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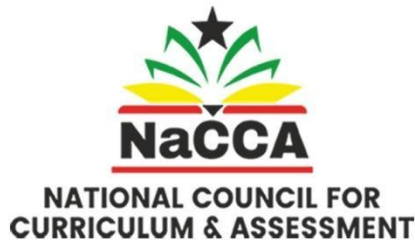
**MINISTRY OF EDUCATION  
REPUBLIC OF GHANA**

# 2024 National Standardised Test



Naccaghana





# 2024 National Standardised Test

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## **Abbreviations**

MoE	-	Ministry of Education
NaCCA	-	National Council for Curriculum and Assessment
NST	-	National Standardised Test
SAQA	-	Standards Assessment and Quality Assurance
GEOP	-	Ghana Education Outcomes Project
ESP	-	Educational Strategic Plan
FCUBE	-	Free Compulsory Basic Education
GPF	-	Global Proficiency Framework
GALOP	-	Ghana Accountability for Learning Outcome Project
GES	-	Ghana Education Service
NPLAF	-	National Pre-tertiary Learning Assessment Framework
NMTDPF	-	National Medium-Term Development Policy Framework
P4	-	Primary 4
BECE	-	Basic Education Certificate Education
JHS	-	Junior High School

**Table of Contents**

**Acknowledgment**.....2

**Abbreviations** .....3

Table of Contents ..... **Error! Bookmark not defined.**

List of Figures .....5

Executive Summary .....7

2024 NST Results.....7

Benchmarking NST outcomes to Global standards ..... 10

Findings..... 12

Recommendations ..... 12

Background ..... 13

Methodology ..... 14

A. Design..... 14

B. Population..... 14

C. Sampling..... 14

E. Data Collection Instrument ..... 15

Piloting of Assessment Instruments ..... 17

Data Collection Procedure..... 18

Data Analysis Procedure ..... 19

Results .....20

Mean Percent Scores by Regions (P6) .....27

Benchmarking NST outcomes to Global standards .....28

**PCM exercise outputs (benchmarking)**.....28

Findings.....33

Recommendations .....33

References .....45

## List of Tables

*Table ES 1: Learners Proficiency Level (P4)*

*Table ES 2: Proficiency Level by Learners*

*Table ES 3: Outcome of the analysis of the PCM exercise*

*Table 1: Test Specification Table (P4 English Language Test)*

*Table 2: Test Specification Table (P4 Mathematics Test)*

*Table 3: Test Specification Table (P6 English Test)*

*Table 4: Test Specification Table (P6 Mathematics Test)*

*Table 5: NPLAF Proficiency Levels*

*Table 6: Overall P4 Mean Percent Scores*

*Table 7: Learners' Proficiency Level (P4 NST)*

*Table 8: Overall Mean Percent Scores for P6*

*Table 9: Overall Mean Percent Score by Gender (P6)*

*Table 11: Expertise of participants in national exercise*

*Table 12: Gender of participants in national exercise*

*Table 13: Regional representations of participants in national exercise*

*Table 14: PCM experience of participants in international exercise*

*Table 15: Geographic representation of participants in international exercise*

*Table 16: Training workshops held*

*Table 17: Judgements completed during PCM benchmarking exercise*

*Table 18: Participants fit NST English Language P4 NST 2024*

*Table 19: Participants fit NST Mathematics P4 NST 2024*

*Table 20: Participants fit NST English Language P6 NST 2024*

*Table 21: Participants fit NST Mathematics P6 NST 2024*

*Table 22: Item fit and DIF NST English Language P4 NST 2024*

*Table 23: Item fit and DIF NST Mathematics P4 NST 2024*

*Table 24: Item fit and DIF NST English Language P6 NST 2024*

*Table 25: Item fit and DIF NST Mathematics P6 NST 2024*

## List of Figures

1. *Figure ES 1: Learners Proficiency Level (P4)*

2. *Figure ES 2: Proficiency by Learners*

3. *Figure ES 3: Proficiency level by gender*

4. *Figure 1: Mean Percent Score by Gender*

5. *Figure 2: Proficiency Level of Learners*
6. *Figure 3: Proficiency Level by Gender*
7. *Figure 4: Mean Percent Scores by Regions*
8. *Figure 5: Mean Percent Score by Gender*
9. *Figure 6: Proficiency Level by Learners*
10. *Figure 7: Proficiency Level by Gender*
11. *Figure 8: Mean Percent Score by Regions*

## **Executive Summary**

This report presents the findings from the 2024 administration of the National Standardised Test (NST) conducted by NaCCA. The 2024 edition of the Primary 4 NST was the third census assessment and the first census assessment for Primary 6. It covered about 16,534 public basic schools across the 16 regions of Ghana. Primary 4 participants were 472,878 and Primary 6 participants were 314,797.

The Australian Council for Educational Research (ACER) UK, funded by the UK Foreign, Commonwealth and Development Office (FCDO), supported NaCCA in reviewing the test items, ensuring that the items in both Mathematics and English language aligned with the global proficiency framework, the national curricula, and accurately measured the intended learning outcomes. The psychometric properties (reliability, item difficulty and item discrimination indexes) were determined for each test item in the instruments. The tests consisted of thirty-five (35) and forty (40) multiple-choice questions across domains in Mathematics and English Language for primaries 4 and 6, respectively.

