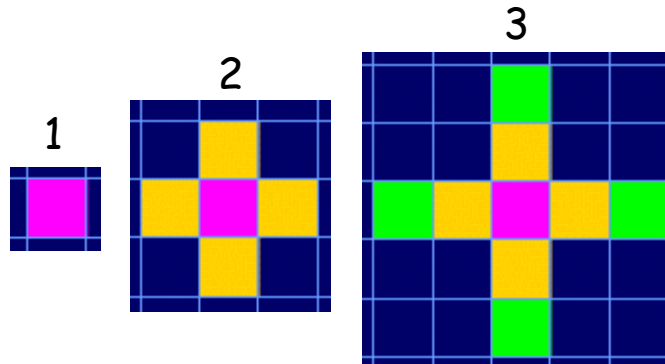


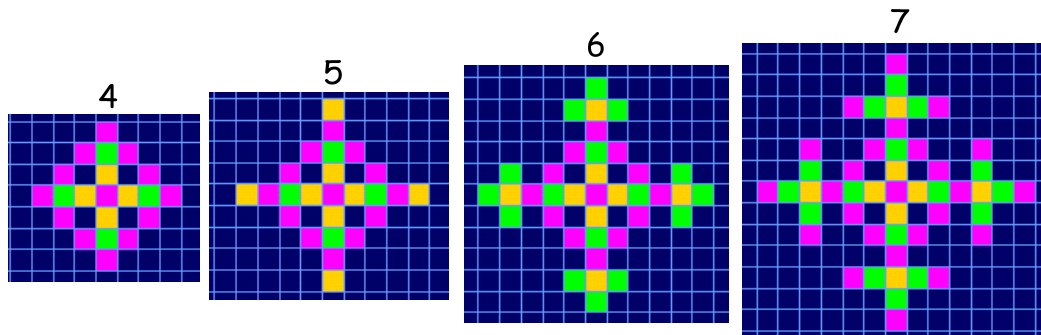
Snowflakes

These are the rules for growing snowflakes:

1. Start with one square
2. Add one square to each side of the first square
3. Add one square to each of the second layer of squares



4. Add 3 squares to each of the end squares because they will not touch side to side with any other square



Continue adding squares around the snowflake.

Only add squares that touch one other square along one side

What patterns can you find in the total number of squares in a snowflake or in the number of squares added each time?

Learning and Teaching Objectives

- Decide on the information you need to describe and continue the pattern
- Describe a rule of a pattern or relationship in words or symbols
- Predict the next few terms in a sequence to test the rule

Snowflakes Solution

Pattern number	1	2	3	4	5	6	7	8
Number of squares added	1	4	4	12	4	12	12	36
Total number of squares	1	5	9	21	25	37	49	85

The patterns within this problem are not easy to spot, but give excellent opportunities for prediction, reasoning and communicating.