

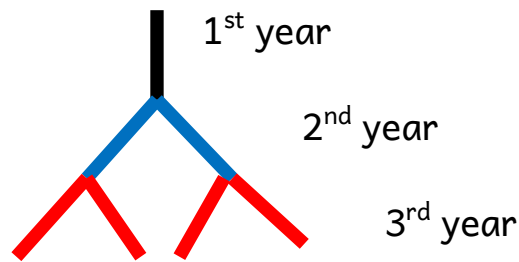


The Mistletoe



Number Patterns

The mistletoe is a plant which grows mathematically.
Every year each branch splits into two.



1. How many branches will this mistletoe have next year?

Year	Number of Branches
1	1
2	2
3	
4	
5	

Continue the table to find the number of branches in its 10th year.

2. Which year will be the first year to see over 10,000 branches?

The tallest toilet roll square-based pyramid

Number Patterns



The tallest toilet roll square-based pyramid is 4.36 m (14 ft 3.75 in), achieved by Kimberly-Clark Corporation and Meijer in USA, on 24 May 2018.

The base of the pyramid measures approximately 4.87 m long on each side. It took 14 people 10 hours to build the pyramid.

The pyramid was comprised of 25,585 separate rolls.

TASK 1

What number pattern is used to build the tiers of this pyramid?

Show your work by drawing a labelled diagram.

TASK 2

Imagine you are building a square-based pyramid out of toilet paper roll yourself:

- a) How many tiers (layers) of toilet rolls would your square-based pyramid have if you had 91 toilet rolls?
- b) A toilet paper roll is approximately 9.5cm in height. How high would your pyramid be?