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# Class 6 girls and boys in Afghanistan 2013 : comparing outcomes of girls and boys from a learning assessment of mathematical, reading and writing literacy

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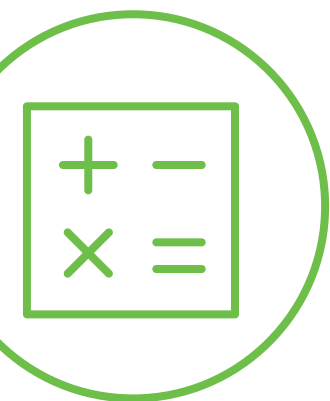
MONITORING TRENDS IN  
EDUCATIONAL GROWTH

# CLASS 6 GIRLS AND BOYS IN AFGHANISTAN 2013

COMPARING OUTCOMES OF GIRLS  
AND BOYS FROM A LEARNING  
ASSESSMENT OF MATHEMATICAL,  
READING AND WRITING LITERACY

Australian Council for Educational Research





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READING AND WRITING LITERACY



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This report has been prepared for the  
Ministry of Education, Islamic Republic of Afghanistan.



## Ministry of Education

Islamic Republic of Afghanistan

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# Overview

## Background

In 2012, the Ministry of Education, Afghanistan, engaged the Australian Council for Educational Research (ACER) as a partner to support the development of a national learning assessment program in Afghanistan. To achieve this goal, the Learning Assessment Unit of the Ministry of Education and ACER collaborated to design and implement the Monitoring Trends in Educational Growth (MTEG) program in Afghanistan.

MTEG is designed as a long-term monitoring program with one focus on trends in achievement outcomes in single classes over time, and another focus on the growth of achievement in cohorts throughout the school cycle, from Class 3 through to Class 9.

The Afghan Ministry of Education's curriculum goals speak of students' learning skills such as 'reading and writing, using numbers', and of utilising those skills to support 'thinking, reasoning, study, research, diagnosis and innovation in academic, literary, cultural and technical contexts' and in the 'solving and identification [of] individual and social

problems' (Afghanistan Ministry of Education, 1390 [2011], pp. 116-117). These goals are reflected in MTEG's literacy approach to the assessment of mathematics, reading and writing. The term literacy denotes the ability to apply knowledge, skills and understanding across a range of contexts, both within school and in extra-curricular settings. Rather than limiting its focus to set topics laid out in a curriculum, in MTEG the domains of mathematics, reading and writing are assessed through tasks that require *authentic use of knowledge* (Turner, 2014). Similarly, the *Afghanistan Education Curriculum* highlights the importance of being able to 'use the acquired knowledge and skills in solving daily problems' at Class 6 level (Afghanistan Ministry of Education, 1390 [2011], pp. 116-117). The literacy orientation underpins an approach that is both curricular and cross-curricular. The assumptions behind a literacy approach to assessment are explained in more detail in *An Assessment Framework for Monitoring Trends in Educational Growth* (ACER, in press).

### Exhibit 1: Educational Goals of the Afghanistan Education Curriculum



Acquiring and strengthening the learning skills [of] listening, speaking, reading and writing, using numbers and calligraphy in national and foreign languages.



Promoting and strengthening the abilities of thinking, reasoning, study, research, diagnosis and innovation in academic, literary, cultural and technical contexts.



Gaining skills for solving and identification [of] individual and social problems.

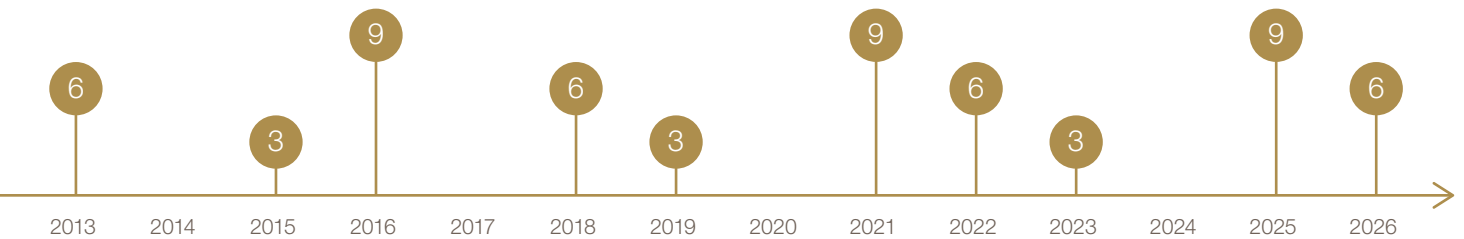
(Afghanistan Ministry of Education, 1390 [2011], pp. 30)



As can be seen from the MTEG assessment schedule below, the first assessment of Class 6 students took place in 2013. In 2018, another assessment of Class 6 students is planned which will measure the trend in Class 6 achievement over time. In addition to measuring class achievement, as Exhibit 2 shows, growth in achievement is measured by testing the same cohort as it progresses through the classes: the cohort tested in Class 3 in 2015 will be the same cohort tested in Class 6 in 2018, and again in Class 9 in 2021. Thus, the design of the program allows for conclusions to be drawn about changes in the achievement of Class 6 students at regular intervals, as well as about changes in achievement as students progress from class to class.

It is the 2013 assessment results of boys and girls in Class 6 that are the focus of this report.

Exhibit 2: MTEG assessment schedule in Afghanistan



## Terminology and conventions used in this report

### Reporting of student data

The report uses 'Class 6' students as shorthand for the MTEG Afghanistan 2013 target population. The target population is defined as Class 6 students in government schools in 13 Afghan provinces taught in Dari or Pashto.

The figures in this report are estimates that apply to the Class 6 population. To obtain these estimates, the sample data is weighted to the estimated number of students in the Class 6 population.

### Rounding

All statistics, including their totals and differences, are rounded for reporting purposes. Because of rounding, some figures in some tables may not add up to 100 per cent exactly.

Where a value of 0 is reported it means that the value is less than 0.05.

### Statistical significance

Statistical significance shows that the differences identified are likely to be reflected in the population, rather than being the result of the random nature of the data.

The 95% confidence level is used throughout this report to compute confidence intervals and statistical significance.

Differences which are statistically significant and positive are identified by a triangle 'Δ'; the differences that are statistically significant and negative are identified by an inverted triangle '∇'; and the differences that are not statistically significant are identified by a dash '-'.

Standard errors are not published here but will be available in the technical report.

### Correlation

A correlation coefficient shows the strength of association between two variables. The correlation coefficient ranges from -1 to 1, with 0 meaning there is no correlation, values greater than 0 showing positive correlation, and values less than 0 showing negative correlation.

For ease of discussion, the following descriptions will be used in this report when the correlation coefficient is statistically significant:

- Correlations of 0.5 and higher are considered to be moderate to strong.
- Correlations lower than 0.5 are considered to be weak to moderate.

The same scale and descriptions are used for negative correlations (eg -0.5 or less is a moderate to strong negative correlation).

### Acronyms

ACER	Australian Council for Educational Research
MTEG	Monitoring Trends in Educational Growth
PIRLS	Progress in International Reading Literacy Study
PISA	Project for International Student Assessment
TIMSS	Trends in International Mathematics and Science Study

## Key Points for MTEG Afghanistan 2013

### Purpose

MTEG is designed as a long-term monitoring program.

One focus of MTEG is on trends in achievement outcomes in single classes over time.

Another focus is on the growth of achievement in cohorts throughout the school cycle, from Class 3 through to Class 9.

### Methods

In total, 110 schools and 5,979 students participated in the assessment, representing 361,172 students estimated to be in the Class 6 population across the 13 provinces.

Each participating student undertook a one-and-a-half-hour test and a background questionnaire of approximately half an hour.

The test contained tasks relating to mathematical, reading and writing literacy – about 30 minutes of test material per domain.

The student questionnaire contained questions about the student, his or her family, living conditions, and attitudes towards school, reading, and mathematics.

In addition, the principals of participating schools filled in a school questionnaire including questions about the principal, the teachers, and the school's facilities and resources.

### Publications

Along with the technical report and assessment framework, a number of short topical reports for the general public are included in the series being published by ACER in 2015 in conjunction with the 2013 MTEG Afghanistan assessment.

The topics include:

- Class 6 proficiency
- Class 6 girls and boys
- School resources

The results from the 2013 Class 6 assessment in relation to gender are the main topic of this report (Class 6 girls and boys).

### Database

The 2013 Class 6 data is available for research purposes at this address

<http://www.acer.edu.au/gem/activities/mteg/products>

### Future assessments

The MTEG program design includes assessments of Class 3 and Class 9 students in Afghanistan, as well as ongoing assessment of Class 6. It is envisaged that the program will expand to implementation in other countries.

## The sample

Schools from 13 provinces in Afghanistan participated in the assessment. The provinces included are broadly representative of the five main regions of Afghanistan: East, West, Central, North and South. The 13 provinces are Balkh, Bamyan, Faryab, Helmand, Herat, Kabul Province, Kabul City, Kandahar, Khost, Kunduz, Nangarhar, Paktia, and Parwan.

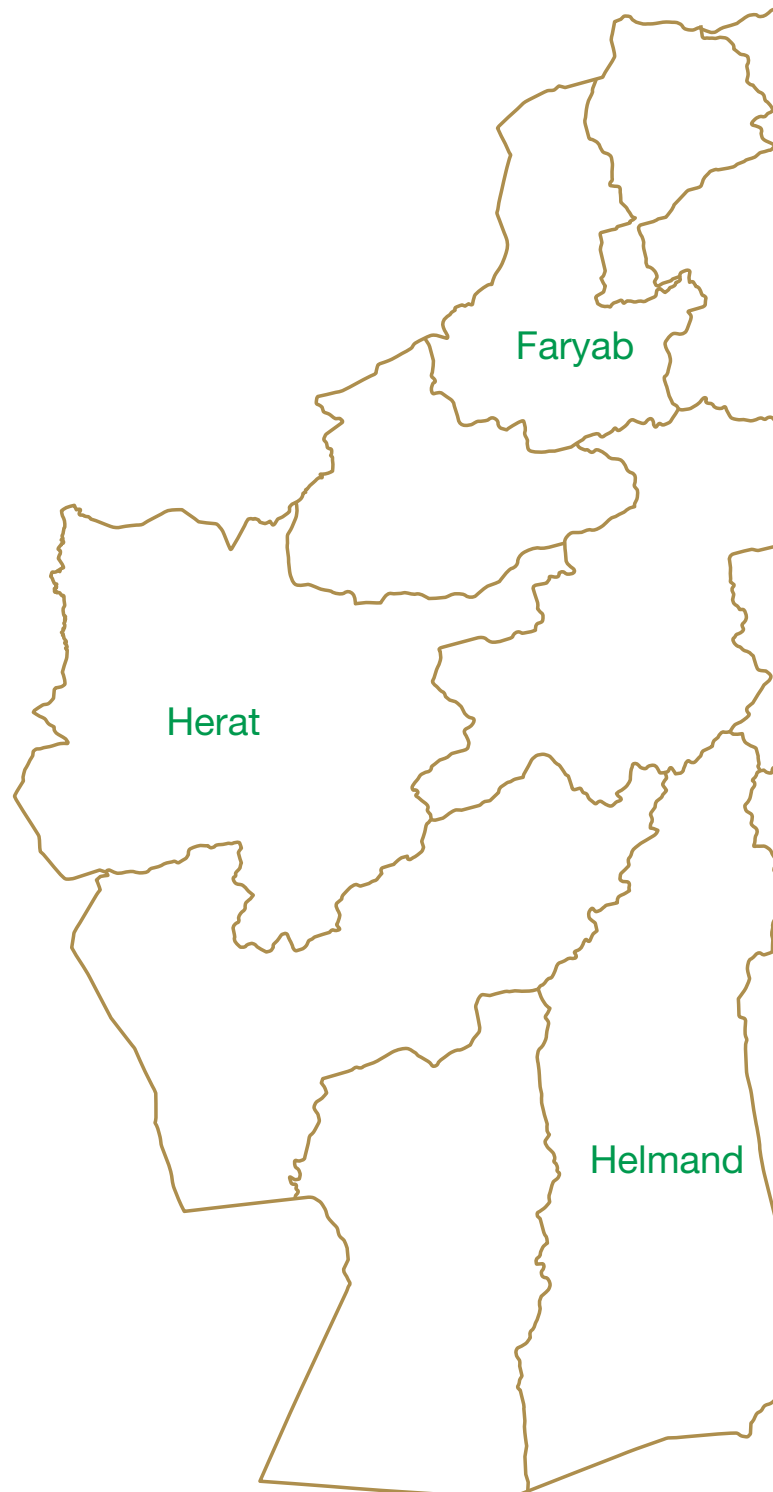
Using scientific methods<sup>1</sup>, schools from these provinces were randomly sampled to participate in the study. From each randomly sampled school, one randomly sampled section of Class 6 students was administered the assessment.

In total, 110 schools and 5,979 students participated in the assessment, representing 361,172 students estimated to be in the Class 6 population across the 13 provinces.

About 42% of the sample consisted of girls and 58% of boys, which closely matches the estimated gender proportion in the population in Class 6.

The number of participating students was fairly even in terms of students tested in Dari (54%) and students tested in Pashto (46%).

Exhibit 3: Provinces participating in the MTEG Class 6 Afghanistan survey in 2013



<sup>1</sup> More detailed descriptions of the scientific methods used will be provided in future publications.





# Introduction

This report presents the results of an assessment of reading, writing and mathematical literacy of Class 6 students in 13 provinces in Afghanistan in relation to the gender of students. The data were collected in late 2013.

