



Homework 1

You will need a stopwatch or a clock or watch that has a second hand.

The Aliens have started to come out from the spaceships. To escape, your class is going to have to get back together as quickly as possible. To work out how long this will take, you will need to know your average walking speed.

Task A

There is a useful formula to estimate your average walking speed (s) in miles per hour:

$$s = \frac{n}{30}, \text{ where } n \text{ is the number of steps you take in 1 minute}$$

STEP 1 Time 1 minute. Count how many steps you take in 1 minute at the pace that you normally walk.

STEP 2 Divide the number of steps you take in 1 minute by 30.

For example, if you take 96 steps in 1 minute, you'll divide 96 by 30.

STEP 3 Write down the result. Round it to 1 decimal place if necessary. This is the estimate of your average walking speed in **miles per hour**.

 mph

For example, $96 \div 30 = 3.2$, which means that you walk an average of 3.2 mph.

It would be helpful to know what this is in **kilometres per hour**.

Remember that 5 miles is about the same as 8 kilometres, so 1 mile is $8 \div 5 = 1.6$ kilometres. So to change miles per hour to kilometres per hour, multiply the miles per hour by 1.6.

STEP 4 To estimate your average walking speed in kilometres per hour, multiply your speed in mph by 1.6. Round the result to 1 decimal place if necessary.

 km/h

For example, a speed of 3.2 mph is roughly $3.2 \times 1.6 = 5.12$ km/h. This is 5.1 km/h to 1 d.p.

Task B

- 1 How many **miles** do you think you could walk in 30 minutes?
- 2 How many **miles** do you think you could walk in 6 minutes?
- 3 How many **kilometres** do you think you could walk in 15 minutes?
- 4 How many **kilometres** do you think you could walk in 1 hour 20 minutes?

Task C

- 5 Write down three factors that could affect how fast you can walk. If possible, look first at this website:

<http://www.go4awalk.com/navigationskills/timing.php>