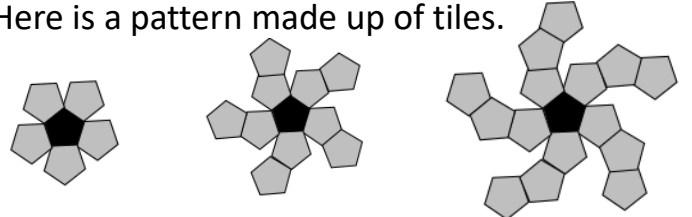




Timester Challenge

Linear Sequences



<p>Here are the first five terms of a number sequence</p> <p>2, 6, 10, 14, 18</p> <p>a) Write down the next two terms of the sequence.</p> <p>b) Explain how you found your answer.</p> <p style="text-align: right;">Bronze ★</p>	<p>The first five terms of a arithmetic sequence are</p> <p>2, 5, 8, 11, 14</p> <p>a) Work out the 8th term of the arithmetic sequence.</p> <p>b) Find in terms of n, an expression for the nth term of this sequence.</p> <p style="text-align: right;">Silver ★</p>	<p>The first five terms of a arithmetic sequence are</p> <p>8, 5, 2, -1, -4</p> <p>a) Work out the 10th term of the arithmetic sequence.</p> <p>b) Find in terms of n, an expression for the nth term of this sequence.</p> <p>c) Claire says -64 is a term of this sequence. Is she correct? Give a reason for your answer.</p> <p style="text-align: right;">Gold ★</p>
<p>Complete the arithmetic sequence by calculating the missing terms.</p> <p>3, ___, 13, ___, 23</p> <p style="text-align: right;">Bronze ★</p>	<p>Here is a pattern made up of tiles.</p>  <p>a) How many tiles will be in the 5th Pattern?</p> <p>b) Find in terms of n, an expression for the nth term of this pattern.</p> <p style="text-align: right;">Silver ★</p>	



Timester Challenge

Linear Sequences

Answers



Here are the first five terms of a number sequence
2, 6, 10, 14, 18

a) Write down the next **two** terms of the sequence. **22, 26**

b) Explain how you found your answer.
The term to term rule is add 4 or the nth term rule is $4n-2$ **Bronze** ★

Complete the arithmetic sequence by calculating the missing terms.

3, 8, 13, 18, 23

Difference between 3 and 13 is 10. The number is halfway between, so half the distance is 5. **Bronze** ★

The first five terms of an arithmetic sequence are
2, 5, 8, 11, 14

a) Work out the 8th term of the arithmetic sequence. **23**

b) Find in terms of n , an expression for the n th term of this sequence.
 $3n - 1$ **Silver** ★

Here is a pattern made up of tiles.

a) How many tiles will be in the 5th Pattern?
Pattern 4 = $16 + 5 = 21$
Pattern 5 = $21 + 5 = 26$

b) Find in terms of n , an expression for the n th term of this pattern. **$5n + 1$** **Silver** ★

The first five terms of an arithmetic sequence are
8, 5, 2, -1, -4

a) Work out the 10th term of the arithmetic sequence.
6th: -7 **9th: -16**
7th: -10 **10th: -19**
8th: -13

b) Find in terms of n , an expression for the n th term of this sequence.
 $-3n + 11$ or $11 - 3n$

c) Claire says -64 is a term of this sequence. Is she correct? Give a reason for your answer.
 $-3n + 11 = -64$ **Add 11**
 $-3n = -75$ **Divide by -3**
 $n = -25$
Yes, -64 is the 25th term of the sequence. **Gold** ★