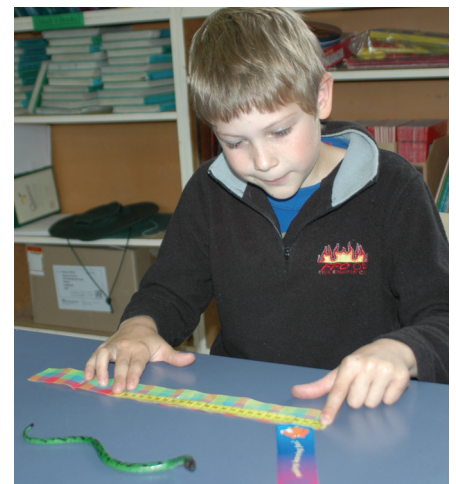


Students' attitudes, interests and liking for a subject can have a bearing on their achievement. The mathematics survey sought information from students about their curriculum preferences and perceptions of their own achievement. The questions were the same for year 4 and year 8 students. The survey was administered to the students in an independent session (four students working individually on tasks, supported by a teacher). The questions were read to year 4 students, and also to individual year 8 students who requested this help. Writing help was available if requested.

The survey included 11 items which asked students to record a rating response by circling their choice, one item which asked them to select three preferences from a list, one item which asked them to nominate up to six activities, and three items which invited them to write comments.

In the Social Studies survey, administered during the 2005 assessments, students were asked to select their three favourite school subjects from a list of 12 subjects. Full details are in the social studies report, but it is appropriate to summarise here how mathematics fared. Mathematics was second in popularity of the 14 subjects among year 4 students, chosen by 48 percent of them. Physical education and sport was slightly higher, at 53 percent, with a large gap below mathematics to the next subject at 31 percent. Mathematics was third in popularity for year 8 students, chosen by 28 percent of students, but well below the 68 percent for physical education and sport and 44 percent for technology.



Students were presented with a list of nine mathematics activities and asked to nominate up to three that they liked doing at school. The responses are shown adjacent, in percentage order for year 4 students. Comparative figures are given for 1997 and 2005, but it should be noted that four additional choices were available in 1997 and a new one was added in 2005, so the percentages are not strictly comparable.

The most notable changes from year 4 to year 8 are that "maths problems and puzzles" are substantially more popular at year 8 level, while taking maths tests is substantially less popular at year 8 level. Comparing the 1997 and 2005 results, "maths problems and puzzles" and "using equipment" have become more popular at both levels, while taking maths tests has become less popular among year 8 students.

MATHS ACTIVITIES STUDENTS LIKE DOING AT SCHOOL: [• = question not asked in that year.]	year 4	year 8
	2005 ('01) ['97]	2005 ('01) ['97]
doing maths work sheets	44 (41) [41]	35 (33) [30]
maths problems and puzzles	41 (39) [30]	58 (60) [43]
using equipment	37 (35) [21]	44 (43) [27]
work in my maths book	36 (40) [34]	27 (22) [21]
maths tests	30 (30) [23]	10 (16) [16]
using a calculator	28 (29) [31]	33 (27) [26]
maths competitions	24 (22) [18]	23 (25) [17]
using maths textbooks	16 (14) [11]	21 (17) [14]
explaining my maths ideas	9 (•) [•]	12 (•) [•]
something else	• (5) [3]	• (10) [7]

An open-ended question asked students to nominate what they considered to be some very important things a person needs to learn or do to be good at maths. They were asked to try to think of three things. Their responses were coded into eight categories and the results shown in the table adjacent are percentage totals from the sets of three ideas. If a student listed two or more ideas in the same category (such as learning addition facts and multiplication tables), only one was counted. Basic facts and tables were seen by students in both years to be most important, with several other factors given fairly equal importance.

A second open-ended question asked students, "What are some interesting maths things you do in your own time?" Their responses were coded into seven categories, and the results shown in the table are percentage totals, out of those students who responded. Year 4 students placed more emphasis on basic facts and tables, while year 8 students made more diverse choices. The emphasis on basic facts and tables among year 4 students declined dramatically between 2001 and 2005.

The third open-ended question asked, "If you have something really hard to do in maths, what do you do?" Students' responses were coded into seven categories, and the results shown in the table are percentage totals, out of those students who responded. Year 8 students were more inclined to ask for help, particularly from a teacher. There is an apparent shift for year 4 students, between 2001 and 2005, away from "ask a teacher".



### Rating Items

Responses to the 11 rating items are presented in separate tables on the following page for year 4 and year 8 students.