The purpose of MTEG is to provide information to *education policy makers* on the quality of education outcomes in Afghanistan. In addition MTEG will inform *educational practitioners* by clearly demonstrating what students at Class 6 can and cannot do in an assessment situation.

One of the policy areas that MTEG aims to inform is gender equality. It is known that fewer girls attend school than boys and that the rate of illiteracy amongst the female population is higher (Central Statistics Organization, 2014, p. 70ff). In accordance with the United Nations Millennium Development Goals (United Nations, n.d.), redressing this imbalance is a priority for Afghanistan (Islamic Republic of Afghanistan, 2008; Afghanistan Ministry of Education, 2010; Afghanistan Ministry of Education, 2011). Despite data having been collected on school attendance and literacy levels in the population, little is known on the *quality* of educational outcomes. This report hopes to contribute to the discussion on gender disparity by reporting on the proficiency levels of girls and boys in the domains of mathematical, reading and writing literacy. The data gathered in the 2013 MTEG assessment of Class 6 students in Afghanistan also provides information on background characteristics that may interact with school attendance and achievement, both of which are important indicators of gender parity. These background characteristics include attitudes to school, perceived support, socio-economic status, and location.

Before turning to gender, it is important to have an overview of the achievement outcomes of the whole Class 6 population in Afghanistan – that is, girls and boys together. These results are presented in brief below; for a more detailed discussion of Class 6 achievement, see *Class 6 Proficiency in Afghanistan 2013* (Lumley et al., 2015).

## Overview of achievement

The results of the assessment are reported on ‘described proficiency scales’.<sup>2</sup> For each subject, proficiency can be described from early stages of learning to sophisticated skills and understanding. Each continuous scale is divided into ‘bands’ or ‘levels’ for ease of interpretation, making it possible to describe the knowledge, skills and understanding that students demonstrate at a given region of the scale for each of reading, writing and mathematical literacy.<sup>3</sup>

Based on the results of the assessment, the proportion of the Class 6 population performing at each proficiency level is identified (see Exhibits 4–6). The results show that while there are small numbers of Class 6 students operating at the higher levels of proficiency in each of the domains of reading, writing and mathematical literacy, there are substantial proportions of the population who are not able to perform simple reading, writing and mathematical tasks.

2 Described proficiency scales are also referred to interchangeably as ‘learning metrics’ in education literature. Throughout this report, the term ‘described proficiency scales’ will be used.

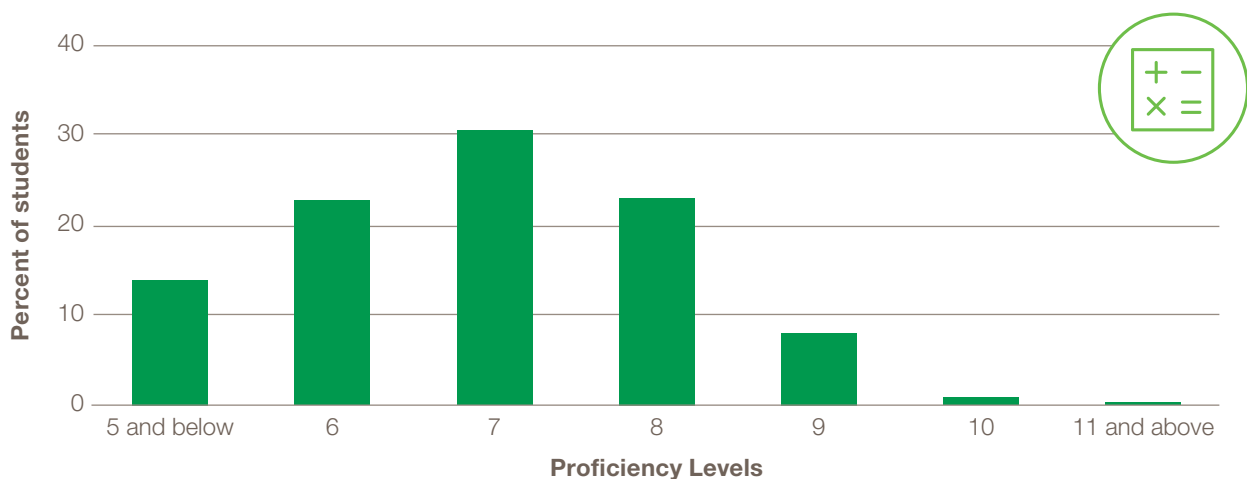
3 For more information on describing proficiency, see Appendix A in this report, or *Class 6 Proficiency in Afghanistan 2013* (Lumley et al., 2015).

In the area of mathematical literacy, the data show that 86% of students (proficiency levels 6-11 and above in Exhibit 4) in Class 6 are likely to be able to recognise common shape names, and use spatial reasoning as part of a counting strategy or to make comparisons involving mathematical properties of objects. A small percentage of Class 6 students – those at proficiency levels 10-11 and above – can understand and use a range of mathematical tools, language, and techniques to solve problems where relationships among problem elements are central.

While the above results are encouraging, the data also show that students in proficiency levels 6 and below – more than one-third of students in Class 6 – cannot answer questions that require them to add two-digit numbers (eg  $22 + 49$ ). At the time of writing, there is little known about

the performance of Class 6 students studying in countries neighbouring Afghanistan. However, there are TIMSS results from the Islamic Republic of Iran, Azerbaijan and Kazakhstan that may be used for comparative purposes. TIMSS is a major international study of mathematics and science for Class 4. Among other findings, the TIMSS study reports on Class 4 students' ability to add three-digit numbers (eg  $155 + 318$ ) – a more difficult arithmetic procedure than adding two-digit numbers. TIMSS reports that 64% of Class 4 students in Iran, 72% in Azerbaijan and 88% in Kazakhstan demonstrate the ability to add three-digit numbers (Mullis et al., 2012a, p. 90, 95). It would appear that Class 4 students in those countries are performing at a similar or higher level compared to Class 6 students in Afghanistan.

Exhibit 4: Distribution of Class 6 mathematical proficiency



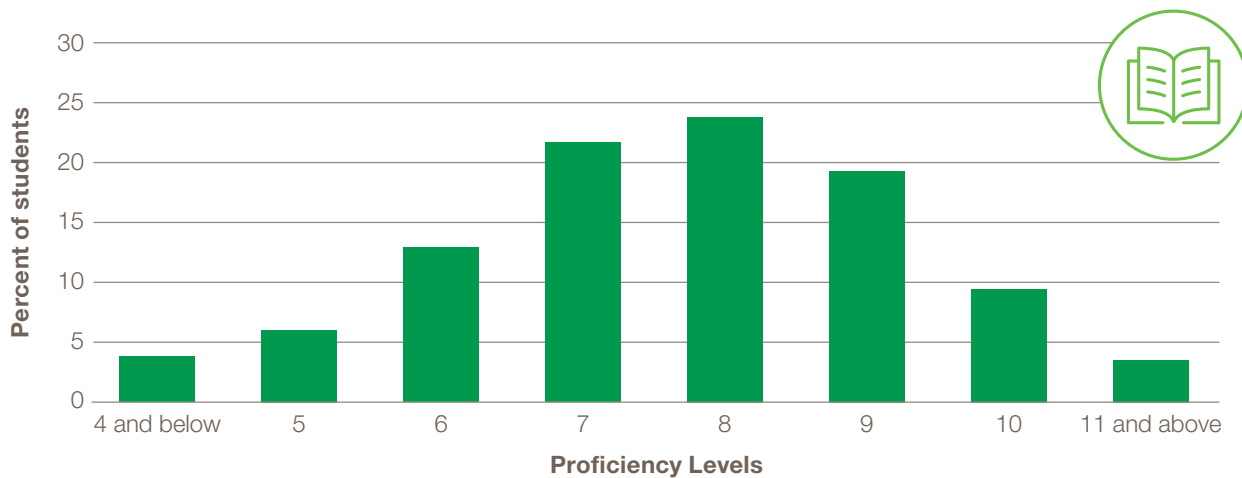
In the area of reading literacy, 90% of students (proficiency levels 6-11 and above in Exhibit 5) in Class 6 are likely to be able to recognise the meaning of single sentences on familiar topics; about 10% of students are able to identify the main message in short texts on familiar topics (proficiency levels 10-11 and above); and a small percentage of Class 6 students can explain the behaviour and emotions of characters in a narrative text (proficiency level 11 and above).

Students in proficiency levels 8-11 and above – 55% of Class 6 students in Afghanistan – could answer questions that required them to retrieve directly stated information located at the beginning of a text. No data are available on neighbouring regions for reading literacy at Class 6.

However, using PIRLS – a major international study of reading literacy at Class 4 – some interesting comparisons can be drawn. In PIRLS, this skill of retrieving directly stated information at the beginning of a text was demonstrated by 76% of Class 4 students in the Islamic Republic of Iran, and 82% of Class 4 students in Azerbaijan (Mullis et al., 2012b, p. 65, 68). It would appear that many Class 4 students in these countries are performing at or above the level of Class 6 students in Afghanistan.

Nevertheless, it is promising that a large majority of students are able to demonstrate fundamental reading skills and that a significant, if small, proportion of the population is performing well on relatively difficult reading tasks.

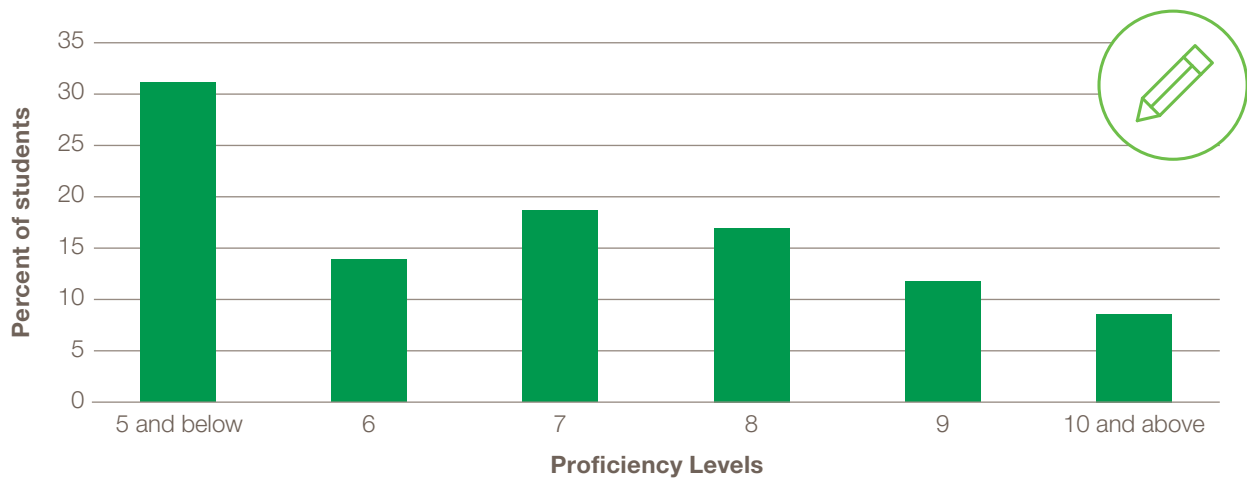
Exhibit 5: Distribution of Class 6 reading proficiency



For writing literacy, eight per cent of students are able to produce texts where ideas are elaborated to some extent, and are generally relevant to the task (proficiency level 10 and above in Exhibit 6). Forty-five per cent of Class 6 students are unable to demonstrate writing ability beyond producing a recognisable word to label an everyday object or correctly spelling single words prompted by a picture (proficiency levels 6 and below).

There are currently no large-scale international assessments of writing literacy. This means that, at the time of publication, the MTEG Class 6 results for writing cannot be compared with those of other countries.

Exhibit 6: Distribution of Class 6 writing proficiency



## Focus on girls and boys

**This report focuses on gender differences in achievement as well as in background characteristics.**

The Class 6 assessment results point to similarities and differences in achievement between girls and boys.

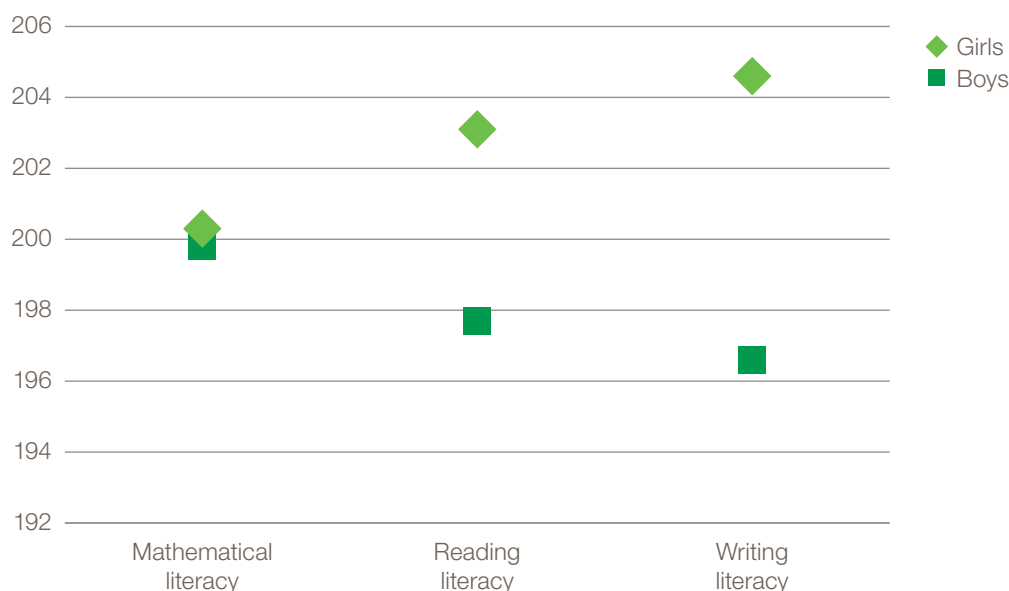
There is no difference between girls' and boys' achievement in mathematical literacy: both are at the mean score of 200. This finding is consistent with assessment results from many countries in international studies. TIMSS, for example, reports that in half of the participating countries there are no significant gender differences in mathematics outcomes at Class 4 (Mullis et al, 2012a, p. 68; see also OECD 2013b, p. 71).

