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

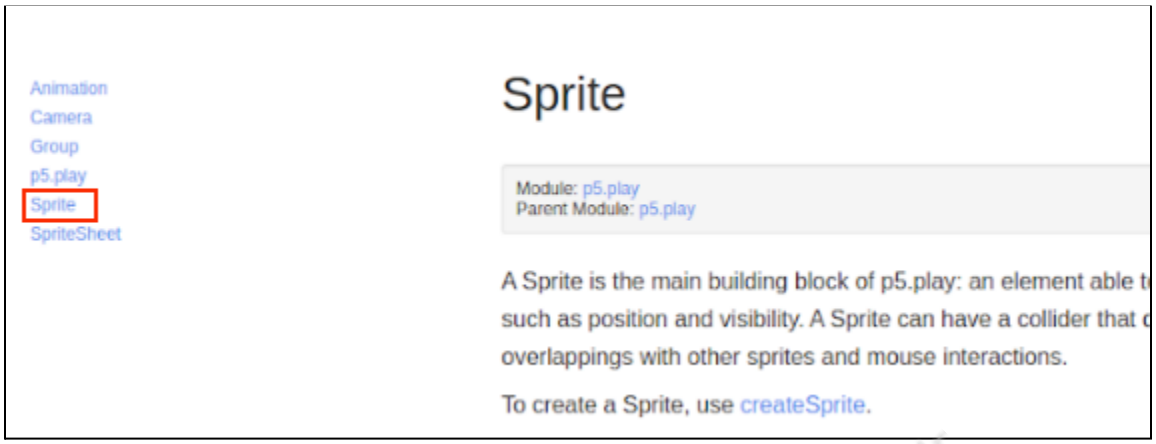
```
var trex, trex_running;

function preload(){
  trex_running =
loadAnimation("trex1.png","trex3.png","trex4.png");
}

function setup(){
  createCanvas(400,400);
  trex = createSprite(200,350,20,50);
  trex.addAnimation("running",trex_running);
}


function draw(){
  drawSprites();
}
```

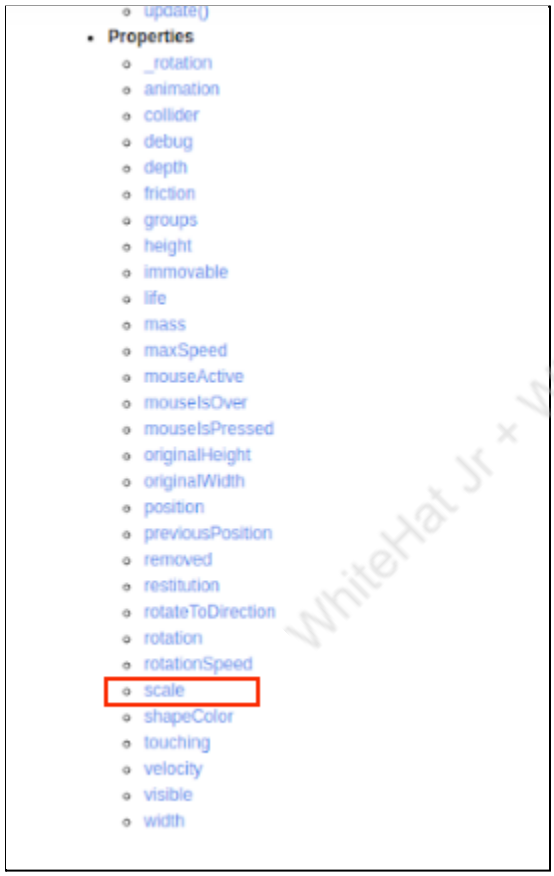
2. Make the Trex jump and add gravity effect to it. Make sure the trex falls on the 'ground'.

sketch.js • Saved: 1 minute ago

```
  //create a trex sprite
  trex = createSprite(50,380,20,50);
  trex.addAnimation("running", trex_running);


}

function draw() {
  //set background color
  background(220);

  //jump when space key is pressed
  if(keyDown("space")) {
    trex.velocityY = -10;
  }

  //add gravity
  trex.velocityY = trex.velocityY + 0.8

  //creates edges
 edges= createEdgeSprites()

  //stops trex from falling down
  trex.collide(edges);
  drawSprites();
}
```

