

JavaScript Interactive Snowman

Pre-work	3 options: 1) Use https://codepen.io - you can use without an account by clicking the Start Coding button in the upper left corner (but you won't be able to save) or create one 2) Use https://replit.com - If you don't have an account, you can sign up for a Starter Account 3) You can just create the files on your computer using Notepad or another editor (it's a little harder though)
Getting Started	Create a new Codepen (choose Pen under Create), Replit (HTML, CSS, JS), or a New File in Notepad (save it as Snowman.html) - you will need to put in the HTML and JS below or you can also fork this Interactive Snowman Starter (https://codepen.io/gwclplfacilitator/pen/rNMRzNP)
HTML	<pre><html> <head> <title>My Snowman</title> </head> <body> <canvas width="500" height="500"></canvas> <script src="script.js"></script> </body> </html></pre>
JS	<pre>var canvas = document.querySelector('canvas') var ctx = canvas.getContext('2d') function snowman_background(color_choice) { ctx.fillStyle = color_choice ctx.fillRect(0,0,400,400) } function snowman_body(color_choice) { ctx.lineWidth = 5 ctx.strokeStyle = color_choice ctx.fillStyle = color_choice //body ctx.beginPath() ctx.arc(200,295,100,0, Math.PI * 2, true) ctx.fill() ctx.stroke() }</pre>

JavaScript Interactive Snowman

```
function snowman_head(color_choice) {
  ctx.lineWidth = 5
  ctx.strokeStyle = color_choice
  ctx.fillStyle = color_choice
  //head
  ctx.beginPath()
  ctx.arc(200,145,60,0, Math.PI * 2, true)
  ctx.fill()
  ctx.stroke()
}

function snowman_buttons(color_choice) {

  ctx.lineWidth = 5
  ctx.strokeStyle = color_choice
  ctx.fillStyle = color_choice

  //buttons
  ctx.beginPath()
  ctx.arc(200,260,15,0, Math.PI * 2, true)
  ctx.fill()
  ctx.stroke()

  ctx.beginPath()
  ctx.arc(200,330,15,0, Math.PI * 2, true)
  ctx.fill()
  ctx.stroke()
}

function snowman_eyes(color_choice) {

  ctx.lineWidth = 5
  ctx.strokeStyle = color_choice
  ctx.fillStyle = color_choice

  //buttons
  ctx.beginPath()
  ctx.arc(180,135,8,0, Math.PI * 2, true)
  ctx.fill()
  ctx.stroke()

  ctx.beginPath()
  ctx.arc(220,135,8,0, Math.PI * 2, true)
  ctx.fill()
  ctx.stroke()
}
```

JavaScript Interactive Snowman

```

}

function snowman_nose(color_choice) {

    ctx.lineWidth = 5
    ctx.strokeStyle = color_choice
    ctx.fillStyle = color_choice

    //nose
    ctx.beginPath()
    ctx.moveTo(196,150)
    ctx.lineTo(232,160)
    ctx.lineTo(196,170)
    ctx.fill()
}

function snowman_hat(color_choice, band_choice) {

    ctx.lineWidth = 5
    ctx.strokeStyle = color_choice
    ctx.fillStyle = color_choice

    //hat
    ctx.beginPath()
    ctx.moveTo(125,105)
    ctx.lineTo(275,105)
    ctx.lineTo(275,90)
    ctx.lineTo(125,90)
    ctx.fill()
    ctx.beginPath()
    ctx.moveTo(155,90)
    ctx.lineTo(245,90)
    ctx.lineTo(245,35)
    ctx.lineTo(155,35)
    ctx.fill()

    ctx.lineWidth = 5
    ctx.strokeStyle = band_choice
    ctx.fillStyle = band_choice

    //hatband
    ctx.beginPath()
    ctx.moveTo(155,90)
    ctx.lineTo(245,90)
    ctx.lineTo(245,75)
    ctx.lineTo(155,75)

```

JavaScript Interactive Snowman

	<pre> ctx.fill() } function snowman_mouth() { ctx.lineWidth = 5 ctx.strokeStyle = 'red' ctx.fillStyle = 'red' ctx.beginPath(); ctx.arc(200,145,45, Math.PI - Math.PI/3, Math.PI/3, true); ctx.stroke(); } snowman_background('lightblue') snowman_body('white') snowman_head('white') snowman_eyes('green') snowman_nose('orange') snowman_mouth() snowman_buttons('purple') snowman_hat('black','red') </pre>
--	---

Now for making this interactive:

Function: draw_ snowman	<pre> function draw_snowman(color_background, color_body, color_head, color_eyes, color_nose, color_buttons, color_hat, color_band) { snowman_background(color_background) snowman_body(color_body) snowman_head(color_head) snowman_eyes(color_eyes) snowman_nose(color_nose) snowman_mouth() snowman_buttons(color_buttons) snowman_hat(color_hat,color_band) } draw_snowman('lightblue','white','wh ite','blue','orange','purple','black ','red') </pre>	◆ This lets us draw the snowman with one line of code
--	---	--

JavaScript Interactive Snowman

Listener Event: hover	<pre> canvas.addEventListener('mouseover', function(event) { ctx.restore() draw_snowman('orange','black','black', 'yellow','lightblue','hotpink','white','green') }) </pre>	♦ When we move the mouse over the image, we can make it change colors
Listener Event: mouse away	<pre> canvas.addEventListener('mouseleave', function(event) { ctx.restore() //ctx.transform(1, 0.5, -0.5, 1, 30, 10); //ctx.translate(50,0) draw_snowman('lightblue','white','white','blue','orange','purple','black','red') }) </pre>	♦ When we move the mouse away from the image, we can change it back to its original colors

Other things to try:

- Add additional functions for new parts of the snowman, don't forget to add them in your draw_snowman function!
- Control the color on the mouth too!
- Create changes for other Listener Events (learn more about Mouse and keyboard events at <https://developer.mozilla.org/en-US/docs/Web/Events>)

My Notes: