Stage 3 ★
Mixed Selection 2

1. **Tummy ache**
   Timmy, Tammy and Tommy all have tummy ache!

   They all set off separately to visit their doctor, leaving their homes at exactly the same time.
   Timmy cycles the 8 km to the surgery at an average speed of 20 km/hr.
   Tammy walks the 1.2 km to the surgery at an average speed of 4 km/hr.
   Tommy drives the 16.5 km to the surgery at an average speed of 45 km/hr.

   In what order do they arrive at the surgery?

2. **Hiking the hill**
   Sarah walks uphill at an average of 2 miles per hour, and downhill at an average of 4 miles per hour. She goes for a 6 mile hike up a hill, and then returns downhill by the same route.

   What is Sarah's average speed in miles per hour for the whole journey?

3. **Travelling by train**
   Stephen leaves Middlesborough by train at 09:00. The train travels the first 27 km at 96 km per hour. It then stops at Darlington for 3 minutes, before travelling the remaining 29 km to Durham at the same speed.

   At what time does Stephen arrive in Durham?

4. **Turbo tortoise**
   Harriet Hare and Turbo Tortoise want to cross the finish line together on their 12 mile woodland race. Turbo sets off at 8:15 am and trots at a constant speed of 4 mph. Given that Harriet runs at a constant speed of 8 mph, at what time should she set off?

These problems are adapted from UKMT Mathematical Challenge problems (ukmt.org.uk)