Roll-a-Ball

1. Which Unity component is used to set the color of Objects? Materials.
   - What parameters look familiar to you? *I'm not sure what this means*
   - Which are unfamiliar? *not sure what this means either*
2. What is the difference between Update() and **FixedUpdate()**?
   - FixedUpdate () → just before performing any physics calculation
   - Update () → called before rendering a frame (run once per frame)
3. What is the difference between Update() and **LateUpdate()**?
   - Update() → update every frame, but could be not the last one to update, which can potentially create what it seem to be a "delay" or "early"
   - LateUpdate () → guarantee to run after all item has been process and update (being the last item to be updated)
4. Which Unity **component** shows the player to be a sphere ,the PickUps to be cubes, etc.
   - Game Object → 3D Object
5. What is the role of the Main Camera?
   - The point of view of the player -- what player sees while the game is running.
6. What is the problem with making the Main Camera a child object of the Player object?
   - As a child object, → the camera moves following where the player is but also follows if the player is rotating, the camera will also be rotating along with the player → rotating on all 3 axes, not just one.
7. What is a Directional Light? The location of the source of light.
   - What natural source of light does it model? The sun.
8. What is the difference between Start() and Awake()?
   - Start() → first frame when the script is active (when game begins)
   - Awake() → set up a specific component at start
9. Change the PickUp prefab by selecting the prefab in the project window and changing the scale of the object. What happens in the scene window?
   - As Prefab is connected to the game object, changing the scale on prefab will also change the scale of the object on the game scene.

10. Change the PlayerController script so that instead of comparing it to "Pick Up" you compare to the string "PickUP". Play the game. What is the result?
    - As the string is a different name, once the player hits (collide) with the pick-up cubes, the ball will only go through without "picking it up" (removing the cubes from the scene).

11. Change an instance of the PickUp prefab by selecting one prefab on the playfield in the scene window.
    - What is different about the behavior? This will only change the behavior of that specific Pick Up rather than all the Pick-Ups.
    - Look at the Inspector panel for the PickUp you changed. What new options are there? *I don't know what this means*

12. Can you change the rotator script so that:
    - the prefab only spins around its vertical axis (flat spin)? Yes
    - the prefab only spins forward (like a somersault)? Yes
    - the prefab only spins sideways (like a cartwheel)? Yes
    - what did you change and does it make sense? Changing the value of the new Vector3 on the Controller using 0.0f for the axis that are not being rotated to and a certain number (e.g 100.0f) for the axis we want it to rotate around.

13. Draw a sketch of the different rotations with a label for the axes.

14. Can you change the game so that there are two different Pick Ups, one type worth 1 point and the other type worth 5 points? What elements need to be added or changed to make this work?
    - This might not be the actual way to do it, but I tried duplicating one Pick Up into five but keeping everything in the same exact spot, so if the player passed it, it would directly count as picking up 5 Pick Up rather than one. Which did work, but might not be the best way.
    - Another option I can think of is to create two different sets of Pick Ups including two different Collider codes on PlayerController.

15. What do you think you would need to change to allow the player to jump?

- ○ Use of one key (potentially 'space') to jump → changing the Y-axis (elevation) rather than X or Z-axis.

16. Can you develop a way to place the PickUp objects distributed evenly around the perimeter of a circle centered on the player's start point in the middle of the playing field? You should be able to enter a number between 3 and 20 and have that number of PickUps placed on the board.

- ○ I don't know how to do this as I tried to have it on balance in a circle. As I was not able to do so, I decided to not make a circle and instead, I create a rectangle. Regardless of a rectangle, it is not a perfect rectangle either as the placement of each Pick Ups is quite messy.