

## MEASURES - TIME

speed in metres per second. Discuss the different methods:

*There are 60 seconds in a minute, so 6 metres per second is the same as 360 metres per minute, and there are 60 minutes per hour so 360 metres per minute is  $60 \times 360$  metres per hour.  $60 \times 360$  is the same as  $30 \times 720$  (doubling and halving) and I can work that out by  $3 \times 72 \times 100 = 21600$ . 21600 metres per hour is 21.6 kilometres per hour. I was running more than 6 metres per second, so that is more than 21.6 kilometres per hour. 16 seconds for 100 metres is the same as 160 seconds for 1 kilometre. That's 2 minutes and 40 seconds. Two and a half minutes goes into an hour 24 times, so I was running less than 24 kilometres per hour.*

Compare pupils' speeds with their predictions from the start of the lesson. Ask them how fast they think the fastest runners in the world can run 100 metres.



The current world records for the 100m are:

Men:	9.58 seconds	Usain Bolt (2009)
Women:	10.49 seconds	Florence Griffith-Joyner (1998)



Ask pupils to work out the approximate speeds of the world record holders in kilometres per hour.

### The Hare and the Tortoise <sup>358</sup>

This problem provides opportunities for pupils to apply their understanding of distance, speed and time. If pupils work in pairs, they will be enabled to communicate strategies with each other.



### Timmy, Tammy & Tommy <sup>359</sup>

This is a problem involving average speed, distance and time.



<sup>358</sup> <http://nrich.maths.org/1082>

<sup>359</sup> <http://nrich.maths.org/2408>