3. Scale the Dinosaur to the right size.





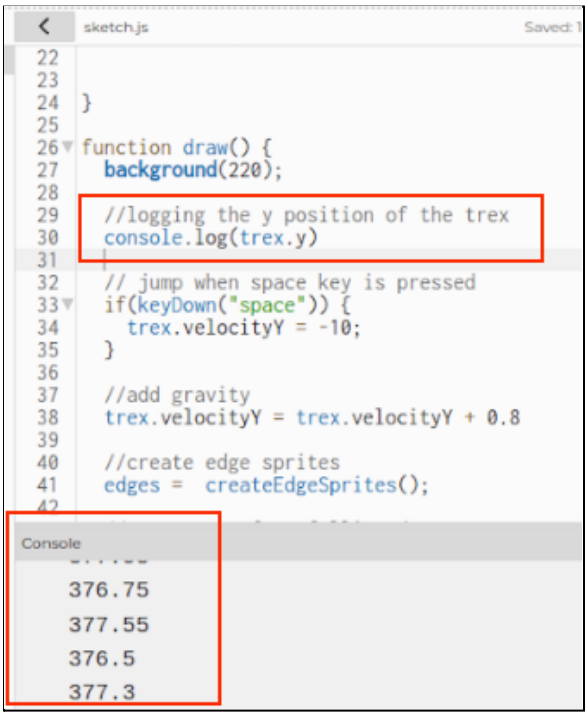
Code:

```
sketch.js                                                    Saved: just now
  6   trex_running =
      loadAnimation("trex1.png","trex3.png","trex4.png");
  7   trex_collided = loadImage("trex_collided.png");
  8
  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
 26 function draw() {
 27   background(220);
 28
 29   // jump when space key is pressed
 30   if(keyDown("space")) {
 31     trex.velocityY = -10;
```

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.

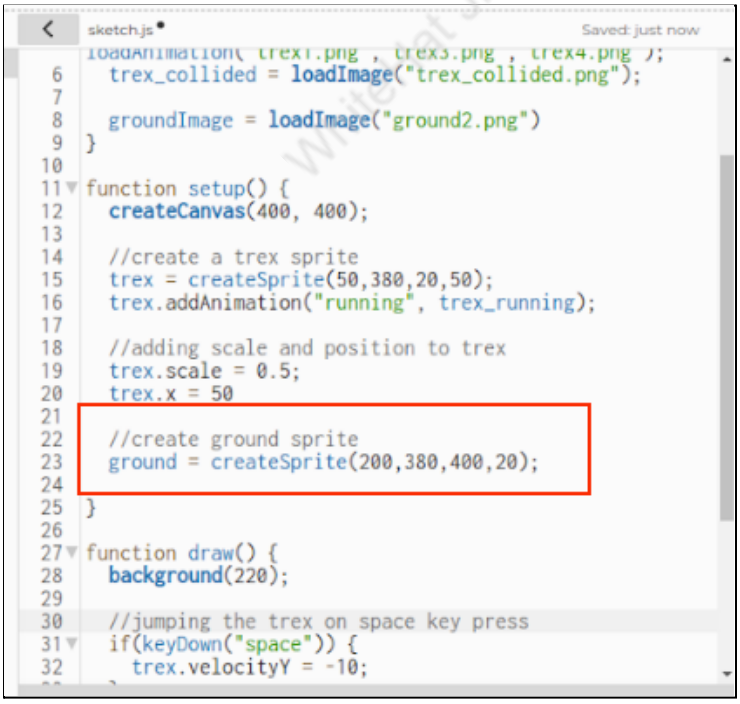
```
sketch.js                                                    Saved: 15 seconds ag
 25
 26 function draw() {
 27   background(220);
 28
 29 //using console.log()
 30   console.log("trex runner")
 31
 32   // jump when space key is pressed
 33   if(keyDown("space")) {
 34     trex.velocityY = -10;
 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();
Console                                                          Cle
14 trex runner
14 trex runner
14 trex runner
13 trex runner
```

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



6. 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:



```
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 }
Console
```

Output:

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

```
sketch.js
  //adding scale and position to trex
  trex.scale = 0.5;
  trex.x = 50

  //create ground sprite
  ground = createSprite(200,380,400,20);
  ground.addImage("ground",groundImage);
  ground.x = ground.width /2;
}

function draw() {
  background(220);

  ground.velocityX = -2
  console.log(ground.x)

  if (ground.x<0){
    ground.x = ground.width/2;
  }

  //jumping the trex on space key press
  if(keyDown("space")) {
    trex.velocityY = -10;
  }

  trex.velocityY = trex.velocityY + 0.8
```

Use an actual ground image

```
sketch.js                                   Saved: just now
  //adding scale and position to trex
  trex.scale = 0.5;
  trex.x = 50

  //create ground sprite
  ground = createSprite(200,380,400,20);
  ground.addImage("ground",groundImage);
  ground.x = ground.width /2;
}

function draw() {
  background(220);

  ground.velocityX = -2
  console.log(ground.x)

  if (ground.x<0){
    ground.x = ground.width/2;
  }
```

What's next?

We will fix the two bugs discovered in the game.