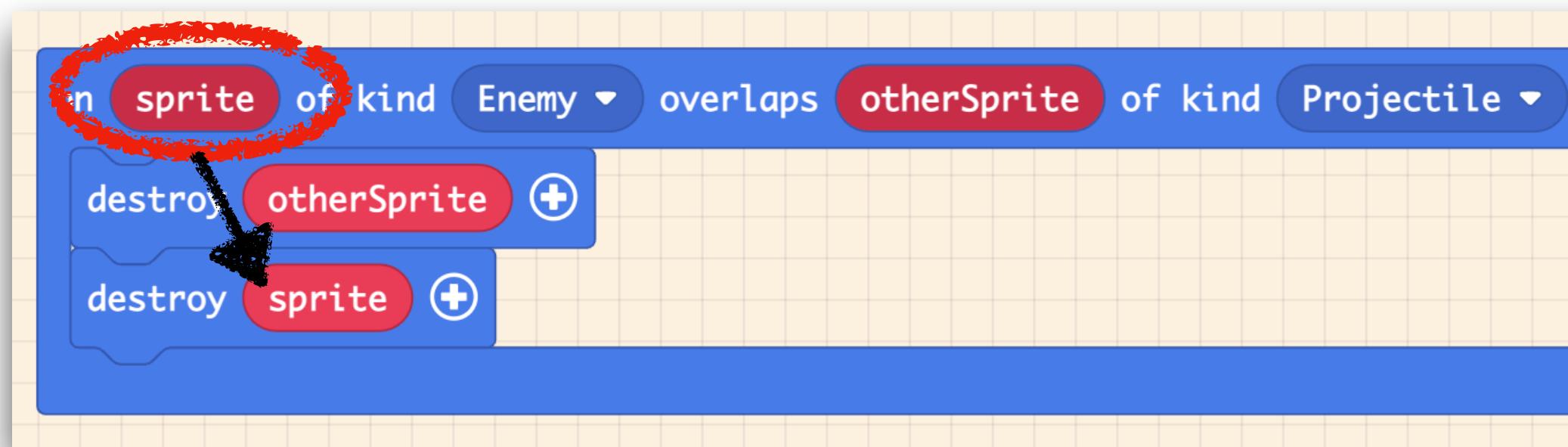


4

- Drag the 'otherSprite' block into the destroy code block

## Step 6: Program what happens when a laser hits an Asteroid

Sprites



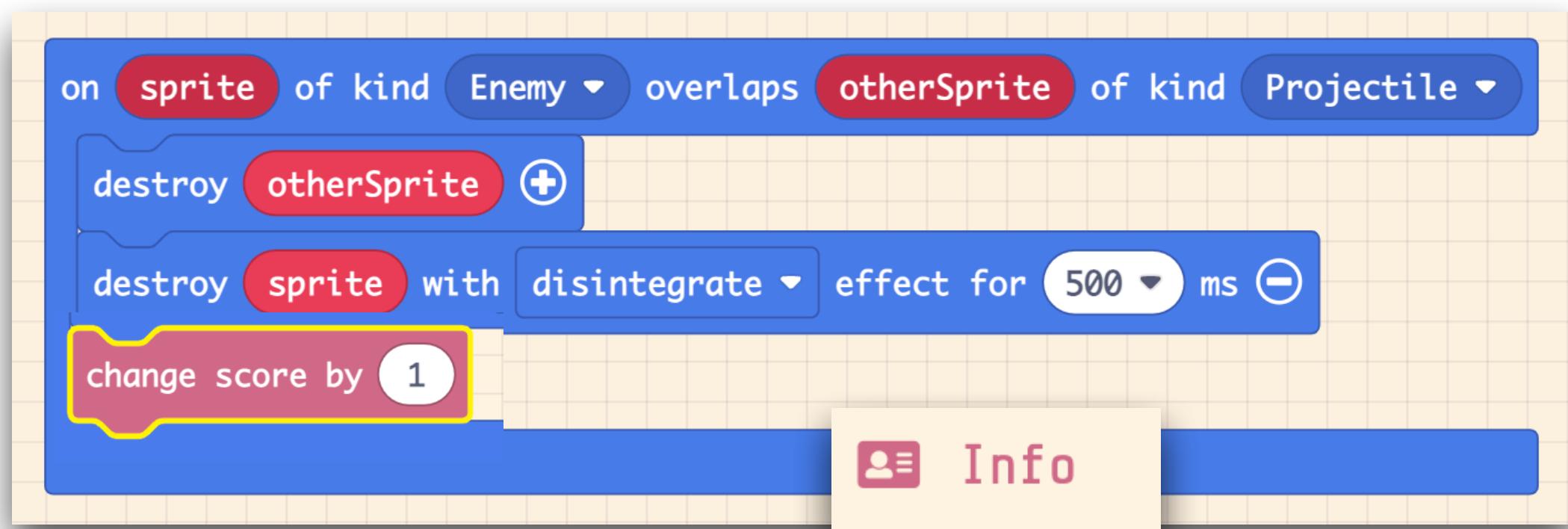
- 1
  - Drag in another Destroy Code Block
  - Drag the 'sprite' variable into the destroy code block
  - Click the + icon



- 2
  - Choose 'disintegrate' as the effect

## Step 6: Program what happens when a laser hits an Asteroid

3



- Go to the Info menu and drag in this code block
- Change the number to 1

# Your finished code should look like this!

The image displays five Scratch scripts arranged in a grid:

- on start**: Sets the background to "star field" with an effect, creates a player sprite at position (75, 107), moves it with button inputs, and enables "stay in screen".
- on game update every 1000 ms**: Changes an asteroid sprite to a projectile from the left side with vx=0 vy=50, sets its x position to a random value between 0 and screen width, and changes the sprite kind to Player.
- on A button pressed**: Creates a projectile from the player's position with vx=0 vy=-50 and plays the sound "pew pew" until done.
- on sprite of kind Enemy overlaps otherSprite of kind Projectile**: Destroys the projectile, destroys the enemy with a disintegrate effect, and changes the score by 1.
- on sprite of kind Player overlaps otherSprite of kind Enemy**: Destroys the enemy with a fire effect, performs a camera shake, and changes the enemy's life by -1.

**Have you finished early?**

**Why don't you try to add some extra bits on your own!**

**Here are some ideas:**

- **Add more sounds and effects**
- **Change how often asteroids appear**
- **Change the speed of your spaceship**
- **Add a background imagine**
- **Add a beginning screen with instructions**
- **Add animations**