

```

<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Fireboy and Watergirl</title>

  <script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>
  <script>
    var blueGems = [], redGems = [], poisons = [], platforms = []; border = []; rectangle = [];
    var watergirl, fireboy;
    var gravity = 2;
    var jumpStrength = 18;
    var watergirlVelocityY = 0;
    var fireboyVelocityY = 0;
    var watergirlOnGround = false;
    var fireboyOnGround = false;
    var groundLevel = 450;
    var keys = {};

    var blue_gem_collected = [false, false, false];
    var red_gem_collected = [false, false, false];
    var imgBlueGem = "https://i.postimg.cc/wvtqrM8d/Blue-Diamond-Gemstone-PNG.png";
    var imgRedGem = "https://i.postimg.cc/2yFwNzh0/red-gem.png";

    var platforms = [
  // Border (only bottom and top edges matter for collisions)
  { x1: 0, y1: 0, x2: 700, y2: 0 }, // Top border
  { x1: 0, y1: 500, x2: 700, y2: 500 }, // Bottom border

  // Top Fireboy platform
  { x1: 430, y1: 130, x2: 540, y2: 130 },

  // Top FB path (zigzag line)
  { x1: 0, y1: 90, x2: 90, y2: 90 },
  { x1: 90, y1: 90, x2: 140, y2: 140 },
  { x1: 140, y1: 140, x2: 190, y2: 140 },
  { x1: 190, y1: 140, x2: 240, y2: 90 },
  { x1: 240, y1: 90, x2: 300, y2: 90 },
  { x1: 300, y1: 90, x2: 380, y2: 170 },
  { x1: 380, y1: 170, x2: 540, y2: 170 },
  { x1: 540, y1: 170, x2: 590, y2: 120 },
  { x1: 590, y1: 120, x2: 640, y2: 120 },

```

// Bottom FB path

```
{ x1: 0, y1: 250, x2: 170, y2: 250 },  
{ x1: 170, y1: 250, x2: 190, y2: 230 },  
{ x1: 190, y1: 230, x2: 210, y2: 250 },  
{ x1: 210, y1: 250, x2: 230, y2: 230 },  
{ x1: 230, y1: 230, x2: 230, y2: 200 },  
{ x1: 230, y1: 200, x2: 300, y2: 200 },  
{ x1: 300, y1: 200, x2: 300, y2: 230 },  
{ x1: 300, y1: 230, x2: 320, y2: 250 },  
{ x1: 320, y1: 250, x2: 340, y2: 230 },  
{ x1: 340, y1: 230, x2: 360, y2: 230 },  
{ x1: 360, y1: 230, x2: 380, y2: 250 },  
{ x1: 380, y1: 250, x2: 620, y2: 250 },  
{ x1: 620, y1: 250, x2: 700, y2: 180 },
```

// Top Watergirl path

```
{ x1: 0, y1: 340, x2: 90, y2: 340 },  
{ x1: 90, y1: 340, x2: 140, y2: 390 },  
{ x1: 140, y1: 390, x2: 190, y2: 390 },  
{ x1: 190, y1: 390, x2: 240, y2: 340 },  
{ x1: 240, y1: 340, x2: 300, y2: 340 },  
{ x1: 300, y1: 340, x2: 380, y2: 420 },  
{ x1: 380, y1: 420, x2: 540, y2: 420 },  
{ x1: 540, y1: 420, x2: 590, y2: 370 },  
{ x1: 590, y1: 370, x2: 640, y2: 370 },
```

// Bottom Watergirl path

```
{ x1: 0, y1: 490, x2: 170, y2: 490 },  
{ x1: 170, y1: 490, x2: 190, y2: 470 },  
{ x1: 190, y1: 470, x2: 210, y2: 490 },  
{ x1: 210, y1: 490, x2: 230, y2: 470 },  
{ x1: 230, y1: 470, x2: 230, y2: 440 },  
{ x1: 230, y1: 440, x2: 300, y2: 440 },  
{ x1: 300, y1: 440, x2: 300, y2: 470 },  
{ x1: 300, y1: 470, x2: 320, y2: 490 },  
{ x1: 320, y1: 490, x2: 340, y2: 470 },  
{ x1: 340, y1: 470, x2: 360, y2: 470 },  
{ x1: 360, y1: 470, x2: 380, y2: 490 },  
{ x1: 380, y1: 490, x2: 620, y2: 490 },  
{ x1: 620, y1: 490, x2: 700, y2: 420 },
```