As can be seen in Exhibit 7, there are differences between girls' and boys' achievement in reading and writing literacy. These differences are statistically significant and in line with other studies.<sup>4</sup>

As will be shown in the following pages, there are also considerable differences in the distributions of boys and girls across the proficiency levels in reading and writing where there is a disproportionately higher number of boys in the lower proficiency levels.

Girls and boys also differ in some of the background characteristics. After presenting the distributions in achievement of girls and boys in mathematical, reading and writing literacy, this report will examine gender differences in reading habits and attitudes, learning support, socio-economic background, attitudes to school and teachers, age, and location.

Exhibit 7: Average achievement by gender in mathematical, reading and writing literacy



Note: achievement levels should not be compared between domains, as the scale for each domain is constructed independently and on different parameters

<sup>4</sup> For Afghanistan's Class 6 students in 2013, the difference in reading achievement between girls and boys was 25% of the standard deviation of the MTEG reading scale. In PIRLS, the difference between Class 4 boys' and girls' reading achievement is 14% of the standard deviation of the PIRLS scale in Azerbaijan, 20% in the Islamic Republic of Iran, and 27–54% in Arabic-speaking countries.

In writing literacy, the difference was 40% of the standard deviation, a difference which is not only statistically significant but important. Currently, comparisons with other regions cannot be made for writing.



## Class 6 proficiency: girls and boys

*In the area of mathematical literacy, girls and boys achieved the same score overall. About the same proportions of boys and girls performed at each proficiency level.*

*In reading and writing literacy, girls performed significantly better than boys. In both areas, a higher proportion of boys are in the lower proficiency levels, and a higher proportion of girls are in the higher proficiency levels.*

The differences in the proportions of girls and boys in each proficiency level in each domain are discussed in the next three sections. After presenting the distributions, each domain is explained through two displays: a draft proficiency scale, showing the overall percentage of Class 6 students who performed at each of several levels associated with MTEG scores; and an illustrated scale, showing how example tasks from the MTEG Afghanistan instruments for Class 6 relate to the MTEG scores and proficiency levels.

These proficiency scales are based on the results of the assessment of mathematical literacy, reading literacy and writing literacy administered to Class 6 students in MTEG Afghanistan. The scales will be further refined and extended as MTEG collects data from Class 3 and Class 9 students.

Before presenting the distributions of girls and boys at each of the proficiency levels in the three domains, it is helpful to have an overview of girls' and boys' mean achievement:

- In mathematics, boys' and girls' achievement is around the overall mean of 200.
- In reading and writing, on average girls perform slightly above the overall mean of 200 and boys on average perform slightly below (see Exhibit 8) with the difference between boys and girls being statistically significant.

Exhibit 8: Mean achievement for Class 6 girls and boys<sup>5</sup>

	Girls	Boys	Difference Girls–Boys	Statistical significance
Mean Mathematics Achievement	200	200	0	-
Mean Reading Achievement	203	198	5	Δ
Mean Writing Achievement	205	197	8	Δ

<sup>5</sup> Note: achievement levels should not be compared between domains, as the scale for each domain is constructed independently and on different parameters.

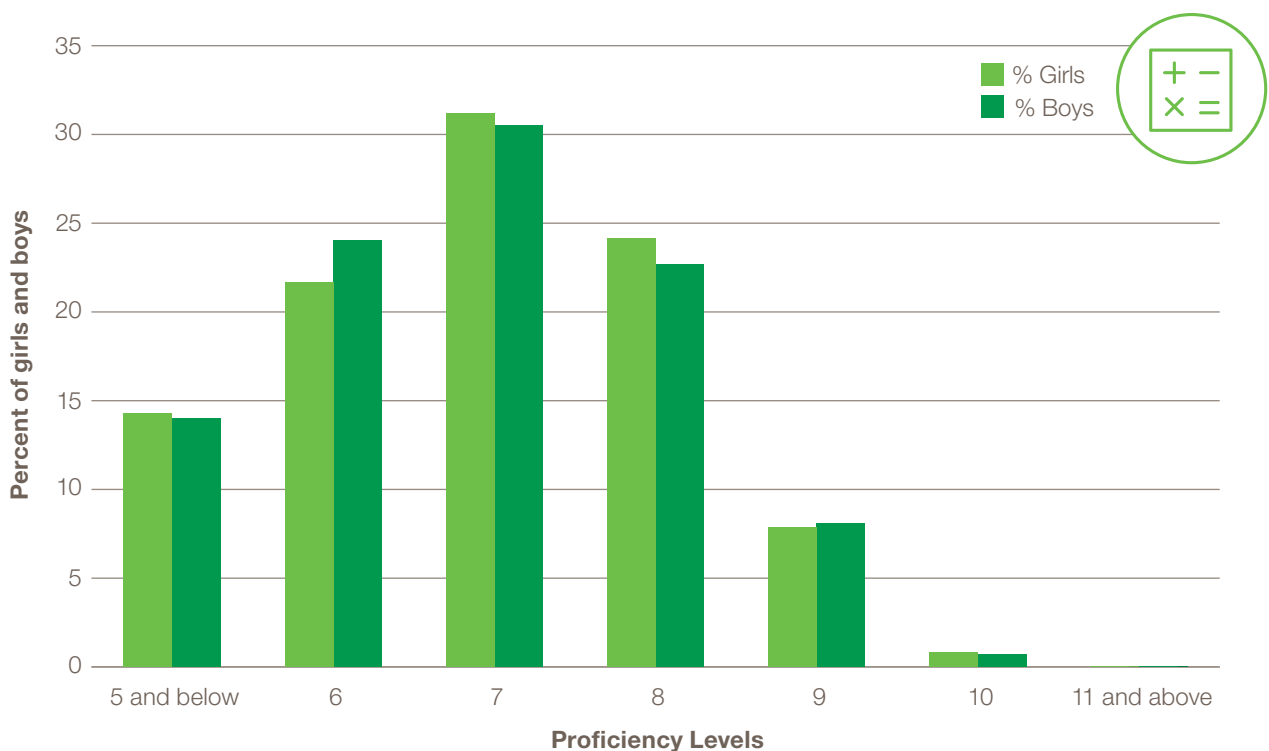
## Mathematical literacy

As expected from the overall results presented in Exhibit 8, the differences in proportions of girls and boys at each mathematics proficiency level were not statistically significant (see Exhibit 9).

The following two pages explain the skills, knowledge and understanding displayed by students at each of the mathematical literacy proficiency levels:

- Exhibit 10 is a description of the proficiency scale for mathematics. Examples are tasks from the Class 6 assessment. The average proportion of students at each proficiency level is given, along with a breakdown for girls and boys.
- Exhibit 11 presents the scale with illustrated tasks.

Exhibit 9: Gender differences in mathematics proficiency levels (Class 6)

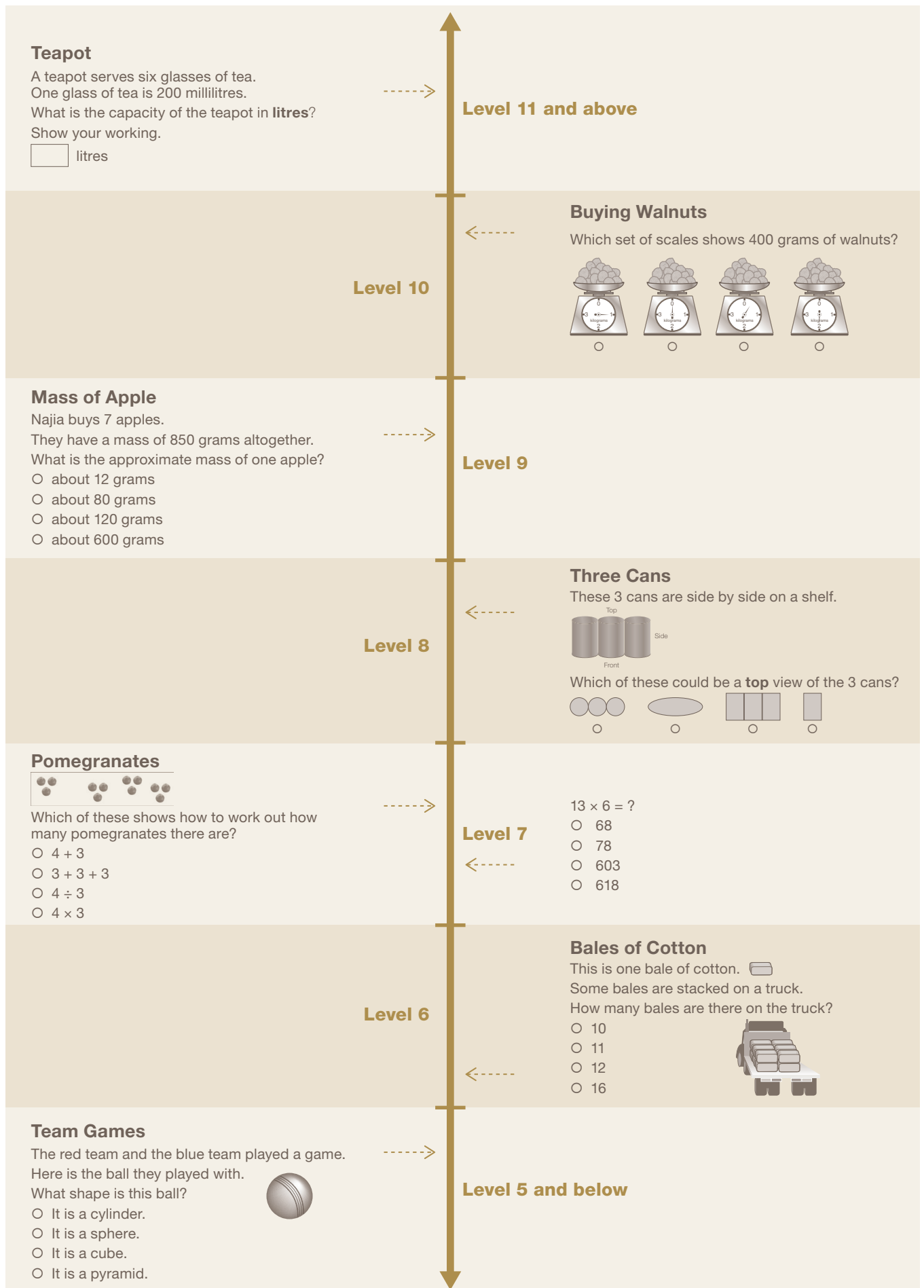




## Exhibit 10: Proficiency descriptions for mathematics (Class 6)

Level and examples	Proficiency description
<b>Level 11 and above</b> (259 and above) eg Teapot (full credit) Class 6 students at this level: 0% Girls 0%; Boys: 0%	Students at this level typically have highly developed reasoning and strategic thinking skills; they can flexibly use different mathematical representations, and can apply a range of mathematical skills and knowledge to solve problems involving multiple steps set in a variety of contexts.
<b>Level 10</b> (242 to less than 259) eg Buying walnuts Class 6 students at this level: 1% Girls: 1%; Boys: 1%	Students at this level can typically understand and use a range of mathematical tools, language, and techniques to solve problems where relationships among problem elements are central; and they can apply the required reasoning steps to plan and follow straight-forward sequential processes.
<b>Level 9</b> (226 to less than 242) eg Mass of apple Class 6 students at this level: 8% Girls 8%; Boys: 8%	Students at this level can typically understand important mathematical terms and processes, and are able to carry out linked calculations that involve a number of steps. Their abstract reasoning skills are developing; they show fluency with calculations involving 1-digit and 2-digit numbers and those involving time; and they can work with data in tables and graph form.
<b>Level 8</b> (210 to less than 226) eg Three cans Class 6 students at this level: 23% Girls: 24%; Boys: 23%	Students at this level can typically interpret information presented in text form, and relate it to graphs or diagrams; they can work with basic mathematical properties of objects; they can successfully complete calculations of different kinds that involve tractable numbers; and they can interpret and use mathematical concepts expressed in relational language.
<b>Level 7</b> (194 to less than 210) eg Pomegranates, $13 \times 6$ Class 6 students at this level: 31% Girls: 31%; Boys: 31%	Students at this level can typically perform basic arithmetic operations; they can interpret text describing a familiar situation involving mathematical ideas, formulate an appropriate calculation and solve it; and they can interpret and use standard graphical representations of data and of relative quantities.
<b>Level 6</b> (178 to less than 194) eg Bales of cotton Class 6 students at this level: 23% Girls: 22%; Boys: 24%	Students at this level can typically recognise common shape names, and they can use spatial reasoning as part of a counting strategy or to make comparisons involving mathematical properties of objects.
<b>Level 5 and below</b> (less than 178) eg Team Games Q1 Class 6 students at Level 5 and below: 14% Girls: 14%; Boys: 14%	Below the lowest level currently described: there were insufficient tasks at this level in the Class 6 test to create a general description.

