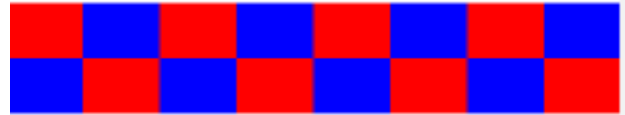## DESIGN BREAKOUT GAME

What is our GOAL for this MODULE?

We used our knowledge from previous classes to create the Breakout game.

What did we ACHIEVE in the class TODAY?

- Create a paddle and a ball sprite objects in the game.
- Create multiple brick sprites.
- Assign game behavior to the paddles and the ball.

Which CONCEPTS/ CODING BLOCKS did we cover today?

- createEdgeSprites()
- createSprite()
- background()

How did we DO the activities?

1. Create a new project and add the first row of boxes by using the **createSprite()** function and changing the x-axis value.

```
//Row 1
var box1 = createSprite(25, 75, 50, 50);
box1.shapeColor="red";
var box2 = createSprite(75, 75, 50, 50);
box2.shapeColor="blue";
var box3 = createSprite(125, 75, 50, 50);
box3.shapeColor="red";
var box4 = createSprite(175, 75, 50, 50);
box4.shapeColor="blue";
var box5 = createSprite(225, 75, 50, 50);
box5.shapeColor="red";
var box6 = createSprite(275, 75, 50, 50);
box6.shapeColor="blue";
var box7 = createSprite(325, 75, 50, 50);
box7.shapeColor="red";
var box8 = createSprite(375, 75, 50, 50);
box8.shapeColor="blue";
```

2. Create the second row of boxes by adjusting the y-axis value copied from the first row of boxes.

```
16  var box8 = createSprite(375, 75, 50, 50);
17  box8.shapeColor="blue";
18
19
20  var box9 = createSprite(25, 125, 50, 50);
21  box9.shapeColor="blue";
22  var box10 = createSprite(75, 125, 50, 50);
23  box10.shapeColor="red";
24  var box11 = createSprite(125, 125, 50, 50);
25  box11.shapeColor="blue";
26  var box12 = createSprite(175, 125, 50, 50);
27  box12.shapeColor="red";
28  var box13 = createSprite(225,125, 50, 50);
29  box13.shapeColor="blue";
30  var box14 = createSprite(275, 125, 50, 50);
31  box14.shapeColor="red";
32  var box15 = createSprite(325, 125, 50, 50);
33  box15.shapeColor="blue";
34  var box16 = createSprite(375, 125, 50, 50);
35  box16.shapeColor="red";
36
37 - function draw() {
38      drawSprites();
```

Output:
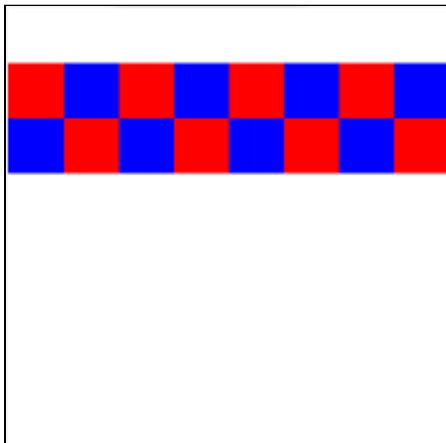
3. Add a paddle and a ball to the game.

```
28  var box13 = createSprite(225,125, 50, 50);
29  box13.shapeColor="blue";
30  var box14 = createSprite(275, 125, 50, 50);
31  box14.shapeColor="red";
32  var box15 = createSprite(325, 125, 50, 50);
33  box15.shapeColor="blue";
34  var box16 = createSprite(375, 125, 50, 50);
35  box16.shapeColor="red";
36
37  paddle=createSprite(200,390,100,20)
38  ball=createSprite(200,200,20,20)
39
40  function draw() {
```

