



## Grade 3 - Challenge 1 - Complete all checklist items

Create a program in Scratch that will solve each situation. There is more than one correct solution for each problem. The goal is to create a program that is the best possible solution, addresses all possibilities and is efficient in its execution. Skip the ones that you have difficulty with and come back to them later.

Show each solution to your tutor.

1. Whenever you press the B key, the sprite gets a little bigger. Whenever you press the S key, the sprite gets a little smaller.
2. Whenever the sprite hears a loud sound, it changes color.
3. Whenever the sprite is in the top 25% of the screen, it says "I like it up here."
4. When the sprite touches something blue, it plays a high note. When the sprite touches something red, it plays a low note.
5. Whenever two sprites collide, one of them says: "Excuse me."
6. Whenever the cat sprite gets near the dog sprite, the cat turns and runs away from the dog.
7. Whenever you click on the background, a flower appears at that spot.
8. Whenever you click on a sprite, all other sprites do a dance.
9. When the score reaches 10, the scene (background) changes.
10. The sprite falls as if controlled by gravity, but stops when hits the green ground.
11. The sprite follows the mouse-pointer, but it never gets too close to the mouse-pointer.
12. The sprite follows a red line.



## Challenge 1 - Collect the Coins Game

Example - [https://www.youtube.com/watch?v=-6\\_WduoHUIM](https://www.youtube.com/watch?v=-6_WduoHUIM)

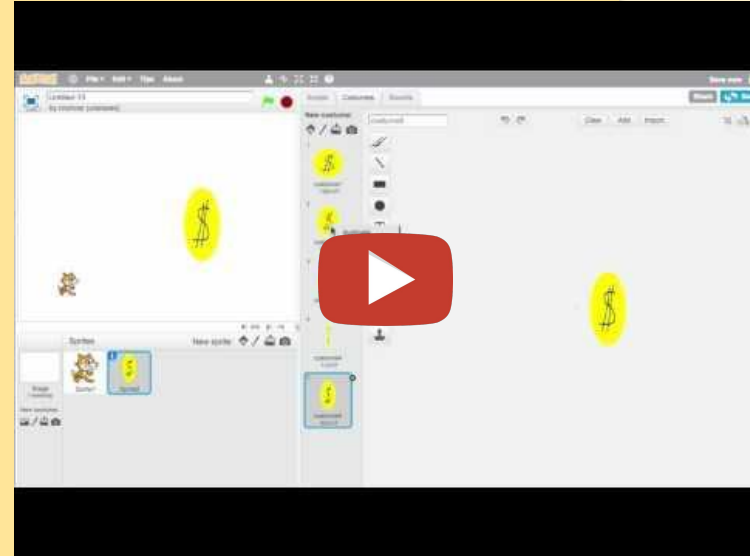
Make your sprite **move with arrow keys** and **collect the coins**.

**Part A:** Make the sprite controlled with the arrow keys

**Part B:** Detect if the Coin is touching the sprite and make it hide

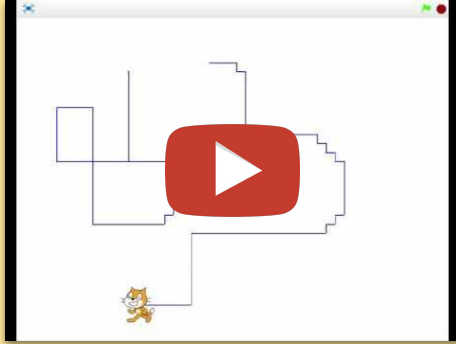
**Part C:** Keep track of how many coins the player has collected in a variable.

**Part D:** When their points reach a certain level display a win screen. This should involve a background change and characters hiding.





## Challenge 2 - Collect the Coins Game



Make the sprite **draw designs** on the screen.  
Be creative and experiment with different blocks.

Here are some of the blocks you can use:

**Pen Up**

**Pen Down**

**Clear**

**Mode 1:** If the user presses a key, then the sprite will draw a preprogrammed design. (Could be a geometric pattern, a picture or even your name)

**Mode 2:** The user moves around the sprite to draw a picture themselves. The user should be able to change pen color and the size of the line.

**Part A:** Provide instructions on how to start each mode, and how to control the cat in the keyboard control mode. You can do this with a sprite or through a stage background.

**Part B:** Provide a way for the user to clear the pattern off the screen

### How to draw in Scratch 3.0

You need to enable the Pen tool by clicking **here** and selecting the **Pen Extension**.

