## **Properties of numbers**

As outcomes, Year 5 pupils should, for example:	As outcomes, Year 6 pupils should, for example:	
Make general statements about odd or even numbers and/or give examples that match them.	Make general statements about odd or even numbers and/or give examples that match them.	
<ul> <li>For example, explore and give some examples to satisfy these general statements:</li> <li>the sum of three even numbers is even;</li> <li>the sum of three odd numbers is odd;</li> <li>the difference between one odd and one even number is odd;</li> <li>the difference between two odd or two even numbers is even.</li> </ul>	<ul> <li>For example, explore and give some examples to satisfy these general statements:</li> <li>the product of two even numbers is even;</li> <li>the product of two odd numbers is odd;</li> <li>the product of one odd and one even number is even;</li> <li>an odd number can be written as twice a number plus one (an example is 21, which is 2 × 10 + 1).</li> </ul>	
Use, read and write, spelling correctly: multiple, digit, divisible, divisibility, factor	Use, read and write, spelling correctly: multiple, digit, divisible, divisibility, factor	
Recognise multiples in the 6, 7, 8, 9 times-tables, and in the 11 times-table to 99. Respond to questions such as:	Recognise multiples to at least $10 \times 10$ . Respond to questions such as:	
• Ring the numbers in the box that are divisible by 7 (or have a factor of 7).	• Ring the numbers in the box that are divisible by 12 (or have a factor of 12).	
3 18 21 27 36 42 56	24 38 42 60 70 84 96	

 A line of counters is set out in a pattern: two white, four blue, two white, four blue... What colour is the 49th counter? What position in the line is the 11th blue counter?



• Use a number grid computer program to highlight and explore multiples on different sizes of grid. Describe and explain the patterns produced.

Recognise multiples of more than one number: for example, multiples of both 2 and 3.



multiples of 3 multiples of 6 multiples of 2

Recognise that a whole number is divisible by:

- 100 if the last two digits are 00;
- 10 if the last digit is 0;
- 2 if its last digit is 0, 2, 4, 6 or 8;
- 4 if the last two digits are divisible by 4;
- 5 if the last digit is 0 or 5.

Use this knowledge to work out, for example, that the year 2004 is a leap year because 2004 is divisible by 4.

 A line of counters is set out in a pattern: five white, four blue, five white, four blue...
 What colour is the 65th counter?
 What position in the line is the 17th blue counter?

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• Ring the numbers that are divisible by 7.



Find the smallest number that is a common multiple of two numbers such as:

8 and	12
12 and	16
6 and	15

Recognise that a whole number is divisible by:

- 3 if the sum of its digits is divisible by 3;
- 6 if it is even and is also divisible by 3;
- 8 if half of it is divisible by 4, or
- if the last three digits are divisible by 8;
- 9 if the sum of its digits is divisible by 9;
- 25 if the last two digits are 00, 25, 50 or 75.

See also tests of divisibility (page 73).