Output:
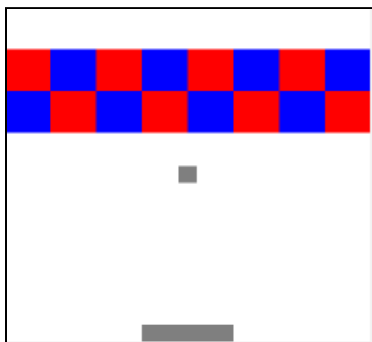
4. Add a condition to move the ball.
   - Add an **if block** and check if the **enter key** is pressed.

```
box14.shapeColor="red";
var box15 = createSprite(325, 125, 50, 50);
box15.shapeColor="blue";
var box16 = createSprite(375, 125, 50, 50);
box16.shapeColor="red";

paddle=createSprite(200,390,100,20)
ball=createSprite(200,200,20,20)

function draw() {

  if(keyDown("enter"))
  {
  }
  drawSprites();
}
```
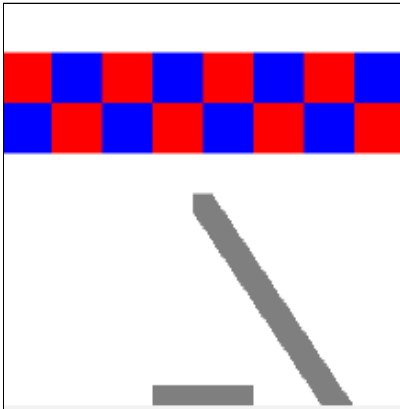
   - Add instructions to move the ball.

```
39
40▾ function draw() {
41
42    if(keyDown("enter"))
43▾   {
44      ball.velocityX=2;
45      ball.velocityY=3;
46    }
47    drawSprites();
48 }
```
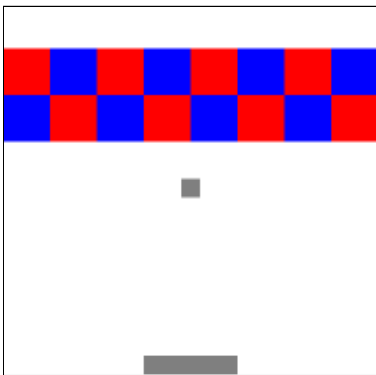
Output:

5. Add background instruction to erase the multiple balls drawn whenever the **draw()** function is called.

```
37  paddle=createSprite(200,390,100,20);
38  ball=createSprite(200,200,20,20);
39
40▼ function draw() {
41    background("white");
42
43    if(keyDown("enter"))
44▼   {
45      ball.velocityX=2;
46      ball.velocityY=3;
47    }
48    drawSprites();
49  }
```
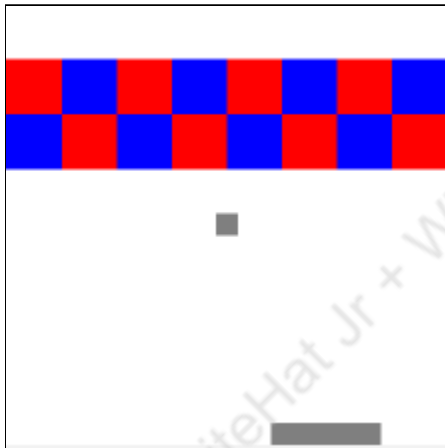
Output:

6. Add instruction to move the **paddle** according to the mouse.

```
40 ▾ function draw() {
41     background("white");
42
43     if(keyDown("enter"))
44 ▾   {
45         ball.velocityX=2;
46         ball.velocityY=3;
47     }
48
49     paddle.x=World.mouseX;
50     drawSprites();
51 }
```

Output:

What's next?

We will make the game playable by destroying the ball when the ball hits the boxes.

EXTEND YOUR KNOWLEDGE

1. To know more about velocity:
   https://studio.code.org/docs/concepts/game-lab/sprites/velocity/