### **2024 NST Results**

The 2024 NST report presents the results of the data analysed. It covers proficiency levels and the overall mean percent scores by schools, gender and regions for Mathematics and English Language for both Primaries 4 and 6. The report also includes the global benchmarks for the internationally agreed minimum proficiency levels.

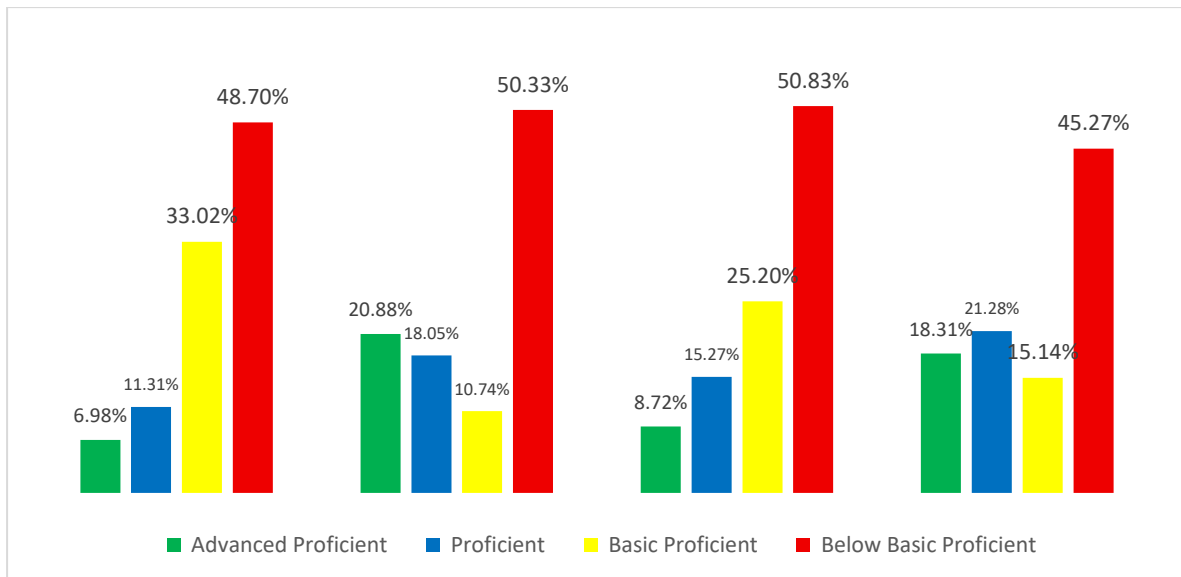
#### **P4 results**

Table ES 1 and Figure ES 1 provide information on learners' proficiency levels in P4 English Language and Mathematics in 2022 and 2024. Out of the 472,878 learners in 2024, 20.88% met the advanced proficiency level in English Language, while 18.31% achieved advanced proficiency in Mathematics. These are both increases in the proportions achieving advanced proficiency in 2022. However, 45.27% of learners had below basic proficiency level in Mathematics, and 50.33% had below basic proficiency level in English Language. This represents a slight increase on 2022 in English but a decrease on 2022 for mathematics.

**TABLE ES 1: Learners' Proficiency Level (P4 NST)**

Proficiency Level	2022 English Language	2024 English Language	2022 Mathematics	2024 Mathematics
Highly Proficient (HP) / Advanced Proficient	6.98%	20.88%	8.72%	18.31%
Proficient (P)/ Proficient	11.31%	18.05%	15.27%	21.28%
Approaching Proficiency (AP)/ Basic Proficient	33.02%	10.74%	25.2%	15.14%
Developing (D)/ Below Basic Proficient	48.70%	50.33%	50.83%	45.27%

**Figure ES 1: Proficiency Level of Learners**



## P6 results

Table ES2 and Figure ES2 show the learners' proficiency levels in English Language and Mathematics. Out of the 314,797 learners, 31.15% met the advanced proficiency level in English Language, while 24.44% achieved advanced proficiency in Mathematics. However, 33.4% of learners had below-basic proficiency in Mathematics, and 32.08% had below-basic proficiency in the English Language. There is no data from 2022 to enable comparisons over time to be made.

**TABLE ES 2: Proficiency Level by Learners (P6 NST)**

Proficiency levels	P6	
	Mathematics	English Language
Highly Proficient (HP) / Advanced Proficient	24.44%	31.15%
Proficient (P)/ Proficient	19.69%	18.21%
Approaching Proficiency (AP)/ Basic Proficient	22.47%	18.56%
Developing (D)/ Below Basic Proficient	33.4%	32.08%

