

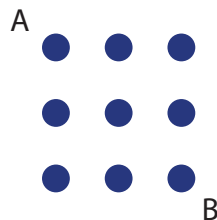
# Y5 Learning at home activity sheet #3

## Problem 1:

How long is one thousand minutes?

## Problem 2:

Brian has a pegboard with 9 pegs in a 3 by 3 square array. He also has a piece of string that he wants to put from the top left hand peg A, to the bottom right hand peg B, so that it touches all of the other pegs on the way only once.



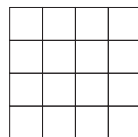
If the string is never put diagonally between the pegs, how many different ways can Brian string up his pegboard?

## Problem 3:

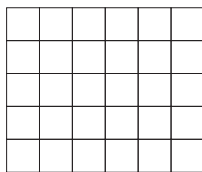
You can use four copies of this tile:



To cover this board:



Can you cover this board:



With ten copies of this tile?



## Number facts:

Cut out the cards on the attached sheet and shuffle them.

How fast can you match each equation with the correct answer?  
Try to beat your time.

## Number line challenge:

Draw a number line. Put these numbers on it. Think carefully about which numbers to put on first and how long your number line needs to be.

$$0, \frac{20}{2}, 5, 20, 30.5, 15\frac{1}{2}$$

Add the ages of members of your whānau to the number line.

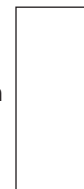
## Perimeter puzzle:

Look at this shape.

What is the perimeter (distance around the outside) of the shape?

6cm

What is the area of the shape?



2cm

Is it possible to:

- Draw a shape that has the same area and a smaller perimeter?
- Draw a shape that has the same area and a larger perimeter?
- Draw a shape that has the same perimeter and a smaller area?
- Draw a shape that has the same perimeter and a larger area?

## Quick questions:

- What is  $12 \times 5$ ?
- How many sides does a pentagon have?
- How many 5's are there in 100?
- What is  $4 \times \frac{1}{2}$ ?
- Write 0.5 as a fraction.
- Which is more,  $\frac{5}{6}$  or  $\frac{2}{3}$ ?
- What is the smallest odd number greater than 100?
- What is  $\$1.50 + 70$  cents?
- How many centimetres is 40 millimetres?
- What is  $25 + 16$ ?

# 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:

$1,000 \div 60 = 16.66$ , so 1,000 minutes = 16.66 hours

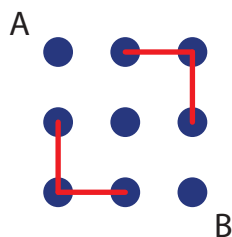
16 hours = 960 minutes, so 1000 minutes is 16 hours and 40 minutes.

## Problem 2:

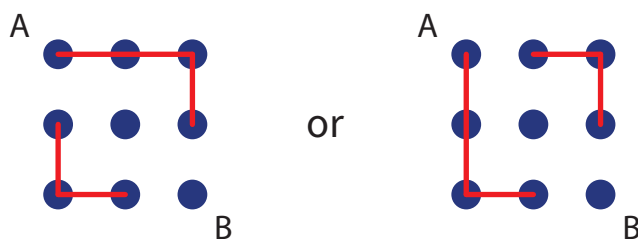
Your child should first try experimenting with ways to approach this problem. They could draw some  $3 \times 3$  arrays and try different ways to draw lines to touch all the dots.

When they have tried for a while, encourage them to think about ways they can be 'clever' about the problem.

