

Matching the Sequences

Students take the 3 sequences and the blank sequence and stick them apart on a large piece of paper. Then match the properties to a sequence has that property and write some justification for their decision. The task is complicated by the fact that not all properties have a sequence. Students have to work out the missing sequence from the properties that are left over.

Sigma notation is used - define it briefly for the students but let them puzzle out how it is applied to these sequences. Also highlighted here is that fact that sigma notation can be used for any sum within the sequence but S_n can only be used when summing from the first term. A good discussion is to ask why there are two ways of asking for a sum of terms and see whether students can work out the difference.

Referring back to finding the n th term at GCSE might help make the algebraic definition more familiar.

$2, 5, 8, 11, 14 \dots$
$3, 9, 15, 21, 27 \dots$
$-1, 2, 7, 14, 23 \dots$

$U_4 = 14$	$U_1 = 2$	$U_{41} = 243$
$\sum_{i=3}^5 U_i = 33$	$U_{n+1} = U_n + 3$	$U_{10} = 29$
$U_4 = U_3 + 6$	$U_n = n^2 - 2$	$U_1 = 30$
$\sum_{i=1}^3 U_i = 8$	$S_4 = 22$	$U_n = 34 - 4n$
$U_{41} = 1598$	$S_3 = 15$	$U_4 = 18$
$U_n = 3n - 1$	$U_5 = 14$	$U_n = U_{n-1} - 4$
$U_{21} = -50$	$S_4 = 96$	$\sum_{i=2}^7 U_i = 98$