**Figure ES 2: Proficiency Level of Learners**

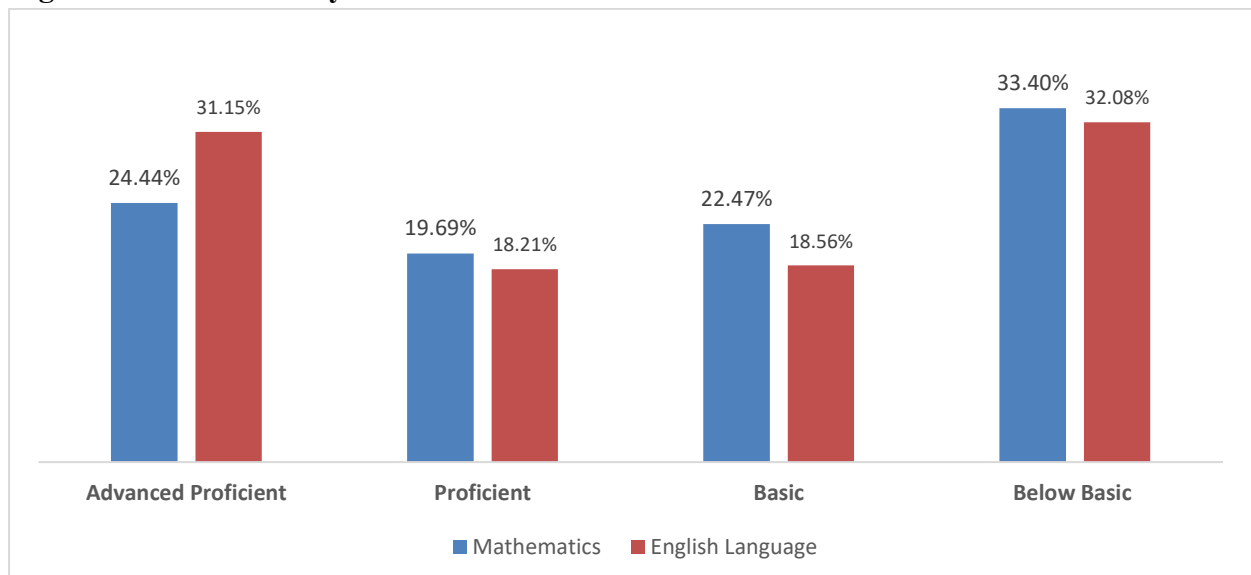
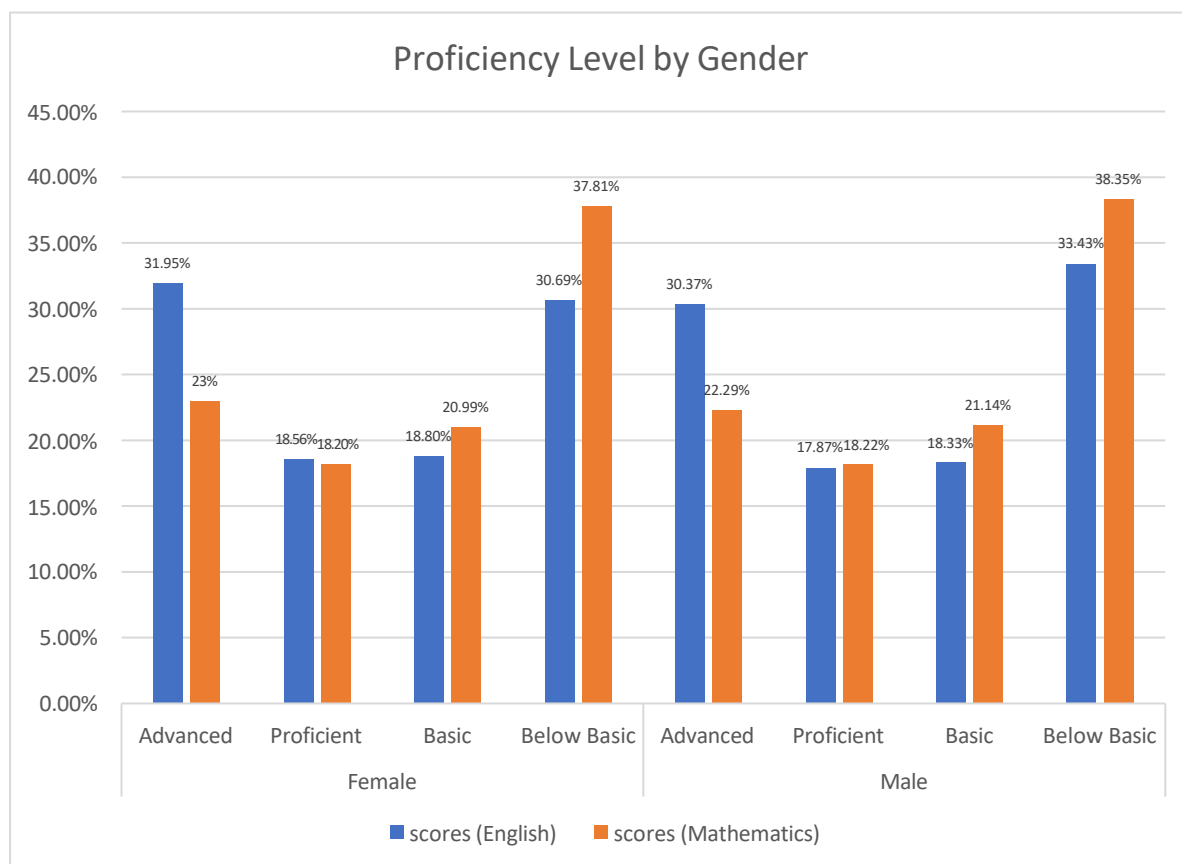


Figure ES 3 shows learners' proficiency levels by gender. From the graph, 30.37% and 22.29% of male learners attained advanced proficiency in English Language and Mathematics, respectively, whereas 31.95% and 23% of female learners attained advanced proficiency in English Language and Mathematics, respectively. However, 33.43% and 38.35% of male learners had below basic proficiency in English Language and Mathematics, respectively, whilst 30.69% and 37.81% of female learners had below basic proficiency in English Language and Mathematics, respectively.