Exhibit 11: Graphic representation of illustrated mathematics scale





## Reading literacy

In reading there tended to be higher proportions of boys in lower proficiency levels (especially 6–7) and higher proportions of girls in higher proficiency levels (9–11) (see Exhibit 12).

The differences in proportions of boys and girls at reading proficiency levels 6, 7, 9, 10 and 11 are statistically significant.

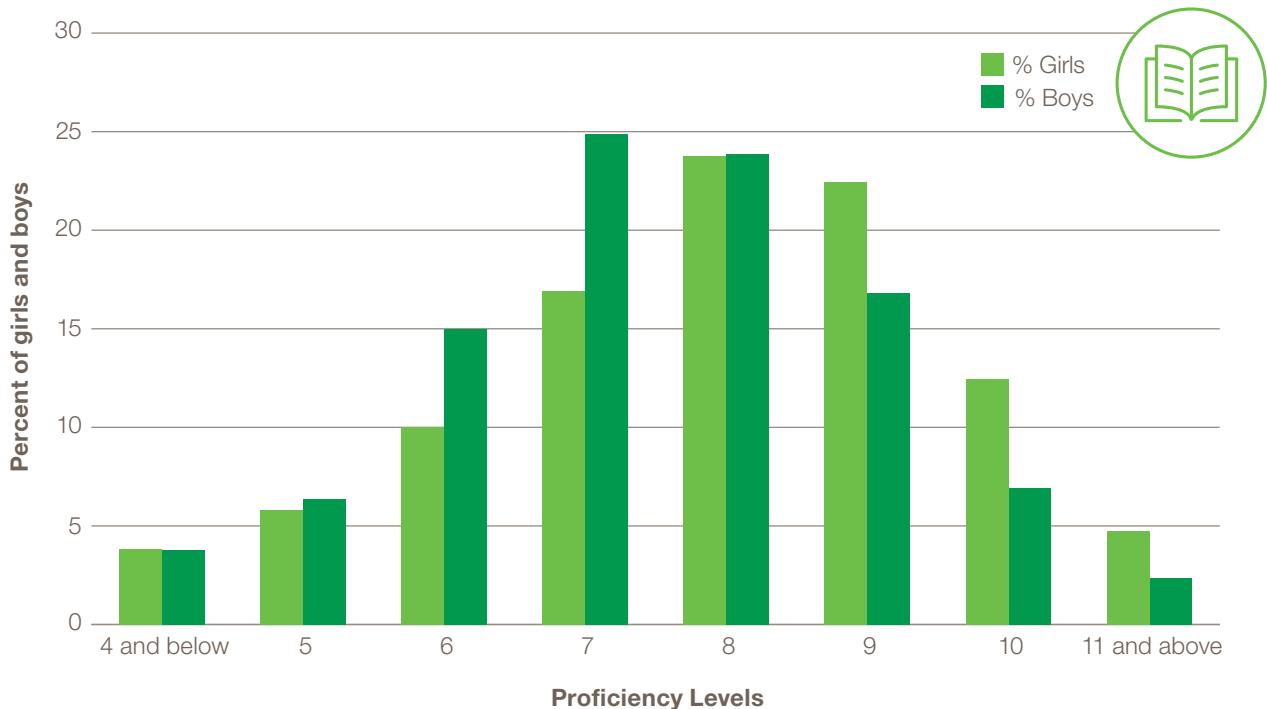
The higher percentage of girls in proficiency level 11 means that nearly twice as many girls as boys are able to explain the behaviour and emotions of characters, even when they are not stated directly. These students can also combine several pieces of information and deal with distracting information in texts of several hundred words on a variety of familiar topics (family, school or local community) including narratives and persuasive texts.

At proficiency level 10, nearly twice as many girls as boys are able to identify the main message and identify clearly stated details in short texts on familiar topics.

The following two pages explain the skills, knowledge and understanding displayed by students at each of the reading literacy proficiency levels:

- Exhibit 13 is a description of the proficiency scale for reading. The average proportion of students at each level is given, along with a breakdown for girls and boys.<sup>6</sup>
- Exhibit 14 presents the scale with illustrated tasks.

Exhibit 12: Gender differences in reading proficiency levels (Class 6)



<sup>6</sup> Examples are tasks from the Class 6 assessment. Due to the limited number of publicly available tasks, examples cannot be given for all proficiency levels.

## Exhibit 13: Proficiency descriptions for reading

Level and examples	Proficiency description
<p><b>Level 11 and above</b> (234 and above)</p> <p>eg The Hole Q2 (full credit)</p> <p>Class 6 students at this level: 3%</p> <p>Girls: 5%; Boys: 2%</p>	<p>Students at this level are typically able to explain the behaviour and emotions of characters, even when they are not stated directly; and, they can combine several pieces of information and deal with distracting information in texts of several hundred words on a variety of familiar topics (family, school or local community) including narratives and persuasive texts.</p>
<p><b>Level 10</b> (222 to less than 234)</p> <p>eg Country Fact File Q4</p> <p>Class 6 students at this level: 9%</p> <p>Girls: 12%; Boys: 7%</p>	<p>Students at this level are typically able to identify the main message and clearly stated details, even when they are not in a prominent position, in short texts on familiar topics. These texts include narratives and letters, and information presented in tables.</p>
<p><b>Level 9</b> (210 to less than 222)</p> <p>eg Country Fact File Q3 &amp; Q8</p> <p>Class 6 students at this level: 19%</p> <p>Girls: 22%; Boys: 17%</p>	<p>Students at this level are typically able to identify one or two pieces of explicitly stated information from different parts of texts on familiar topics, where there is strong support in the text such as illustrations, or where the information is in a prominent position, such as at the beginning of the text.</p>
<p><b>Level 8</b> (198 to less than 210)</p> <p>eg The Hole Q6</p> <p>Class 6 students at this level: 24%</p> <p>Girls: 24%; Boys: 24%</p>	<p>Students at this level are typically able to identify directly stated information in short texts on familiar topics such as family or school, or a longer text with strong support given in the task (such as a key word from the text); and they can recognise information about concrete objects or well-known things such as animals.</p>
<p><b>Level 7</b> (186 to less than 198)</p> <p>Class 6 students at this level: 22%</p> <p>Girls: 17%; Boys: 25%</p>	<p>Students at this level are typically able to recognise simple details, explicitly stated, in a very short text such as a note to a relative; and they can identify the message of a narrative, supported by repetition in the text.</p>
<p><b>Level 6</b> (174 to less than 186)</p> <p>Class 6 students at this level: 13%</p> <p>Girls: 10%; Boys: 15%</p>	<p>Students at this level are typically able to recognise the meaning of single sentences on familiar topics; and they can match one of four given words to a simple illustration of a familiar object, where the other three words may have similarities to the target word in meaning or graphic appearance.</p>
<p><b>Level 5</b> (162 to less than 174)</p> <p>eg Wheel</p> <p>Class 6 students at this level: 6%</p> <p>Girls: 6%; Boys: 6%</p>	<p>Students at this level are typically able to match one of four given words to a simple illustration of a single highly familiar object, where the task is simple, direct and repetitive, and the other three words are unlike the target word in both meaning and graphic appearance.</p>
<p><b>Level 4 and below</b> (less than 162)</p> <p>eg Gloves</p> <p>Class 6 students at Level 4 and below: 4%</p> <p>Girls: 4%; Boys: 4%</p>	<p>Below the lowest level currently described: there were insufficient items at this level in the Class 6 test to create a general description.</p>

Exhibit 14: Graphic representation of illustrated reading scale

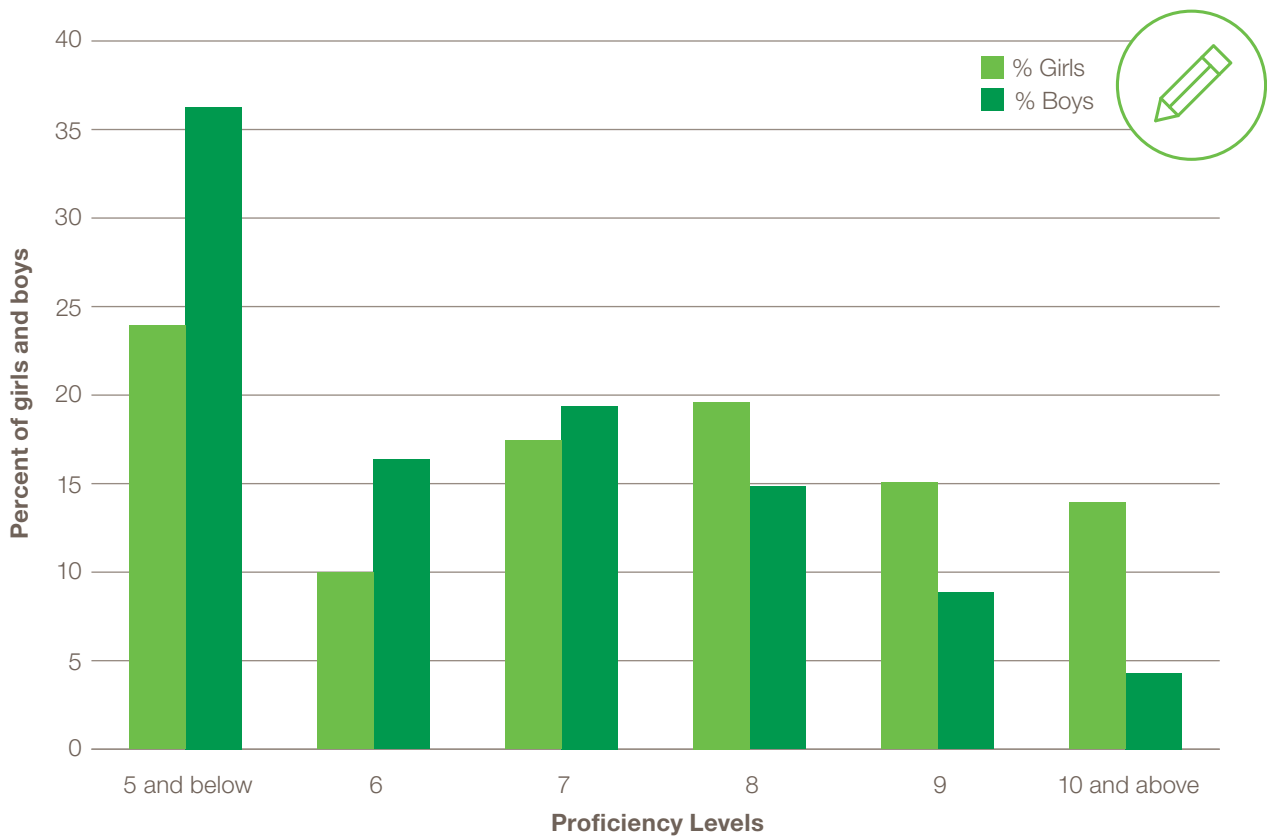


## Writing literacy

In writing (see Exhibit 15) the picture is similar to reading, only the differences between the proportions of girls and boys in the lowest proficiency levels are more pronounced.

The differences in proportions of boys and girls at all writing proficiency levels except level 7 are statistically significant.

Exhibit 15: Gender differences in writing proficiency levels



After having spent at least five years at school<sup>7</sup>, there are estimated to be still about 24% of girls and 36% of boys at or below the lowest described writing proficiency level (level 5). Students who are at or below proficiency level 5 are unable to consistently demonstrate the ability to produce a recognisable word to label an everyday object, or correctly spell single words prompted by a picture. While both proportions may seem high, the percentage of boys is one-and-a-half times higher than the percentage of girls.

On the other hand, there are 15% of girls and 9% of boys in proficiency level 9. This means that a much higher percentage of girls than boys is able to include important elements that are characteristic of the kind of writing required by the task (for example, use persuasion in a message to a family member, and write an introduction and ending in a narrative). These students are also able to provide minor elaboration in their texts, form simple sentences correctly and use vocabulary adequately to convey important elements of a short and simple message. When writing about family or school, they can generate and spell words correctly beyond basic vocabulary. They can also use some punctuation correctly in a story and control handwriting to produce good letter formation.

Also, while there are 14% of girls there are only 4% of boys in the highest proficiency level (level 10). This means that more than three times more girls

than boys are able to produce texts where ideas are elaborated to some extent, and generally relevant to the task (for example, telling a short story or presenting an opinion). Students at proficiency level 10 can also write texts in which sentences are varied in structure and correctly formed and use vocabulary that is adequate to convey some level of detail (for example, describing a scene).

The following two pages explain the skills, knowledge and understanding displayed by students at each of the writing literacy proficiency levels:

- Exhibit 16 is a description of the proficiency scale for writing. The average proportion of students at each level is given, along with a breakdown for girls and boys.<sup>8</sup>
- Each writing task has its own set of marking criteria, eg ideas, vocabulary, punctuation, and each criterion has been divided into scores that describe the quality that the writing exhibits. The criteria and score at each proficiency level is listed for each task in Exhibit 16. For a more detailed description on how writing tasks were marked, see *Class 6 Proficiency in Afghanistan 2013* (Lumley et al., 2015).
- Exhibit 17 presents the scale with illustrated tasks.

Highest  
proficiency level  
(Level 10)

14%

4%



<sup>7</sup> The possibility that some students may not have completed five years of schooling is acknowledged.

<sup>8</sup> Examples are tasks from the Class 6 assessment. Due to the limited number of publicly available tasks, examples cannot be given for all proficiency levels.



