Although national monitoring has been designed primarily to present an overall national picture of student achievement, there is some provision for reporting on performance differences among subgroups of the sample. Nine demographic variables are available for creating subgroups, with students divided into two or three subgroups on each variable, as detailed in Chapter 1 (p8).

The analyses of the relative performance of subgroups used an overall score for each task, created by adding scores for the most important components of the task.

Where only two subgroups were compared, differences in task performance between the two subgroups were checked for statistical significance using t-tests. Where three subgroups were compared, one way analysis of variance was used to check for statistically significant differences among the three subgroups.

Because the number of students included in each analysis was quite large (approximately 450), the statistical tests were quite sensitive to small differences. To reduce the likelihood of attention being drawn to unimportant differences, the critical level for statistical significance was set at $\mathrm{p}=.01$ (so that differences this large or larger among the subgroups would not be expected by chance in more than one percent of cases). The critical level was adjusted to $\mathrm{p}=.05$ for the two tasks where differences in team performance among 120 teams were being examined.
For the first four of the nine demographic variables, few statistically significant differences among the subgroups were found. For the remaining five variables, statistically significant differences were found on substantial numbers of tasks. Details are presented below.

## Zone

Results achieved by students from Auckland, the rest of the North Island, and the South Island were compared.
For year 8 students, there were no statistically significant differences among the three subgroups on any of the fourteen reading tasks, but there were statistically significant differences on five of the twelve speaking tasks. Students from the South Island scored highest on Bike accident (p45), students from Auckland scored highest on Link task 6 (p57) but lowest on Link task 5 (p48) and Link task 9 (p57), and students from elsewhere in the North Island scored lowest on Sticky situations (p55). There was also a statistically significant difference among the three subgroups on one question of the Reading survey (p61). In response to question 18, Auckland students were most positive and students from elsewhere in the North Island least positive about being asked to read aloud to their class. There were no statistically significant differences among the three subgroups on questions of the Speaking survey.

For year 4 students, there was a statistically significant difference among the three subgroups on only one of the twenty-six tasks. Students from Auckland scored highest and students from elsewhere in the North Island scored lowest on Pet pals (p35). There were no statistically significant differences among the three subgroups on questions of the Reading survey or Speaking survey.

## Community Size

Results were compared for students living in communities containing over 100,000 people (main centres), communities containing 10,000 to 100,000 people (provincial cities), and communities containing less than 10,000 people (rural areas).

For year 8 students, there were statistically significant differences among the three subgroups on one of the fourteen reading tasks and three of the twelve speaking tasks. Students from main centres scored highest on Sticky situations (p55) and Choosing a book for the class library (p38), students from rural areas scored highest on Link task 9 (p57), and students from provincial cities scored lowest on Link task 6 (p57). There were no statistically significant differences on questions of the Reading survey or Speaking survey.

For year 4 students, there was a statistically significant difference among the three subgroups on only one of the twenty-six tasks. Students from the main centres scored lowest on Nils \& Nelli (p50). There were no statistically significant differences among the three subgroups on questions of the Reading survey or Speaking survey.

## School Size

## School Type

Results were compared from students in larger, medium sized, and small schools (exact definitions were given in Chapter 1,p8).
For both year 4 and year 8 students, there were no statistically significant differences among the three subgroups on any of the tasks or on any questions of the Reading survey and Speaking survey.

Results were compared for year 8 students attending full primary schools and year 8 students attending intermediate schools. No statistically significant difference between the two subgroups was found for any of the tasks or on any questions of the Reading survey and Speaking survey.

## Gender

Results achieved by male and female students were compared.
For year 8 students, there were statistically significant differences between boys and girls on nine of the fourteen reading tasks and one of eleven speaking tasks. Girls scored higher than boys in all cases. Because of the large number of tasks involved, they will not be listed here. On the Reading survey ( p 61 ), there were statistically significant differences between boys and girls on five questions, with girls higher in each case. Girls reported greater enjoyment of reading at school (question 1), judged themselves to be better readers (question 2), reported greater enjoyment of reading in their own time (questions 5 and 10), and listed more books that they had read during 1996 (question 8). On the Speaking survey (p63), there was a statistically significant difference between boys and girls on one question. In response to question 2 , girls reported greater enjoyment of talking to a group in class.

For year 4 students, there were statistically significant differences between boys and girls on seven of the fourteen reading tasks and four of eleven speaking tasks. Girls scored higher than boys in all cases. Because of the large number of tasks involved, they will not be listed here. Girls also gave higher ratings than boys on four questions of the Reading survey ( p 60 ). They reported greater enjoyment of reading in their own time (questions 5 and 10), and greater enjoyment of reading aloud to the teacher (question 17) or class (question 18). There were no statistically significant differences between boys and girls on questions of the Speaking survey.

## Socio-Economic Index

Schools are categorised by the Ministry of Education based on census data for the census mesh blocks where children attending the schools live. The SES index takes into account household income levels, categories of employment, and the ethnic mix in the census mesh blocks. The SES index uses ten subdivisions, each containing ten percent of schools (deciles 1 to 10). For our purposes, the bottom three deciles (1-3) formed the low SES group, the middle four deciles (4-7) formed the medium SES group, and the
top three deciles (8-10) formed the high SES group. Results were compared for students attending schools in each of these three SES groups.
For year 8 students, there were statistically significant differences among the three subgroups on thirteen of the fourteen reading tasks and eight of the twelve speaking tasks. Because of the number of tasks, the specific tasks will not be listed here. In each case, performance was lowest for students in the low SES group. Students in the high SES group generally performed better than students in the medium SES group, but in many cases these differences were small. On the Reading survey (p61), there was a statistically significant difference on one question: students from low SES schools reported greater enjoyment of the stories/books they read as part of their reading programme at school (question 13). There were no statistically significant differences among the three subgroups on questions of the Speaking survey.

