

Max's Time-Travelling Market Challenge

Learning objective: To solve problems involving converting between units of time, calculating durations, and reading 12-hour and 24-hour clocks in a real-world context.

Max the monkey is helping the local market traders organise their schedules. Use your knowledge of time to help Max complete the tasks below. You must convert between units (seconds, minutes, hours, days) and calculate the start and end times of the market stalls accurately. Remember to use 24-hour clock notation where requested.

Word bank: duration · interval · 24-hour clock · 14:30 · 09:15 · elapsed time

1. The Fruit Stall opens at 08:30 and closes at 16:15. Calculate the total duration the stall is open in hours and minutes. Show your working out. (2 marks)

2. The Bakery needs 145 minutes to prepare all their sourdough loaves. If they start at 06:45, at what time will they finish? Give your answer in 24-hour format. (2 marks)

3. Compare the two opening times: Stall A opens for 450 minutes and Stall B opens for 7 hours and 45 minutes. Which stall is open for longer and by how many minutes? Justify your answer. (3 marks)

4. Explain why it is useful for market traders to use the 24-hour clock system rather than 12-hour AM/PM notation when planning long days. (2 marks)

5. The vegetable delivery arrives at 14:15. If the journey takes 3 hours and 50 minutes, at what time did the delivery truck depart? Show your calculation. (2 marks)

6. If the market operates for 6 days a week, and each day is 8 hours and 30 minutes long, how many total hours does the market trade in a week? Provide your final answer in hours and minutes. (3 marks)

Draw: Draw two clock faces side-by-side: one showing 09:45 in an analogue format, and the other showing the time 3 hours and 20 minutes later in 24-hour digital format.



Extension challenge: What might happen if the market manager decided to switch to a 'decimal time' system where there are 100 minutes in an hour? Write a short paragraph explaining the difficulties this would cause for the traders and why our current base-60 system is more practical for fractions of an hour.