

Portfolio notes

Unity follows a DITA-like content model, splitting topics into tasks, concepts, reference, and landing pages. This **task page** describes how to simulate a constant force being applied to an object in a 3D environment.

As part of a content migration to the DITA-like model, I pulled all task content out onto its own page, and minimised the amount of conceptual information present (unless absolutely relevant). To see where this content used to sit, see [legacy documentation on the Constant Force component](#).



Apply constant force to a Rigidbody component

To apply a constant linear or rotational force to a GameObject's Rigidbody component, add the **Constant Force** component (represented by the API class [ConstantForce](#)) to the same GameObject.

See [Constant Force component reference](#) for details on how to configure each property on the component.

Example: Configure constant forward acceleration

To make a GameObject constantly accelerate forward (for example, to make it behave like a rocket):

1. Add a Constant Force component to the GameObject.
2. On the Constant Force component, set the **Relative Force** Z axis to a positive value.
3. On the Rigidbody, disable **Use Gravity**. This ensures that there is no competing gravitational force acting upon the GameObject.
4. On the Rigidbody component, set the **Drag** property so that the Rigidbody does not exceed your preferred maximum velocity (the higher the drag, the lower the maximum velocity will be). This might require some trial and error to get the effect you want.

Set maximum velocity limitations

When you apply a constant physics force, the speed of movement accelerates over time based on the value of the force. In real life, this acceleration continues indefinitely. By default in Unity's physics simulation, linear acceleration continues indefinitely, and angular acceleration continues until the Rigidbody reaches a max velocity of 50 rad/s.

You can change these maximum velocities in code:

- To change the maximum linear velocity, use [Rigidbody.maxLinearVelocity](#).
- To change the maximum angular (or rotational) velocity, use [Rigidbody.maxAngularVelocity](#).