**Figure ES 3: Proficiency Level by Gender**



### **Benchmarking NST outcomes to Global standards**

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States, sets an indicator for countries to report on the number of learners, by sex, in each country who achieve at least the Minimum Proficiency Level in reading and mathematics at the end of lower primary and the end of primary. Following data analysis and confirmation of test reliability, two Pairwise Comparison Method (PCM) exercises were conducted. These exercises aimed to establish the cut scores on each NST that define the Minimum Proficiency Levels (MPLs) used for reporting progress on SDG 4.1.1. The outcomes of the analysis are reported in Table ES 3.

**Table ES 3: outcome of the analyses of the PCM exercises**

<b>Grade</b>	<b>Minimum Proficiency Level</b>	<b>Percentage of Assessed Population</b>
Primary 4	<b>MPL a Reading (lower primary)</b>	59.61%
	Girls	59.57%
	Boys	59.64%
	<b>MPL a Mathematics (lower primary)</b>	65.55%
	Girls	65.77%
	Boys	65.43%
Primary 6	<b>MPL b Reading (upper primary)</b>	72.77%
	Girls	74.65%
	Boys	71.79%
	<b>MPL b Mathematics (upper primary)</b>	63.62%
	Girls	63.69%
	Boys	63.57%

## **Findings**

1. Among the 472,878 Primary 4 (P4) learners assessed, 59.61% achieved the Global Minimum Proficiency Level (MPL) in reading, whereas 65.55% attained the MPL in Mathematics.
2. For the upper primary (P6), 72.77% of the learners assessed met the Global Minimum Proficiency Level (MPL) in reading, while 63.62% met the MPL in Mathematics.
3. Primary 4 learners in the Western North Region recorded the highest scores in English Language, while those in the Bono Region achieved the highest scores in Mathematics compared to learners in other regions.
4. Primary 6 learners in the Oti and Western North regions recorded higher scores in the English language and Mathematics tests.
5. Among learners who participated in the P4 NST assessment, males constituted 63%, while females accounted for 37%, indicating higher male participation.

## **Recommendations**

1. The Ministry of Education, through its agencies, should strengthen reading interventions in schools to close the literacy gap.
2. Diagnostic assessment should be strengthened in schools to identify foundational learning gaps early, and appropriate teaching interventions should be implemented at the school level.
3. Effective practices within regions recording higher scores should be monitored and shared with regions with low scores.
4. It is recommended that school-level engagement and strategies should be reinforced to increase learners' participation in the NST assessment.
5. To increase female engagement at the P4 level, it is recommended that targeted girl-child participation and retention strategies and gender-responsive policies should be reinforced to ensure equitable access and participation in national assessments and classroom instruction.
6. NaCCA, in collaboration with the Ministry of Education, should build a test bank for learners to use as preparatory items and for teachers to use for formative assessment to improve teaching and learning. These items should be uploaded on a portal for teachers, parents and learners to access.

## **Background**

The National Standardised Test (NST) is an assessment initiative conducted by the National Council for Curriculum and Assessment (NaCCA) under the Education Strategic Plan (2018-2030) to evaluate the foundational literacy and numeracy skills of learners at the pre-tertiary level in Ghana focusing on Primaries 2, 4, 6 and JHS 2. As part of efforts to enhance educational outcomes, the NST serves as a nationwide tool for measuring students' proficiency against the national curriculum standards (NaCCA, 2020).

The introduction of the NST aligns with Ghana's broader educational reforms aimed at improving learning outcomes and ensuring equitable access to quality education. Assessing learners' competencies at critical stages of their academic journey helps to provide key insights into learner performance trends, identify learning gaps, and inform targeted educational interventions. Additionally, the NST supports evidence-based decision-making in curriculum development, teacher training, and resource allocation to enhance teaching and learning.

Since its implementation, the NST has played a crucial role in monitoring the effectiveness of curriculum delivery and strengthening accountability within the education sector. The test enables policymakers, educators, and stakeholders to track progress and implement strategies to improve educational equity and excellence across the country.

## **Methodology**

### **A. Design**

The survey test design was employed as a methodology to inform data collection strategy.

A survey test design refers to the structured approach used to develop and administer a survey-based assessment. This design ensures that the survey effectively collects valid and reliable data on respondents' knowledge, attitudes, behaviours, or experiences (Groves et al., 2009). This design permits the use of data collection instruments in gathering data, which is subsequently analysed and summarised to derive insight into the population. The NST was conducted in all public schools across the country with the aim of gathering national level data on learners' foundational learning. This periodic assessment is used to gather evidence to inform appropriate learning interventions.

### **B. Population**

A total of about 16,534 public basic schools across the 16 regions of Ghana participated in the 2024 NST. 472,878 learners participated in the P4 assessment exercise, with a total of 299,570 (63%) being males and 173,308 (37%) being females. A total number of 314,797 learners participated in the P6 assessment exercise, with 159,973 (51%) being males and 154,824 (49%) being females. The learners were within the age range of 8–17 years.

### **C. Sampling**

The population of interest for the 2024 National Standardised Test (NST) comprised all Primary 4 and 6 learners in public schools across Ghana. The 2024 NST was designed to evaluate learning outcomes for an entire population of learners within these grade levels. The assessment aimed to generate comprehensive and representative data on foundational literacy and numeracy skills, ensuring that every learner's performance contributed to the nationwide evaluation of educational standards.

