

# The **Working Mathematically** Process

## **When mathematicians become interested in a problem they:**

Play with the problem to collect and organise data about it.

Discuss and record notes and diagrams.

Seek and see patterns or connections in the organised data.

Make and test hypotheses based on the patterns or connections.

Look in their strategy toolbox for problem solving strategies which could help.

Look in their skill toolbox for mathematical skills which could help.

Check their answer and think about what else they can learn from it.

Publish their results.

## **Questions which help mathematicians learn more are:**

Can I check this another way?

What happens if ...?

How many solutions are there?

How will I know when I have found them all?

## When mathematicians have a problem they:

Read and understand the problem.

Plan a strategy to start the problem.

Carry out their plan.

Check the result.

## A mathematician's strategy toolbox includes:

Do I know a similar problem?

Guess, check and improve

Try a simpler problem

Write an equation

Make a list or table

Work backwards

Act it out

Draw a picture or graph

Make a model

Look for a pattern

Try all possibilities

***If trying one way doesn't work they just start again another way.***