

Unit 3: Physics

Lesson 3: Rigidbody

Activity 4 (🕒 10' minutes): Gap text

Fill the gaps with the words you've heard in the video.

If you are going to have **moving** GameObjects in your game, you should make sure they are Rigidbody objects. Rigidbodies are components that allow a GameObject to be affected by physics. They allow the object to fall under **gravity**, and have physical properties. When we add a Rigidbody component to a GameObject, we often then refer to it as a Rigidbody object.

A Rigidbody component is required for any physics-based interaction, and the GameObject must also have a **collider** attached in order to interact with other physics objects.

Rigidbodies have numerous options:

- The **mass** of the object affect how collisions are **treated** with the object.
- The **drag** affects how quickly the object will slow down without other interactions. Something like air **resistance**, used to determine the rate of a loss of linear velocity. Similarly, **angular** drag affects how quickly the GameObject will slow down its angular velocity, how fast it is rotating.
- "Is **Kinematic**" affects whether or not a Rigidbody will react to physics. Ordinarily, when a scene begins, the physics engine checks all static geometry only once for **efficiency**. However, when you move a static object, the physics engine must re-check all other static objects and this can affect performance. To avoid this, Kinematic Rigidbody objects are moved via their transform by using the Translate function.
- The **constraints** section of the Rigidbody components allows you to constrain movement or rotation of the object by physics.