#### **D. Language of Instruction and Assessment**

NST items are written in English because English is the official language of instruction for learners at the Primary 4 level. In the early years of schooling, from Kindergarten (KG) to Primary 3, pupils are usually taught using a bilingual approach. During this stage, instruction is delivered in both their mother tongue and English to help them gradually develop literacy and comprehension skills in English while maintaining understanding through a familiar local language.

From Primary 4 onward, however, English becomes the primary and official medium of instruction across subjects. As a result, assessment items such as those used in the NST are designed and administered in English to align with classroom instruction. This ensures consistency between teaching and assessment and allows the test to measure learners' understanding of subject content as it is delivered in school.

#### **E. Data Collection Instrument**

The Test Instrument was aligned with the national curricula and the Global Proficiency Framework (GPF) for both grade levels. The Primary 4 test consisted of 35 multiple-choice questions, while the Primary 6 test consisted of 40 multiple-choice questions for both Mathematics and English Language. Each item had four options, and learners were to select the correct or best option as the key to the item. The P4 2024 tests sampled anchor items from the 2022 NST to ensure comparability across the years. The P6 2024 NST was the first test to be conducted. Tables 1 to 4 detail how test items were spread for each subject area.

**TABLE 1: Test Specification Table (P4 English Language Test)**

Domain	Number of Items
Reading	20
Anchor Items from 2022 P4 NST (Grammar)	15
Total	35

**TABLE 2: Test Specification Table (P4 Mathematics Test)**

Domain	Number of Items
Number and Operations	10
Measurement	2
Statistics and Probability	3
Geometry	3
Algebra	2
Anchor Items from 2022 P4 NST	15
Total	35

**TABLE 3: Test Specification Table (P6 English Test)**

Domain	Number of Items
Reading	26
Grammar	12
Rhyme	2
Total	40

**TABLE 4: Test Specification Table (P6 Mathematics Test)**

Domain	Number of Items
Number and Operations	22
Algebra	5
Statistics and Probability	5
Geometry	3
Measurement	5
Total	40

### **Piloting of Assessment Instruments**

The instruments were piloted in selected schools to ascertain the psychometric properties of the items. This exercise was to determine which items to include in the final test.

Twenty (20) public schools were selected from four districts in the Greater Accra Region to pilot the instruments. These schools were carefully selected using a stratified sampling technique to ensure rural and urban representation.

The test was piloted in all twenty (20) schools within two days. In all, 774 learners were assessed. Test administrators were tasked with the administration of the test instruments.

Test materials such as test manuals, scannable answer sheets, pencils, erasers, and sharpeners were provided.

The data was cleaned and analysed using the Classical Test Theory (CTT) to evaluate the statistical quality of test items. This analysis played a crucial role in determining which items would be included in the final operational test.

### **Data Collection Procedure**

Regional and district directors of education, test administrators and monitors selected from the 16 regions of Ghana were trained on the test administration protocols. The sessions were supported with training materials such as PowerPoint presentations, test administration manuals and test protocols.

NaCCA, in collaboration with WAEC, distributed the logistics and test materials to all 16 regions of Ghana from July 19<sup>th</sup> to 21<sup>st</sup>, 2024. Materials distributed included pencils, sharpeners, scannable sheets, and test booklets in test security bags. The items were stored in WAEC depots in various districts across the country to ensure test security.

The NST was conducted on the 23<sup>rd</sup> and 24<sup>th</sup> of July 2024, in all the approved examination centres within the 16 regions for Primaries 4 and 6, respectively. The assessment was conducted in two sessions, 1 hour and 15 minutes for both Mathematics and English Language. Mathematics was conducted in the first session, followed by English Language after a thirty

(30) minutes break.

The test administrators collected all the scannable sheets and test booklets (used and unused) and deposited them at the various WAEC depots and the District Education Offices across the country.

## Data Analysis Procedure

Scannable sheets received were sorted into regions and districts. The sheets were scanned with Scantron i700 scanners using Edumetric software. Rejected scannable sheets were re- shaded and rescanned to minimise data loss. The cleaned data was analysed using descriptive statistics such as means, standard deviation, bar charts and line graph. The scores of learners were then interpreted using the proficiency levels in the NPLAF as shown in Table 5.<sup>1</sup>

**TABLE 5: NPLAF Proficiency Levels**

Level of Proficiency	Score
Highly Proficient (HP) / Advanced Proficient	80+
Proficient (P)/ Proficient	66 -79%
Approaching Proficiency (AP)/ Basic Proficient	50 -65%
Developing (D)/ Below Basic Proficient	49% and below

<sup>1</sup> Since the NST 2022 and NST 2024 were different assessments, statistical linking was conducted to ensure outcomes could be compared. Details of the approach used can be found in Appendix A.

## Results

The 2024 NST presents the results of the data analysed. It covers the overall mean percent scores by schools, regions and proficiency levels for Mathematics and English Language for both Primaries 4 and 6.

Table 6 shows the mean percent scores of primary 4 learners in Mathematics and English Language before scaling or equating them to the 2022 NST data. From the table, learners had a mean score of 19.72 (56.34%) and 20.11 (57.47%) in English Language and Mathematics, respectively. This indicates that most learners responded correctly to more items on the English Language test than on the mathematics test.

