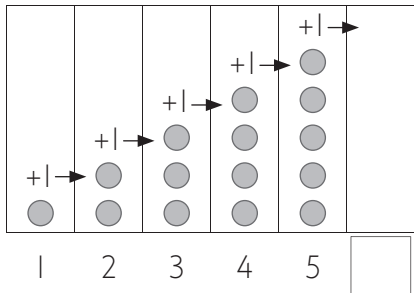




NA33 Investigating patterns

1 Look at the pattern. Each time you add one counter. Complete the pattern.



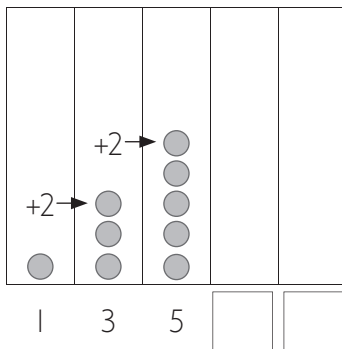
$$\boxed{1} + 1 \quad \boxed{2} + 1 \quad \boxed{3} + 1 \quad \boxed{4} + 1 \quad \boxed{5} + 1 \quad \boxed{}$$



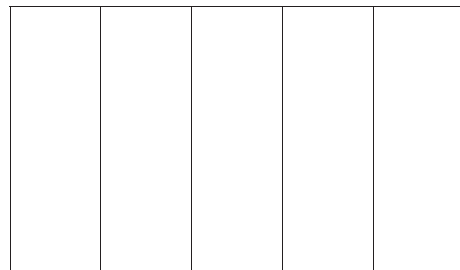
You will need a calculator, counters and matchsticks.



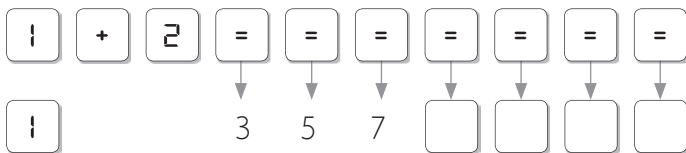
2 a The rule is add two counters. Complete the pattern using counters.



b Make your own pattern with counters.



3 Use your calculator for this pattern.



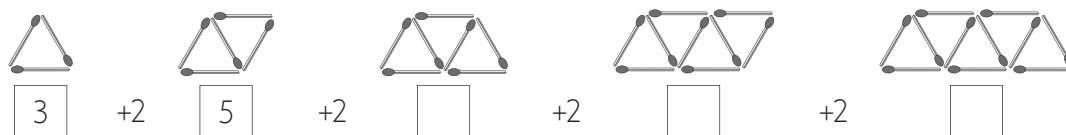
4 Make this pattern with 4 matchsticks.



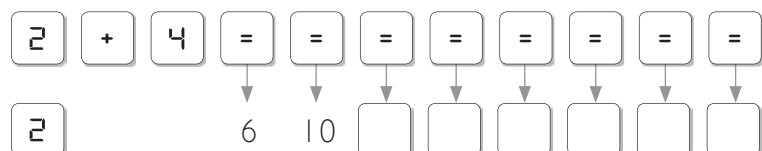
Count the number of matchsticks for each.

$$\boxed{4} \quad + 3 \quad \boxed{7} \quad + 3 \quad \boxed{}$$

5 Continue this pattern with matchsticks.



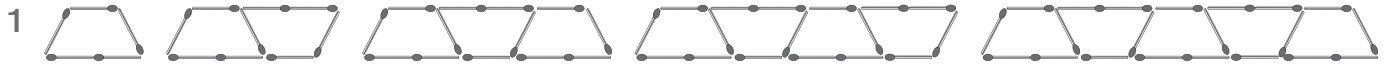
6 Use your calculator for this pattern. Start at 2 and add on 4.



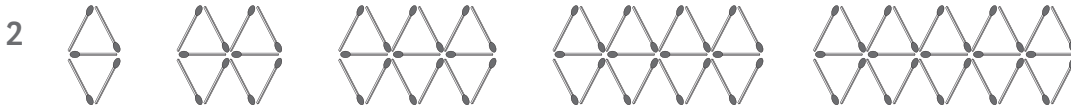


NA33 Investigating patterns

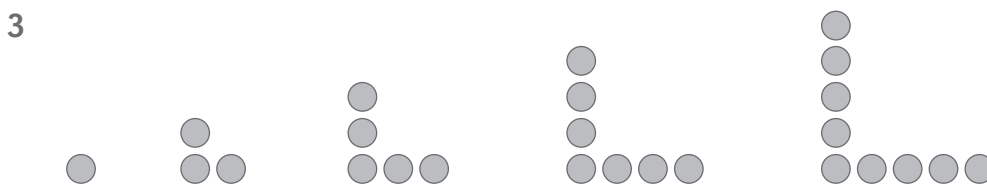
For each pattern, complete the table of values to the 5th term, describe the change using a rule, then continue the table of values to the 10th term.



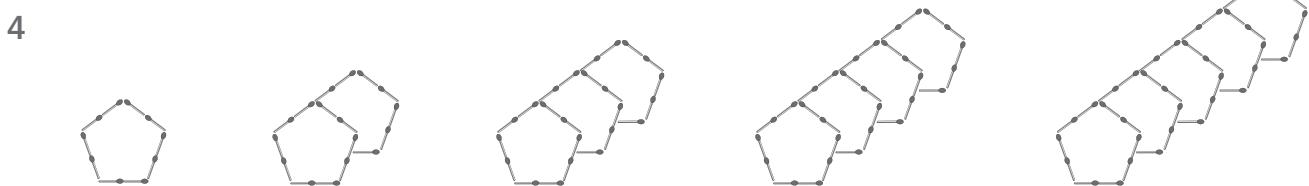
Term	1	2	3	4	5	6	7	8	9	10
Number of matchsticks	5	9								



Term	1	2	3	4	5	6	7	8	9	10
Number of matchsticks	5									



Term	1	2	3	4	5	6	7	8	9	10
Number of counters										



Term	1	2	3	4	5	6	7	8	9	10
Number of matchsticks										



Term	1	2	3	4	5	6	7	8	9	10
Number of matchsticks										





NA33 Investigating patterns

- 1 Continue this pattern of tables and chairs for the fourth and fifth terms. Complete the table of values to the 5th term, describe the change using a rule, then continue the table of values to the 10th term.



Term	1	2	3	4	5	6	7	8	9	10
Number of chairs	5									



- 2 How many tables arranged in a line would be needed to seat 50 people?

- 3 If the tables were arranged in two lines, how many tables would be needed to seat 50 people?

Draw the tables to show the seating arrangements.

- 4 A classroom uses trapezoid tables. The students are seated in rows. A single table seats 3 or 4 students.



The tables are arranged in long rows.

If the class has 26 students, how could these tables be arranged? Every student must face the front of the room.

Use the drawing tools in a word processing program to show how these tables would be arranged.