Y4 Learning at home activity sheet #6

Problem 1:

Miriama knows that her PIN has the digits 3, 5, 8 and 9.

If only she could remember it!

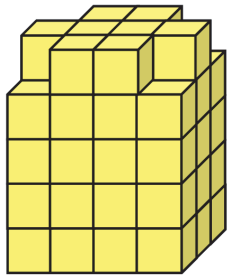
Miriama remembers that the last digit is 5.

What could her pin number be?

Problem 2:

How many cubes make up this building?

Explain how you counted them all, including the cubes you cannot see.



Problem 3:

At the start of the year Hirini had $20 in his piggy bank, and Ana had $6 in hers. Every week, Hirini put $3 in his piggy, and Ana put $5 in her piggy.

How many weeks did it take before they both had the same amount saved?

Sixes and threes:

Here are the six times and three times tables written side by side. Some numbers are left out. Fill in those numbers.

Six times tables		Three times tables
1 x 6 = 6		2 x 3 = 6
2 x 6 = 12		[ ] x 3 = 12
3 x 6 = 18		6 x 3 = [ ]
[ ] x 6 = 24		8 x 3 = 24
5 x 6 = 30		[ ] x 3 = 30

What patterns do you notice in the table?

Eights and fours:

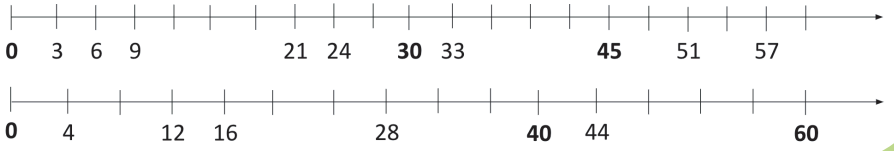
Some numbers are left out. Fill in those numbers.

Eight times tables		Four times tables
1 x 8 = 8		2 x 4 = 8
2 x 8 = 16		[ ] x 4 = 16
[ ] x 8 = 24		6 x 4 = [ ]
[ ] x 8 = 32		8 x 4 = [ ]
5 x 8 = 40		[ ] x 4 = 40

What patterns do you notice in the table?

Placing numbers:

Write the missing numbers on these number lines.



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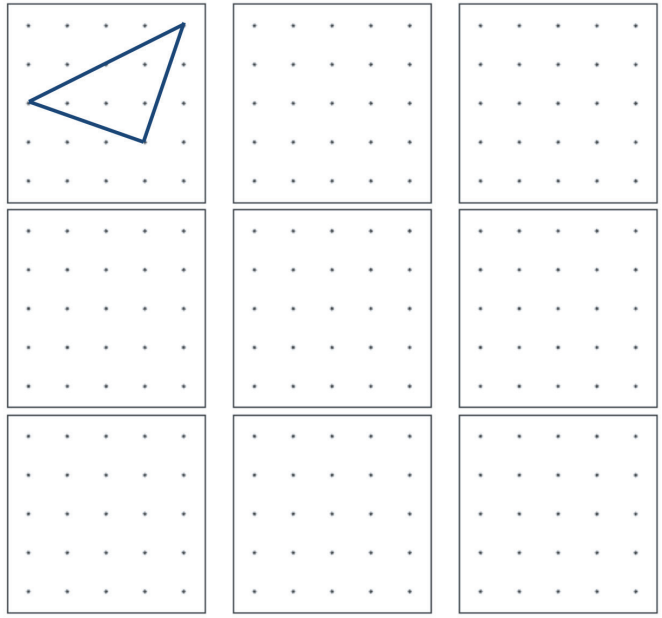
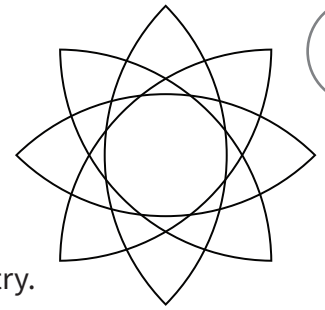
How many triangles?

A triangle is any three-sided shape.
Draw as many different triangles as you can on these grids.
All corners must be at a dot. An example is drawn for you.



