Approach: One to one   *Level:* Year 4 and year 8

Focus: Approximate calculations.

Resources: Picture of busy motorway, recording book.

Motorway
About how many cars would go down the road
in 9 minutes?

Questions/instructions

Show student photo

This picture shows a busy motorway. During the day time, about 98 cars go down this road every minute.

	% responses	
	y4	*y8*
1. About how many cars would go down the road in 9 minutes?		
882	2	18
900	4	17
any other answer between 850 and 899	5	13
2. Explain to me how you got your answer.		
multiply 98×9	31	48
multiply 100×9, then subtract 9×2	1	9
multiply 100×9, then say answer is a little less than that	2	3
multiply 100×9, then say answer is near that	4	16

Commentary

Only 48 percent of year 8 students and 11 percent of year 4 students made an accurate calculation or good approximation. In part, this was because many students tried to use the standard multiplication approach with the original numbers, rather than adjusting the 98 to 100. Only 28 percent of year 8 students and 7 percent of year 4 students used that simplification.