

**Scratch:**

**Start simple**

Getting the sprite moving  
Drawing a simple line  
Display a number/word

**Add more**

Changing costumes  
Drawing a rectangle  
Inputting data

**More difficult**

Dancing with lights and music  
Creating a house or pinwheel  
Entering and sorting data

**Difficulties:** Understanding that the computer is doing exactly as it was told.  
Perseverance in finding the errors.  
They want a quick fix.  
Learning to test, test, test. Reduces the source of errors down to one.  
Code a piece & make it run, make a change/add something and run it again.

WarmUp & Assignment handouts

**Project to work on:** Apple Bowl

The program is to drop 30 apples from a random spot at the top of the screen and “fall” to the bottom. The basket is to slide along the bottom of the screen and catch the apples. My students liked to leave the fruit on the ground if it was missed. They said the fruit was rotting.

Programming steps:

1. Select an appropriate background, an apple sprite and a bowl sprite.
2. Have the bowl appear centered (left to right) near the bottom of the screen.  
GET THIS RUNNING
3. The bowl can be moved left to right either by pressing the arrow keys or by sliding the mouse. The students prefer the arrow keys. It feels like a game to them.  
GET THIS RUNNING
4. Have the apple appear at the top of the screen at a random (left/right) location.
5. You will need to create a clone of the apple, have the original apple “hide”, and then have the clone apple “fall” down the screen by decreasing the y value.  
GET THIS RUNNING
6. If the apple touches the bowl, then delete the clone.  
GET THIS RUNNING
7. If the apple drops below the bowl, then let it lay on the ground.  
GET THIS RUNNING

Enhancements:

1. After the above works properly, a variable “score” can be used to increment each time the basket catches an apple.
2. The program makes a joyful sound when the fruit is caught, but a horrible noise when the fruit is missed.
3. As the game progresses, speed could be added to the fall of the apples.
4. A new background can be created that says “Game Over”. When the game is over, send a message to the background to switch.