

Max the Monkey's Mathematical Decimals Challenge

Learning objective: To demonstrate mastery of decimals, including place value, rounding, and comparing, in the context of money and measurement.

Read each question carefully. Show your working out clearly, especially for multi-step problems. You may use a pencil for your diagrams. Max the Monkey is counting on your accuracy!

Max the Monkey is organising his jungle market stall. He sells tropical fruit by weight and uses decimal currency to track his earnings. He needs your help to ensure his pricing and inventory are perfectly precise.

Word bank: thousandths · hundredths · tenths · place value · decimal point · equivalent · round · partition

1. Max has 4.67 kilograms of bananas. Write this number in words and partition it into its decimal components. (2 marks)

2. Max sells a bunch of mangoes for £3.45 and a bag of passionfruit for £3.49. Which item is more expensive? Use the symbols $<$, $>$ or $=$ to compare these two prices. (2 marks)

3. Round 7.82 to the nearest whole number. Then, round 7.82 to the nearest tenth. Explain your reasoning for both. (3 marks)

4. Max finds a mystery bag of coconuts weighing 2.5 kilograms. He adds another 0.75 kilograms to the bag. What is the total weight? Show your addition calculation using column method alignment. (3 marks)

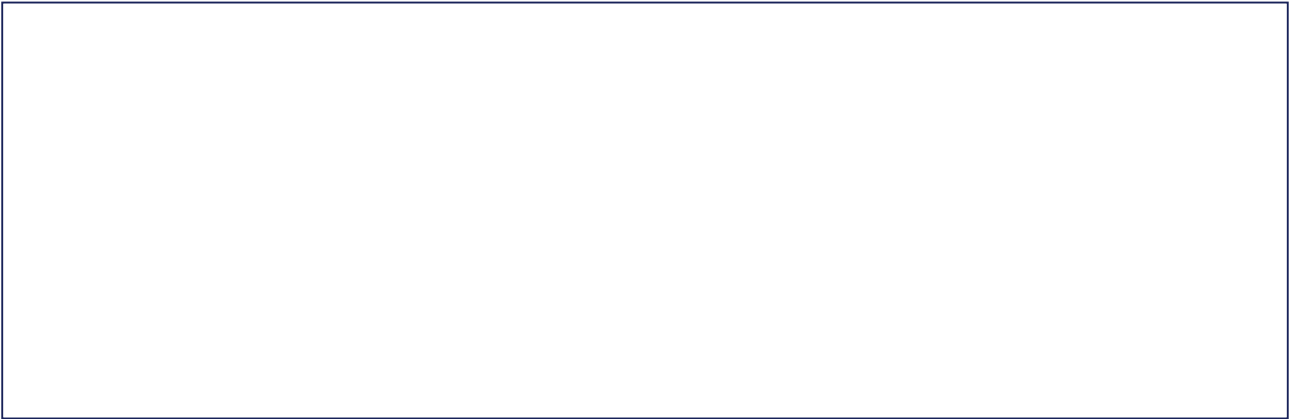
5. Max has £10.00. He buys a gift for Leo the Lion costing £4.65. How much change should Max receive? Show your subtraction method clearly. (3 marks)

6. Max says, '0.5 is the same as 0.500.' Is he correct? Justify your answer by explaining the place value of the digits involved. (3 marks)

7. Max wants to buy new scales. One set costs £12.75 and the other costs £15.20. If Max buys both, what is the total cost? If he pays with a £50 note, how much change will he receive? Provide a step-by-step breakdown. (4 marks)

8. Extended Writing: Imagine you are managing the jungle market with Max. Write a short plan (approx. 100 words) on how you would price three different items using decimals to ensure you make a profit of exactly £2.50 on each. Explain why precision is vital when dealing with decimal currency and measurements in a market setting. (5 marks)

Draw: Draw a number line from 0 to 1 and mark the positions of 0.25, 0.5, and 0.75 clearly, labelling them as both decimals and fractions.



Extension challenge: Total: /25. Challenge: What might happen to a business if the owner consistently rounded decimal prices down instead of up? Compare and contrast the impact on profit and customer satisfaction.