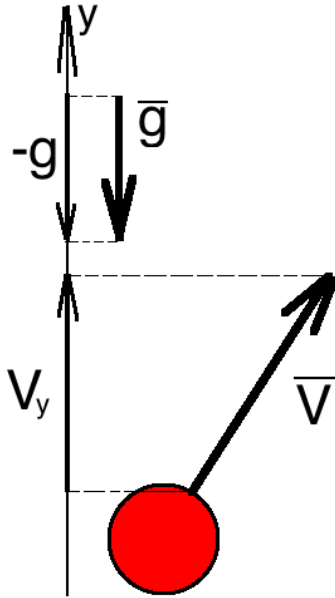


In time of flight of projectile why we take the value of gravitational acceleration 'g' negative

**Solution:**



We take the value of gravitational acceleration 'g' negative, because the acceleration due to gravity is always directed to reduce the vertical velocity component (Y-axis). Then the projection of the gravitational acceleration directed against the Y-axis direction, so when we write the law of motion along the vertical axis, we consider not only the magnitude but also the direction of the acceleration.

By the way,  $g -$  actually is deceleration, because it reduces the initial rate of projectile, as long as its vertical velocity is not equal zero.