## Exhibit 16: Proficiency descriptions for writing

**Level and examples****Proficiency description****Level 10 and above** (224 and above)

- eg Brothers' Race:
- Development of narrative (4)
  - Punctuation (2)
- eg Celebration:
- Ideas (relevance) (2)

Class 6 students at this level: 8%  
Girls: 14%; Boys: 4%

Students at this level are typically able to produce texts where ideas are elaborated to some extent, and generally relevant to the task (for example, telling a short story or presenting an opinion); they can write texts in which sentences are varied in structure and correctly formed; and they can use vocabulary that is adequate to convey some level of detail (for example, describing a scene).

**Level 9** (216 to less than 224)

- eg Celebration:
- Vocabulary (2)
- eg Brothers' Race:
- Punctuation (1)
  - Narrative sequence (2)
  - Development of narrative (3)
  - Story elements (2)

Class 6 students at this level: 11%  
Girls: 15%; Boys: 9%

Students at this level are typically able to include important elements that are characteristic of the kind of writing required (for example, use persuasion in a message to a family member; write an introduction and ending in a narrative); they can provide minor elaboration in their texts; they can form simple sentences correctly and use vocabulary adequately to convey important elements of a short and simple message; they can generate and spell words correctly beyond basic vocabulary in writing about family or school; they can use some punctuation correctly in a story; and they can control handwriting to produce good letter formation.

**Level 8** (208 to less than 216)

- eg Celebration:
- Handwriting (2, 1)
  - Ideas (relevance) (1)
  - Vocabulary (1)
- eg Brothers' Race:
- Development of narrative (2, 1)
  - Narrative sequence (1)
  - Story elements (1)
- eg Scenes we see – Bird over mountains:
- Syntax (2)

Class 6 students at this level: 17%  
Girls: 20%; Boys: 15%

Students at this level are typically able to provide some simple ideas relevant to a task (for example, describe some elements in a picture or tell part of a story); they can form one or two simple sentences correctly using a basic pattern; they can use basic vocabulary to describe a scene or convey a simple message; they can spell basic words in a letter or when giving an opinion; and they can write legibly with most letters well formed.

**Level 7** (200 to less than 208)

- eg Scenes we see – Bird over mountains:
- Syntax (1)
  - Vocabulary (1)

Class 6 students at this level: 19%  
Girls: 17%; Boys: 19%

Students at this level are typically able to begin to include important elements of writing (for example, an introduction to a story, or part of a process when writing a set of instructions); they can produce up to two very basic sentences correctly; they can use simple and relevant nouns, verbs and adjectives; and they can spell the names of common objects correctly.

**Level 6** (192 to less than 200)

Class 6 students at this level: 14%  
Girls: 10%; Boys: 16%

Students at this level are typically able to produce a recognisable word to label an everyday object; and they can correctly spell single words prompted by a picture.

**Level 5 and below** (less than 192)

- eg Foot:
- Vocabulary (1)

Class 6 students at Level 5 and below: 31%  
Girls: 24%; Boys: 36%

Below the lowest level currently described: there were insufficient items at this level in the Class 6 test to create a general description.

Writing skills that were measured in four of the MTEG writing tasks are used to illustrate this scale. The four tasks are shown above the scale. Skills relating to a single task may appear at different levels along the scale.

Exhibit 17: Graphic representation of illustrated writing scale

**Task: Celebration**

Write a letter to a friend in another country to describe what happens in Afghanistan during the Eid celebration.

Tell your friend about:

- Places and times
- People
- Food
- Dress

Your description should be interesting. Write your letter on the lines below.

**Task: Brothers' Race**

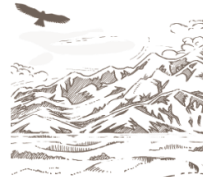
Use the picture to help you write a story. Write as much as you can.



One day, ...

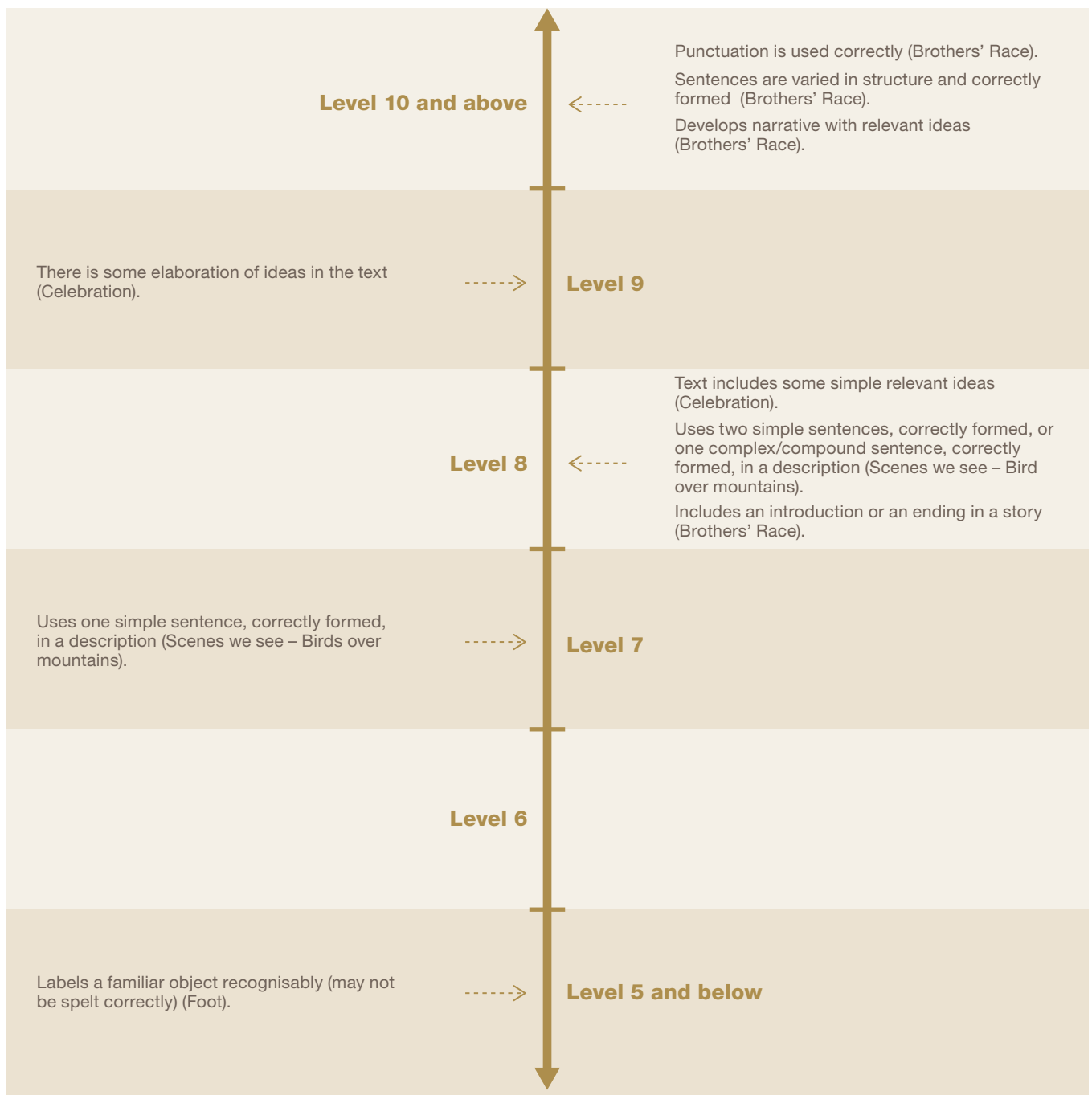
**Task: Scenes we see – Bird over mountains**

Write two sentences to describe this picture.



**Task: Foot**

Write the correct word for this object.



## Reading habits and attitudes of girls and boys in Class 6

*Girls and boys indicated similar attitudes towards reading. The results show that students who expressed a more negative attitude to reading demonstrated lower levels of achievement.*

*Unsurprisingly, the MTEG study found that the majority of children in Class 6 in Afghanistan read the Holy Quran. Class 6 students who read a greater variety of materials demonstrated higher proficiency in mathematical, reading and writing literacy. While girls indicated reading more fiction books than boys, overall the amount of variety in reading materials read by girls and boys is similar.*

Information was obtained from the student questionnaire to construct three indices which numerically summarise students' reading habits and attitudes (see Exhibit 18).

The rest of this section discusses gender differences in relation to reading habits and attitudes of the Class 6 students, and association between the indices and achievement.

Exhibit 18: Questionnaire indices related to students' reading habits and attitudes (Class 6)

Index	Questions used from the student questionnaire
Reading materials	8 items in which students indicated which materials they read, eg the 'Holy Quran', and 'Newspapers'.
Positive attitudes towards reading	6 items in which students indicated how much they agree with positive statements about reading, eg 'Reading is one of my favourite hobbies', and 'I enjoy going to a bookstore or a library.'
Negative attitudes towards reading	5 items in which students indicated how much they agree with negative statements about reading, eg 'I read only if I have to', and 'For me, reading is a waste of time'.

## Positive and negative reading attitudes

The questionnaire contained a series of statements relating to reading attitudes. Students were asked to indicate their level of agreement with a number of positive and negative statements about reading. The responses were analysed in two groups: responses to positive statements and responses to negative statements (see Exhibit 18). If, for example, a student is said to have a more negative attitude towards reading, this means that they indicated stronger agreement with negative statements (eg indicating that they ‘strongly agree’ with statements like ‘For me, reading is a waste of time’). Conversely, the more disagreement expressed about negative attitudes towards reading (eg indicating that they ‘strongly disagree’ with these statements), the less negative the student’s attitude to reading, according to the index.

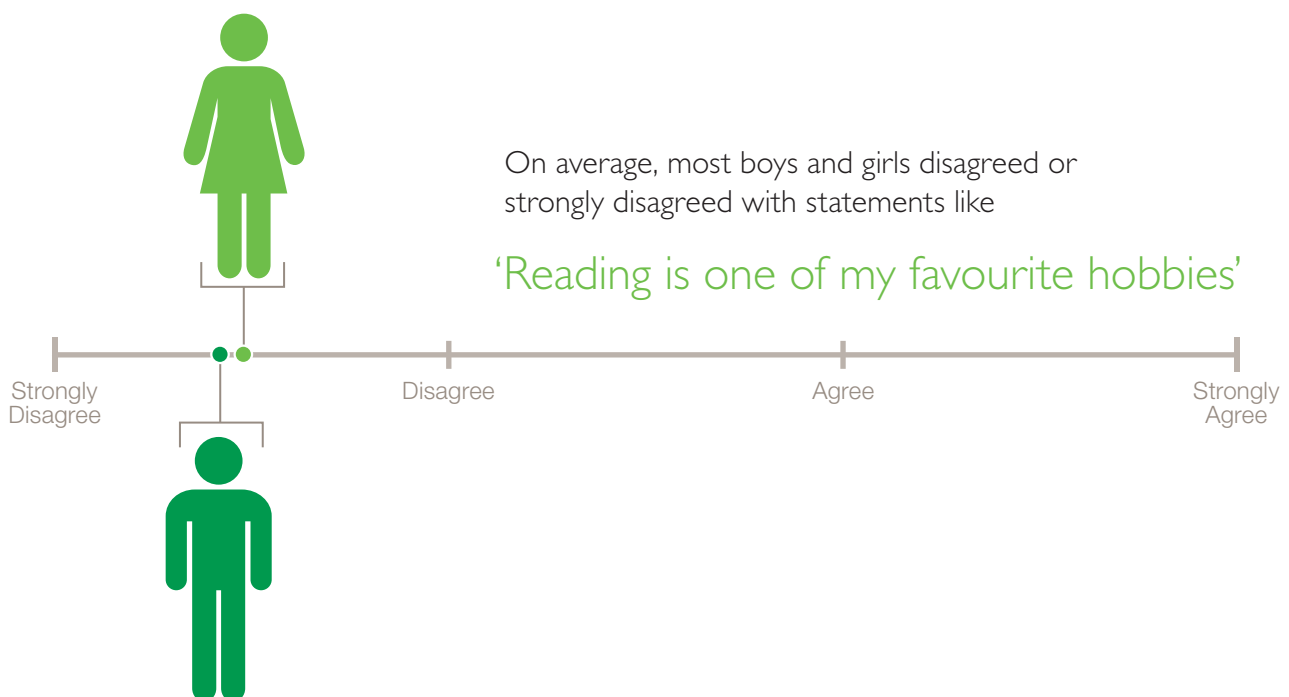
Similarly, if a student is said to have a more positive attitude towards reading, this means they indicated stronger agreement with positive

statements (eg indicating that they ‘strongly agree’ with statements like ‘Reading is one of my favourite hobbies’).

There was no gender difference in positive attitudes to reading and also no relationship found between a student’s positive attitude to reading and their achievement in reading, mathematics or writing.

In contrast, students expressing more negative attitudes about reading demonstrated lower proficiency, on average. In statistical terms, the index of negative attitudes towards reading has weak correlation with achievement in all three domains.<sup>9</sup>

Interestingly, as with positive attitudes to reading, the negative attitudes towards reading index did not show statistically significant gender differences.



<sup>9</sup> Mathematical literacy:  $r = -0.24$ ;  
Reading literacy:  $r = -0.24$ ;  
Writing literacy:  $r = -0.19$

## What are girls and boys reading in Class 6?

Students were asked what materials they read (see Exhibit 19). Students' responses to the items were analysed in two ways: as individual reading materials, and together as an index. Exhibit 19 shows the percentage of girls and boys who indicated that they read each kind of reading material.

