Identify multiples and factors and common factors of two numbers

Factors of 20 1 and 20 2 and 10

4 and 5

Multiples of 20 20 40 60 80 ... Common factors of 10 and 20 are

1 2 5 and 10

Establish whether numbers are prime – factors of 1 and number itself 2, 3, 5, 7, 11, 13, 17, 19...

Continue to recall multiplication facts and associated division facts up to 12 x 12

7 groups of 8 multiply 12 by 9 the product of 80 and 40

0.6 multiplied by 4 560 divided by 7

74500 ÷ 5

3.2 divided by 4

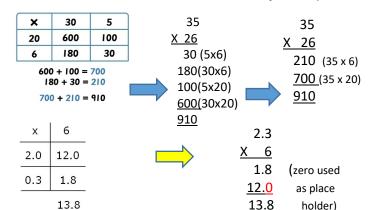
Recognise and use square numbers and cube numbers

 $8^2 - 8 \times 8$

 $4^3 - 4 \times 4 \times 4$

Multiplication and division can be represented in different ways...

These structures show the methods that are used for multiplication and division calculations



Real Life Problems

Last year my age was a square number. Next year it will be a cube number. How old am I? How long will it be until my age is both a square and cube number?

Year 5 Multiplication and Division (including fractions)

Always, sometimes. never

Check division

by using the

127

42

120

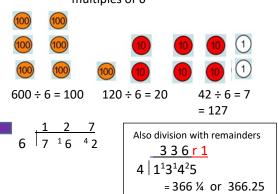
600

762

inverse

A square number has an even number of factors.

$762 \div 6$ – partition the large number into multiples of 6



Continue to understand the inverse relationship between x and ÷

 $6 \times 0.7 = 4.2$ $4.2 = 0.7 \times 6$ $4.2 \div 0.7 = 6$ $0.7 = 4.2 \div 6$ $6 = 4.2 \div 0.7$

Know that x is *distributive* - 37 x 6 is the same as (30 x 6) plus (7 x 6)

Know that x is *commutative* - $37 \times 6 = 6 \times 37$ Know that x is associative - 18 x 4 x 10 can be combined in any order

Calculating with measures

40 cupcakes cost £3.60, how much do 20 cupcakes cost? How much do 80 cupcakes cost? How much do 10 cupcakes cost?

Apples weigh about 160g each. How many apples would you expect to get in a 2kg bag? Explain your reasoning

Mo Farah runs 135 miles a week. How far does he run each year?

Bryan is 2.68m tall. He is 89cm taller than his sister. How tall is his sister?

A 5p coin has a thickness of 1.6mm. Jake makes a tower of 5p coins worth 90p. What is the height of the coins in cm?

Vocabulary

multiple, multiply, product, factor, prime number, prime factor, composite number, square number, cube number

divide, divisible by, divided into, quotient, divisor, remainder, power of, inverse

Fractions

Change between improper fractions and mixed numbers using knowledge of x and ÷

$$3\underline{2} = \underline{5} + \underline{5} + \underline{5} + \underline{5} + \underline{2} = \underline{17}$$
 $\underline{17} = 6 + 6 + 5 = 2\underline{5}$
5 5 5 5 5 6 6 6 6 6

A pizza has 8 slices. At a party, 2 full pizzas and 3 slices are left over. Write this as an improper fraction

Linking fractions and decimals

16 = 0.16 it can be simplified to 4 $(16 \div 4)$ 100 $25 (100 \div 4)$

0.25 = 25 it can be simplified to 1 (÷ by 25) 100

Write two hundred and fifty one thousandths as a fraction and a decimal

Scaling - linking x and ÷

Katie uses ten tomatoes for every 200ml of sauce. How many tomatoes are needed for 1 litre of sauce?



ml of sauce 200 400 600

How much sauce can be made with 70 tomatoes?