

User Input and Graphics (Teacher Version)

Corresponding Material

JavaScript and Graphics, Lesson 3: User Input, Lesson 5: Graphics in JavaScript

Discussion

Getting input from the user of our programs can help individualize and personalize our code for the specific needs of an individual. We are able to give the user control over different parts of our code by asking them to input a certain phrase or value that can be used in our commands.

Further Discussion

This activity will give students practice with asking for and using user input in their codes. This can be used as a homework sheet to give students more practice or exit slip/do now activity to check students' level of understanding after learning the material.

Class Exercise

Programs are written below that use static values to control different aspects of the program. Your job to is to alter the code so that user input can be used to control the commands followed.

- 1) The code below draws a circle with radius of 50. Alter the code so that user input controls the radius of the circle.

Original Code	New Code
<pre>1 var circle = new Circle(50); 2 add(circle);</pre>	<pre>var radius = readInt('Enter a radius: '); var circle = new Circle(radius); add(circle);</pre>

- 2) The code below prints the name 'Robert' to the screen at position (200, 200). Alter the code so that user input controls the name that is printed.

Original Code	New Code
<pre>1 var nameText = new Text('Robert'); 2 nameText.setPosition(200,200); 3 add(nameText);</pre>	<pre>var name = readLine('Name to be displayed: '); var nameText = new Text(name); nameText.setPosition(200,200); add(nameText);</pre>

- 3) The code below draws a circle with radius 100 centered at point (200, 200). Alter the code so that user input controls the x and y position of the circle.

Original Code
<pre>1 var circle = new Circle(100); 2 circle.setPosition(200, 200); 3 add(circle);</pre>



New Code

```
var xPos = readInt('What is the x-coordinate for the center of the circle? ');
var yPos = readInt('What is the y-coordinate for the center of the circle?');

var circle = new Circle(100);
circle.setPosition(xPos, yPos);
add(circle);
```

- 4) The code below draws a circle with radius 50 touching the top and left sides of the canvas. Alter the code so that user input controls the radius while making sure the circle still touches the top left corner.

Original Code

```
1 var circle = new Circle(50);
2 circle.setPosition(50, 50);
3 add(circle);
```

New Code

```
var radius = readInt('What is the radius of the circle? ');

var circle = new Circle(radius);
circle.setPosition(radius, radius);
add(circle);
```

- 5) The code below draws a rectangle in the center of the screen. Alter the code so that user input controls the width and height of the rectangle, while keeping the rectangle centered on the screen. (Remember: rectangles are drawn from the top left corner!)

Original Code

```
1 var rectangle = new Rectangle(100,200);
2 rectangle.setPosition(getWidth()/2-50, getHeight()/2-100);
3 add(rectangle);
```

New Code

```
var width = readInt('Width of rectangle: ');
var height = readInt('Height of rectangle: ');

var rectangle = new Rectangle(width, height);
rectangle.setPosition(getWidth()/2-width/2, getHeight()/2-height/2);
add(rectangle);
```