// Top Watergirl platform

```
{ x1: 430, y1: 370, x2: 540, y2: 370 }
```

```
];
```

```
window.onload = function() {  
    blueGems.push(createSprite(imgBlueGem, "BlueGem1", 100, 450));  
    blueGems.push(createSprite(imgBlueGem, "BlueGem2", 500, 450));  
    blueGems.push(createSprite(imgBlueGem, "BlueGem3", 450, 330));  
    redGems.push(createSprite(imgRedGem, "Red Gem", 450, 100));  
    redGems.push(createSprite(imgRedGem, "Red Gem", 500, 200));  
    redGems.push(createSprite(imgRedGem, "Red Gem", 100, 200));  
    poisons.push(createSprite("https://i.postimg.cc/Y9FR8N9K/poison-water.png", "Poison",  
0, 0));  
    border.push(createSprite("https://i.postimg.cc/y8fLNY55/bg-transp.png", "Border", 0, 0));  
    watergirl = createSprite("https://i.postimg.cc/2j4TZxMn/watergirl-large.avif", "Watergirl",  
50, 280);  
    fireboy = createSprite("https://i.postimg.cc/YShbLBBS/fireboy.webp", "Fireboy", 50, 40);  
    setInterval(updateGame, 50);  
    updateGame();  
};
```

```
function createSprite(src, title, x, y) {  
    var img = new Image();  
    img.src = src;  
    img.alt = title;  
    img.title = title;  
    img.style.position = "absolute";  
    img.left = x;  
    img.top = y;  
    return img;  
}
```

```
$(document).keydown(function(event){  
    var keycode = event.which || event.keyCode;
```

```
    // Watergirl Controls (WASD)  
    if (keycode === 65) { // A  
        watergirl.left -= 5;  
        watergirlWalking = true;  
    }  
    if (keycode === 68) { // D  
        watergirl.left += 10;  
        watergirlWalking = true;  
    }  
}
```

```

    if (keycode === 87 && watergirlOnGround) { // W - jump
        watergirlVelocityY = -jumpStrength;
        watergirlOnGround = false;
    }
    if (keycode === 83) { // S (down)
        watergirl.top += 10;
    }

    // Fireboy controls (Arrow Keys)
    if (keycode === 37) { // Left
        fireboy.left -= 10;
        fireboyWalking = true;
    }
    if (keycode === 39) { // Right
        fireboy.left += 10;
        fireboyWalking = true;
    }
    if (keycode === 38 && fireboyOnGround) { // Up - jump
        fireboyVelocityY = -jumpStrength;
        fireboyOnGround = false;
    }
    if (keycode === 39) { // Right Arrow
        fireboy.left += 10;
    }
}
});

```

```

$(document).keydown(function(event){
    keys[event.which || event.keyCode] = true;
});

```

```

$(document).keyup(function(event){
    keys[event.which || event.keyCode] = false;
});

```

```

function checkWin() {
    if (blueGems.length === 0 && redGems.length === 0) {
        alert("You won!");
        clearInterval(gameLoop); // stop the game updates
    }
}

```

```

function charatersGravity() {
    // Watergirl

```

```

watergirlVelocityY += gravity;
watergirl.top += watergirlVelocityY;
if (isOnPlatform(watergirl)) {
    watergirlVelocityY = 0;
    watergirlOnGround = true;
} else if (watergirl.top >= groundLevel) {
    watergirl.top = groundLevel;
    watergirlVelocityY = 0;
    watergirlOnGround = true;
} else {
    watergirlOnGround = false;
}

// Fireboy
fireboyVelocityY += gravity;
fireboy.top += fireboyVelocityY;
if (isOnPlatform(fireboy)) {
    fireboyVelocityY = 0;
    fireboyOnGround = true;
} else if (fireboy.top >= groundLevel) {
    fireboy.top = groundLevel;
    fireboyVelocityY = 0;
    fireboyOnGround = true;
} else {
    fireboyOnGround = false;
}

// Apply positions
watergirl.style.top = watergirl.top + "px";
fireboy.style.top = fireboy.top + "px";
}

function isOnPlatform(character) {
    let characterBottom = character.top + 40; // assuming 40 is height
    let characterCenterX = character.left + 15; // assuming 30px width

    for (let platform of platforms) {
        // Check if character is over the platform horizontally
        if (characterCenterX >= platform.x1 && characterCenterX <= platform.x2) {
            // Check if character is just touching the platform vertically
            if (Math.abs(characterBottom - platform.y1) <= 5 && characterVelocityY >= 0) {
                character.top = platform.y1 - 40;
                return true;
            }
        }
    }
}

