FOCUS

The big idea is that:

All students can learn to work like a mathematician.

DIMENSIONS

There are several overlapping dimensions to this idea:

- Mathematicians learning to count.
- Mathematicians learning to reason.
- Mathematicians learning to measure.
- Mathematicians learning to make connections.
- Mathematicians learning about shape and space.
- Mathematicians learning to predict random events.
- Mathematicians learning to communicate with others.

STRUCTURES

To assist in the exploration of these dimensions we arbitrarily use structures to guide our planning.

One successful example of a structure is Maths With Attitude:

- Number & Computation
- Pattern & Algebra
- Space & Logic
- Chance & Measurement
- Teacher team selection from local best practice

Another structure (not necessarily as successful) is a sequence of text book chapters.

PROBLEM-BASED UNITS

Within any planning structure:

- We build units to draw focus to particular aspects of the dimensions.
- Often a unit includes aspects of several dimensions.
- Units bring best teaching practice into coalition with content and context.
- Therefore, to generate purpose and interest within any unit we choose both problems to explore, and pedagogy to present them, because interesting problems are the starting point for the work of all mathematicians.
- Doing so begs the question: How do mathematicians go about solving problems? which kindles yet another experience of learning to work like a mathematician.
- The problems chosen to fuel the units are presented through a balance of:
  - Whole class investigations ... modelling how a mathematician works
  - Tasks ... invitations to work independently as a mathematician
  - Tool/skill practice ... to support learner mathematicians to more effectively tackle other problems
- In Years K-8 Calculating Changes offers many activities for this purpose
- So each and every unit brings students back to the Working Mathematically Process.

The whole thing is not linear - it's a web.