**Ben**

When asked to describe Ben, his teacher says:

“Ben has an eagerness to learn and he has become fully involved in our ‘maths in the supermarket’ investigation this term. He approaches problems thoughtfully, likes to be precise, and explains himself well.

His first preference, when he’s partitioning numbers to solve addition and subtraction problems, is to use a place value strategy. He’ll often first estimate the answer, and then, when the numbers are a little tricky, he’ll use some compensation to get his answer. He’s not afraid to refine and correct his estimate as he works through a problem. We’ve been exploring change unknown, start unknown and result unknown problems, and Ben is good at making sense of the different contexts and working with the numbers.

Ben is working hard to learn his multiplication facts. When he’s problem solving, he’ll often use a combination of addition and multiplication and, once again, he relies strongly on his knowledge of place value. For example when he was working out how many packets of soup there were altogether in four cartons, each with 24 packets, he knew 4 x 20 = 80, because 4 x 2 = 8, and 4 x 4 = 16 and then he added these together. When he solves division problems he also makes good use of the basic facts he knows well, especially multiples of 10. Again he partitions numbers into the bits he can work with.

Because he’s beginning to think multiplicatively, Ben’s starting to see how patterns and relationships work now. For example, just today in class, we were talking about the way supermarkets sometimes stack their products in a display, you know, wide at the bottom and narrowing the higher it gets.

Ben began writing down the numbers for each layer of the stack from the bottom up and then stopped. He drew a table and started again, explaining that this would better help him see the order and pattern of the numbers in the stack.

Ben records thoughtfully and methodically, using his recording as a way of ‘thinking as he goes’, rather than simply writing equations in a standard form. He uses symbols well to express and to explain what he is doing, and it is quite evident that he understands the notation he uses. For example, when he was doing ‘supermarket stocktaking’, he began adding groups of 8, and then he very quickly said, “Oh, I could write that as a times!” He’s careful to check that his equations finally make sense and that his ‘equals is true’. He’s quite pleased with himself too because he’s now comfortable using the division symbol.

It was interesting to see how Ben handled the products. He was so eager to name them…like with the tissue box, “This is a cuboid…it’s a 3D rectangle.” He could readily see and describe how 3D shapes are made of plane shapes. When they made their supermarket layout maps, he could describe the location of the checkout, for example, by giving a simple grid reference. Ben even included compass points for his supermarket map! And he could say whether the freezers were north or south of the deli. He really got into it.

Our measurement work was focused around supermarket products. Ben likes to be very precise when he reads scales, even those that do not have all the numbers. He gets right down so he can eyeball them, and systematically works out values by interpreting the increments. He knows most of the measurement abbreviations too. Whether he is measuring length, working out volume or weighing, he certainly knows the importance of aligning the start of a measurement with zero. He even compensated for the difference when the scales were not initially at zero! Working out perimeter was straightforward for him too, because he added the pairs of parallel sides, although he needs to be reminded that the unit of measurement here is centimetres.

Ben is still getting his head around what a statistical investigation is. He thinks of an investigation as something associated with crime! He’s quite funny. Having said that, he is methodical in carrying out data gathering, like when we surveyed people to find out how they like the aisles to be organized. We collectively discussed and posed our investigation question, but he constructed his own dot plot very carefully, he could talk about what it showed, and was certainly able answer our investigative question.

Because he is logical and thoughtful, he can spot simple errors in the presentation of others too, like if the title doesn’t make sense or if the tally marks are added wrongly. He’s very diplomatic and carefully words his suggestions for improvements. His fair-mindedness also serves him well when it comes to probability. In simple dice games he’ll speak up if he can spot that someone is more likely to get their combination of numbers than someone else. He likes things to be fair.

Ben is really enjoying maths. He’s always keen to tell me before school of the latest maths discovery he’s made at the supermarket, if he’s been there the day before with his dad.