AP Computer Science Principles

Unit: Game Design
Lesson 3: **Jumping Mechanics**
Link: https://snap.berkeley.edu

NYS Standards:
9-12.CT.8 Develop a program that effectively uses control structures in order to create a computer program for practical intent, personal expression, or to address a societal issue.
9-12.CT.9 Systematically test and refine programs using a range of test cases, based on anticipating common errors and user behavior.
9-12.CT.10 Collaboratively design and develop a program or computational artifact for a specific audience and create documentation outlining implementation features to inform collaborators and users.

Learning Intentions:
- ☐ Explain how 3 different "jumping" mechanics work
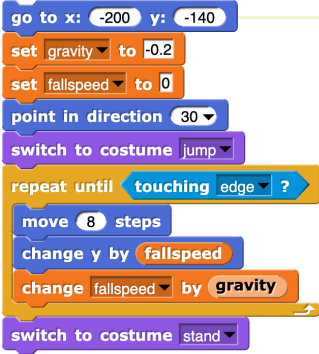- ☐ Incorporate "jumping", sprite interactions, and score elements into a **very** simple game

Instructions:

1) Open and save this file with your name in the title Games--Jumping

2) Paste a SHARED link to your project here (I will be able to see updates/changes as long as you save them. **Please also submit it as a link attachment to this assignment.**

3) Explain what is happening with the three different jumping scripts—not just "vertical", "with gravity" or "flappy"...but rather try to explain how the code accomplishes that.

CODE PIC	PURPOSE/FUNCTION/HOW IT WORKS

go to x: -200 y: -150
switch to costume jump
repeat 10
  change y by 5
repeat 10
  change y by -5
switch to costume stand
 	
1
Basic vertical jumping.
Experiment with the numbers to slow or speed up the jump.	

go to x: -200 y: -140
set gravity to -0.2
set fallspeed to 0
point in direction 30
switch to costume jump
repeat until touching edge ?
  move 8 steps
  change y by fallspeed
  change fallspeed by gravity
switch to costume stand
 	
2
Jumping with "gravity".
Try changing the value of "point in direction"
Try changing other values too! (Like move ___ steps)	

go to x: -200 y: 0
forever
  switch to costume stand
  repeat until key space pressed?
    change y by -5
  if key space pressed?
    switch to costume jump
    change y by 10
 	
3 Flappy jumping.
Press space to keep stick dude up.	

(Add rows as needed)

5) Make a <mark>very</mark> simple game and then TEST AND DEBUG:

Find a classmate to run your very simple game.

Name of classmate:

Your classmate must suggest **1-2 ways** to improve your program. Document the suggestions in the table below. Before making changes, paste a script pic of the code that should be modified. After you make the changes, paste a pic of the improved code.

Suggestion	Old code	New Code

6) Add comments to your code to explain to yourself and anyone else looking at it what the purpose of the script is. (Right click in the black space and choose "comment. You can drag your comment onto the script to attach it).