

SPRITE OBJECTS



What is our GOAL for this MODULE?

Students continue to design the Pong game by adding velocity to the ball and making it bounce off the edges of the output screen.

What did we ACHIEVE in the class TODAY?

- Added velocity to our ball.
- Started designing the Pong game.
- Created edge sprites.
- Learned about **bounceOff()** function.

Which CONCEPTS/ CODING BLOCKS did we cover today?

- **sprite.velocityX**, **sprite.VelocityY**
- **createEdgeSprites()**
- **sprite.bounceOff()**

How did we DO the activities?

1. Add **velocityX** to our ball and set it as 2.

```
var playerPaddle= createSprite(390,200,10,100);
playerPaddle.shapeColor="blue";
var computerPaddle= createSprite(10,200,10,100);
computerPaddle.shapeColor="red";
var ball= createSprite(200,200,10,10);
ball.shapeColor="yellow";
ball.velocityX=2;
function draw() {
  drawSprites();
}
```

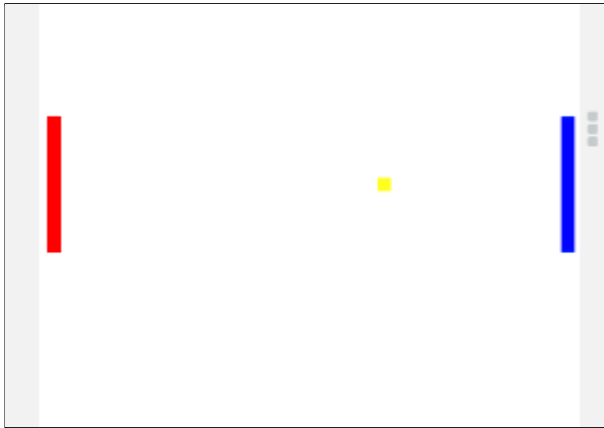
Output:



2. Use the **background()** function to clear the previous output and set it as white.

```
var playerPaddle= createSprite(390,200,10,100);
playerPaddle.shapeColor="blue";
var computerPaddle= createSprite(10,200,10,100);
computerPaddle.shapeColor="red";
var ball= createSprite(200,200,10,10);
ball.shapeColor="yellow";
ball.velocityX=2;
function draw() {
  background("white");
  drawSprites();
}
```

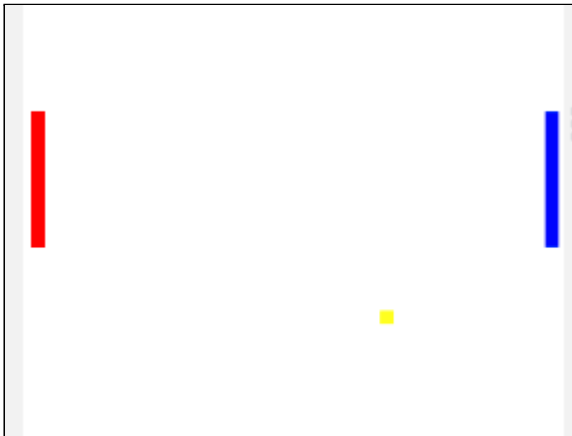
Output:



3. Add **velocityY**, **velocityX** property of the ball, and give the values as 2, 3 respectively.

```
var playerPaddle= createSprite(390,200,10,100);
playerPaddle.shapeColor="blue";
var computerPaddle= createSprite(10,200,10,100);
computerPaddle.shapeColor="red";
var ball= createSprite(200,200,10,10);
ball.shapeColor="yellow";
ball.velocityX=2;
ball.velocityY=3;
function draw() {
  background("white")
  drawSprites();
}
```

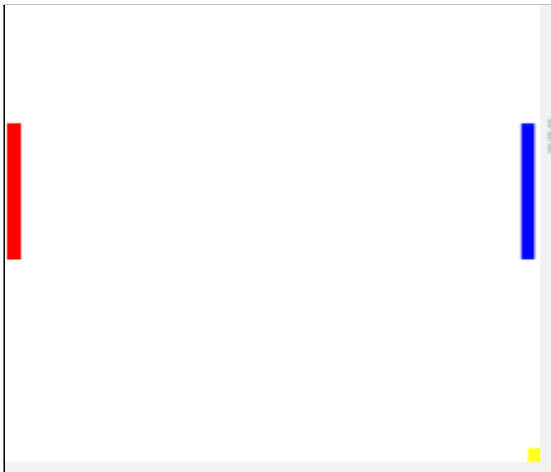
Output:



4. Create edge sprites and make the ball bounce off top and bottom edges.

```
var playerPaddle= createSprite(390,200,10,100);
playerPaddle.shapeColor="blue";
var computerPaddle= createSprite(10,200,10,100);
computerPaddle.shapeColor="red";
var ball= createSprite(200,200,10,10);
ball.shapeColor="yellow";
ball.velocityX=2;
ball.velocityY=3;
function draw() {
  background("white")
  createEdgeSprites();
  ball.bounceOff(topEdge);
  ball.bounceOff(bottomEdge);
  drawSprites();
}
```

Output:

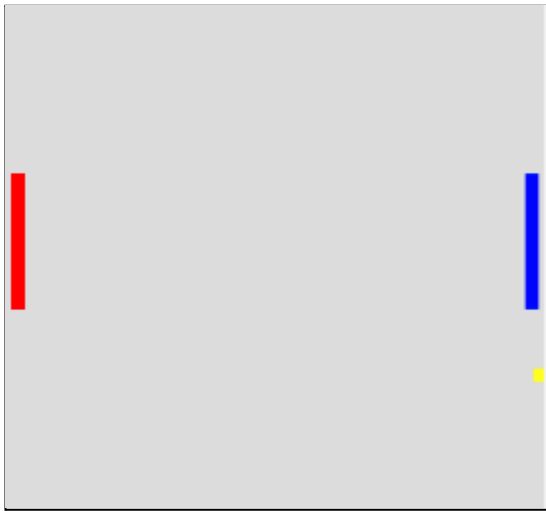


5. Make the **ball** bounce off the paddles from the top and bottom edge only.

```
var playerPaddle= createSprite(390,200,10,100);
    playerPaddle.shapeColor="blue";
    var computerPaddle= createSprite(10,200,10,100);
    computerPaddle.shapeColor="red";
    var ball= createSprite(200,200,10,10);
    ball.shapeColor="yellow";
    ball.velocityX=2;
    ball.velocityY=3;

function draw() {
    background(220);
    createEdgeSprites();
    ball.bounceOff(topEdge);
    ball.bounceOff(bottomEdge);
    ball.bounceOff(computerPaddle);
    ball.bounceOff(playerPaddle);
    drawSprites();
}
```

Output:



What's NEXT?

We'll continue building the Pong game, and use conditional programming to move the player, and use artificial intelligence to move the computer paddles.

EXTEND YOUR KNOWLEDGE

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