The student responses to the rating items showed the pattern found to date in all subjects except technology: year 8 students are less likely to use the most positive rating than year 4 students. In other words, students become more cautious about expressing high enthusiasm and self-confidence over the four additional years of schooling. It is also clear, however, that about 10 percent more year 8 than year

### IMPORTANT FOR LEARNING AND BEING GOOD AT MATHS:

Factors nominated by students as being very important for learning maths or for being very good at maths.

	y4	y8
basic facts and tables	43	53
classroom behaviours (seeking help, discussing with others, paying attention)	24	15
work skills (practise, study, revision, homework)	21	18
personal attributes (good attitudes, concentration, focus, enjoyment)	18	23
maths knowledge (algebra, money, percentages, use of calculators, etc.)	14	23
intelligence (thinking, being brainy, being smart, being able to understand)	17	15
skills and abilities in related subjects (reading, writing)	7	7
problem-solving skills	3	9

### MATHS ACTIVITIES STUDENTS DO IN THEIR OWN TIME:

	year 4 2005 ('01)	year 8 2005 ('01)
basic facts and tables	36 (56)	20 (21)
puzzles, quizzes and games	25 (23)	23 (24)
maths homework	8 (7)	9 (10)
math skills (excluding basic facts)	14 (9)	16 (25)
life skills maths (counting money, banking, calculating animal feed, fencing for paddocks, etc.)	3 (3)	12 (15)
none	7 (8)	18 (16)
other	16 (8)	14 (12)

### STRATEGIES STUDENTS USE WHEN THEY HAVE SOMETHING IN MATHS THAT IS VERY HARD TO DO:













	year 4 2005 ('01)	year 8 2005 ('01)
ask a teacher	18 (31)	33 (42)
try harder; persevere	31 (33)	31 (24)
ask for help (no specific people indicated)	21 (16)	31 (25)
ask family/friends for help	10 (6)	18 (22)
quit/nothing	11 (8)	10 (4)
guess	1 (3)	1 (1)
other	21 (10)	12 (9)

4 students have distinctly negative views about studying mathematics in school and their own capabilities, while 33 percent more year 8 than year 4 students are negative about doing maths in their own time. These patterns have stayed quite consistent from the first survey in 1997 to the 2005 survey. Over the same period, there have been worthwhile reductions, at both

year levels but especially year 8, in the percentages of students who said that they didn't know how good their parents thought they were at maths, or how good their teacher thought they were at maths. There is considerable scope for further reduction in the percentage of students who do not know what their teacher thinks about their mathematical capabilities.













## YEAR 4 MATHEMATICS 2005 (2001) [1997]

[\* = question not asked in that year]

	<i>more</i>	<i>about the same</i>	<i>less</i>	
1. Would you like to do more, the same or less maths at school?	37 (38) [36]	41 (39) [46]	22 (23) [18]	
				
2. How much do you like doing maths at school?	50 (51) [52]	34 (30) [31]	10 (10) [10]	6 (9) [7]
3. How good do you think you are at maths?	33 (41) [40]	55 (45) [46]	8 (10) [11]	4 (4) [3]
				 <b>don't know</b>
4. How good does your teacher think you are at maths?	39 (46) [37]	30 (25) [29]	6 (5) [5]	1 (1) [1]      24 (23) [28]
5. How good does your Mum or Dad think you are at maths?	63 (65) [60]	21 (15) [19]	4 (4) [3]	2 (1) [1]      10 (15) [16]
				
6. How much do you like doing maths on your own?	50 (53) [*]	26 (23) [*]	14 (14) [*]	10 (10) [*]
7. How much do you like doing maths with others?	59 (55) [*]	25 (27) [*]	7 (9) [*]	7 (9) [*]
8. How much do you like helping others with their maths?	60 (56) [*]	22 (25) [*]	9 (9) [*]	9 (10) [*]
9. How do you feel about doing things in maths you haven't tried before?	47 (47) [39]	31 (28) [35]	14 (15) [20]	8 (10) [6]
10. How much do you like doing maths in your own time (not at school)?	40 (37) [41]	26 (23) [26]	14 (16) [14]	20 (24) [19]
11. How do you feel about learning or doing maths as you get older?	64 (*) [*]	24 (*) [*]	6 (*) [*]	6 (*) [*]

## YEAR 8 MATHEMATICS 2005 (2001) [1997]

[\* = question not asked in that year]

	<i>more</i>	<i>about the same</i>	<i>less</i>	
1. Would you like to do more, the same or less maths at school?	14 (13) [14]	59 (59) [63]	27 (28) [23]	
				
2. How much do you like doing maths at school?	25 (26) [25]	48 (40) [49]	19 (23) [18]	8 (11) [8]
3. How good do you think you are at maths?	23 (22) [14]	56 (58) [60]	16 (16) [22]	5 (4) [4]
				 <b>don't know</b>
4. How good does your teacher think you are at maths?	20 (20) [15]	39 (34) [36]	8 (10) [6]	3 (3) [2]      30 (33) [41]
5. How good does your Mum or Dad think you are at maths?	31 (35) [26]	43 (32) [39]	10 (7) [9]	2 (1) [2]      14 (25) [24]
				
6. How much do you like doing maths on your own?	26 (23) [*]	38 (42) [*]	22 (21) [*]	14 (14) [*]
7. How much do you like doing maths with others?	46 (49) [*]	37 (34) [*]	14 (11) [*]	3 (6) [*]
8. How much do you like helping others with their maths?	33 (30) [*]	38 (40) [*]	21 (20) [*]	8 (10) [*]
9. How do you feel about doing things in maths you haven't tried before?	32 (33) [26]	45 (38) [46]	17 (21) [22]	6 (8) [6]
10. How much do you like doing maths in your own time (not at school)?	11 (9) [13]	22 (22) [28]	31 (33) [33]	36 (36) [26]
11. How do you feel about learning or doing maths as you get older?	32 (*) [*]	50 (*) [*]	14 (*) [*]	4 (*) [*]