

Max's Mathematical Prime Number Challenge

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

Help Max the monkey solve these number puzzles by using your knowledge of factors and prime numbers. Remember, a prime number has exactly two factors: 1 and itself.

Max has been busy sorting numbers into two groups: the 'Prime Party' and the 'Composite Club'. A number is prime if it cannot be made by multiplying two smaller whole numbers together (other than 1 and the number itself).

Word bank: Prime number · Composite number · Factor · Multiple · Divisible · Product

1. Max says: 'The number 1 is a prime number.' Is Max correct? Explain your reasoning using the definition of a prime number. (2 marks)

2. List all the prime numbers between 10 and 30. (2 marks)

3. Circle the numbers in this list that are prime: 9, 13, 21, 27, 29, 33. (2 marks)

4. A shopkeeper is selling special marble packs. Can he put 17 marbles into equal groups of more than one, without any marbles left over? Why or why not? (2 marks)

5. Max finds a mystery number. It is a prime number, it is greater than 10, and it is less than 20. When you add the two digits together, the sum is 8. What is the number? (2 marks)

Draw: Draw a picture of Max the monkey standing next to a giant tree. On the leaves of the tree, draw the prime numbers between 1 and 20 as if they were pieces of fruit.



Extension challenge: Investigate 'Twin Primes'. These are pairs of prime numbers that have a difference of 2 (for example, 3 and 5). Can you find all the twin prime pairs up to 50?