Pascal’s Triangle & Fibonacci

Derive as the number of routes from top to each other dot in the triangle

Or as a row of 0’s and a single 1, then add pairs

Golden or Fibonacci Spiral <http://nrich.maths.org/8294>

The Golden Ration and the human Body <http://nrich.maths.org/7668> [Video Clip](http://www.youtube.com/watch?v=085KSyQVb-U)
 Links from Fibonacci to the Golden Ratio: [Sunflower Animation](http://www.mathsisfun.com/numbers/nature-golden-ratio-fibonacci.html)

Colouring Cells – Modulo [Click here](http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=9&ved=0CHIQFjAI&url=http%3A%2F%2Ftonyreiter.wikispaces.com%2Ffile%2Fview%2FPascal%25E2%2580%2599s%2BTriangle.doc&ei=irb0T-uOHYOr0QWpnPSiBw&usg=AFQjCNFq1Gq4YVJNc-bGDjRp6tDTKYhENA&sig2=aKa7)
Colouring Cells – Odd Numbers
Colouring Multiples of 3

Exploring Pascal’s Triangle – [Click here](http://www.geometer.org/mathcircles/pascal.pdf)
Patterns in Pascal’s Triangle and Links to Fibonacci: YouTube Clip - [Click here](http://www.youtube.com/watch?v=YUqHdxxdbyM&feature=fvwrel)
Written explanation: <http://www.mathsisfun.com/pascals-triangle.html>

#### Hockey Stick Pattern

|  |  |
| --- | --- |
|   | Hockey stick pattern |

#### Parallelogram Pattern



#### Fibonacci Binostat Machine: [Click here](http://www.youtube.com/watch?feature=endscreen&NR=1&v=yzJqYl9EHgA)Number of routes from a corner of a rectangular grid to each other point on the grid – [Investigation](http://mathforum.org/library/drmath/view/66728.html) Fibonacci Puzzles: [Click here](http://www.maths.surrey.ac.uk/hosted-sites/R.Knott/Fibonacci/fibpuzzles.html#bricks)Fibonacci Number Trick: [Click here](http://www.maths.surrey.ac.uk/hosted-sites/R.Knott/Fibonacci/fibmaths.html#aandb)