Task: Te Whakamārama Tangohanga

Approach:	One to one
Focus:	Explaining how to solve subtraction problems, with and without counters
Resources:	E 4 ngā ipu; 10 ngā pīni ki ia ipu; kāri tangohanga
Kupu:	

Questions / instructions:

Whakaaturia te kāri tangohanga ki te ākonga.

1. He tangohanga tēnei. 35 tangohia te 19. Whakamāramatia mai ka pēhea koe e whiriwhiri ai te otinga o tēnei tangohanga.

	% response
conventional subtraction algorithm; try to take 9 from 5, won't work ; convert one ten in top line to units; take 9 from 15, get 6; take 1 ten away from 2 remaining tens; get 10, total is therefore 16	7
vertical subtraction layout; try to take 9 from 5, won't work; add 10 units to 5 in top line; compensate by adding one ten to bottom line; subtract 9 from 15 *(units)*, get 6; subtract 2 from 3, answer is 16	11
increase 19 to 20; compensate by increasing 35 to 36; subtract 20 from 36, answer is 16	2
increase 19 to 20; subtract 20 from 35, get 15; add one, answer is 16	5
start at 19 and count up to 35	9
plan to use concrete materials; start with 35, take away 19	2
other	16

Whakatakotoria ngā ipu pīni ki mua i te ākonga.

2. Anei ētahi ipu e whā. Tekau ngā pīni kei roto i ia ipu. Whakamahia ngā pīni hei āwhina i a koe ki te whakamārama me pēhea te whiriwhiri i te otinga o te 35 tangohia te 19.

	% response
take 5 from one container; take 19 *(10 from one container, 9 from another)*; leaves one with 10, one with 1, and one with 5; either move 1 to join 5, then add 10 and 6 OR leave separate and add 10, 5, and 1	7
take 5 beans away/tip all beans out *(either order)*; count 19 beans and remove them; count the remaining beans	11
tip all beans out; count 35 from scratch; discard remaining 5; count 19 beans and remove them; count the remaining beans	39
take 5 beans from container, discard then take 19 beans from containers in haphazard fashion *(no complete 10 left)*; count beans remaining	2
take 5 beans from one container, discard; take away two complete containers; add 1 bean to 5 container from discard pile or discarded containers	2
other	7

Commentary:

Just over half of the students were able to explain a valid strategy for question 1. Eighteen percent described a vertical algorithm, seven percent described a part-whole mental strategy. In question 2, 42 percent of students modelled a counting strategy with the materials to complete the subtraction, seven percent modelled a valid part-whole strategy.