

Trex and The Infinite Game World



What is our GOAL for this MODULE?

We create a jumping and running Trex Dinosaur for our Trex Game

What did we ACHIEVE in the class TODAY?

- Make a jumping and running Trex
- Learn to scale the images in the game.
- Learn to log messages/ outputs from the program into the console for testing purposes.
- Learn to create an infinitely scrolling ground for the dinosaur to run on.

Which CONCEPTS/ CODING BLOCKS did we cover today?

- Adding animation to a sprite
- Using code to add gravity effect to sprites
- `console.log()` to log messages on the console to test program
- Using logic to create a ground which gives the perception of scrolling infinitely

How did we DO the activities?

1. Create a Trex Sprite and load a running Trex animation

```
1 var trex, trex_running;
2
3 function preload(){
4   trex_running =
   loadAnimation("trex1.png","trex3.png","trex4.png");
5 }
6
7 function setup(){
8   createCanvas(400,400);
9   trex = createSprite(200,350,20,50);
10  trex.addAnimation("running",trex_running);
11 }
12
13
14 function draw(){
15   drawSprites();
16 }
```

2. Make the Trex jump and add gravity effect to it. Make sure the trex falls on the 'ground'.

```
< sketch.js Saved: 1 minute ago
14
15 //create a trex sprite
16 trex = createSprite(50,380,20,50);
17 trex.addAnimation("running", trex_running);
18
19
20 }
21
22 function draw() {
23   //set background color
24   background(220);
25
26   //jump when space key is pressed
27   if(keyDown("space")) {
28     trex.velocityY = -10;
29   }
30
31   //add gravity
32   trex.velocityY = trex.velocityY + 0.8
33
34   //creates edges
35   edges= createEdgeSprites()
36
37   //stops trex from falling down
38   trex.collide(edges);
39   drawSprites();
40 }
```

3. Scale the Dinosaur to the right size.

[Animation](#)
[Camera](#)
[Group](#)
[p5.play](#)
[Sprite](#)
[SpriteSheet](#)

Sprite

Module: [p5.play](#)
Parent Module: [p5.play](#)

A Sprite is the main building block of p5.play: an element able to move, change position and visibility. A Sprite can have a collider that can detect overlappings with other sprites and mouse interactions.

To create a Sprite, use [createSprite](#).

- [update\(\)](#)
- **Properties**
 - [_rotation](#)
 - [animation](#)
 - [collider](#)
 - [debug](#)
 - [depth](#)
 - [friction](#)
 - [groups](#)
 - [height](#)
 - [immovable](#)
 - [life](#)
 - [mass](#)
 - [maxSpeed](#)
 - [mouseActive](#)
 - [mouseIsOver](#)
 - [mouseIsPressed](#)
 - [originalHeight](#)
 - [originalWidth](#)
 - [position](#)
 - [previousPosition](#)
 - [removed](#)
 - [restitution](#)
 - [rotateToDirection](#)
 - [rotation](#)
 - [rotationSpeed](#)
 - [scale](#)**
 - [shapeColor](#)
 - [touching](#)
 - [velocity](#)
 - [visible](#)
 - [width](#)

Code:

```

sketch.js Saved: just now
5 function preload() {
6   trex_running =
7   loadAnimation("trex1.png", "trex3.png", "trex4.png");
8   trex_collided = loadImage("trex_collided.png");
9   groundImage = loadImage("ground2.png")
10 }
11
12 function setup() {
13   createCanvas(400, 400);
14
15   //create a trex sprite
16   trex = createSprite(50, 380, 20, 50);
17   trex.addAnimation("running", trex_running);
18
19   //adding scale and position to trex
20   trex.scale = 0.5;
21   trex.x = 50;
22
23 }
24
25 function draw() {
26   background(220);
27
28   // jump when space key is pressed
29   if(keyDown("space")) {
30     trex.velocityY = -10;
31   }
32 }
  
```

4. Learn to use console.log(). The P5 editor has a console window where we can log any message while the program is running. We do this using console.log() instruction.

```

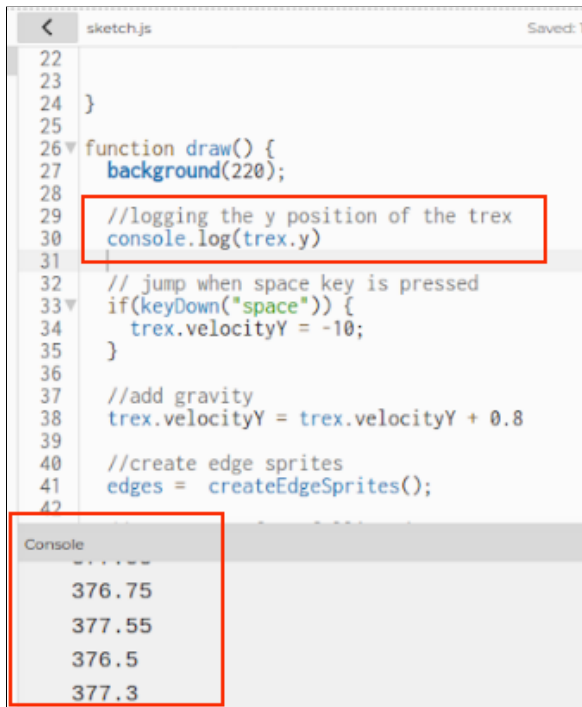
sketch.js Saved: 15 seconds ago
25
26 function draw() {
27   background(220);
28
29   //using console.log()
30   console.log("trex runner")
31
32   // jump when space key is pressed
33   if(keyDown("space")) {
34     trex.velocityY = -10;
35   }
36
37   //add gravity
38   trex.velocityY = trex.velocityY + 0.8
39
40   //create edge sprites
41   edges = createEdgeSprites();
42
43   // stop trex from falling down
44   trex.collide(edges);
45   drawSprites();
46 }
  