```

```

    }
  }
  return false;
}

```

```

function updateGame() {

  // Watergirl movement
  if (keys[65]) watergirl.left -= 5; // A
  if (keys[68]) watergirl.left += 5; // D
  if (keys[87] && watergirlOnGround) {
    watergirlVelocityY = -jumpStrength;
    watergirlOnGround = false;
  }

  // Fireboy movement
  if (keys[37]) fireboy.left -= 5; // Left Arrow
  if (keys[39]) fireboy.left += 5; // Right Arrow
  if (keys[38] && fireboyOnGround) {
    fireboyVelocityY = -jumpStrength;
    fireboyOnGround = false;
  }

  watergirl.style.left = watergirl.left + "px";
  fireboy.style.left = fireboy.left + "px";

  charatersGravity();

  for (let i = blueGems.length - 1; i >= 0; i--) {
    collectGem(watergirl, blueGems[i], i, "blue");
  }
  for (let i = redGems.length - 1; i >= 0; i--) {
    collectGem(fireboy, redGems[i], i, "red");
  }

  checkPoisonCollision(watergirl);
  checkPoisonCollision(fireboy);
  renderLevel();
  checkWin();
}

function collectGem(character, gem, index, color) {

```

```

    if (Math.abs(character.left - gem.left) < 30 && Math.abs(character.top - gem.top) < 30) {
        if (color === "blue" && character === watergirl && !blue_gem_collected[index]) {
            blue_gem_collected[index] = true;
            alert("Watergirl collected a blue gem!" + index);
            blueGems.splice(index, 1);
            blue_gem_collected.splice(index, 1);
        }
        if (color === "red" && character === fireboy && !red_gem_collected[index]) {
            red_gem_collected[index] = true;
            alert("Fireboy collected a red gem!");
            redGems.splice(index, 1);
            red_gem_collected.splice(index, 1);
        }
    }
}

function checkPoisonCollision(character) {
    poisons.forEach(poison => {
        if (Math.abs(character.left - poison.left) < 30 && Math.abs(character.top - poison.top) <
30) {
            alert(character.title + " touched poison! Game Over.");
            resetGame();
        }
    });
}

function resetGame() {
    location.reload();
}

function renderLevel() {
    var canvas = document.getElementById("mycanvas");
    var ctx = canvas.getContext("2d");
    var bg = new Image();
    bg.src =
"https://mail.google.com/mail/u/0?ui=2&ik=96b8cdd1e3&attid=0.1&permmsgid=msg-a:r-150305
3273245573562&th=19684aa62088993f&view=fimg&fur=ip&permmsgid=msg-a:r-15030532732
45573562&sz=s0-l75-ft&attbid=ANGjdJ8sHdRTN0LIA2iZ6aigzz9vwjBXv-D42YSN24fAi1mu4mc
ypZqaPwZJQLBeUpILxb5jCeSjhtIHtKXeIBub44JL4SUqMCQuK5DI707SE0AduDtiXx9muG2w6
o&disp=emb&realattid=C30D8A98-6C82-4889-91C9-B7C0C81EB8D1&zw";
    bg.onload = function() {
        ctx.clearRect(0, 0, 700, 500);
        ctx.drawImage(bg, 0, 0, 700, 500);
    }
}

