Fibonacci

Problem sheet

Fibonacci sequences

- What happens when you add the same Fibonacci sequence to itself? Do you get a Fibonacci sequence? Can you explain what you discover?
- What happens when you add two different Fibonacci sequences (with different start values)? Do you get a Fibonacci sequence? Explain your findings.
- What happens when you add a multiple of one Fibonacci sequence to a multiple of another?
- Are your explanations convincing? Will you be able to convince the rest of the class?
- Can you extend your findings to more than two Fibonacci sequences?
- Do you find the same things when you subtract, multiply or divide terms in two Fibonacci sequences?

Extension

- Can you build a sequence from two consecutive terms that are somewhere in the middle of the sequence? For example, can you find other numbers in the sequence containing ..., 33, 53, ...?
- What happens if you are given two non-consecutive terms such as 31, ☐, ☐, 131?
  Is there a way to generate the sequence? For example,