

At time = 0 s

Velocity = 0 m/s

Acceleration = 9.8 m/s^2

Distance fallen = 0 m

t = 0s

Over the first second, the speed goes from 0 m/s to 9.8 m/s. As the object gains speed, the distance it falls increases too.

At time = 1 s

Velocity = 9.8 m/s

Acceleration = 9.8 m/s^2

Distance fallen *during* second #1 = 4.9 m

t = 1s

Over the length of second 2, the speed progressively increases from 9.8 m/s to 19.6 m/s. The object falls faster than during the first second, and so covers a longer distance.

At time = 2 s

Velocity = $9.8 \text{ m/s} \times 2 = 19.6 \text{ m/s}$

Acceleration = 9.8 m/s^2

Distance fallen *during* second #2 = $4.9 \text{ m} + 9.8 \text{ m} = 14.7 \text{ m}$

t = 2s

