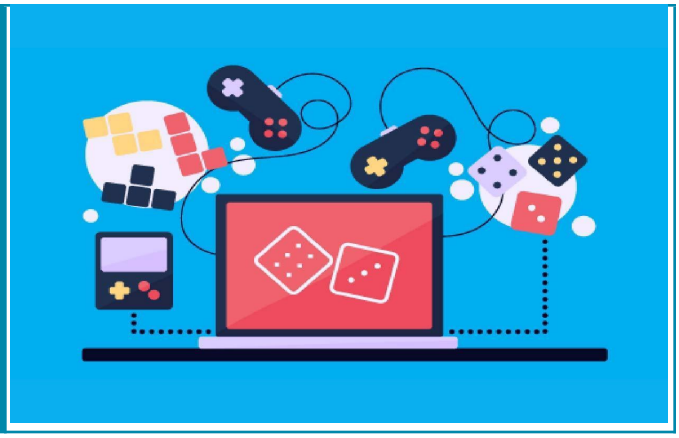
# Loops



## What is our GOAL for this MODULE?

In this class, we learned to create the Breakout Game which has a paddle at the bottom of the screen and multi-colored bricks on the top. The player has to break all the bricks to win the game.

## What did we ACHIEVE in the class TODAY?

- Understood what happens if we write code **outside** the **draw()** function and the code **inside** the **draw()** function.
- Wrote a code to find all odd numbers less than 10 using the **for()** loop.
- Wrote a function to print even numbers between 4 and 20.
- Created and added color to the bricks in the game.
- Added a sprite to the group in the **Toolbox**?

## Which CONCEPTS/ CODING BLOCKS did we cover today?

- Learned about the for loop.
- Learned about group.add(sprite).
- Created bricks in the game.
- Added color to the bricks.

## How did we DO the activities?

1. Understand what happens if we write code **outside** the **draw()** function and the code **inside** the **draw()** function:

**CODE:**

Workspace

```
1
2  console.log("print once");
3
4  function draw()
5  {
6    console.log("print repeatedly");
7  }
8
```

**OUTPUT:**

Debug Console

```
"print once"
"print repeatedly"
"print repeatedly"
"print repeatedly"
"print repeatedly"
"print repeatedly"
"print repeatedly"
"print repeatedly"
```

2. Wrote a code to find all odd numbers less than 10 using the **for()** loop:

**CODE:**

Workspace

```
1
2
3  for(var i=1; i<=10; i=i+2)
4  {
5   console.log(i);
6  }
7
```

**OUTPUT:**

Debug

```
1
3
5
7
9
```

3. Write the **for** loop to print even numbers between **4** and **20**:

**CODE:**

Workspace

```
1  for(var i=4; i<=20; i=i+2)
2  {
3    console.log(i);
4  }
5
```

**OUTPUT:**

Debug Console

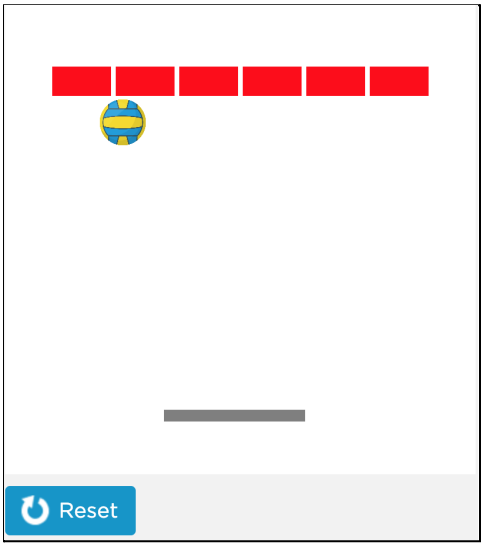
```
4
6
8
10
12
14
16
18
20
```

4. Created first row bricks in the game using a **for** loop and set the color of the sprite to 'red' color:

**CODE:**

```
10 var paddle = createSprite(200, 350, 120, 10);
11
12 createEdgeSprites();
13
14 for(c=0; c<6; c++)
15 {
16   var brick = createSprite(65+54*c,65,50, 25);
17   brick.shapeColor = "red";
18 }
19
20 function draw(){
21   background("white");
22
```

