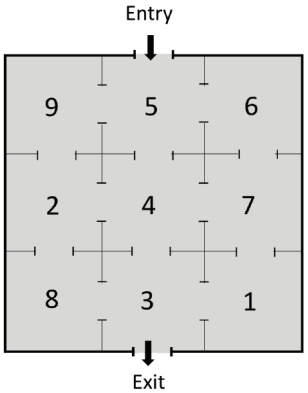
# Y3 Learning at home activity sheet #6

## Problem 1:

Find a path through the house that adds to 22.

You must go through the doorways and can only visit a room once.

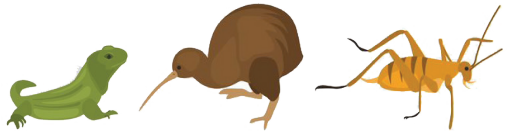
What other path totals are possible?




## Problem 2:

Three animals, tuatara, kiwi, and wētā, line up for the school bus each morning.

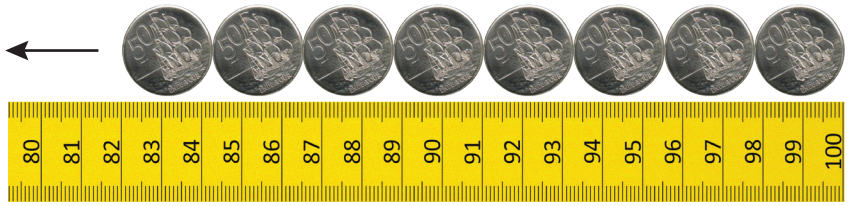
Here is one order they can line up.
How many different lineup orders can you find?



Tuatara Kiwi Wētā


## Problem 3:

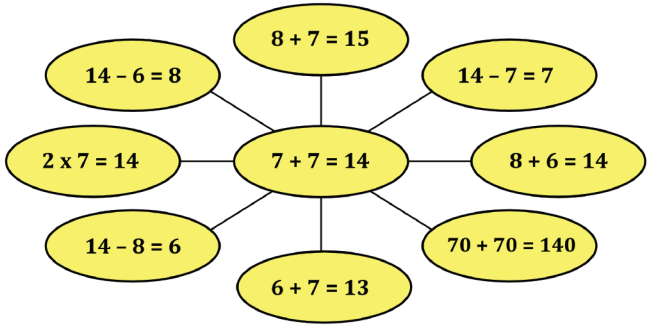
How many 50 cent coins, placed end-on-end, does it take to make one metre?



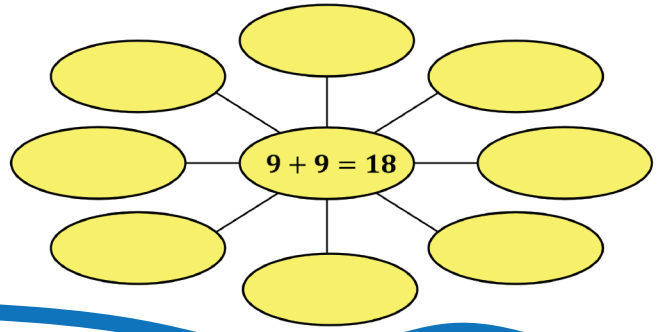

## Spider web:

You can start with one basic fact and know many other facts from it.

Here is a spider web of facts using 7 + 7 = 14.

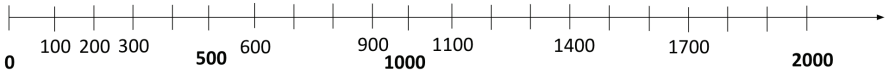


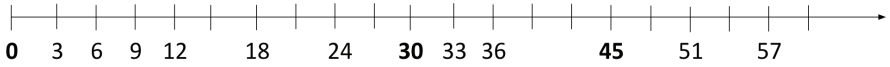

Finish this spider web for 9 + 9 = 18.




## Placing numbers:

Write the missing numbers on these number lines.

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## Looking for:

Look around your house for examples of circles. Draw pictures of the things you find that are circular.

Draw your picture of circular objects here:

## Ordering weight:

Get a collection of footware from around your home. Five or six shoes, boots, sandals, or jandals is enough.

Hold one item of footware in each hand.
Which item is heaviest? Which is lightest?

Put all your items of footware in order of weight. You will need to do lots of weighing items in your hands.

Draw the items on this line to show the order.

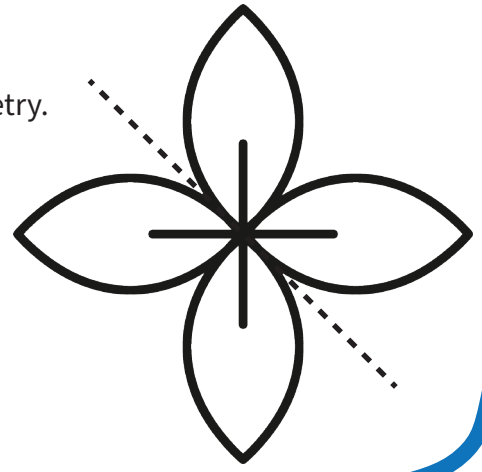
Lightest ⟷ Heaviest

## Lines of reflection:

The dotted line is a line of reflection symmetry.