Lines of reflection:

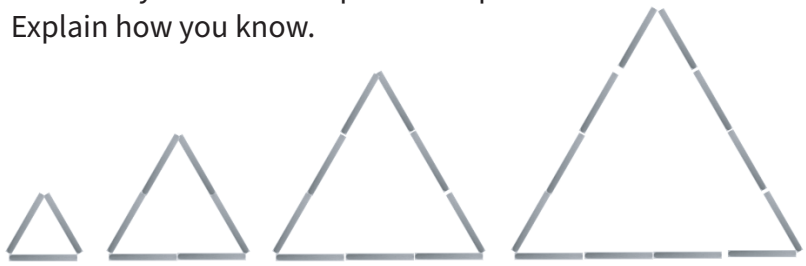
This figure has 8 lines of reflection symmetry.
Find and draw all the lines.



Create your own figure that has 4 lines of symmetry.

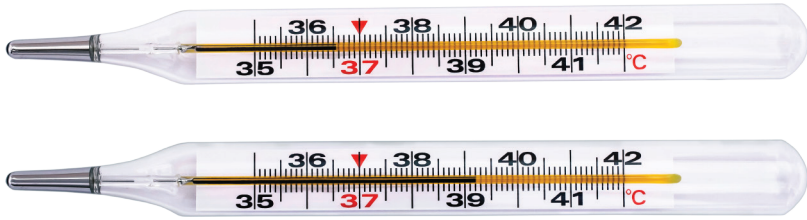
Pattern finding:

Draw the next figure in this pattern.
How many sticks make up the next pattern?
Explain how you know.



Pattern 1 | Pattern 2 | Pattern 3 | Pattern 4

Too cold or too hot?



Your normal body temperature is 37°C.

Which thermometer shows a fever (too hot)?
What is the temperature?

Which thermometer show hyperthermia (too cold)?
What is the temperature?

Draw a thermometer that shows 37°C.

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Learning at home: Notes for whānau

When your child finishes each activity, ask them to add a mouth to the face to show how they felt about that activity.

Problem 1:

It pays to be systematic. The first number could be 3, 8, or 9. For each of those, there are two possibilities for the second number.

There are six possibilities altogether:

3895 3985 8395 8935 9385 9835

Problem 2:

To count the number of cubes accurately you will need a system. That system will probably involve breaking the building into chunks. For example, the layers of the building have 12, 12, 12, 12, and 8 cubes, giving a total of 56 cubes

Problem 3:

There are many ways to solve the problem. A good example is a table like this:

Week	Dollars in Hirini's money box	Dollars in Ana's money box
0	$20	$6
1	$23	$11
2	$26	$16
3	$29	$21
4	$32	$26
5	$35	$31
6	$38	$36
7	$41	$41

The table shows that the amounts are even in Week 7. Another approach is to find the differences. Ana needs 20 - 6 = $14 to catch Hirini at the start. She saves 5 – 3 = $2 more than him every week. Since 14 ÷ 2 = 7, it will take her 7 weeks to catch Hirini.

Sixes and threes, eights and fours:

This task is aimed at connecting the six times and three times tables, and the eight times tables with the four times tables. Since each six contains two threes, doubling and halving patterns occur with multiplications that have the same answer.
The same occurs with the eights and fours.

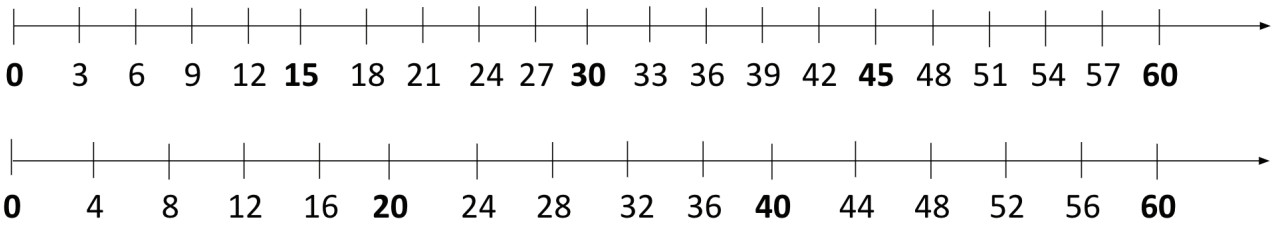
For example, three eights must contain six fours. This relationship shows as 3 x 8 = 24 so 6 x 4 = 24.

