Basketball Game | **Mini Project 3: Power Gauge**

In this third mini-project, you'll code the velocity gauge. The gauge won't change based on arrow keys yet. This is just the drawing of the gauge. You'll import this code in two different places in activity 5.

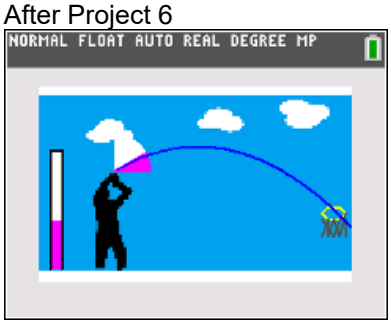
Objectives:

- create a variable F to store the velocity
- use the Line function to create a velocity meter

Basketball Game Project Overview:

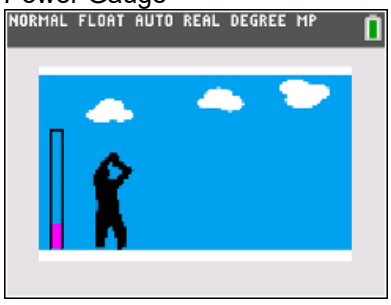
After completing a series of 8 mini projects, you will have a basketball game similar to the one on the right. The code for projects 1 -4 will be imported into project 5. Projects 6-8 will build upon project 5.

After Project 6



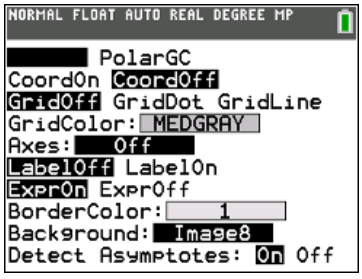
Mini-Project order:
1. Draw the Background
2. Draw the Net
3. **Power Gauge**
4. Angle Gauge
5. Merge the Projects and Code the Arrow Keys
6. Toss the Ball
7. The Game
8. Win the Trophy (and fireworks!)

Power Gauge



1. It will be useful to have your background loaded as reference. We won't do this in code because it is already coded in our NET code you use in later projects.

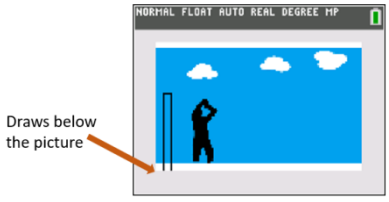
   Press 2nd Zoom (2nd zoom)
   Under Background, select the image that has your basketball background.



2. Create a new program named GAUGE.

   Add a comment line and a ClrDraw line. It will be beneficial to have the comment line when compiling the final project.

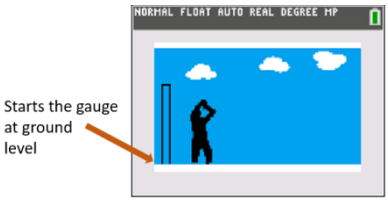
   :"Gauge
   :ClrDraw



   Draw 3 line segments to outline the gauge. The height of the gauge should be

100. The width in the demo is 10. Make sure the base of your gauge matches the base of your picture. Your lines should be in the form

:Line(X1, Y1, X2, Y2, Color)



3. Does your code look similar to the code on the right?
The y-values may or may not be the same based on where your background picture starts.

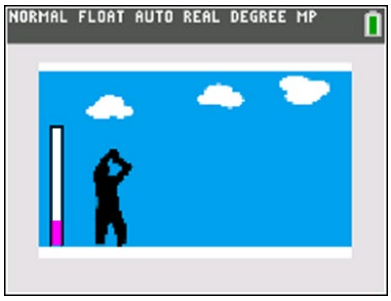
Now you will color in part of the gauge.

```
NORMAL FLOAT AUTO REAL DEGREE MP
EDIT MENU: [alpha][f5]
PROGRAM:GAUGE
:"GAUGE
:ClrDraw
:Line(10,12,10,112,BLACK)
:Line(20,12,20,112,BLACK)
:Line(10,112,20,112,BLACK)
```

1.) You will create a variable F to store a Force from 1 to 100. Initialize the value of F to 30.

2.) Use a For loop to draw lines from the base to the value of F in one color. You'll use another For loop to draw line segments from F+1 to 100 in white.

Can you code both For loops?



