Consecutive Numbers

Approach:	One to one	Year:	8
Focus:	Patterns, relationships, generalisations; verifying and proving		
Resources:	Card, calculator, recording book		

Questions / instructions:

Consecutive numbers are numbers that follow each other in order, like 1, 2, 3 or 9, 10, 11.

Hand student the *Consecutive Numbers* card.

Here is a card showing some sums with three consecutive numbers. Some people say that to add three consecutive numbers, you multiply the middle number by 3.

Hand out recording book, pencil, calculator.

1. Do you think this would always happen?

	% response 2009 ('05) year 8
yes	73 (68)
no	27 (32)

Some people say that to add three consecutive numbers, you multiply the middle number by 3.

9 + 10 + 11 = 30
19 + 20 + 21 = 60
99 + 100 + 101 = 300

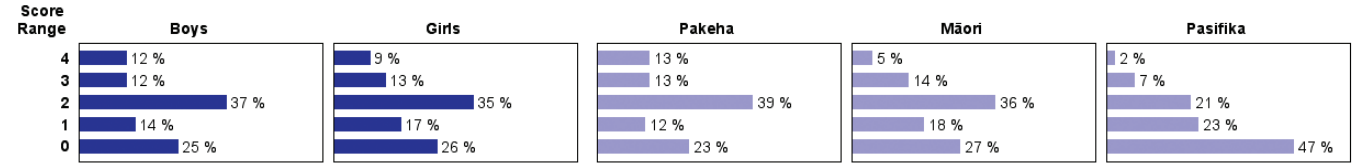
2. Explain to me why you think that.

	% response 2009 ('05) year 8
generalisation *(middle number is always 1 less than biggest number and 1 more than smallest number, so multiplying the middle number by 3 will always give the same result as adding all three numbers together)*	10 (13)
some explanation using one or more examples to justify	13 (11)
some verification *(e.g. written/oral)* but not clear	36 (34)
mathematical error justifying "no" as response to question 1	7 (15)

Total Score:	% response 2009 ('05) year 8
4	10 (13)
3	13 (11)
2	36 (34)
1	15 (11)
0	26 (31)

Subgroup Analyses:

Year 8



Commentary:

While about three quarters of the year 8 students agreed that the sum of three consecutive whole numbers will always be the same as three times the middle number, only about one quarter could clearly explain why they gave that answer. On average, Pasifika students scored substantially lower than Pakeha and Māori students.