Pupils should be taught to:	As outcomes, Year 4 pupils should, for example:
Understand the operation of multiplication and the associated vocabulary, and its relationship to addition and division	Use, read and write: *times, multiply, multiplied by, product, multiple, inverse…* and the × sign. Understand and use when appropriate the principles (but not the names) of the commutative, associative and distributive laws as they apply to multiplication: *Example of commutative law* $8 \times 15 = 15 \times 8$ *Example of associative law* $6 \times 15 = 6 \times (5 \times 3) = (6 \times 5) \times 3 = 30 \times 3 = 90$ *Example of distributive law* $18 \times 5 = (10 + 8) \times 5 = (10 \times 5) + (8 \times 5) = 50 + 40 = 90$ Understand that: • 86 + 86 + 86 is equivalent to 86×3 or 3×86; • multiplication by 1 leaves a number unchanged; • multiplication of zero results in zero. Understand that multiplication is the inverse of division (multiplication reverses division and vice versa) and use this to check results. **See also mental calculation strategies (pages 60–65) and checking results of calculations (page 72).** Respond rapidly to oral or written questions, explaining the strategy used. For example: • Two elevens. • Double 16. • 7 times 4… 9 multiplied by 3. • Multiply 15 by 6… by zero… by 1. • Is 40 a multiple of 5? How do you know? • What is the product of 15 and 6? • Find all the different products you can make by using two of these five numbers: 2, 3, 4, 5, 10. Complete written questions, for example: • working rapidly, using known facts: $7 \times 2 = \square$ $10 \times \square = 80$ $\square \times 5 = 35$ $4 \times 9 = \square$ $3 \times \square = 24$ $\square \times 4 = 20$ • using pencil and paper jottings and/or mental strategies: $90 \times 6 = \square$ $8 \times \square = 560$ $\square \times 90 = 720$ $4 \times \square + 8 = 24$ progressing to: $36 \times 18 = \square$ $\square \times \triangle = 720$ $5 \times 35 + \square = 180$