The most-read material is the Holy Quran, which is read by more than 50% of girls and boys, followed by textbooks, which are read by around 40% of girls and boys. Online materials are read by slightly more than 10% of Class 6 girls and boys. Although Exhibit 19 shows slightly higher percentages of girls reading all materials, only the differences relating to fiction books are statistically significant (see Exhibit 20).

An index of variety of reading was constructed by summing all affirmative responses for each student. This index shows weak to moderate

positive correlation with achievement in all three domains.<sup>10</sup> The positive correlations show that the greater the variety of materials students indicated they read, the more likely they are to do better in each of the three domains. Given the only gender difference for an individual item was for fiction books (see Exhibit 20), it is not surprising that the index of variety of reading materials does not show statistically significant gender differences.

The overall findings in differences in achievement and reading habits are in agreement with findings from large scale international studies: girls generally do better in reading and writing and they also usually read more fiction books (OECD, 2010a: p. 75). Research suggests that *diversified* reading of a variety of texts – especially books of any kind – characterises the most proficient readers, whether boys or girls (Kirsch et al., 2002, pp. 116-117).



<sup>10</sup> Mathematical literacy:  $r = 0.18$ ;  
Reading literacy:  $r = 0.24$ ;  
Writing literacy:  $r = 0.31$

Exhibit 19: Per cent of girls and boys reading each text type (Class 6)

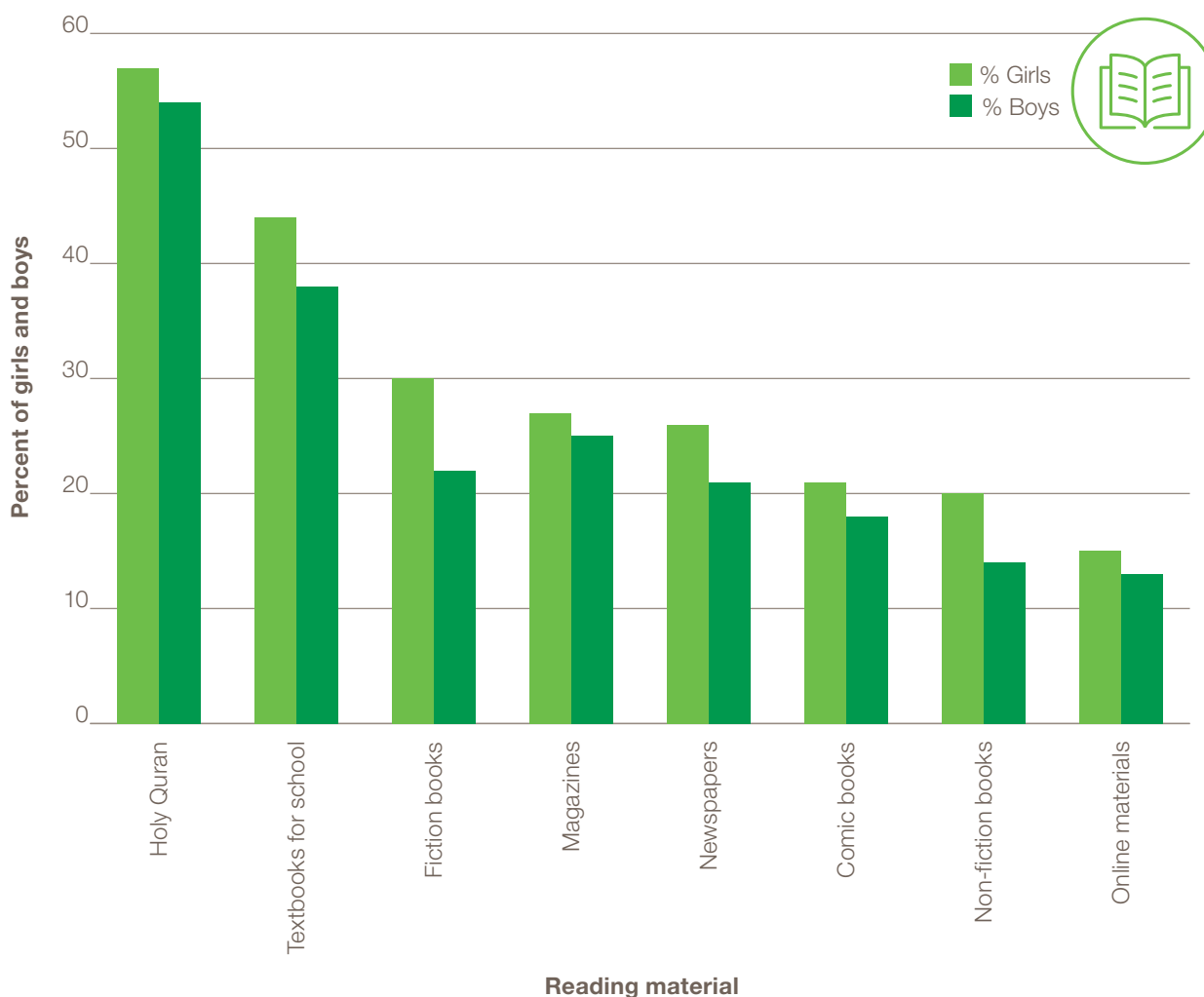


Exhibit 20: Difference in per cent of girls and boys reading each text type (Class 6)

	% Girls	% Boys	Difference Girls-Boys	Statistical significance
Holy Quran	57	54	3.8	-
Textbooks for school	44	38	5.1	-
Fiction books	30	22	8.3	Δ
Magazines	27	25	1.7	-
Newspapers	26	21	4.5	-
Comic books	21	18	2.3	-
Non-fiction books	20	14	5.7	-
Online materials	15	13	1.4	-

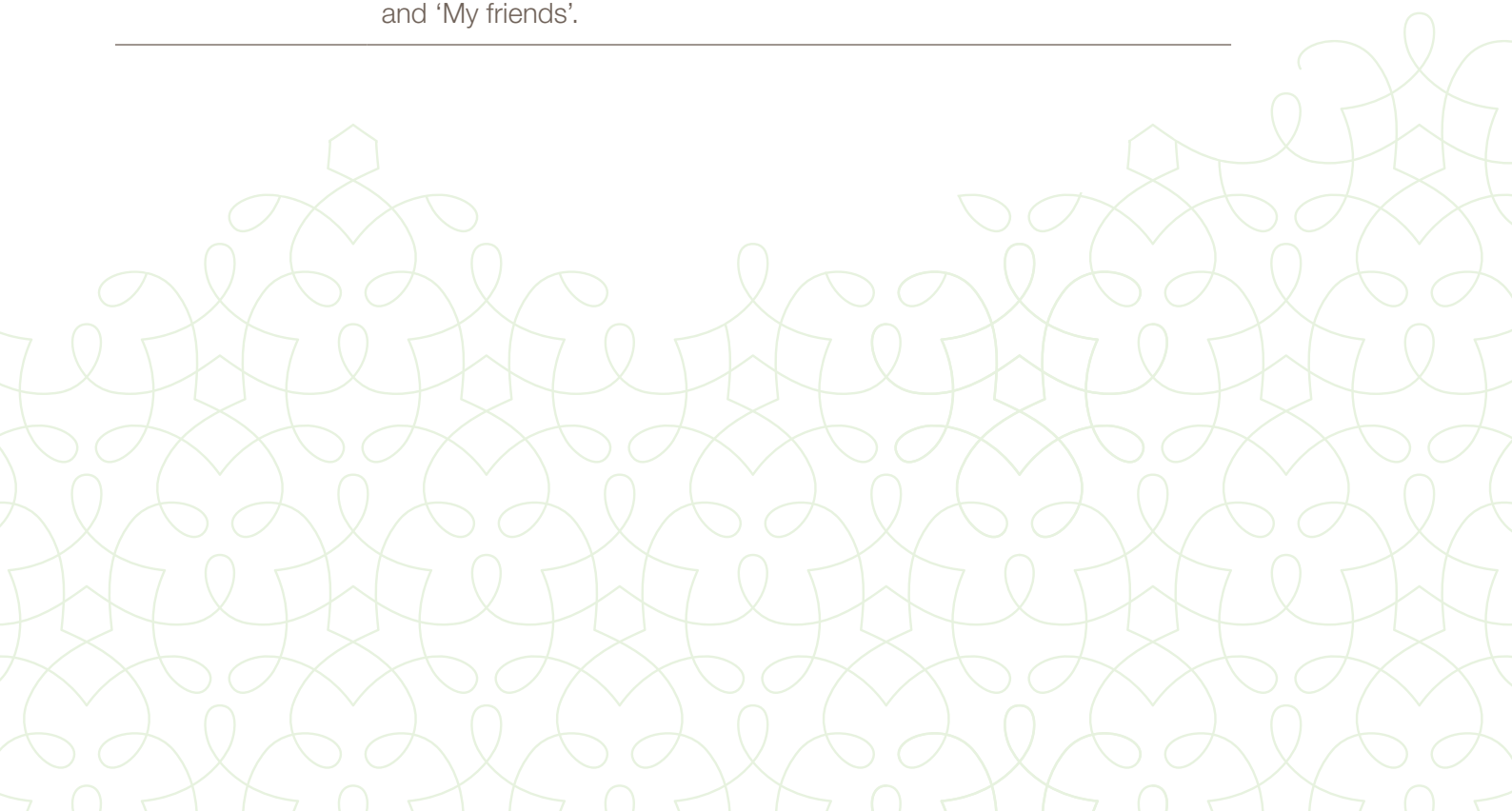
## Learning support for girls and boys in Class 6

*Overall, boys report receiving slightly more help in attending school than girls. Although girls and boys indicated receiving similar levels of support from their parents, boys indicated receiving more support in attending school from other family members, friends and the community than girls did. Interestingly, students who indicated that they have more support in attending school demonstrated lower achievement in mathematical, reading and writing literacy.*

The student questionnaire contained two questions about the support that Class 6 students receive in attending school and doing homework.

Exhibit 21: Questionnaire indices and variables related to learning support of Class 6 students

Index	Questions used from the student questionnaire
Homework help	1 item that asks students how often they receive help with their homework from someone other than their teacher.
Support in attending school	6 items that ask students to indicate how much support they received in attending school from different people, eg 'My mother', and 'My friends'.

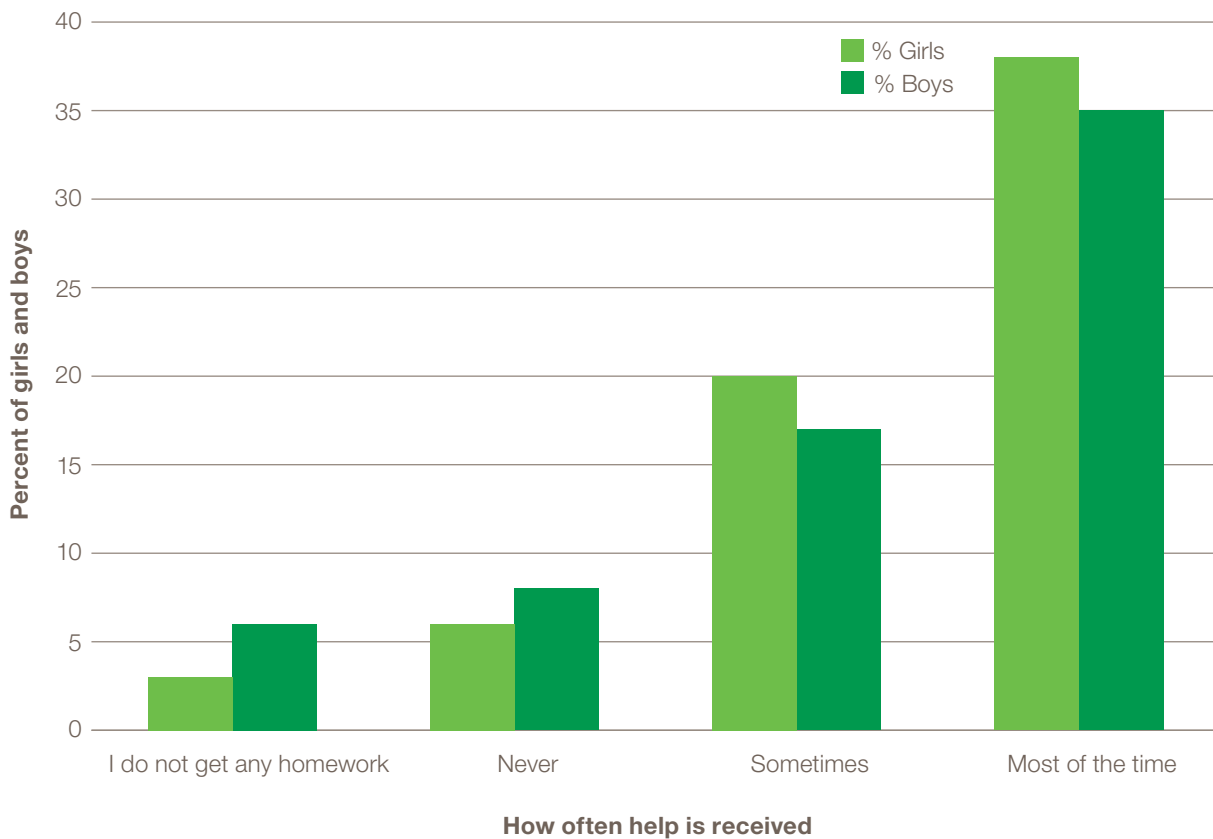


## Help with homework

Students were asked to indicate how often they receive help with homework from someone other than their teacher. For the question about homework help, the response options were ‘I do not get any homework’, ‘Never’, ‘Sometimes’, and ‘Most of the time’ coded from 1 to 4 respectively.

