

Max's Magnificent Multi-Digit Challenge

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

Help Max the monkey solve these numerical puzzles by carefully considering the place value of each digit. Show your working out clearly.

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

1. Max has collected 456,209 acorns. Write this number in words and partition it into its constituent parts (e.g., 400,000 + 50,000...). (2 marks)

2. Compare these two numbers using the greater than (>) or less than (<) symbols: 890,123 _____ 891,023. Explain why the second number is larger, despite both having an eight in the hundred-thousands column. (3 marks)

3. What is the value of the digit '7' in the following three numbers? A) 172,000, B) 705,342, C) 610,750. (3 marks)

4. Max buys a treehouse for £345,670 and a set of climbing ropes for £12,500. Calculate the total cost. If he pays with £400,000, does he have enough money? Justify your answer. (3 marks)

5. Arrange the following numbers in descending order: 567,890; 567,098; 576,890; 568,790. (2 marks)

6. Max says: 'If I add 10,000 to 995,000, the new number will have a zero in the hundred-thousands place.' Is he correct? Explain the impact of this addition on the place value columns. (3 marks)

Draw: Draw a place value chart for the number 782,451 using Max's favourite shapes: circles for hundred-thousands, triangles for ten-thousands, and squares for thousands.



Extension challenge: Create your own six-digit number puzzle where the digit '4' is worth 40,000 and the digit '9' is worth 9. Write a set of three clues for a friend to solve to find your secret number.