Six times tables		Three times tables
1 x 6 = 6		2 x 3 = 6
2 x 6 = 12		4 x 3 = 12
3 x 6 = 18		6 x 3 = 18
4 x 6 = 24		8 x 3 = 24
5 x 6 = 30		10 x 3 = 30

Eight times tables		Four times tables
1 x 8 = 8		2 x 4 = 8
2 x 8 = 16		4 x 4 = 16
3 x 8 = 24		6 x 4 = 24
4 x 8 = 32		8 x 4 = 32
5 x 8 = 40		10 x 4 = 40

Placing numbers:

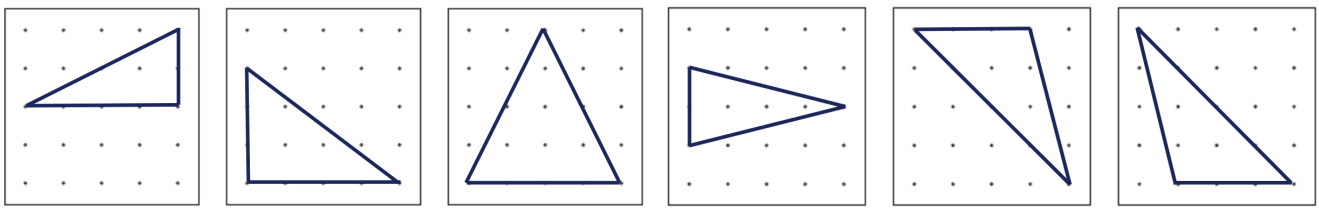
The task requires your child to place the multiples of three and four on a number line.



Some numbers occur in both the multiples of three and four. These numbers are 12, 24, 36, 48, 60, ... , and are called common multiples of three and four.

How many triangles?

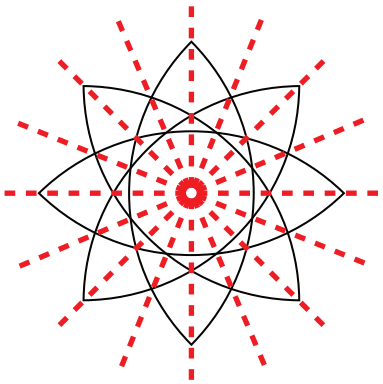
There are many different triangles that might be drawn. Here are some examples with their mathematical names:



Right angled | Also right angled | Isoceles | Also isoceles | Obtuse | Also obtuse

Lines of reflection:

If you have a small make-up mirror, using that may help to find all the lines of reflection symmetry. You can place the mirror in different places to see what works. In total the figure has eight lines of symmetry.



Too hot or too cold?

This task is based on reading a thermometer. Your child may be familiar with times where they got ill and "ran a temperature." They also may have heard of people suffering from hypothermia caused by long periods in cold water or getting caught in cold conditions when tramping or mountain climbing.

Look to see if your child can read the scale. They should be familiar with scales through using rulers. The temperatures shown are 36.5^0C and 39.2^0C. Your child may not be familiar with decimals in the form of tenths of a degree Celsius. This is a good opportunity to talk about the tenths place which is needed to show temperature with more accuracy than can be achieved with whole numbers of degrees.

Drawing a thermometer is a good way to focus attention on the structure of this measurement tool.

Pattern finding:

The figure are all equilateral triangles.
The side lengths increase by one stick each term.
It helps to organise the numbers in a table.

Pattern 1
3 sticks

Pattern 2
6 sticks

Pattern 3
9 sticks

Pattern 4
12 sticks

Pattern number	1	2	3	4	5
Number of sticks	3	6	9	12	?

The number of sticks goes up by three with each new term in the pattern. Why? Relating the increase of three to one stick being added to each side is an important structural generalization. Since 12 + 3 = 15 the next member will require 15 sticks. The sticks will be organised in an equilateral triangle with 5 sticks on each side.

Encourage your child to look for a direct rule between the pattern number and the number of sticks. Ask questions like, "How many sticks are in pattern 10? How do you know? What about pattern 100?"