

Lesson 6

Set Up

Colors that Change:

- * Learn how to declare and use variables in order to create values that can be changed.
- * Manipulate variables with math expressions to change colors.

Project Goal:

1) Generally, what should the project look like?

A shape whose color changes while it moves across the screen.

2) What skill(s) are being learned/ practiced?

3) What concept are students gaining insight on?

Manipulating variables to move objects.

Further Development :

- * Have students create variables for the green and blue values of the fill command, not just red.
- * Try changing the variables by different amounts.
- * Try changing variables with other variables. For example: $r = r + x$;

Lesson 6

Outline

Introduction to Topic:

“Today we are going to be changing the color of a moving shape.

Project Breakdown:

- 1) Draw in the advanced grid
- 2) Declare variables for the x coordinate of your shape and the red value in the fill command.
- 3) Add the variables to the x coordinate and the red value.
- 4) Use a math expression to change one or all of your variables
- 5) Problem solve and trouble shoot errors

Example Projects/ Basic Source Code:

```
// define variables for x and r
var x = 0;
var r = 0;
draw = function() {
  //draw an ellipse
  fill(r, 0, 0);
  ellipse(x+50, 300, 50, 50);
  //use a math expression to add 5 to the x coordinate
  x = x + 5;
  //use a math expression to change the amount of red
  r = r +5;
};
```