**TABLE 6: Overall P4 Mean Percent Scores**

Subjects	Mean Score	SD	Mean Percent Score (%)
English Language	19.72	9.47	56.34
Mathematics	20.11	8.08	57.47

Figure 1 shows the mean percent scores of male and female learners in English Language and Mathematics. Female learners had a mean percent score of 56.27% while male learners had 56.36% in English Language. For Mathematics, female learners had a mean percent score of 57.6% while male learners had 57.4%. This indicates that female learners performed better than male learners in Mathematics.

**Figure 1: Mean Percent Score by Gender**

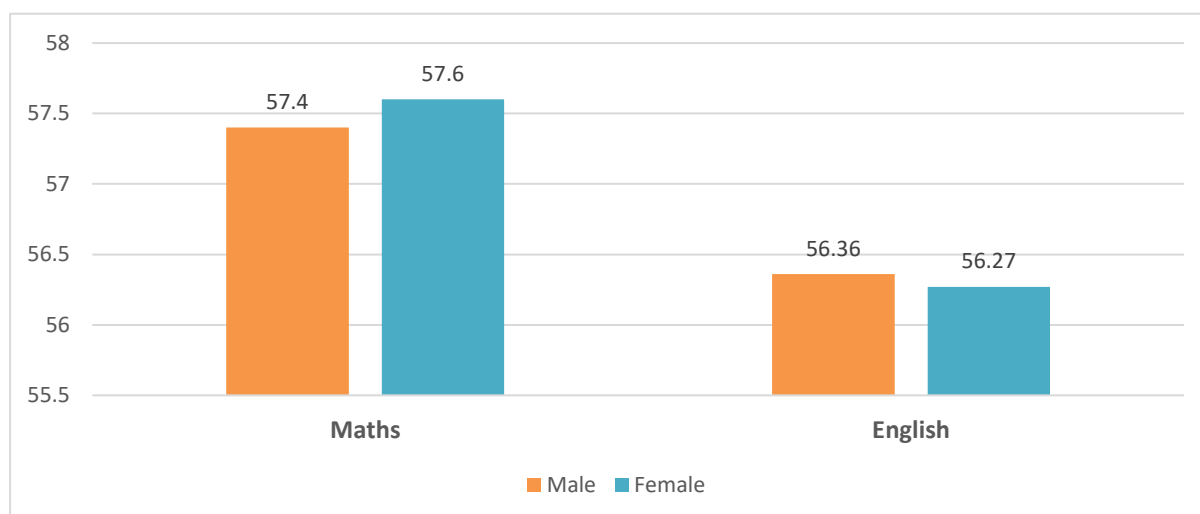
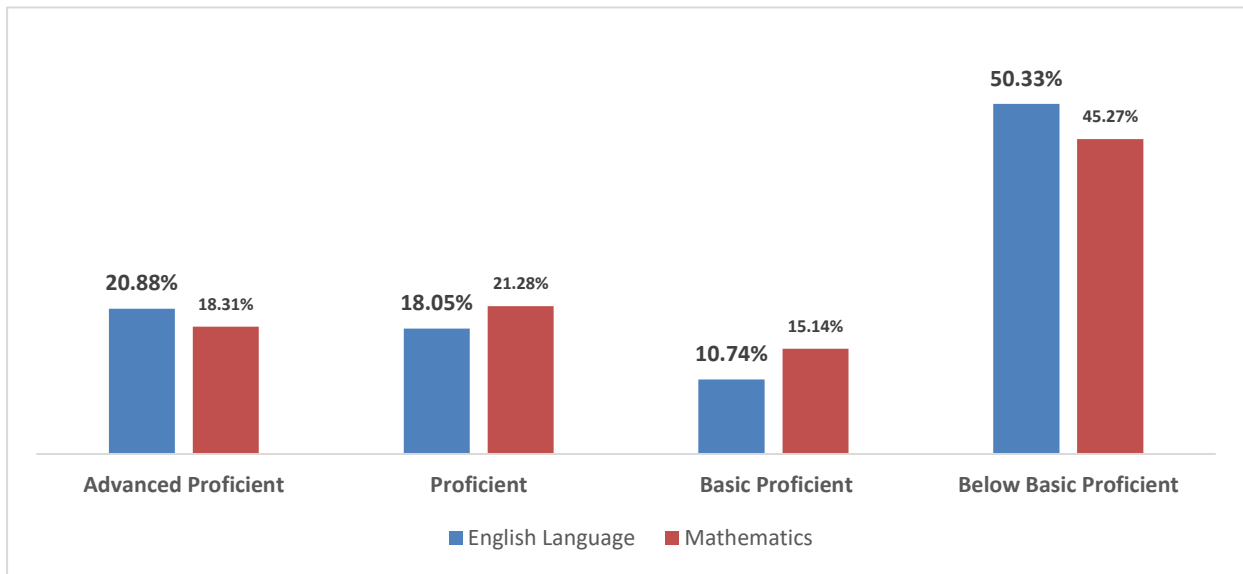


Table 7 and Figure 2 provide information on learners’ proficiency levels in English Language and Mathematics. Out of the 472,878 learners, 20.88% met the advanced proficiency level in English Language, while 18.31% achieved advanced proficiency in Mathematics. However, 45.27% of learners had below basic proficiency level in Mathematics, and 50.33% had below basic proficiency level in English Language. This implies that P4 learners performed better in English Language than in Mathematics.