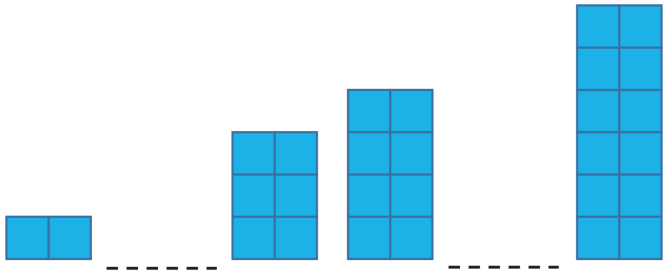
It is a place to put a mirror so the whole shape is still seen.

Draw three other lines of symmetry for this figure.



## Pattern finding:

Draw the two shapes that are missing in this pattern.



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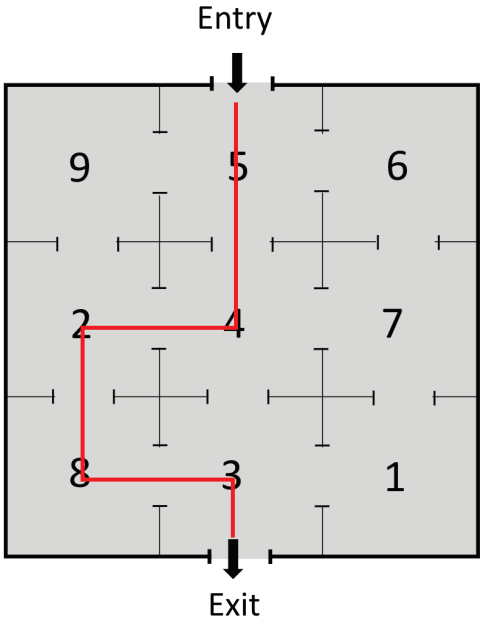
# Learning at home: Notes for whānau

*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:**




Check that your child understands the problem. They might try several routes through the house to find a total of 22. The problem is much simpler if your child recognizes that they must pass through the entry and exit rooms. The two numbers in those rooms, 5 and 3, add to 8. Since 22 – 8 = 14 they need to look for a total of 14 from the other rooms. There is only one way to get that total.

If your child is interested, you might investigate how many different totals are possible when navigating the house. These totals are all possible; 12, 20, 21, 22, 23, 25, 27,31, and 35.

**Problem 2:**

The purpose of the problem is to encourage your child to work systematically to find all the possible lineups. Your child might use objects, like toys to represent each creature. Their initial approach might be trial and error. Encourage them to record what they find. Letters might be used to make the recording easier, such as K, T, W for Kiwi, Tuatara, Wētā. The six possible line ups are (right is closest to the sign).

- Kiwi, Tuatara, Wētā
- Tuatara, Kiwi, Wētā
- Kiwi, Wētā, Tuatara
- Wētā, Kiwi, Tuatara
- Wētā, Tuatara, Kiwi
- Tuatara, Wētā, Kiwi

Encourage your child to be systematic. One strategy is to position one creature closest to the sign and find the two possible line ups of the other two creatures. Then move on to another creature being closest to the sign, then finally the third creature being closest.

**Problem 3:**

Use real 50 cent coins and a tape measure if possible. They may have to use a 30 centimetre school ruler to mark out a length of one metre. That exercise will promote discussion about the number of centimetres in one metre (100, just like 100 cents in one dollar).

Look to see that your child places the coins as units of length, end-on-end with no gaps or overlaps. Once they have placed a few coins end on end, ask for an estimation, “How many 50 cent coins do you think will fit in the whole metre?” Look for your child to map out the visible section to make an estimate. For example, they place ten 50 cent coins and that makes a length of about 25 centimetres (25cm). Ask, “How many times does that ‘unit’ fit into 100 centimetres (four)?”, “How many 50 cent coins in total will fit?” 10 + 10 + 10 + 10 = 40 coins will fit.

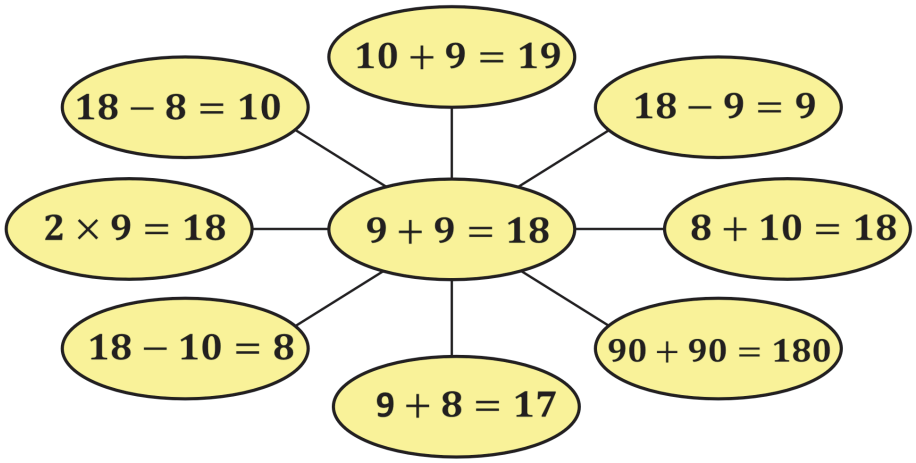
**Spider web:**

Discuss how the other facts are worked out for the 7 + 7 = 14 web. Ask questions like:

