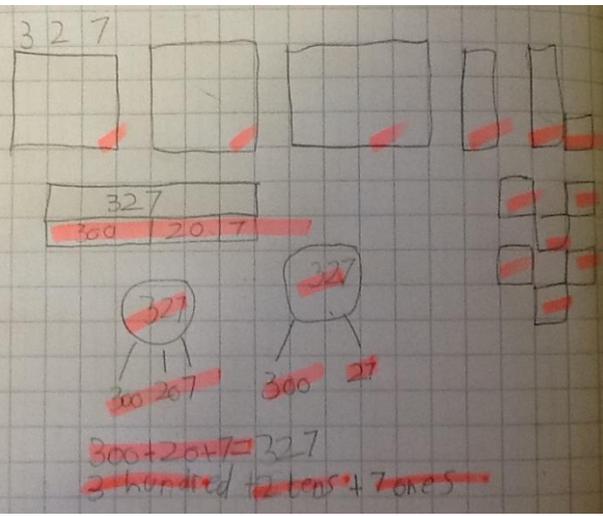# Mastery

See also – about maths at World's End

Journaling

An important aspect of teaching for mastery is encouraging the children to record their understanding of each concept via jottings in their maths journals. This work is independent. Below is an example of how different the children's work looks compared with how it used to look. Both work samples were from year 3 children who achieved a level 3 at the end of KS1.

Work Sample: September 2015	Work Sample: September 2016
A typical activity under the previous style of teaching. The same procedure repeated many times. The child was considered high attaining so was accelerated into 4 digit number.	After a lesson exploring place value, the child was asked to journal what they now understand. This child demonstrates an understanding of how to represent the number 327 as base 10, bar model, two different part whole diagrams (same value different appearance), as a number sentence and as words. There is much more evidence of a depth of understanding of place value.

Depth through multiple representations

The journals allow us to see the depth at which the children have understood the work. The class is taught together but the different depths of learning can be seen in the journaling.

A year 3 lesson – subtraction with re-grouping	
The part whole diagram shows us that this child has some understanding of the need to regroup as the first step in the calculation.	This child has a deep understanding of regrouping for subtraction and can demonstrate it in several ways.
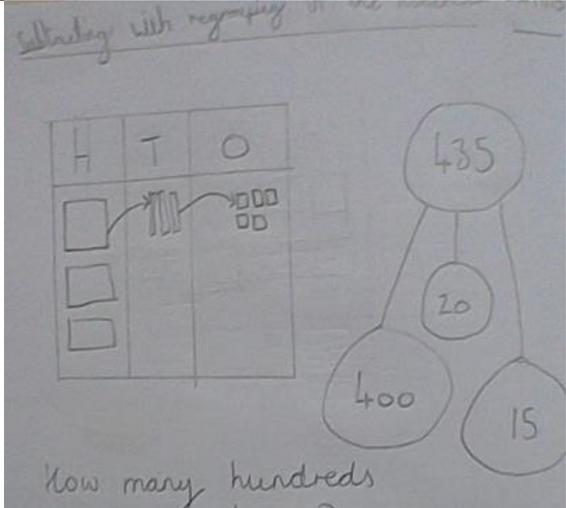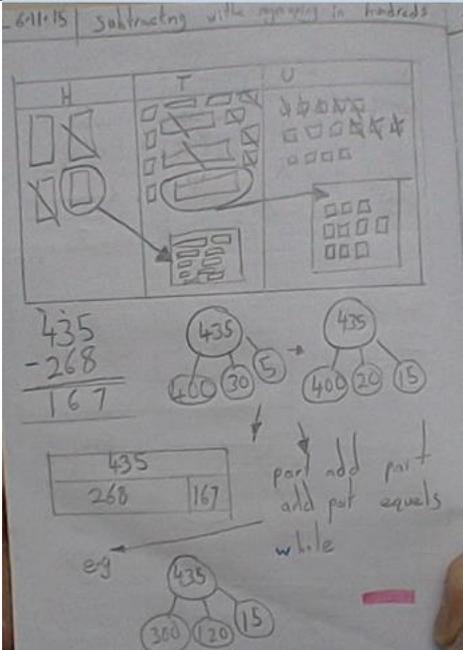
To take learning deeper, we use variation theory and the advice of Dr Yeap Ban Har, *Advisor to the Curriculum Planning and Development Division of the Ministry of Education in Singapore and Debbie Morgan (Director for Primary: NCETM)*

Less is more

To learn deeply, you must solve the same problem in lots of different ways – NOT solve lots of different problems.

KEEP CALM BECAUSE LESS IS MORE

Indicators of Advanced Ability
* physical model
* visual model
* oral explanation
* written explanation
* seek opportunities to challenge oneself

Precise Use of Mathematical Vocabulary

Precise use of mathematical vocabulary used in lessons can be seen reflected in the journals. For example, this year 3 lesson on division.