**TABLE 7: Learners’ Proficiency Level (P4 NST)**

Proficiency Level	English Language	Mathematics
Highly Proficient (HP) / Advanced Proficient	20.88%	18.31%
Proficient (P) / Proficient	18.05%	21.28%
Approaching Proficiency (AP) / Basic Proficient	10.74%	15.14%
Developing (D) / Below Basic Proficient	50.33%	45.27%

**Figure 2: Proficiency Level of Learners**



As shown in Figure 3, the Western North region recorded a mean percent score of 74% in English Language, while the Upper East region recorded the lowest mean percent score of 50.2%. This implies that schools in the Western North region performed better in the English language test. However, schools in the Bono Region recorded the highest mean percent score of 66.7% in mathematics, while schools in the Upper West region had the lowest mean percent score of 48.4%, indicating that schools in the Bono region performed better in the Mathematics Test.

**Figure 3: Mean Percent Scores by Regions**

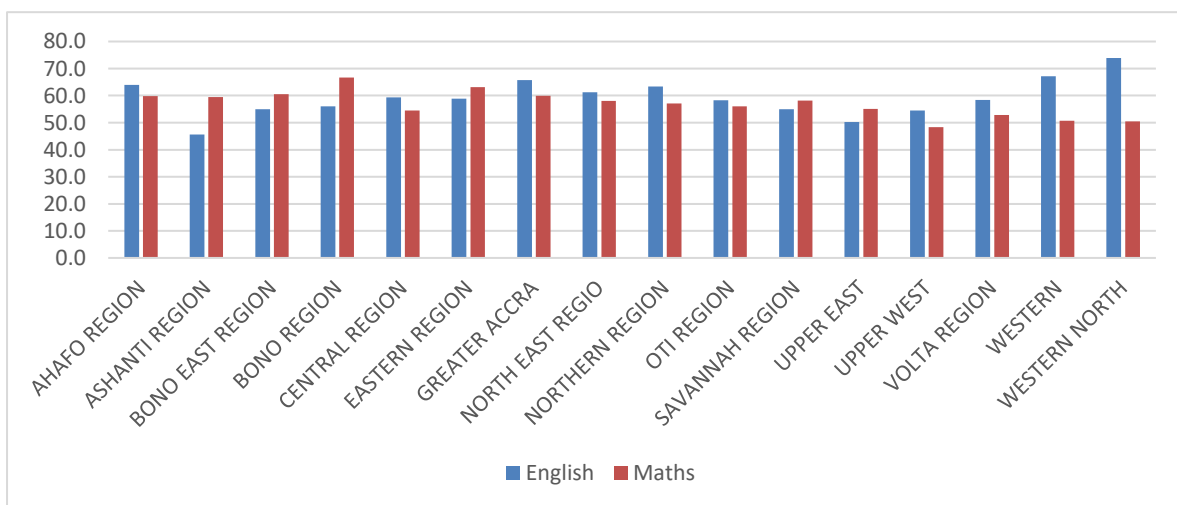


Table 8 shows the overall mean percent score of Primary 6 learners in Mathematics and English. The mean percent score of learners in English Language was 61.56%, whilst the mean percent score of learners in Mathematics was 57.04%. This implies that learners had higher scores in the English test than the mathematics test. Additionally, the standard deviation was used to describe the score distribution of each subject. The score distribution of learners in mathematics was more homogeneous than English Language.

**TABLE 8: Overall Mean Percent Scores for P6**

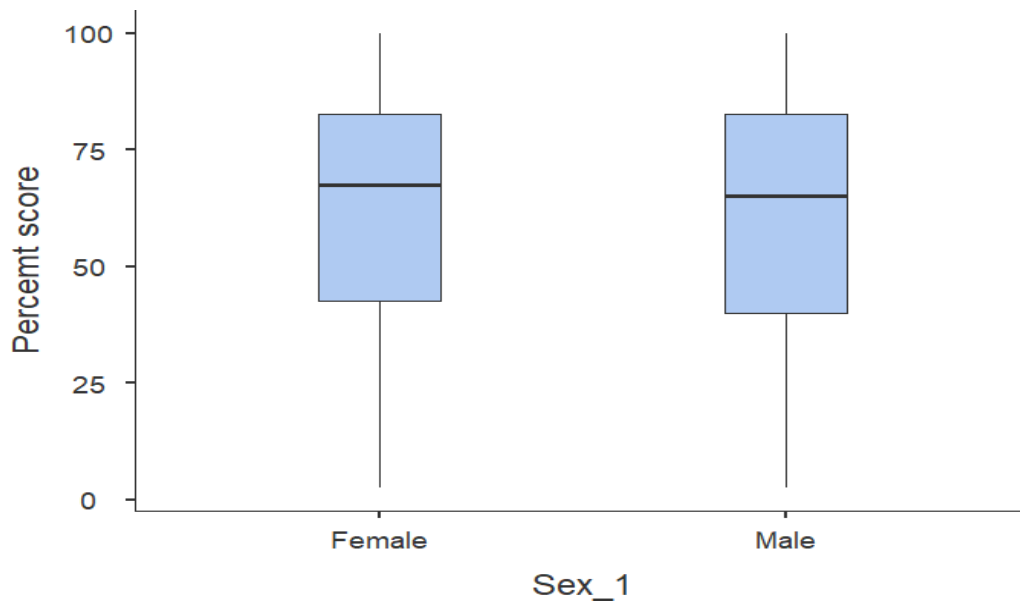
Subjects	2024	SD	2024	SD
	Mean Score		Mean Percent (%)	
English	24.62	9.64	61.56	24.09
Mathematics	23.78	9.09	59.45	22.72