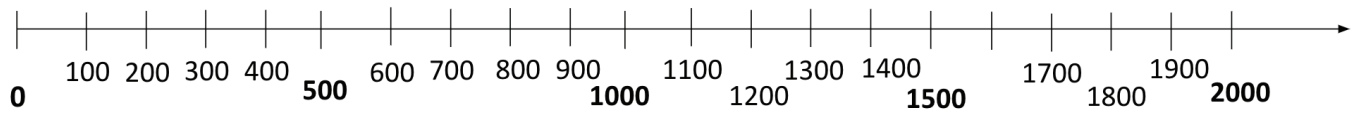
If we know 7 + 7 = 14, how do we work out 7 + 6 = ? or 8 + 7 = ?

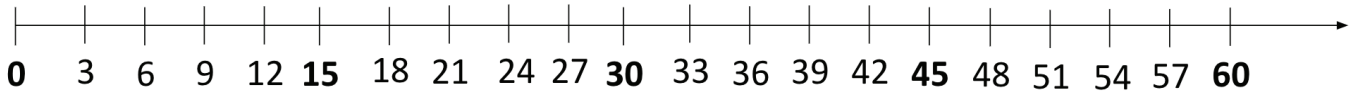
If we know 7 + 7 = 14, how do we work out 14 - 7 = ? or 14 - 6 = ?

A completed web for 6 + 6 = 12 might look like this:




**Placing numbers:**



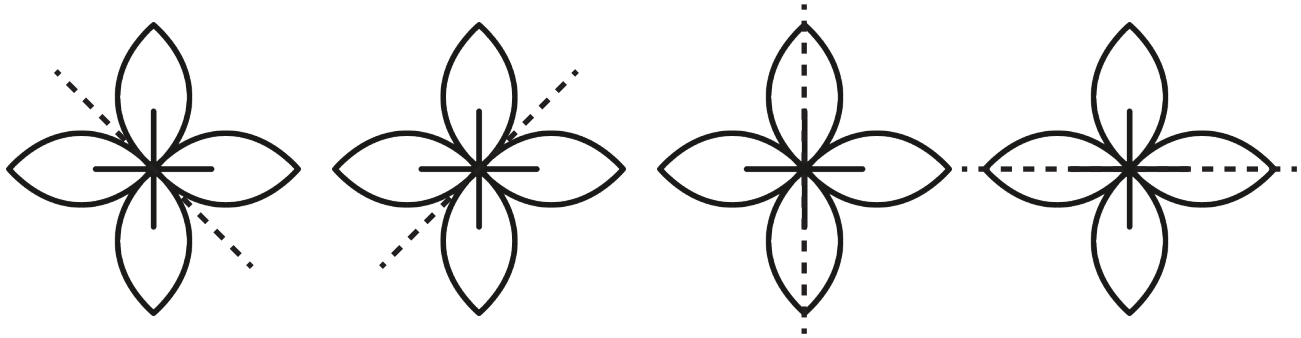



**Looking for...**

The purpose of the task is for your child to identify circles in their environment. Common articles that have circles are glasses and jars, cans, wheels, plates, and hats. Drawing the objects supports your child to represent objects, that are mostly 3 dimensional, as 2 dimensional pictures.

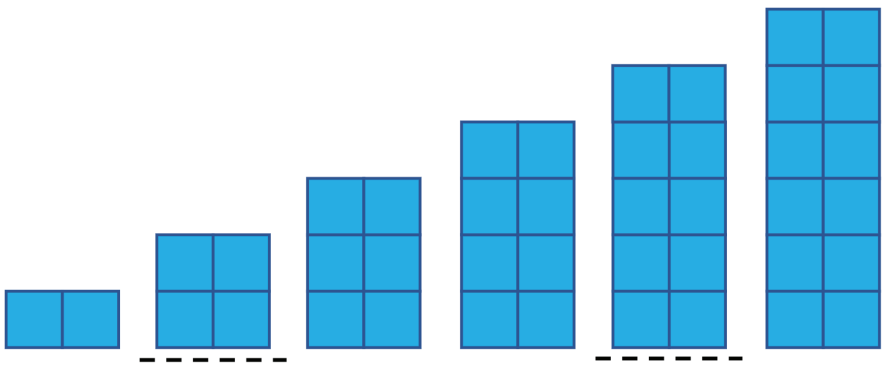
**Lines of reflection:**

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



**Pattern finding:**

Does your child notice that the number of small squares increases by two each time?



Use the pattern as a chance to work with numbers, by working out how many small squares are in each member of the pattern. That task will give the number pattern 2, 4, 6, 8, 10, 12, .. which is the sequence of even numbers.