**OUTPUT:**



5. Called the **createBrickRow(y, color)** function 3 times more to create 4 bricks in the game:

**CODE:**

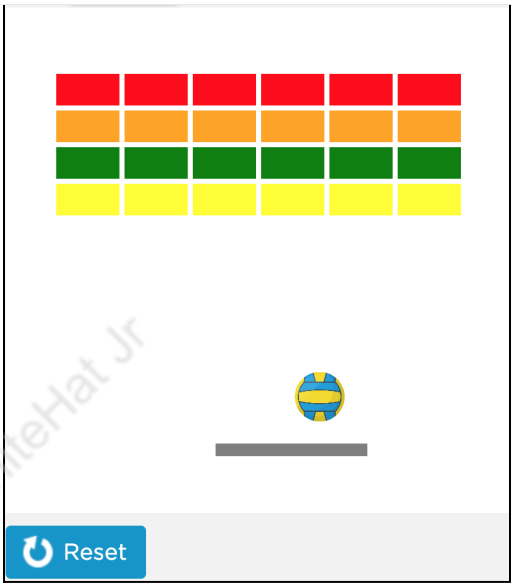
```
ball.velocityX = 0;
ball.velocityY = 0;

var paddle = createSprite(200, 350, 120, 10);

createEdgeSprites();
createBrickRow(65, "red");
createBrickRow(65+29, "orange");
createBrickRow(65+29+29, "green");
createBrickRow(65+29+29+29, "yellow");


function createBrickRow(y, color) {
  for(c=0; c<6; c++)
  {
```

**OUTPUT:**



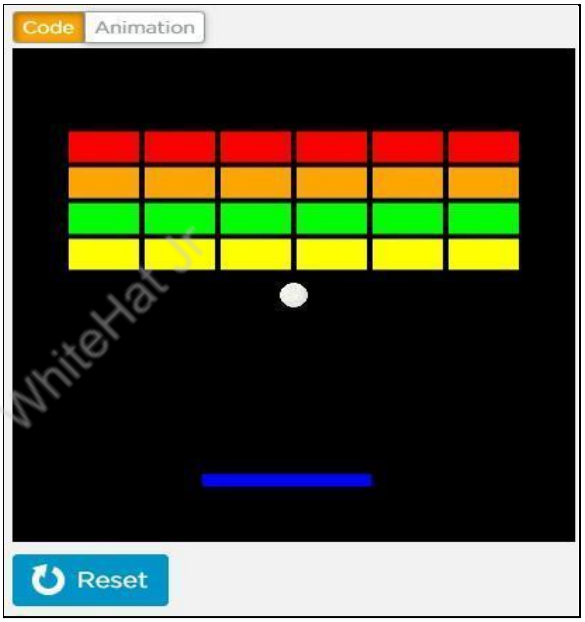
6. Enhanced the graphics of the game by changing **background()** to **“black”**, **setAnimation** of the ball sprite to a **“golfball_1”**, **ball.scale** to **0.05**, and set the paddle sprite’s **shapeColor** property to **“blue”**:

**CODE:**

```
2
3  ball = createSprite(100, 100, 20, 20);
4  ball.setAnimation("golfball_1");
5  ball.scale = 0.05;
6
7  ball.velocityX = 0;
8  ball.velocityY = 0;
9
0  var paddle = createSprite(200, 350, 120, 10);
1  paddle.shapeColor ="blue";
2
3  createEdgeSprites();
4  createBrickRow(65, "red");
```

```
28 function draw(){
29   background("black");
30
31   paddle.x = World.mouseX;
32
33   if(paddle.x < 60){
34     paddle.x =60;
35   }
36
```

**OUTPUT:**






### What’s next?

In the next class, we will add sound and score to our game.

### Extend Your Knowledge:

Bookmark the following link: it will be a reference for **group.destroyEach()**
https://studio.code.org/docs/gamelab/destroyEach/