



The Wilkie Way

Newsletter March 2011

Our thoughts are with all the people of Christchurch at this time. My brother is thankfully fine although his children (and wife) are concerned about their school. Many teachers will not get this newsletter as their schools are not operational.

Our thoughts are also with **Every Educaid**, a major distributor of Wilkie Way products, based in Sydenham, Christchurch. I am sure schools will support you as a major supplier of educational products.

Have you booked your professional development for this term?

**Auckland South 8 9 March ,
Wellington 7 8 April
Christchurch or close by 5 6 April**

Teaching Maths at Level 1 – 2 (focus on basic facts, algebraic reasoning, early PV)

Teaching Maths and levels 2 - 3 (focus developing PV, teaching multiplication)

Teaching Mathematics at levels 3 – 4 (focus fractions, decimals and proportional reasoning)

Contact judith.marecek@pearsoned.co.nz to book your place

Gisborne 30 March

Getting to grips with Fractions and Decimals aimed at teachers of level 3 - 4, years 5 – 10 or any teachers wishing to improve their knowledge in this area.

Contact jenny@gisborne.net.nz to book your place

Invercargill 11 12 April

Dunedin 13 14 April

Implementing Inquiry Learning & a Problem Solving Approach – aimed at year 3 - 8

Teacher Aides supporting Teaching and Learning of Numeracy – all year levels supporting levels 1 – 3

Contact inservice@otago.ac.nz to book your place



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Is number really more important than geometry and measurement? Who says?

No one would disagree that number is required to work with measurement – measuring with units requires counting, addition, subtraction, multiplication and division of units of measure, fractions of units. Measurement is a context for using number knowledge and operations.

Measurement concept ideas begin without numbers. Quantities can be compared without assigning numerical values to them. Attributes of physical objects, while not quantities in themselves, (eg length), can be compared and ordered in the same way as numbers. The relationship between the quantities can be equal or not equal. This relationship remains unchanged if you break one or both quantities into smaller parts.



yellow + red = blue
red + yellow = blue
blue – yellow = red
blue – red = yellow

(Is anybody else recognizing the idea behind cuisinaire rods – no number associations required – the concepts are with using the attribute of length to understand the relationships?)

Geometry and Measurement provide the basis for understanding the basic ideas about relationships between quantities that underpin all understanding of number, which is an abstract way of explaining comparison relationships.

Working within the geometry and measurement strand is essential at level 1 and 2 to provide a sound concrete basis for the relationships which are abstract when applied to number. Without a sound understanding students will always be reliant on physical equipment as they do not understand the number properties (relationships) and nothing makes sense when materials are taken away. Students will be unable to make sense of images.

NZ curriculum page 26:

Mathematics is the exploration and use of patterns and relationships in quantities, space and time. Statistics is the exploration and use of patterns and relationships in data. Both equip students with effective means for investigating, interpreting, explaining and making sense of the world in which they live.

Inquiry learning????????



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Advances in algebra in the mid 20th century strongly influenced curriculum reform which resulted in a reduction in the amount of geometry included in a school curriculum to allow extra time for number and algebra. The advances in algebra meant mathematicians could use algebra to describe and model situation. It has also allowed technological advances which today in the 21st century make it possible to model situations visually or geometrically. (Global positioning, MRI scans, search and rescue equipment – etc). Spatial visualization is once again extremely important.

Spatial visualization is extremely important to humans as it allows us to use spatial intuition or perception to solve a problem which we might not see if wholly reliant on algebra. (The most powerful problem solving tool – draw a picture).

Geometry is grasping space.....The space in which a child lives, breathes and moves. Students must learn to explore and come to understand the space in which they exist.

Available evidence indicates that all types of geometric ideas appear to develop over time becoming increasingly integrated and synthesized. Overall research on teaching and learning geometry indicates that physical experience, especially the physical manipulation of shapes, is important at all ages and a wide variety of geometrical experiences are necessary in order for students to gain a firm understanding of geometrical relationships.

The NZ curriculum includes all the necessary requirements for primary geometry and measurement. If the geometry and measurement strand is effectively implemented, then students transferring to high school should have a suitable basis on which to develop their further study.

Consider what you are doing:

Schools must go beyond the Numeracy Project. There is/was no numeracy project to implement it was a professional development to enable you to better implement the NZ curriculum by designing your school mathematics programme.

How to use the numeracy project pink books in conjunction with the Pearson Mathematics in designing a school mathematics programme see

www.ncwilkinsons.com/wilkieway Free Resources: Teacher Professional Knowledge: Planning Support: Using the Numeracy Project books

Assistance with maths programmes – if you are considering in school professional development within the next couple of years **I am now taking provisional bookings for 2012 and 2013.** (I am fully booked for 2011 and partially booked for 2012.

Expressions of interest will be dealt with strictly in order of contact.

Contact charlotte@ncwilkinsons.com for further information or to make a provisional booking for services.



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Some problems to cause thinking

Ask students to draw a picture of the problem – this will help them make sense of the problem and by using intuition they are more likely to be able to begin to solve the problem.

Manu had 6 lollies. He ate 3 lollies and gave 2 lollies to his friend. His friend gave him 4 of her lollies.

How many lollies does Manu have?



Sam lived 5km away from school. Ken cycled 2km to Sam's house each day and then they cycled to and from school together each day.

How many kilometres did Sam cycle each week?

How many kilometres did Ken cycle each week?



Mr Lee left his fortune to his 3 sons, 4 daughters and his wife. Each son received twice as much as each daughter and his wife received \$6000 which was a quarter of the money.

How much did each son receive?



Jake swims 30m in the first minute. Every minute the distance swum decreases by 2m. What is the total distance swum in 5 minutes?



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