

## 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)**

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

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

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**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)**

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**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)**

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**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?*