FIBONACCI SEQUENCES 2

STUDENT RESOURCE

Use a calculator for this activity.

- You have already met the Fibonacci sequence

  1, 1, 2, 3, 5, 8, 13, 21, 34, 55, ...

  You can create a new sequence by adding up the terms of the Fibonacci sequence:

  1
  1 + 1 = 2
  1 + 1 + 2 = 4
  1 + 1 + 2 + 3 = 7

  Continue this new sequence until you have at least twelve terms.
  Call the sequence S_n
  Can you see a pattern in the answers which gives you a formula for S_n?

- Now look at what you get if add up the odd numbered terms:

  1
  1 + 2 = 3
  1 + 2 + 5 = 8

  and so on. Continue this new sequence until you can find a formula for this sequence too.

- Do the same for the even numbered terms:

  1
  1 + 3 = 4
  1 + 3 + 8 = 12 and so on.

- Now see what happens to each of these results if we build a Fibonacci sequence with different starting numbers.

ATM Unit 7 Prime Industrial Park Shaftesbury Street Derby DE23 8YB Tel. 01332 346599 admin@atm.org.uk www.atm.org.uk