Exhibit 22 shows that about 35% of boys and 38% of girls receive help with their homework most of the time, with another 17% of boys and 20% of girls receiving help sometimes.

Exhibit 22: Homework help – per cent for girls and boys (Class 6)



Note: 38% of girls and 35% of boys did not respond to this question

When the average responses for girls and boys were calculated, girls receive help with their homework slightly more often than boys (see Exhibit 23), although it should be noted that the differences in the proportions of girls and boys choosing each response option are not statistically significant.

Exhibit 23: Homework help – mean difference between girls and boys (Class 6)

	Girls	Boys	Difference Girls–Boys	Statistical significance
Average homework help	3.37	3.23	0.14	Δ



## Support attending school

The second question related to learning support asked how supportive a range of people were of the student attending school. Students had the following options to choose from: 'Not supportive', 'Partly supportive', 'Moderately supportive', 'Very supportive', and 'Extremely supportive', which were coded from 1 to 5 respectively.

When comparing girls' and boys' average perception of support they receive from different people, we can see (Exhibit 24) that on average, all these people are between partially supportive and moderately supportive (between codes 2-3) of girls and boys.

Both boys and girls perceive receiving slightly less support from their teachers than they do from other people.

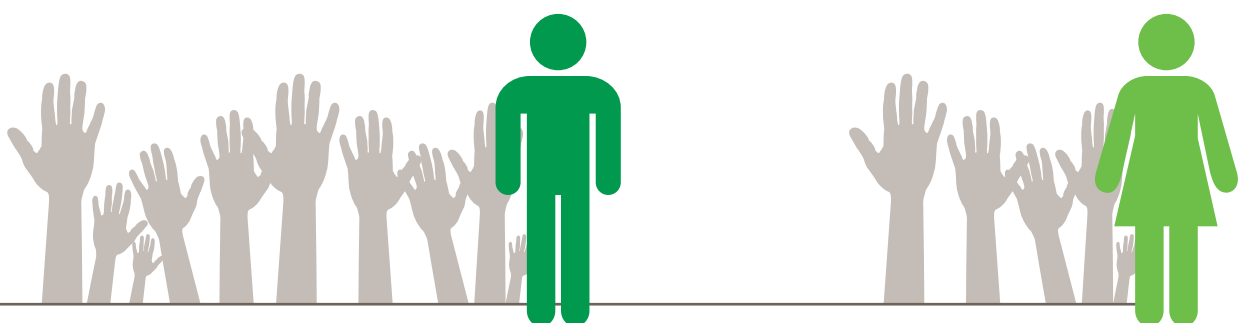
The differences between girls' and boys' perception of their parents' and teachers' support are not statistically significant (see Exhibit 24).

When rating the levels of support given by family members other than parents, friends and the community, boys indicated receiving more help than girls at statistically significant levels.

When these questions were analysed as a group the data showed that, on average, boys indicated receiving higher levels of support in attending school than girls.

The data also showed that students who indicated they had more support demonstrated lower achievement in all three domains: there is weak to moderate negative correlation with achievement in all three domains.<sup>11</sup> A possible explanation could be that weaker students receive more support precisely because they are demonstrating lower achievement and require more encouragement, attention or help.

*Boys indicated receiving higher levels of support in attending school than girls*



<sup>11</sup> Mathematical literacy:  $r = -0.32$ ;  
Reading literacy:  $r = -0.33$ ;  
Writing literacy:  $r = -0.25$

Exhibit 24: Mean difference between girls' and boys' perception of support they receive in attending school (Class 6)

Support from:	Girls	Boys	Difference Girls-Boys	Statistical significance
Mother	2.5	2.8	-0.22	-
Father	2.5	2.8	-0.28	-
Other family members	2.4	2.7	-0.29	∇
Friends	2.4	2.8	-0.43	∇
Community	2.4	2.8	-0.40	∇
Teachers	2.2	2.5	-0.29	-

## Socio-economic background of girls and boys in Class 6

*Socio-economic variables showed only some small differences between girls and boys. Nevertheless, it should be noted that when looking at home building quality and home possessions only, girls attending Class 6 in Afghanistan appear to come from slightly 'better-off' homes than boys, on average.*

*On average, both girls and boys indicated eating between two and three meals per day.*

*The average time it takes to get to school is between 30 minutes and 1 hour for both girls and boys.*

The student questionnaire contains a number of questions related to the socio-economic background of students. The responses to questions about Home Possessions, Home Quality, and Educational Possessions were scaled into indices.<sup>12</sup> The questions about parent education were re-coded into highest year of general education of either parent and the questions about number of meals per day and school travel time were treated as stand-alone variables (see Exhibit 25).<sup>13</sup>

When analyses were performed to investigate the relationship between achievement and the various socio-economic factors, it was found that students from homes with a higher socio-economic status perform better. The strengths of the relationships are within the range of other studies.<sup>14</sup>

The mean differences between boys and girls are statistically significant for two indices: Home Possessions and Home Quality. In both cases, girls and their families were slightly better off than boys (see Exhibit 26). This difference might be explained if girls from the poorest families are less likely to attend school than boys from the poorest families.

For all other indices and variables related to student socio-economic background, gender differences are not statistically significant.

One can see from Exhibit 26 that, on average, both boys and girls have between two and three meals a day. For time travelled to school, the value of 1.7 indicates a travel time of between 30 minutes and one hour on average.

Overall the differences in socio-economic conditions between girls and boys are either small or not statistically significant.

<sup>12</sup> Home and Educational Possessions indices were scaled under Rasch (Rasch, 1960/1980); Home Quality was scaled under a partial credit model (Masters, 1982). To achieve comparable results, all indices were standardised around the mean and standard deviation of Highest Parental Education (mean=9.7; standard deviation=5.6).

<sup>13</sup> More detailed analysis of socio-economic background variables will be provided in future publications.

<sup>14</sup> In MTEG Afghanistan 2013, socio-economic factors are associated with 9% of variance in mathematics performance, 12% in reading performance and 12% in writing performance. In comparison, in the PISA study,

the index of economic, social and cultural status for each country explains between 2.6% and 24.6% of performance variance in mathematics (OECD, 2013a, p. 36) and between 1.8% and 27.4% of performance variance in reading (OECD, 2010b, p. 55). The average across all PISA countries is 13.2% in reading and 14.1% in mathematics, which for reading is not vastly different from the results for Class 6 in MTEG Afghanistan.

Exhibit 25: Questionnaire indices and variables related to socio-economic background of Class 6 students

Index	Questions used from the student questionnaire
Home Possessions	16 items about things students have in their home, eg 'Daily newspaper', 'Car', and 'Piped water', scaled.
Home Quality	Four items about students' houses, eg 'In your home, what is the main source of lighting by which you can read?' and 'What is the roof of your home mostly made of?', scaled.
Educational Possessions	13 items about reading, mathematics, and other educational materials that students have, eg 'How many books are in your home that are not school books, newspapers or magazines?' and a question that asks about items possessed, eg 'Calculator' and 'Pencil', scaled.
Highest Parental Education	Two items about the level of general education that their mother and father (or guardians) have completed, choosing from a list of options from 'Grade 6 or lower' to 'University degree'. The highest level of general education between both the mother and father, was used for analysis.
Number of Meals per Day	One item that asks students how many meals they have on a normal school day: '1 meal', '2 meals' or '3 meals or more', coded as 1, 2, 3 respectively.
Time Travelled to School	One item in which students indicate how long it takes them to get to school each day: 'Less than 30 minutes', '30 minutes to 1 hour', '1 to 2 hours' or 'More than 2 hours', coded as 0, 1, 2, 3 respectively.

Exhibit 26: Differences in socio-economic background of boys and girls in Class 6<sup>15</sup>

Index/variable	Mean Girls	Mean Boys	Difference Girls–Boys	Statistical significance
Home Possessions	10.28	9.19	1.09	Δ
Home Quality	10.25	9.22	1.03	Δ
Educational Possessions	10.14	9.30	0.84	-
Highest Parental Education	9.84	9.53	0.31	-
Number of meals per day	2.69	2.69	0.00	-
Time travelled to school	1.71	1.72	-0.02	-

<sup>15</sup> Values explained further in the forthcoming Technical Report.

## What girls and boys in Class 6 think about their school and their teacher

*Neither girls nor boys expressed positive attitudes towards their school experience.*

*Students' attitudes towards their teachers' classroom organisation were also negative, although girls' attitudes were slightly less negative.*

Towards the end of the questionnaire, students were asked to indicate their level of agreement to a series of questions relating to their experience at school and their teacher's organisation of the classroom.

All of the statements to which the students were asked to respond were worded positively. On average, students responded that they disagreed or strongly disagreed with these positively worded statements about school.

When the questions about school were analysed together, students' attitudes to school did not correlate with achievement, and there were no differences in boys' and girls' attitudes.

In contrast, differences were found between boys' and girls' perceptions of their teacher's

organisation of the classroom when the three items about classroom organisation were analysed together.

On average, students' responses fell between strongly disagreeing and disagreeing with statements about their teacher's organisation, but female students indicated less disagreement: their perception of their teacher's organisation of the classroom was less negative.<sup>16</sup>

Nevertheless, these perceptions did not correlate with achievement. In other words, students with a negative perception of their teacher's classroom organisation did not tend to perform any better or worse on the assessment than students who expressed more positive perceptions.

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<sup>16</sup> More detailed analysis will be provided in future publications.

Exhibit 27: Questionnaire indices related to students' attitudes (Class 6)

Index	Questions used
Students' attitudes towards school	7 items in which students indicate how much they agree with statements about school, eg 'I make friends easily at school', and 'I have learnt things at school that are useful'.
Students' perceptions of teacher's organisation of the classroom	3 items in which students indicate how much they agree with statements about their mathematics teacher: 'My teacher gets students to listen to him or her', 'My teacher keeps the class orderly', and 'My teacher starts lessons on time'.



## Demographic characteristics of girls and boys in Class 6

*The ages and school locations of Class 6 students in Afghanistan were analysed in relation to girls' and boys' achievement.*

*The range of ages in Class 6 is quite wide, from at least 11 to 15 years old and older. The data show that, on average, it was the 12-year-olds in Class 6 who performed best in mathematical, reading and writing literacy. Interestingly, boys are under-represented in the 12-year-old age group.*

*For mathematical literacy, there is no statistically significant difference in student achievement based on location of the school (urban or non-urban).*

*There is also no statistically significant difference in achievement between girls from a non-urban area and boys from a non-urban area.*

*Overall, students from an urban area demonstrated higher levels of reading and writing literacy than those from a non-urban area. Girls from an urban area outperformed boys from an urban area in reading and writing, and these girls from urban areas also outperformed girls from a non-urban area in writing.*



## At what age are girls and boys attending Class 6?

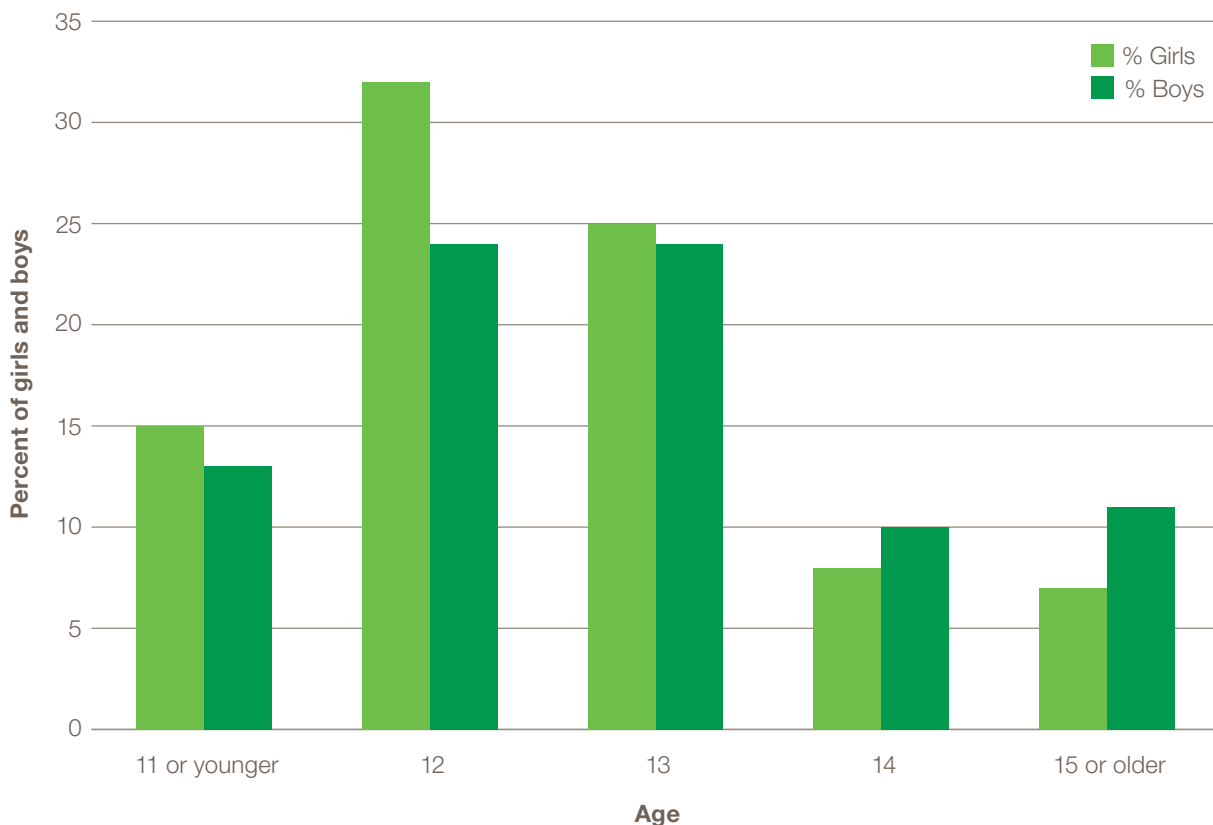
In the questionnaire, students were asked how old they were.

