Discovering rules of patterns

CAPS Statement

Patterns, functions and Algebra
Geometric patterns:
Determine input values, output values and rules for the patterns and relationships using flow diagrams

Note

You will learn how to:
Extend number patterns
Determine input values, output values and rules for patterns
Use flow diagrams to determine rules and patterns.

Activity 1

STEP 1 2 3 4

(a) Describe the pattern. _____

_____.

(b) Complete the table:

STEP	1	2	3	4	5	6	7
Dots	1	4	7	10			
Differences		4-1=3	7-4=3				

ⓒ Write out the number sentence for Step 1 to Step 7.

Example: 1+3 = 4 +3=___+___= 10 +3= ___+3=.....

Step 1 _____.

Step 2 _____.

Step 3 _____.

Step 4 _____.

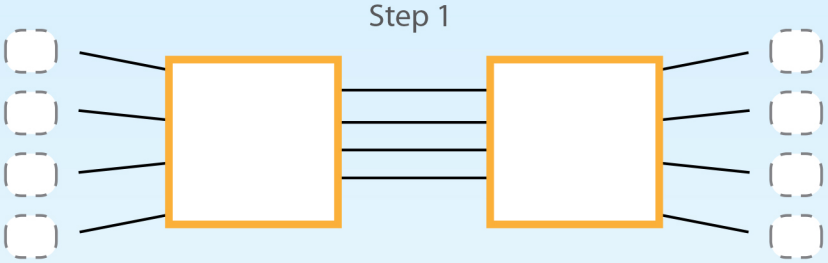
Step 5 _____.

Step 6 _____.

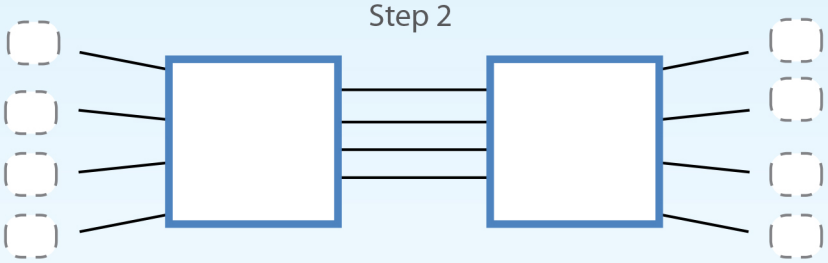
Step 7 _____.

ⓓ Use a flow diagram to show the inputs, rule and outputs for Step 1 to Step 4.

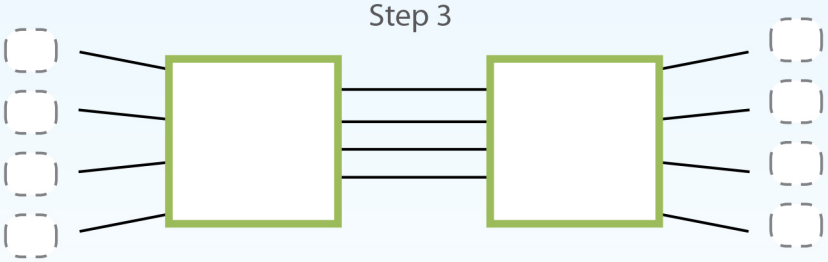
Step 1



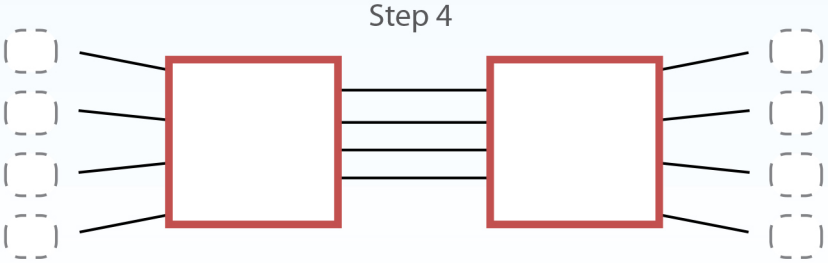
Step 2



Step 3



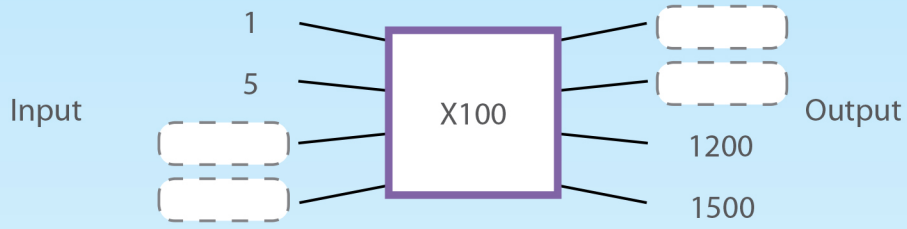
Step 4



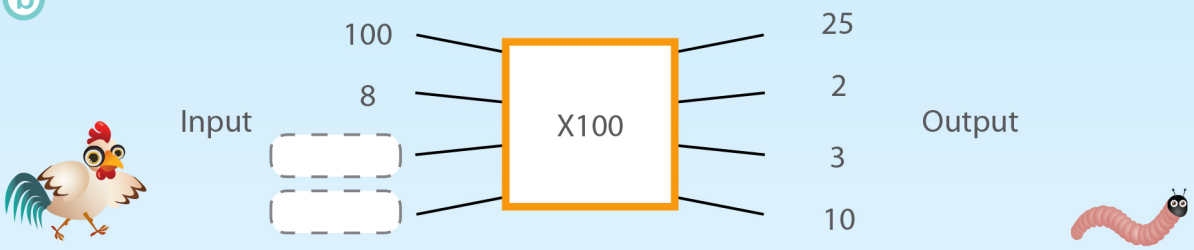
Activity 2

Fill in the missing rule, input values and output values for the flow diagrams below:

(a)



(b)



Activity 3

(a) Fill in the table below:

Input (Step)	1	2	3	4	
Dots	5	9			21
Rule	Input x 4 +1 =5	Input x 4 +1 =9			Input x 4+1 =21

(b) Draw a pattern for Step 1 to 4 that can represent the table above.

STEP 1

STEP 2

Teacher Tip

Use physical objects to illustrate patterns e.g. beads, pencils etc.