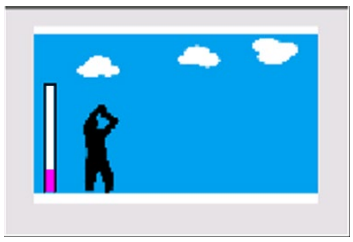
4. Does your code look similar to the code on the right?

```
NORMAL FLOAT AUTO REAL DEGREE MP
EDIT MENU: [alpha][f5]
PROGRAM:GAUGE
:20→F
:For(A,1,F)
:Line(12,A+12,19,A+12,MAGE
NTA)
:End
:For(A,F+1,99)
:Line(12,A+12,19,A+12,WHIT
E)
:End
```

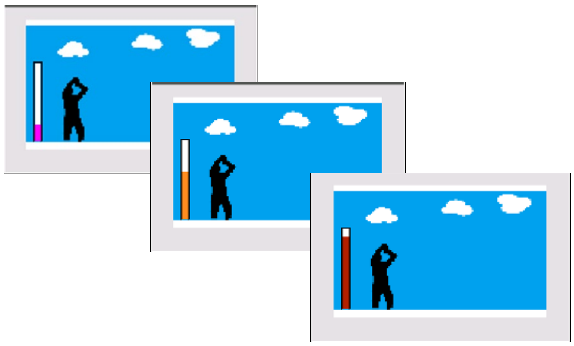
Make sure your code generates a picture similar to the one below. You will import this code later in Project 5.

The next three slide steps are optional. They will teach you how to change the color of the force bar based on the value of F. Changing the color of the gauge is useful when playing the game.

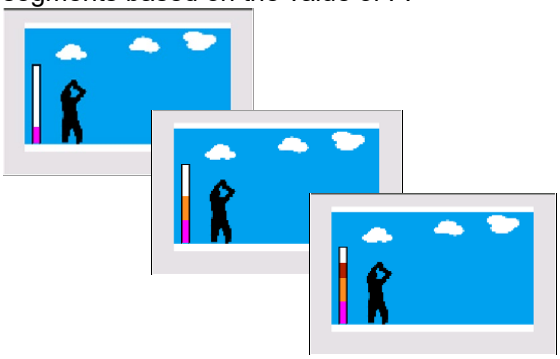
***If you choose to skip the next three slides, delete the ClrDraw from the top of the program.**



5. Option 1 Step 6
Entire bar changes color
based on the value of F.

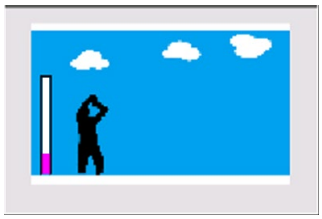


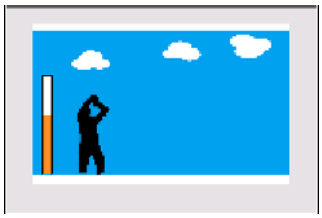
Option 2 Step 7
The bar has different color
segments based on the value of F.



6. Option 1: The entire power gauge color is based on the value of F. Therefore, you'll use multiple Ifs to select the color before the For statement that draws the bar. Based on the results of the If, you'll set the color. You get to decide how many Ifs to include which will determine the number of color choices. Your modification should look something like the lines below

```
:MAGENTA →C
:If F > 33
:Then
:ORANGE →C
:End
:If F > 66
:Then
:BROWN →C
:End
:For(A, 1, F)
:Line(12, A + 12, 19, A + 12, C)
:End
:For(A, F+1,99)
:Line(12, A + 12, 19, A + 12, WHITE)
:End
```

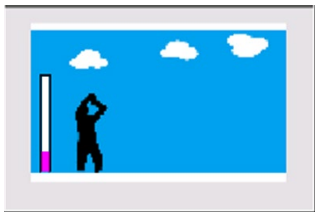


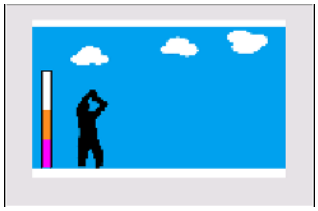


***Once your program is complete and functioning, delete the ClrDraw from the top of your code.**

7. Option 2: Each layer of the power gauge is based on a selection. Therefore, the If is inside the For statement. Based on the results of the If, you'll set the color for that line. You get to decide how many Ifs to include which will determine the number of color choices. Your modification should look something like the lines below:

```
:For(A, 1, F)
:MAGENTA →C
:If A > 33
:Then
:ORANGE →C
:End
:If A > 66
:Then
:BROWN →C
```





```
:End
:Line(12, A + 12, 19, A + 12, C)
:End
:For(A, F+1,99)
:Line(12, A + 12, 19, A + 12, WHITE)
:End
```

***Once your program is complete and functioning, delete the ClrDraw from the top of your code.**