```

Console

```

14 trex runner
14 trex runner
14 trex runner
13 trex runner
  
```

- Write the `console.log()` instruction inside the `draw()` function. Try logging the y position of the T-Rex sprite when it jumps.



```

22
23
24 }
25
26 function draw() {
27   background(220);
28
29   //logging the y position of the trex
30   console.log(trex.y)
31
32   // jump when space key is pressed
33   if(keyDown("space")) {
34     trex.velocityY = -10;
35   }
36
37   //add gravity
38   trex.velocityY = trex.velocityY + 0.8
39
40   //create edge sprites
41   edges = createEdgeSprites();
42
  
```

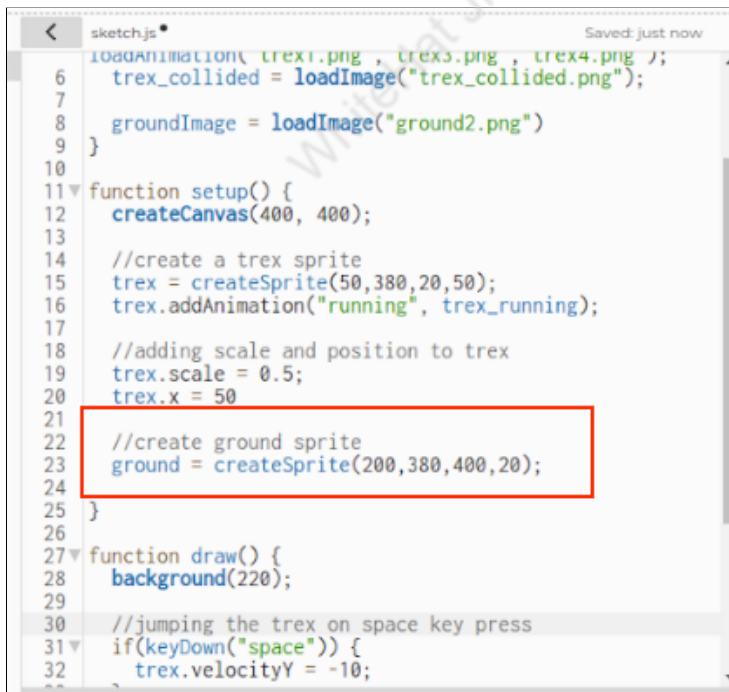
Console

```

376.75
377.55
376.5
377.3
  
```

- Create a rectangular sprite called ground. This is where the T-Rex dinosaur will run. The ground sprite should ideally cover the entire screen.

Code:



```

6   loadImage("trex1.png", "trex3.png", "trex4.png");
7   trex_collided = loadImage("trex_collided.png");
8   groundImage = loadImage("ground2.png");
9 }
10
11 function setup() {
12   createCanvas(400, 400);
13
14   //create a trex sprite
15   trex = createSprite(50, 380, 20, 50);
16   trex.addAnimation("running", trex_running);
17
18   //adding scale and position to trex
19   trex.scale = 0.5;
20   trex.x = 50
21
22   //create ground sprite
23   ground = createSprite(200, 380, 400, 20);
24
25 }
26
27 function draw() {
28   background(220);
29
30   //jumping the trex on space key press
31   if(keyDown("space")) {
32     trex.velocityY = -10;
  
```

```
sketch.js • Saved: 2 minutes ago
14 //create a trex sprite
15 trex = createSprite(50,380,20,50);
16 trex.addAnimation("running", trex_running);
17
18 //adding scale and position to trex
19 trex.scale = 0.5;
20 trex.x = 50
21
22 //create ground sprite
23 ground = createSprite(200,380,400,20);
24
25 }
26
27 function draw() {
28   background(220);
29
30   //jumping the trex on space key press
31   if(keyDown("space")) {
32     trex.velocityY = -10;
33   }
34
35   trex.velocityY = trex.velocityY + 0.8
36
37
38   //stop trex from falling down
39   trex.collide(ground);
40   drawSprites();
41 }
```

Output:



7. Move the dinosaur. Give a backward velocity to the ground, add the code to reset the ground.

```
> sketch.js
18 //adding scale and position to trex
19 trex.scale = 0.5;
20 trex.x = 50
21
22 //create ground sprite
23 ground = createSprite(200,380,400,20);
24 ground.addImage("ground",groundImage);
25 ground.x = ground.width /2;
26 }
27
28 function draw() {
29   background(220);
30
31   ground.velocityX = -2
32   console.log(ground.x)
33
34   if (ground.x<0){
35     ground.x = ground.width/2;
36   }
37
38   //jumping the trex on space key press
39   if(keyDown("space")) {
40     trex.velocityY = -10;
41   }
42
43   trex.velocityY = trex.velocityY + 0.8
44 }
```

Use an actual ground image

```
> sketch.js Saved: just now
18 //adding scale and position to trex
19 trex.scale = 0.5;
20 trex.x = 50
21
22 //create ground sprite
23 ground = createSprite(200,380,400,20);
24 ground.addImage("ground",groundImage);
25 ground.x = ground.width /2;
26 }
27
28 function draw() {
29   background(220);
30
31   ground.velocityX = -2
32   console.log(ground.x)
33
34   if (ground.x<0){
35     ground.x = ground.width/2;
36   }
37 }
```

What's next?

We will fix the two bugs discovered in the game.

WhiteHat Jr + WhiteHat Jr + WhiteHat Jr