

Students' attitudes, interests and liking for a subject have a strong 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 tasks 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 eight 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 four items which invited them to write comments.




Subject Preferences

The students were first asked to select their three favourite school subjects from a list of twelve subjects. Among the year 4 students, art was the most popular subject, listed as first, second or third choice by 70 percent of year 4 students. Physical education came second (46 percent), mathematics third (41 percent), reading fourth (29 percent), music fifth (28 percent). Among the year 8 students, physical education was first (61 percent), art second (40 percent), mathematics third (34 percent), technology fourth (29 percent) and science fifth (23 percent).




Rating Items

Responses to the eight rating items are presented in separate tables for year 4 and year 8 students. The results show that, compared to year 4 students, fewer year 8 students were highly positive about doing mathematics at school, or highly positive about wanting to spend more time on mathematics at school. Year 8 students were also markedly less positive about their own abilities in mathematics than year 4 students, and less likely to think that their parents and teachers viewed their mathematical abilities favourably. Furthermore, higher percentages of year 8 than year 4 students said they didn't know how good their teachers and parents rated their abilities in mathematics. Over two-thirds of both year 4 and year 8 students indicated confidence about doing mathematics they haven't attempted before, and higher percentages of year 4 than year 8 students said they liked doing mathematics in their own time out of school.

YEAR 4 MATHEMATICS SURVEY

| | | | | |
|--|---|---|---|-------------------|
| 1. Would you like to do more maths or less maths at school? | <i>more</i> 36 | <i>about the same</i> 46 | <i>less</i> 18 | |
| |  |  |  | <i>don't know</i> |
| 2. How much do you like doing maths at school? | 52 | 31 | 10 | 7 |
| 3. How good do you think you are at maths? | 40 | 46 | 11 | 3 |
| 4. How good does your teacher think you are at maths? | 37 | 29 | 5 | 1 28 |
| 5. How good does your Mum or Dad think you are at maths? | 60 | 19 | 3 | 1 16 |
| 6. How do you feel about doing things in maths you haven't tried before? | 39 | 35 | 20 | 6 |
| 7. How much do you like doing maths in your own time (not at school)? | 41 | 26 | 14 | 19 |
| 8. Do you want to keep learning maths when you grow up? | <i>yes</i> 54 | <i>maybe/not sure</i> 41 | <i>no</i> 5 | |

YEAR 8 MATHEMATICS SURVEY

| | | | | |
|--|---|--|---|-------------------|
| 1. Would you like to do more maths or less maths at school? | <i>more</i> 14 | <i>about the same</i> 63 | <i>less</i> 23 | |
| |  |  |  | <i>don't know</i> |
| 2. How much do you like doing maths at school? | 25 | 49 | 18 | 8 |
| 3. How good do you think you are at maths? | 4 | 22 | 60 | 14 |
| 4. How good does your teacher think you are at maths? | 15 | 36 | 6 | 2 41 |
| 5. How good does your Mum or Dad think you are at maths? | 26 | 39 | 9 | 2 24 |
| 6. How do you feel about doing things in maths you haven't tried before? | 26 | 46 | 22 | 6 |
| 7. How much do you like doing maths in your own time (not at school)? | 13 | 28 | 33 | 26 |
| 8. Do you want to keep learning maths when you grow up? | <i>yes</i> 43 | <i>maybe/not sure</i> 53 | <i>no</i> 4 | |

Students were presented with a list of twelve mathematics activities and asked to nominate up to three that they liked doing at school and up to three that they did not like doing at school.

| Maths activities at school | LIKED | | DISLIKED | |
|---------------------------------|-------------|----|-------------|----|
| | % responses | | % responses | |
| | y4 | y8 | y4 | y8 |
| doing math work sheets | 41 | 30 | 11 | 18 |
| work in my maths book | 34 | 21 | 22 | 23 |
| using a calculator | 31 | 26 | 17 | 19 |
| maths problems and puzzles | 30 | 43 | 17 | 10 |
| maths tests | 23 | 16 | 29 | 45 |
| using equipment | 21 | 27 | 14 | 7 |
| maths competitions | 18 | 17 | 22 | 25 |
| helping others with their maths | 16 | 8 | 11 | 9 |
| doing maths with others | 14 | 32 | 12 | 5 |
| doing maths in my own time | 14 | 8 | 18 | 18 |
| using maths textbooks | 11 | 14 | 29 | 31 |
| talking to others about maths | 6 | 10 | 14 | 10 |
| something else | 3 | 7 | 4 | 3 |

An open-ended question asked students to write up to three things they are good at in maths, and up to three things they have trouble with. Because some students nominated two or three things that were coded into the same category (e.g. addition, subtraction and multiplication tables) the percentage can exceed 100.

| What students feel they are good at; what gives them trouble. | GOOD | | TROUBLESOME | |
|--|-------------|----|-------------|----|
| | % responses | | % responses | |
| | y4 | y8 | y4 | y8 |
| Basic facts and tables | 173 | 83 | 74 | 41 |
| Class work worksheets, textbooks, games, puzzles, revision | 30 | 18 | 21 | 12 |
| Number fractions, decimals, percentages, integers including long division | 8 | 15 | 6 | 45 |
| Problem solving | 6 | 20 | 4 | 10 |
| Measurement metrics, time, money, area, volume | 4 | 6 | 5 | 5 |
| Algebra and statistics graphs, patterns | 3 | 12 | 2 | 7 |
| Working with others group work; doing what the teacher says | 3 | 7 | 4 | 3 |
| Geometry angles, shapes | 1 | 8 | 1 | 5 |
| Other | 22 | 13 | 16 | 14 |

A second 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 nine categories and the results shown in the table are percentage totals from the sets of three ideas. Because some students nominated two or three things that were coded into the same category (e.g. practising addition, subtraction and multiplication) the percentage can exceed 100.

| Students views on what is important for learning or being good at maths | | % responses | |
|--|---|-------------|----|
| | | y4 | y8 |
| Basic facts and tables | | 102 | 67 |
| Classroom behaviours | seeking help, discussing with others, paying attention | 26 | 22 |
| Work skills | practise, study, revision, homework | 26 | 17 |
| Personal attributes | good attitudes, concentration, focus, enjoyment | 24 | 26 |
| Maths knowledge | algebra, money, percentages, use of calculators, etc | 13 | 14 |
| Intelligence | thinking, being brainy, being smart, being able to understand | 4 | 3 |
| Skills and abilities in related subjects | reading, writing | 8 | 2 |
| Problem solving skills | | 2 | 6 |
| Other factors | | 22 | 11 |

A third 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.

| Maths activities students do in their own time | | |
|---|---|-------|
| | basic facts and tables | 38 18 |
| | puzzles, quizzes and games | 26 20 |
| | maths homework | 12 9 |
| | math skills (excluding basic facts) | 7 5 |
| | life skill maths (counting money, banking, calculating animal feed, fencing for paddocks, etc.) | 4 13 |
| | none | 4 9 |
| | other | 8 15 |

The fourth 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.

| Strategies when the maths is hard | | |
|--|---|-------|
| | ask a teacher | 39 33 |
| | try harder; persevere | 21 30 |
| | ask for help (no specific people indicated) | 16 21 |
| | ask family/friends for help | 11 10 |
| | quit | 6 6 |
| | guess | 1 2 |
| | other | 6 10 |