

Max's Time-Travelling Market Challenge

Learning objective: To solve complex problems involving time intervals, including 12-hour and 24-hour clock conversions and calculating durations across hours and minutes.

Help Max the monkey calculate the schedules for his local community market. Show your working out clearly, as Max needs to be certain his maths is precise!

Max is organising the 'Great Oak Market'. The market stalls open at 08:30 and close at 17:15. Max has carefully planned the day's events. The 'Fresh Fruit Auction' begins at 10:45 and lasts for 75 minutes. Following this, the 'Honey Tasting' hosted by Bea the bee starts at 13:30 and finishes at 14:15. Max needs to ensure that the transition between events is efficient. He also notes that the local bus service runs every 45 minutes, starting its first arrival at 09:00. Max must track these times accurately to ensure the market runs smoothly without any delays.

Word bank: duration · interval · 24-hour clock · chronological · elapsed time · midday · midnight

1. If the Fresh Fruit Auction starts at 10:45 and lasts for 75 minutes, at what time does it finish? Give your answer in 24-hour format. (2 marks)

2. Calculate the total duration the market is open from the opening time of 08:30 to the closing time of 17:15. Explain your method. (3 marks)

3. Max wants to attend the Honey Tasting. If he arrives exactly 20 minutes before it starts, what time will he arrive? Is this before or after the Fresh Fruit Auction ends? Justify your answer. (3 marks)

4. The bus arrives at 09:00, 09:45, and 10:30. If the pattern continues, what will be the time of the fifth bus arrival? Show your calculation. (2 marks)

5. Compare the duration of the Honey Tasting to the duration of the Fresh Fruit Auction. What is the difference in minutes between the two events? (2 marks)

6. What might happen if the Fresh Fruit Auction overran by 15 minutes? How would this affect the rest of the market schedule? Propose a solution for Max. (3 marks)

Draw: Draw two clocks side-by-side: one showing the market opening time (08:30) and the other showing the market closing time (17:15). Label the hands clearly.



Extension challenge: Imagine you are Max. Create a new event for the market that lasts exactly 1 hour and 40 minutes. If this event starts at 15:00, at what time would it finish? If you had to fit this into the existing market schedule, which event would you move or shorten, and why? Justify your decision using your knowledge of time intervals.