

5.

- a. The world coordinate system defines the locations and orientations of every object in a scene with the origin fixed at (0, 0, 0). An example of a world coordinate system is the latitude, longitude, and altitude for describing positions on the Earth. These coordinates do not change with the orientations or point of reference of objects on the Earth.
- b. A local coordinate system is relative to a GameObjects current position and rotation where the origin is centered at the GameObject and the axes are based on the object's orientation. An example of this would be a person walking around on Earth. For a person facing West, moving right is moving North, but for a person facing East, moving right is moving South.
- c. Vector3 are vectors that define 3D space in Unity. They can be used to move GameObjects within Unity. Some examples are vector3.up which can be used to move an object in the positive Y direction or vector3.right which can be used to move an object in the positive X direction.
- d. The Rigidbody.AddRelativeForce function moves an object relative to its own local coordinate system. For instance, if there is an input to move the GameObject up, but the object is rotated slightly to the right, the object will be moved up and to the right with respect to the world coordinate system.
- e. The Input.GetKeymethod is used to detect keys that are given as inputs in Unity. For instance, it can be used to detect when the W is pressed.