



Sequence and Chance Home Information Sheet

Second Level (c)



Having explored more complex number sequences, including well-known named number patterns, I can explain the rule used to generate the sequence, and apply it to extend the pattern.

MTH 2-13a

I can conduct simple experiments involving chance and communicate my predictions and findings using the vocabulary of probability.

NMU 2-22a

Over the next few weeks we are going to be learning to use numbers within 1000 to:

- Recognise sequences in which the terms are linked by one of the four operations, e.g. 9, 13, 17, 21....., 100, 91, 82, 73, 64.....,
- 3, 6, 12, 24, 48....., 128, 64,...., 16....., 4
- Follow a rule based on multiplication, division or simple fractions to generate a sequence, e.g. start with 88 and keep dividing by 2 to find subsequent terms
- Solve problems by identifying a sequence, finding the rule and extending the sequence
- Experiment with and create their own number sequences
- Describe a sequence sufficiently to allow a partner to reproduce it
- Recall and be able to extend well-known number patterns, e.g. square numbers, triangular numbers, Fibonacci
- Use data to predict the outcome of an experiment involving chance
- Justify and explain their predictions using appropriate vocabulary (verbal or written)
- Plan and carry out a simple experiment involving chance, e.g. picking a card from a pack, rolling a dice etc.
- Be able to assign a numerical value to the likelihood of simple events occurring, e.g. there is a one in six chance that I will roll a four

Here are some ideas of how you can help me at home!

Make snakes Ask children to draw three snakes, split into many sections, and to write a sequence in each snake, e.g. by counting on or back in steps of the same size, such as 5 at a time. For more of a challenge you could state that the fifth number in each sequence must be a particular number, e.g. 27 or 54, and say that at least one sequence must be descending.

Coin toss: Ask child to think of odds of getting a head/tail in a coin toss (50:50, half and half). Flip coin 10 times and note results: do they match theory? What if the coin is flipped 100 times?

Here are some websites that you may find useful to use with me!

<http://nrich.maths.org/1193> - Identify a strategy to increase chances of winning a card game

http://lgfl.skool.co.uk/content/primary/maths/number_patterns/index.html
- Find the patterns on a given line

Challenge me!

True or false? Give children the following puzzle to investigate: A sequence starts at 5. The terms grow by adding 2, 4, 6, 8, 10 and so on. Every number in the sequence will have a units digit of 5, 7 or 1. *Do you think the statement is true or false? How do you know?*

7th number Ask children to use the Fibonacci sequence (see explanation below) starting with 1, 2, 3, 5 (note only one 1). Ask them to investigate the relationship between the 7th term of this sequence and the sum of the first 10 numbers in the sequence. (Answer: they should discover that the sum is exactly 11 times the 7th term.)

Fibonacci was a 13th century mathematician from Italy. When studying growth patterns in nature he noticed that the next term was consistently the sum of the previous two terms. So, in the sequence 1, 1, 2, 3, 5, 8, 13, 21:
 $1 + 1 = 2$, $1 + 2 = 3$, $2 + 3 = 5$, $3 + 5 = 8$, $5 + 8 = 13$, $8 + 13 = \dots$