It was found that among those who provided an answer to this question, boys are, on average, 12.8 years of age and girls are 12.5 years of age, which makes girls approximately 3 months younger, on average.<sup>17</sup>

The analysis of the data shows that there are significant differences in achievement between 12-year-olds and 15-year-olds, with 12-year-olds demonstrating higher levels of proficiency in all three domains.

It was also found that boys are under-represented in the 12-year-old category (see Exhibit 28), which is performing best in all three domains. More investigation may be required to ascertain the causes of this: whether it is due to class repetition, late starting age, other factors or a combination of factors.

Exhibit 28: Per cent of boys and girls in each of the Class 6 age categories



<sup>17</sup> Please note that 14% of girls and 17% of boys did not report their age. More details on age-related differences are planned for a forthcoming publication.



## How is the Class 6 population distributed across rural and urban areas?

In the school questionnaire, the principals were asked about the location of their school. They were given a choice of 'Remote', 'Rural', 'In or near a small town', and 'In or near a large town or city'. According to their answers, the percentage of girls and boys who are in Class 6 in these areas was estimated.

The results show that girls are under-represented in rural areas (see Exhibit 29).<sup>18</sup> This may be connected to findings on support attending school: the data show that boys perceive more support in attending school from family members other than parents, friends, and the community than girls do (see page 32). A possible implication is that more support may be required for girls in rural areas to attend school.

Analyses were also performed to compare the achievement of students in urban ('in or near a

large town or city') and non-urban areas. This was done by considering the results for 'remote', 'rural' and 'in or near a small town' as one category: 'non-urban'.

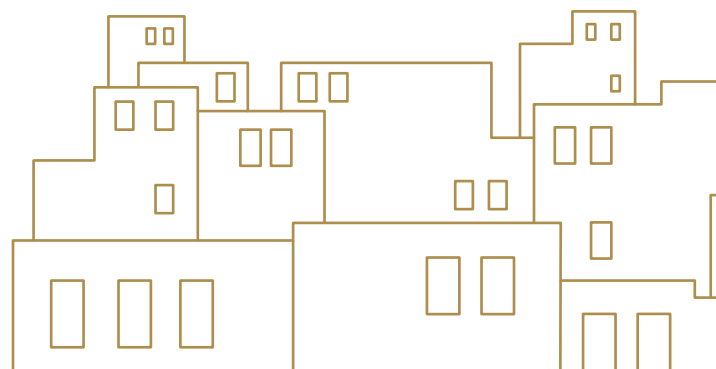
Results from large-scale studies have shown that in many countries, students who go to schools situated in an urban area outperform their peers at schools in a non-urban area (see, for example, Mullis et al, 2012a; Mullis et al, 2012b). In Afghanistan, this was found to be the case for reading and writing, but not for mathematics.

As well as examining overall differences in achievement by location, analyses were performed to include gender differences in the comparison of results by location. The results for writing are of particular interest.

Exhibit 29: Per cent of girls and boys in different locations (Class 6)



<sup>18</sup> Please note that data on school location is missing for approximately one-fifth of girls and approximately one-quarter of boys. More details on location-related differences are planned for a forthcoming publication.



The first area considered was the difference in achievement between girls and boys living in each of the two location categories.

- In reading and writing literacy, girls outperform boys in urban areas ('in or near a large town or city'). For reading, this difference equates to nearly one MTEG proficiency level, while for writing, girls living in an urban area perform nearly two proficiency levels higher than boys living in an urban area.
- When the achievement of girls living in a non-urban area was compared to achievement of boys living in a non-urban area, the results were similar in all domains.

Another point of comparison was to consider the achievement of girls in each of the locations and boys in each of the locations.

- The achievement of boys who live in an urban area and boys who live in a non-urban area is similar in all three domains.
- For girls, the levels of mathematical and reading literacy in urban and non-urban areas are similar. For writing, on the other hand, girls who live in an urban area outperform girls who live in a non-urban area: the difference is 11 MTEG scale points, about one-and-a-half MTEG writing proficiency levels.

It appears that girls living in an urban area are outperforming other sub-groups, particularly in writing literacy.

Exhibit 30: Reading achievement by gender and location (Class 6)

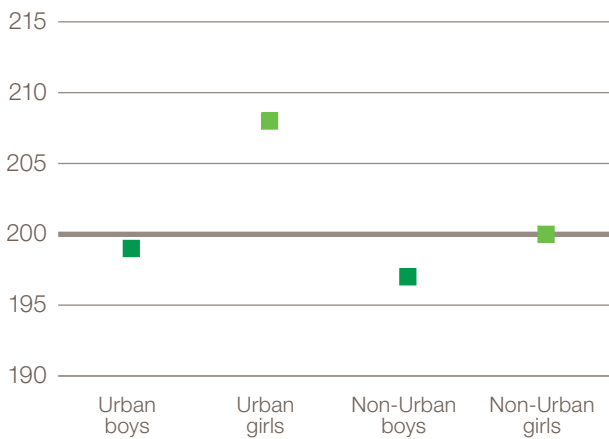
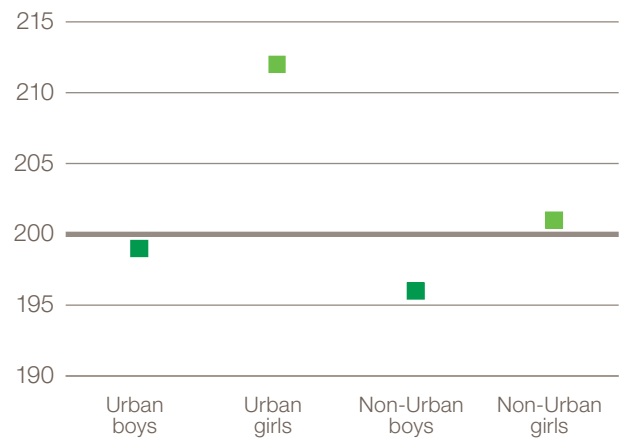


Exhibit 31: Writing achievement by gender and location (Class 6)



# Conclusions and possible policy implications

This report has presented data from the Class 6 MTEG Afghanistan assessment in 2013 as it relates to girls and boys. The main findings include:

- Boys and girls demonstrated similar levels of achievement in mathematical literacy.
- Overall, girls outperformed boys in both reading and writing literacy.
- Boys from non-urban areas and girls from non-urban areas have similar levels of achievement.
- In urban areas, girls outperformed boys in reading.
- Girls schooled in an urban area outperformed girls schooled in non-urban areas, and boys no matter where they are schooled, in writing.
- In general, students who indicated more negative attitudes to reading demonstrated lower achievement in all three domains.

The data show that the mathematical literacy of girls and boys in Class 6 is at the same level: most students demonstrated basic proficiencies, although a substantial minority of students did not demonstrate these basic proficiencies. It is not surprising that in Class 6 there is no gender difference in mathematics achievement – research from international studies shows that gender differences vary between countries and over time (see, for example, Mullis et al, 2012a, p. 74-82; OECD 2013b, p. 71).

In the areas of reading and writing literacy, girls outperformed boys. The fact that girls in Class 6 demonstrated higher levels of proficiency than boys in reading and writing is not surprising given the body of research into gender differences and consistent results of this research for reading and writing. In PISA, for example, ‘girls outperform boys in reading in every country and economy’

(OECD, 2013b, p. 199), and similar results have been found for Class 4 students in PIRLS: ‘in each successive assessment, PIRLS has consistently found that fourth grade girls have much higher reading achievement than boys in most countries, and the 2011 results continue this pattern’ (Mullis et al, 2012b, p. 51).

Even though girls outperformed boys in the Class 6 survey in writing, the percentages of both boys (36%) and girls (24%) at and below the lowest proficiency level are high. On the other hand, much higher proportions of girls than boys performed in the two highest writing proficiency levels. The two highest levels, proficiency levels 9 and 10, comprise more than twice as many girls as boys: 29% of girls but only 13% of boys.

There were some differences in the support received by girls and boys in attending school and doing homework. Girls indicated receiving slightly more support in doing homework while boys indicated receiving more support in attending school. The higher levels of support in attending school come from friends, the community and family members other than their parents.

Collectively, the indices and variables related to socio-economic background of the students are associated with around 10 per cent of differences in their performance (or put another way, there is about 0.3 correlation between socio-economic background and performance). This means that even if all other factors for all students (like age, and location) were found to have been exactly the same, we would still have found about 10% of the differences in performance we observed, just because of differences in socio-economic status. Most of the socio-economic indices and variables do not exhibit gender differences.

However, the Home Possessions and Home Quality indices favour girls, which might mean that girls from the poorest families are less likely to attend Class 6 than boys from similar socio-economic backgrounds.

Generally, both boys and girls responded negatively when asked about their teachers' classroom organisation skills. However, girls were less negative about their teachers than boys. Boys and girls both seemed to have quite negative attitudes towards the school environment as a whole. Future research could investigate how school could be a more positive experience for students in Afghanistan.

Although positive attitudes to reading do not correlate with achievement in any of the domains, students who indicated more negative attitudes towards reading demonstrated lower achievement in all three domains. There is no gender difference in reading attitudes.

A higher percentage of girls (30% compared to 22% of boys) reported that they read fiction books. The index summarising the variety of reading materials showed positive association with achievement in all three domains. On the negative side, the results show that less than half of girls and boys reported that they read textbooks. Making reading materials, including textbooks, available to all students and better integrating them into the learning process would be an advantage.

Although girls performed better than boys at reading and writing in urban areas, the results showed no difference between girls and boys in non-urban areas. However, overall performance in reading and writing is still low. This suggests that more assistance is required in reading and

especially writing, but it should be provided to all children, regardless of their gender.

Availability of a variety of reading texts and writing tasks that are of high interest to boys and girls is likely to promote their engagement in both of these literacies, and improve their attitudes towards reading and writing. It is hoped that this will lead to higher performance. Recent research shows that reading attitudes are associated with 25% of improvement in reading achievement in Chile, an emerging educational system (Valenzuela, Gómez and Sotomayor, 2015). It is recommended that both girls and boys be supported, encouraged and that their interest in reading be fostered right from the beginning of schooling, but with an emphasis on giving more assistance to older students before they come to Class 6 as well as in Class 6.

In general, measures that promote reading and make reading materials, including textbooks, more readily available across the country have strong policy implications. To this end, engaging students more in reading and making reading materials more accessible through establishing school libraries, especially in rural areas, would be an advantage.

## Appendix A: Describing proficiency on a scale

The results of the MTEG assessment of mathematical literacy, reading literacy and writing literacy are analysed to locate students' proficiency in each domain on an empirically derived developmental scale.<sup>19</sup> The scale for each domain assumes there is a single underlying trait - mathematical or reading or writing proficiency - which can be thought of as an attribute possessed to differing degrees by different students. Similarly, each task (or question) in the assessment can be thought of as demanding the activation of a certain degree of this trait. The underlying trait can be represented as a line or scale, showing at the same time the increasing presence of the attribute and the increasing extent to which tasks call for the attribute.

A described proficiency scale details the different levels of proficiency shown by learners in the domain. The proficiency scale describes what learners know, understand and can do at different stages of their development. A key concept underpinning proficiency scales is that learning involves building and developing knowledge, skills and understanding in that area of learning.

The proficiency scale is depicted as a line with numerical gradations that quantify how much of the measured variable (for example, reading literacy) is present. Locations along this metric can be represented by numerical scores or with descriptions (that is, in terms of student skills, understanding and competencies).

In associating students with items on this metric, we make probabilistic statements; for example, that we expect students at a certain location on the scale to have a particular probability of

correctly answering items at or near that same location. Similarly, we expect that students would have a higher probability of correctly answering questions below that location (relatively easy items), and a lower probability of correctly answering questions higher on the scale (relatively difficult items). In other words, the more difficult an item is, the more ability a student needs to answer it; and the less proficient a student is in the relevant domain, the more likely it is that he or she is only able to answer less difficult questions – that is, questions demanding less of the relevant attribute.

The scales cover a wide range of proficiencies, from early stages of learning to more sophisticated skills and understanding. Given their continuous and wide-ranging nature, and their literacy orientation – that is, their orientation towards authentic use of knowledge – these scales can be powerful tools for tracking student progress towards the attainment of a set of skills that enable them to participate fully in life beyond the classroom. In addition, since the proficiency levels in the scales are not directly tied to curriculum goals, they can be applied across different settings: different students, different classes, different schools, and even different classes.

While the scales are continuous, for ease of interpretation they are divided into bands: Level 1, Level 2, and so on. The descriptions of each of the proficiency levels are derived from the skills, knowledge and understanding demanded in each task, and the levels are defined by students' performance in the assessment.

<sup>19</sup> For a description of the processes involved in constructing the scales, please see *Class 6 Proficiency in Afghanistan* (Lumley et al., 2015).

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