Seedlings galore

Annotation

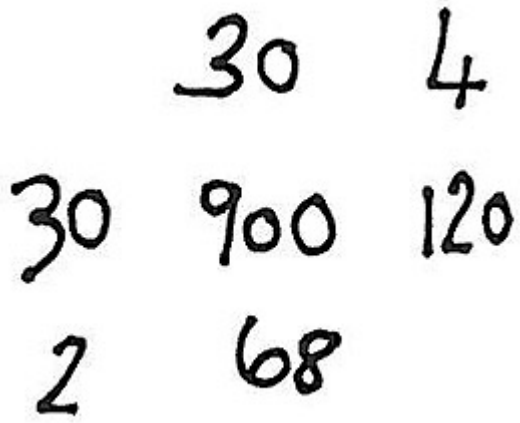
Alec solves this multi-digit problem using a cross products multiplication method, accurately combining the individual products to reach a correct solution. He achieves efficiency by combining 2 of the calculations and identifies his need to use jottings to support the mental load. He recognizes that a written algorithm would provide an alternative method but instead indicates his preference to work with full value of the factors. He checks his original estimate with the final product.

Problem: Seedlings galore

The teacher shows this problem to the student and reads it with him as required:

I buy 34 trays of seedlings with 32 in each tray. How many seedlings do I have to plant?

Student response

Alec:	You'll have 1088 seedlings to plant. You're going to be busy!
Teacher:	Tell me how you did that.
	Well I like to think what I'm aiming for so did a rough estimate of about a thousand. I find the easiest way to work with a 2-digit by 2-digit problem like this is to cross multiply, write down the four parts then put them together. So that's 30 x 30 which is 900, 4 x 30 which is 120, and actually I can do the last two bits together by just doing 2 x 34, which is 68. So that's an easy add to give me 1088. So my estimate was okay actually.
Alec:	
Teacher:	What do you know that helped you?
Alec:	I know splitting numbers like that makes multiplication easier, but I also know I can lose track of the bits so I like to jot those down. I could have done a long multiplication, which is kind of similar. But doing it this way is just as easy, and it seems to make more sense because you're kind of still working with the trays and seedlings instead of just numbers.