

Year 5 Mathematics: Analytical Problem Solving Assessment

Learning objective: To apply mathematical operations, including multi-step word problems involving measures, money, and reasoning.

Read each question carefully. Show your working out clearly in the space provided. If you make a mistake, cross out your work neatly. Ensure your final answers include the correct units (e.g., £, kg, m, ml).

Max the monkey is helping his friends prepare for the annual Forest Feast. He has a list of supplies to collect and budgets to manage. Pip the caterpillar is in charge of the decorations, while Bea the honeybee is organising the refreshment stalls.

Word bank: calculate · operation · estimate · difference · product · total · quotient · remainder

1. Max buys 12 bags of monkey nuts for the feast. Each bag costs £1.45. What is the total cost of the nuts? Show your method. (2 marks)

2. Pip needs 15.5 metres of bunting. He already has 6.75 metres. How much more bunting does he need to buy? Explain your calculation. (2 marks)

3. Bea has 4.5 litres of nectar to share equally among 6 jars. How many millilitres of nectar will be in each jar? (Hint: 1 litre = 1000ml). (3 marks)

4. Leo the lion wants to arrange his collection of 144 poems into booklets. Each booklet holds 9 poems. How many full booklets can he make? If he has 7 leftover poems, can he make an extra booklet? Justify your answer. (3 marks)

5. Zara is painting patterns on 4 wooden crates. Each crate takes 45 minutes to paint. If she starts at 09:15, what time will she finish? Show how you reached your answer. (3 marks)

6. Kit the fox finds a box of 250 pencils. He gives 45 to Pip, 32 to Nova, and 56 to Ellie. How many pencils does Kit have left? Compare this to the original amount and calculate the percentage of the original stock remaining. (4 marks)

7. The Forest Feast budget is £150.00. Max spends £42.50 on fruit, £28.75 on vegetables, and £34.20 on drinks. He then decides to buy decorations that cost £30.00. Does he have enough money left to buy a £15.00 gift for the guests? Justify your answer with a detailed breakdown of the remaining balance. (5 marks)

8. Total: /25

Draw: Draw a visual representation of Max's nut purchase, grouping the 12 bags into arrays to show how you calculated the total product.



Extension challenge: Max wonders what might happen if the price of the nuts increased by 20p per bag. Calculate the new total cost and explain why the 'total' changes disproportionately to the individual unit price increase. If you were organising the feast, how would you ensure you stayed within budget while dealing with unexpected price rises?