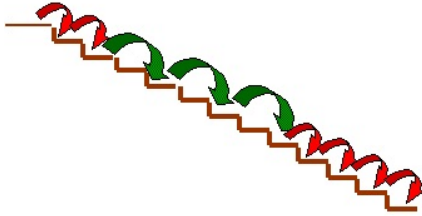


ONE STEP TWO STEPS

A staircase has 12 stairs. You can go down the stairs one at a time or two at a time.



For example: You could go down 1 step (as shown in red), then 1 step, then 2 steps (as shown in green), then 2, 2, 1, 1, 1, 1 steps at a time, as in the picture.

In how many different ways can you go down the 12 stairs, taking one or two steps at a time?

Hint: Do the question for a smaller number of stairs and see if you can find a pattern.

How many ways can you go down 3 stairs?

What about 4 stairs?

What about 5 stairs ...?

HELP

Learners should work on their own to find as many arrangements as they can with 6 stairs, then compare their answers with a partner to see if either of them has answers the other has not found.

Then each pair should compare answers with another pair. Finally, the class should list all the answers that they have found between them and try to list them in a systematic order.

NEXT

n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15...
S_n	1	1	2	3	5	8	13	21	34	55	89	144	233	377	610...

Start from $S_3 = 2$ and list every 3rd number in the sequence. What do you notice?

Start from $S_4 = 3$ and list every 4th number in the sequence. What do you notice?

Start from $S_5 = 5$ and list every 5th number in the sequence. What do you notice?