

Max's Prime Number Investigation Log

Learning objective: To identify, describe, and represent prime numbers up to 100, and recognise prime numbers up to 19.

Help Max the monkey solve his latest maths puzzle! Use this log to define prime numbers, test your knowledge, and explain your reasoning. Remember, a prime number is a natural number greater than 1 that has only two factors: 1 and itself.

Word bank: prime number · composite number · factor · multiple · divisible · product · investigate · pattern

1. Max's Definition: In your own words, explain what a prime number is. How does it differ from a composite number? (2 marks)

2. The Prime Hunt: List all the prime numbers between 1 and 20. How did you verify that each number you chose is prime? (3 marks)

3. The Even Prime: Max has noticed something strange about the number 2. Explain why 2 is considered a unique prime number compared to all other primes. (2 marks)

4. Counter-Argument: A student claims that all odd numbers are prime. Use an example to justify why this statement is incorrect. (2 marks)

5. Compare and Contrast: Compare the number 9 and the number 11. Explain why one is composite and one is prime using the definition of factors. (3 marks)

6. What might happen if prime numbers did not exist? How would this change the way we calculate the factors of larger numbers? (4 marks)

Extension challenge: Max challenges you to create a 'Prime Sieve' for numbers 1 to 50. Draw a grid and colour the prime numbers in blue and the composite numbers in yellow. Then, write a short paragraph justifying why the number 1 is neither prime nor composite.