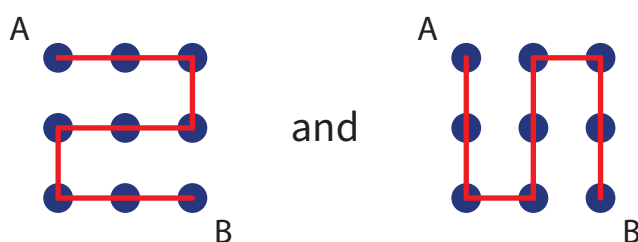
The most obvious one is to look at the corners other than A and B. The string has to go past them both, and the only way it can do so is as shown in this diagram:



Next, think about where the string can go from A to join onto one of the corners. There are only two possibilities:

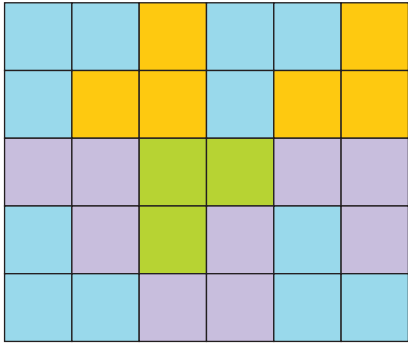


For each of those there is only one way the string can get to the other two pegs to make a single line from A to B without touching any pegs more than once. The answers are:



**Problem 3:**

The answer is that yes you can. One way to do so is shown below.

**Number line challenge:**

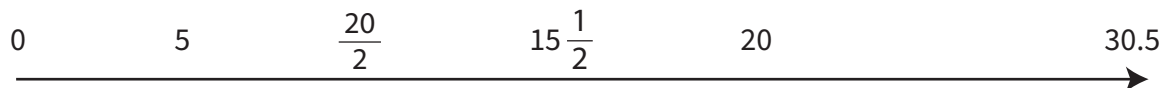
The first thing to do in creating this number line is to work out what numbers should go closest to each end. Here are the numbers to place on the line in order from smallest to largest.

$$0, \frac{20}{2}, 5, 20, 30.5, 15\frac{1}{2}$$

The smallest number is 0, and the largest number is 30.5, so put those in first.

Then work out about where each other number belongs.  $15\frac{1}{2}$  is about halfway between 0 and 30.5, so you could put that in next.

The numbers do not need to be placed exactly, but make sure they are in the right order and the spacing is reasonable. Here is a possible answer:

**Perimeter challenge:**

The perimeter of the shape can be found by adding up the lengths of its sides. There are two sides that are 6cm long and two sides that are 2cm long.  $6\text{cm} + 6\text{cm} + 2\text{cm} + 2\text{cm} = 16\text{cm}$ .

The area can be found by multiplying the rectangle's height by its width.  $6\text{cm} \times 2\text{cm} = 12\text{ cm}^2$ .

Shapes that are long and thin have a larger perimeter compared to their area, so to solve the other parts of the problem, make the shape thinner or squarer as required. Example answers are:

- A 3cm x 4cm rectangle (perimeter of 14cm and area of  $12\text{cm}^2$ .)
- A 12cm x 1cm rectangle (perimeter of 26cm and area of  $12\text{cm}^2$ .)
- A 7cm x 1cm rectangle (perimeter of 16cm and area of  $7\text{cm}^2$ .)
- A 4cm x 4cm square (perimeter of 16cm and area of  $16\text{cm}^2$ .)

**Quick questions:**

1. 60
2. 4
3. 20
4. 2
5.  $\frac{1}{2}$
6.  $\frac{5}{6}$
7. 101
8. \$2.20
9. 4
10. 41

|               |    |                |     |
|---------------|----|----------------|-----|
| $2 \times 2$  | 4  | $2 \times 3$   | 6   |
| $2 \times 4$  | 8  | $2 \times 5$   | 10  |
| $2 \times 6$  | 12 | $2 \times 7$   | 14  |
| $2 \times 8$  | 16 | $2 \times 9$   | 18  |
| $2 \times 10$ | 20 | $5 \times 3$   | 15  |
| $5 \times 4$  | 20 | $5 \times 5$   | 25  |
| $5 \times 6$  | 30 | $5 \times 7$   | 35  |
| $5 \times 8$  | 40 | $5 \times 9$   | 45  |
| $5 \times 10$ | 50 | $10 \times 3$  | 30  |
| $10 \times 4$ | 40 | $10 \times 6$  | 60  |
| $10 \times 7$ | 70 | $10 \times 8$  | 80  |
| $10 \times 9$ | 90 | $10 \times 10$ | 100 |