```

```
redGems.forEach(gem => ctx.drawImage(gem, gem.left, gem.top, 25, 25));
blueGems.forEach(gem => ctx.drawImage(gem, gem.left, gem.top, 25, 25));
poisons.forEach(poison => ctx.drawImage(poison, poison.left, poison.top, 700, 500));
border.forEach(i => ctx.drawImage(i, i.left, i.top, 700, 500));
ctx.drawImage(watergirl, watergirl.left, watergirl.top, 30, 40);
ctx.drawImage(fireboy, fireboy.left, fireboy.top, 30, 40);
```

```
//border
ctx.beginPath();
ctx.moveTo(0, 0);
ctx.lineTo(0, 500);
ctx.lineTo(700, 500);
ctx.lineTo(700, 0);
ctx.lineTo(0, 0);
ctx.lineWidth = 25;
ctx.strokeStyle = "black";
ctx.stroke();
```

```
//border - top fb platform
ctx.beginPath();
ctx.moveTo(430, 130);
ctx.lineTo(540, 130);
ctx.lineWidth = 10;
ctx.strokeStyle = "black";
ctx.stroke();
```

```
//bottom fb door
ctx.beginPath();
ctx.moveTo(50, 250);
ctx.lineTo(50, 190);
ctx.lineWidth = 40;
ctx.strokeStyle = "red";
ctx.stroke();
```

```
//border - top fb
ctx.beginPath();
ctx.moveTo(0, 90);
ctx.lineTo(90, 90);
ctx.lineTo(140, 140);
ctx.lineTo(190, 140);
ctx.lineTo(240, 90);
ctx.lineTo(300, 90);
ctx.lineTo(380, 170);
ctx.lineTo(540, 170);
```

```
ctx.lineTo(590, 120);
ctx.lineTo(640, 120);
ctx.lineWidth = 10;
ctx.strokeStyle = "black";
ctx.stroke();
```

```
//border - bottom fb
ctx.beginPath();
ctx.moveTo(0, 250);
ctx.lineTo(170, 250);
ctx.lineTo(190, 230);
ctx.lineTo(210, 250);
ctx.lineTo(230, 230);
ctx.lineTo(230, 200);
ctx.lineTo(300, 200);
ctx.lineTo(300, 230);
ctx.lineTo(320, 250);
ctx.lineTo(340, 230);
ctx.lineTo(360, 230);
ctx.lineTo(380, 250);
ctx.lineTo(170, 250);
ctx.lineTo(380, 250);
ctx.lineTo(620, 250);
ctx.lineTo(700, 180);
ctx.lineWidth = 10;
ctx.strokeStyle = "black";
ctx.stroke();
```

```
//bottom wg door
ctx.beginPath();
ctx.moveTo(50, 490);
ctx.lineTo(50, 430);
ctx.lineWidth = 40;
ctx.strokeStyle = "lightblue";
ctx.stroke();
```

```
//border - top wg
ctx.beginPath();
ctx.moveTo(0, 340);
ctx.lineTo(90, 340);
ctx.lineTo(140, 390);
ctx.lineTo(190, 390);
ctx.lineTo(240, 340);
```

```
ctx.lineTo(300, 340);
ctx.lineTo(380, 420);
ctx.lineTo(540, 420);
ctx.lineTo(590, 370);
ctx.lineTo(640, 370);
ctx.lineWidth = 10;
ctx.strokeStyle = "black";
ctx.stroke();
```

```
//border - bottom wg
ctx.beginPath();
ctx.moveTo(0, 490);
ctx.lineTo(170, 490);
ctx.lineTo(190, 470);
ctx.lineTo(210, 490);
ctx.lineTo(230, 470);
ctx.lineTo(230, 440);
ctx.lineTo(300, 440);
ctx.lineTo(300, 470);
ctx.lineTo(320, 490);
ctx.lineTo(340, 470);
ctx.lineTo(360, 470);
ctx.lineTo(380, 490);
ctx.lineTo(620, 490);
ctx.lineTo(700, 420);
ctx.lineWidth = 10;
ctx.strokeStyle = "black";
ctx.stroke();
```

```
//border - top wg platform
ctx.beginPath();
ctx.moveTo(430, 370);
ctx.lineTo(540, 370);
ctx.lineWidth = 10;
ctx.strokeStyle = "black";
ctx.stroke();
```

```
};
}
```

```
</script>
</head>
<body>
```

```
<canvas id="mycanvas" width="700" height="500" style="border: 1px solid  
#000000;"></canvas>  
  <button onclick="resetGame()">Reset Game</button>  
</body>  
</html>
```