Numeracy Learning Progressions: STEP 4 capabilities

What STEP 4 *knowledge* might I *have*

What sort of things might I know?

- *that a $6.96 million prize is less than a $7 million prize*

- *that a sports crowd of 29,669 might be reported as 30,000*

- *that $1600 could be read out as 'sixteen hundred dollars' or as 'one thousand, six hundred dollars'*

- *that the decimal parts come from recognising fractions such as $\frac{3}{10}$ and $\frac{7}{10}$ and from number facts such as 3 + 7, 30 + 70, etc.*

I know that one less than a million is 999 999

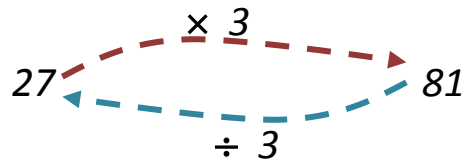I know that 0.3 is bigger than 0.25 and that $\frac{1}{7}$ is bigger than $\frac{1}{27}$

I know that 4500 is the same as 45 hundreds or 450 tens and 0.3 and 0.7 make 1 (a whole).

Which STEP 4 *strategies* might I *use?*

What sort of things might I do?

- *I could solve this with an algorithm or a calculator, <u>expecting</u> the answers to 248 + 317 as over 550 and 972 − 86 as under 890 respectively, <u>reasonably</u>*

- *I can work out that 27 $\times$ 3 = 81 by*
  - *20 $\times$ 3 plus 7 $\times$ 3 . . . ?*
  - *or recognising 9 $\times$ 9 . . . ?*
  - *or from 30 $\times$ 3 − 3 $\times$ 3 . . . ?*

- *I recognise the relationship between*

$$27 \quad \overset{\times\ 3}{\underset{\div\ 3}{\rightleftharpoons}} \quad 81$$

  so the reverse leads to 81 $\div$ 3 = 27

- *I can work out fractions like $\frac{1}{5}$ of 20g by applying 20g $\div$ 5 = 4g*

I can work out 248 + 317 and 972 - 86 .

I can work out 27 x 3 without a calculator. I can use that answer to work out 81 $\div$ 3.

I can work out $\frac{1}{5}$ of 20 grams.

Step Four Numeracy Profile

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What STEP 4 understandings
of *Space and Shape* might I have?

What sort of things might I know or do?

- *That the end of a packet of a certain brand of Swiss chocolate is an equilateral triangle since the 3 sides are equal, and so are the 3 angles*

- *From the map book in my car, I need to exit at the third off ramp, then go for about a kilometre; take the left at the first set of lights – that should be Matata Ave*

- *That 375mL of water can be added to a recipe by using $1\frac{1}{2}$ cups (since 1 cup is 250mL and $\frac{1}{2}$ cup is half of 250mL)*

- *I can pace out 20 metres on the sand so that we can play beach cricket on "our pitch" there every summer*

- *That the height of my front door is close to 2m or 2000mm*

I am confident in describing the features of plane and solid shapes

I can use instruments like kitchen scales to weigh flour in grams, and know my own weight is in kg
I know that 1000mm is the same as 100cm or 1m

I can look up a city map book and find a route from where I am to a new destination.

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What STEP 4 understandings
of *Reasoning Statistically* might I have?

What sort of things might I be doing?

- *When tossing a fair coin no matter how many times, there is always a 50% chance of getting Heads*

- *If I leave work at 4:55pm I almost always get home in 20 min; but if I leave at 5:05pm I can be on the road for at least 30 min!*

- *I check out the Consumer magazine and look at their tables for the best quality electronics and phone deals*

- *Also check the monthly electricity bill for our flat – bar graph on the back always shows how much power we use compared to other months and last year.*

- *I 'm selling my old car so I looked through the paper to check out all the same model cars like my year – I got the range of prices and worked out the median so I will list it for that price since I want to sell it within 2 weeks.*

I can work out the median and range of a set of data; and I can analyse two data sets by comparing medians and ranges

I can use tables, line graphs and bar graphs , then draw conclusions from these – i.e. Any trends, variability,, clusters, and possible reasons for these

I know about simple chance events, and can use fractions , percentages and odds to describe these

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