For year 4 students, there were statistically significant differences among the three subgroups on ten of the fourteen reading tasks and nine of the twelve speaking tasks. In each case, performance was lowest for students in the low SES group. Because of the number of tasks, the specific tasks will not be listed here. Students in the high SES group generally performed better than students in the medium SES group, but in many cases these differences were small. There was also a statistically significant difference on one question of the Reading survey (p60), with students from low SES schools reporting greater enjoyment of reading in a group in the classroom (question 16). There were no statistically significant differences among the three subgroups on questions of the Speaking survey.

## Student Ethnicity

Results achieved by Māori and non-Māori students were compared. This was only possible for fourteen of the twenty-six tasks at each level, because it was not possible to identify ethnicity in cases where tasks were performed by teams or by individuals within teams.

For year 8 students, there were statistically significant differences of performance between Māori and non-Māori students on six of the ten reading tasks and two of the four speaking tasks. Because of the number of tasks, the specific tasks will not be listed here. In each case, non-Mãori students scored higher than Māori students. There were also statistically significant differences between Māori and non-Māori students on two questions of the Reading survey (p61), with Māori students reporting lower levels of reading in their own time (question 5) but higher enjoyment of reading in a group in the classroom (question 16). There were no statistically significant differences on questions of the Speaking survey.

For year 4 students, there were statistically significant differences in performance on all ten reading tasks and one of the four speaking tasks. Māori students scored lower than non-Māori students in all cases. There were no statistically significant differences between Māori and non-Māori students on questions of the Reading survey, but Māori students gave lower ratings on one question of the Speaking survey ( p 63 ), reporting fewer opportunities to talk to others in their class (question 4).

## Proportion of Mā ori Students in Schools

Schools were categorised into three subgroups: schools with less than 10 percent Māori students, schools with 10 to 30 percent Māori students, and schools with more than 30 percent Māori students. Results were compared for students attending schools in these three categories.
For year 8 students, statistically significant differences in performance between the three subgroups were found on nine of the fourteen reading tasks and seven of the twelve speaking tasks. In each case, students attending schools with less than ten percent Māori students scored highest, with
generally smaller differences between the other two subgroups. There were no statistically significant differences on questions of the Reading survey or Speaking survey.
For year 4 students, statistically significant differences in performance between the three subgroups were found on ten of the fourteen reading tasks and nine of the twelve speaking tasks. In each case, students attending schools with less than ten percent Māori students scored highest and students attending schools with more than thirty percent of Māori students scored lowest. There was also a statistically significant difference on one question of the Reading survey (p60), with students from low SES schools reporting greater enjoyment of reading in a group in the classroom (question 16). There were no statistically significant differences on questions of the Speaking survey.

## Proportion of Pacific Island Students in Schools

Because most of the Pacific Island students are concentrated into relatively few schools, it was difficult to create sensible subgroups for schools with higher or lower percentages of Pacific Island students. Two subgroups were formed: students attending schools with up to 5 percent Pacific Island students, and students attending schools with more than 5 percent Pacific Island students. Results were compared for students in these two subgroups.
For year 8 students, statistically significant differences in performance between the two subgroups were found on seven of the fourteen reading tasks and seven of the twelve speaking tasks. In each case, students attending schools with more than five percent of Pacific Island students scored lower. There was also a statistically significant difference on one question of the Reading survey ( p 61 ), with students from schools with more than five percent Pacific Island students listing fewer books read during 1996 (question 8). There were no statistically significant differences on questions of the Speaking survey.
For year 4 students, statistically significant differences in performance between the three subgroups were found on six of the fourteen reading tasks and three of the twelve speaking tasks. In each case, students attending schools with more than five percent of Pacific Island students scored lower. There was also a statistically significant difference on one question of the Reading survey ( p 60 ), with students from low SES schools reporting greater enjoyment of reading in a group in the classroom (question 16). There were no statistically significant differences on questions of the Speaking survey.

## Summary

No statistically significant differences were found for subgroups based on school size or school type, and only a few differences were found for subgroups based on geographic zone or community size. Girls at both year levels performed better than boys on most reading tasks, and also gave higher ratings on several questions of the reading survey. Non-Māori students performed better than Māori students on all ten reading tasks at year 4 level and six of ten reading tasks at year 8 level. The three variables relating to school ethnic composition and school socio-economic index are linked to each other, and present a similar picture. There were statistically significant differences between the three subgroups based on the socio-economic index for 70 to 80 percent of the tasks at both year levels. Given the importance of reading in other aspects of the school curriculum and in life in our community, these patterns must be of concern. They are more extreme for reading than for any other area assessed in the 1995 and 1996 assessments. It is encouraging, however, to note that in most cases poor performance on tasks was not accompanied by negative attitudes to reading and speaking activities in school and beyond.

