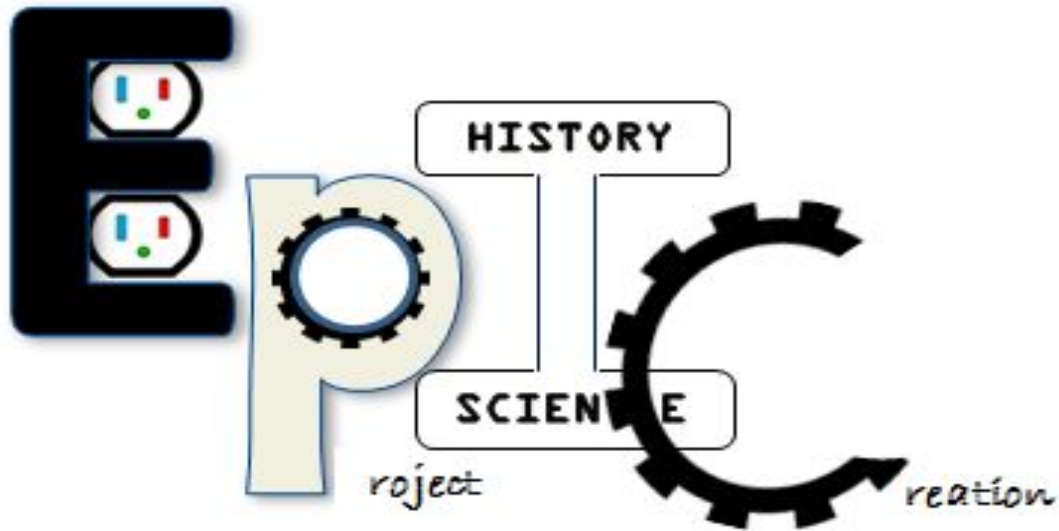


Kit # _____

Computer # _____



Electronic Project Interdisciplinary Creation

Practice Packet

by

Mrs. Barone and Ms. Bronen

Group Members: _____

Expression Building Practice

Make sure you are on the "Expression Builder" tab

We are going to practice building the following:

Your Task: Plan and Save an Expression

Practice Task Expression 1. Light turns on and rotates right

Practice Task Expression 2. Light turns off and rotates left

Practice Task Expression 3. Everything off

Practice Task 1:

Expression: *Our expression will turn a light color on and rotate right*

1. Click box for Servo port 1
2. Slide Servo to 120
3. Click Tri-Color LED port 1
4. Slide red brightness level to 50 (leave all other colors on 0).
5. Click on the "Save" box in the upper right hand corner
6. Save as: red50 servo120 (This expression should appear under "Expressions" on the right side of the screen.)

What problems (if any) did you have?

Names of programmers _____

Practice Task 2:

Expression: *Our expression will turn a light color off and rotate left*

1. Click on "New" in the upper right hand corner of the Expression Builder
2. Next, click on "yes" for the pop up that says "Clear Expression?"
3. Click box for Servo port 1
4. Slide Servo to 50
5. Click Tri-Color LED port 1
6. Slide red brightness level to 0 (leave all other colors on 0.)
7. Click on the "Save" box in the upper right hand corner
8. Save as: redoff servo50 (This expression should appear under "Expressions" on the right side of the screen.)

****When sequencing later, depending on the order of task 1 and task 2, left and right may be reversed.**

What problems (if any) did you have?

Names of programmers _____

Practice Task 3:

Expression: *Our expression will turn everything off that was programmed so far.*

1. Click on "New" in the upper right hand corner of the Expression Builder
2. Next, click on "yes" for the pop up that says "Clear Expression?"
3. Click box for Servo port 1
4. Slide Servo to 0
5. Click Tri-Color LED port 1
6. Slide red brightness level to 0 (leave all other colors on 0.)
7. Click on the "Save" box in the upper right hand corner
8. Save as: Tri-Color1off servo1off (This expression should appear under "Expressions" on the right side of the screen.)

What problems (if any) did you have?

Names of programmers _____

Saving the Expressions

- Click on "Save" and name your expression
- It is important to name the expressions based on what you set them to do. (Ex. If you set the Servo to rotate at a 90° and the light is set to red, you might want to name it rightr90.)

You must have the box checked for the output or input you would like to work.

Points to Remember About Expressions

You must choose a level of brightness, angle, direction, speed, etc. for each output.

It is a good idea to save and name your expressions by what they do. (This is important when we get to building sequences and you need to look at the expressions you have available and in what order you want things to happen.)

***To test your expression, go back and select "everything off" (any used ports must be set at 0) from the list on the right hand side of the screen and then select the expression you want to try. Next, you need to select "Open Expression" and click "yes" on the pop up screen. From here, your expression should work.*

Your Task: Plan and Save an Expression

Directions: Write the plan of your first expression below and then program it using CREATE Lab to see if it works according to your plan.

1. *Our expression will...*

Cause the Servo to rotate at _____ (more than 90 degrees) to the _____ and the LED will light up _____ (color) at a level of _____ (brightness number)

(Remember you must uncheck the boxes to try out your saved expression.)

Did your programmed expression match the written plan? Explain. What problems (if any) did you have?

Names of programmers _____

Your Task: Plan and Save an Expression with the Light Off

Directions: Write the plan of your first expression in the chart below and then program it using CREATE Lab to see if it works according to your plan.

1. *Our expression will...*

Cause the Servo to rotate at _____(less than 90 degrees) to the left and the LED will be set at 0. Save this expression as light off.

Did your programmed expression match the written plan? Explain. What problems (if any) did you have?

****Saving one expression with the light on and then saving a separate expression with the light off will allow you to program a project with a blinking light.**

Names of programmers _____

Directions: Write a plan for your next expression below using at least 3 outputs and then program it using CREATE Lab to see if it works according to your plan.

Our expression will... (look at the last example for help)

Did your programmed expression match the written plan? Explain. What problems (if any) did you have?

Names of programmers _____

Your Task: Making and Saving a Sequence

(Slide 51): Practice Task 1: **Creating a Sequence**

Names of programmers _____

(Slide 53): Practice Task 2: **Using a Counter**

Names of programmers _____

(Slide 55) Practice Task 3: **Using a Sensor**

Names of programmers _____

