

$$S = \frac{1}{2} g t^2$$

$$v = g t$$

$$g_{\text{earth}} = 9.81 \text{ m/s}^2$$

$$g_{\text{moon}} = 1.62 \text{ m/s}^2$$

Motion of a falling object (Earth & Moon) - Level 1

1. State the value of the acceleration due gravity:



a. On Earth 9.81 m/s^2

b. On the Moon 1.62 m/s^2



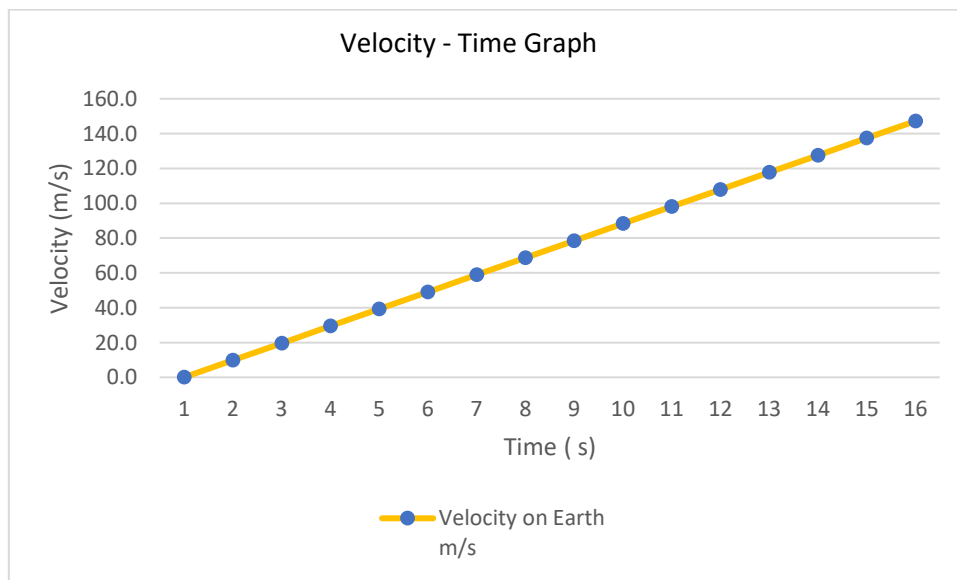
2. An object is dropped from rest on Earth.

- a. What is its initial velocity (u)? 0 m/s
- b. Calculate the speed (v) of a falling object on Earth after 2 seconds.

$$v = g t$$

$$v = 9.81 \times 2 = 19.62 \text{ m/s}$$

2. Look at the velocity -time graph of a falling object.



- a. What does the slope of the graph represent? **Acceleration**
- b. Why is the graph a straight line? **Because the acceleration is constant**