

Max's Magnificent Millions: A Place Value Challenge

Learning objective: To read, write, order, and compare numbers up to at least 1,000,000 and determine the value of each digit.

Max the monkey has been busy organising his collection of rare jungle fruits. Help him solve these place value puzzles by carefully identifying the value of each digit within his inventory lists.

Max has been tallying the fruits in the Great Canopy Market. He has 452,198 star-fruit, 803,421 golden mangoes, and 127,654 purple passion-fruits. Max says, 'If we look at the digit 8 in the star-fruit count, it represents 8 ones, but the 8 in the mango count represents 800,000!' He is now trying to arrange his stock prices. A basket of rare berries costs £345,670, while a crate of climbing vines is priced at £345,760. Max needs to be precise to ensure the market runs smoothly.

Word bank: partition · place value · digit · ascending · descending · thousand · ten thousand · hundred thousand · million

1. Identify the value of the digit '4' in the number of star-fruit (452,198) and the number of passion-fruits (127,654). Explain the difference in their value. (2 marks)

2. Max has 803,421 golden mangoes. Write this number in words and partition it into its constituent parts (e.g., 800,000 + ...). (2 marks)

3. Compare the prices of the berries (£345,670) and the vines (£345,760). Use the greater than (>) or less than (<) symbol to show the relationship between the two prices. (1 mark)

4. Max finds a new crate containing 1,000,000 seeds. If he gives away 100,000 seeds, what is the new total? Write your answer in numerals. (2 marks)

5. Justify why moving a digit one place to the left in a number changes its value by a factor of ten. (2 marks)

Draw: Draw a place value chart for the number 672,409. Label the columns from 'hundred thousands' down to 'ones' and place the correct digits in each column.

[illegible]

Extension challenge: Max wants to create a new price tag that is exactly 20,000 more than £879,500. Calculate this price. Then, explain what might happen to the other digits if Max decided to round his original stock counts to the nearest ten thousand. Compare and contrast the accuracy of using rounded numbers versus exact figures in a busy market setting.