Table 9 and Figures 4 and 5 show the overall mean percent score of Primary 6 learners by Gender. The mean percent score for male learners was (M=60.82%, SD=24.27) in English Language and (M=56.83%, SD=23.62) in Mathematics, and that of the female learners was (M=62.31%, SD=23.87) and (M=57.26%, SD=23.61) in English Language and Mathematics, respectively. This indicates that female learners performed better than male learners with a more homogenous score distribution in both English Language and Mathematics.

**Table 9: Overall Mean Percent Score by Gender (P6)**

Subject	Male Learners		Female Learners	
	Mean Score	Standard Deviation	Mean Score	Standard Deviation
ENGLISH LANGUAGE	60.82	24.27	62.31	23.87
MATHEMATICS	56.83	23.62	57.26	23.61

**Figure 4: Mean Percent Score by Gender in English Language**



**Figure 5: Mean Percent Score by Gender in Mathematics**

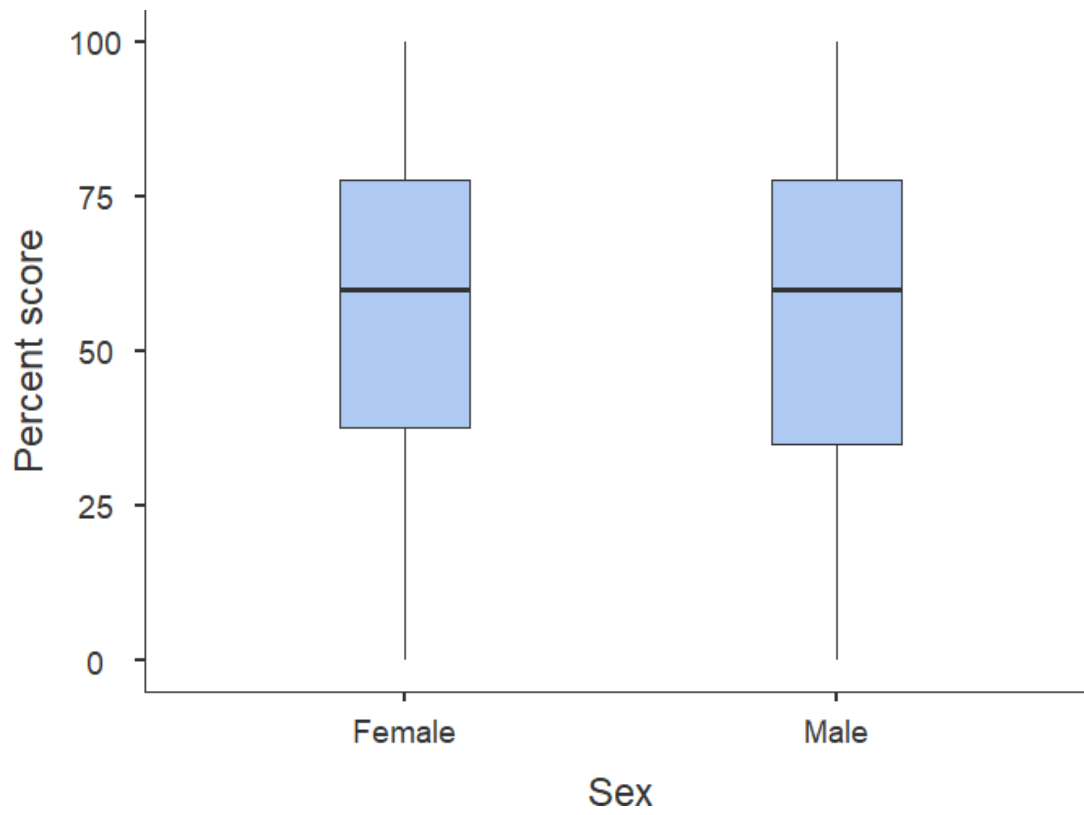


Table 10 and Figure 6 show the learners' proficiency levels in English Language and Mathematics. Out of the 314,797 learners, 31.15% met the advanced proficiency level in English Language, while 22.64% achieved advanced proficiency in Mathematics. However, 38.09% of learners had below-basic proficiency in Mathematics, and 32.08% in English Language. This implies that P6 learners performed better in English Language than in Mathematics.

**TABLE 10: Proficiency Level by Learners (P6 NST)**

Proficiency levels	P6	
	Mathematics	English Language
Highly Proficient (HP) / Advanced Proficient	76,935 (24.44%)	98,053 (31.15%)
Proficient (P)/ Proficient	61,978 (19.69%)	57,326 (18.21)
Approaching Proficiency (AP)/ Basic Proficient	70,740 (22.47%)	58,429 (18.56%)
Developing (D)/ Below Basic Proficient	105,144 (33.4%)	101,000 (32.08%)

**Figure 6: Proficiency Level by Learners**

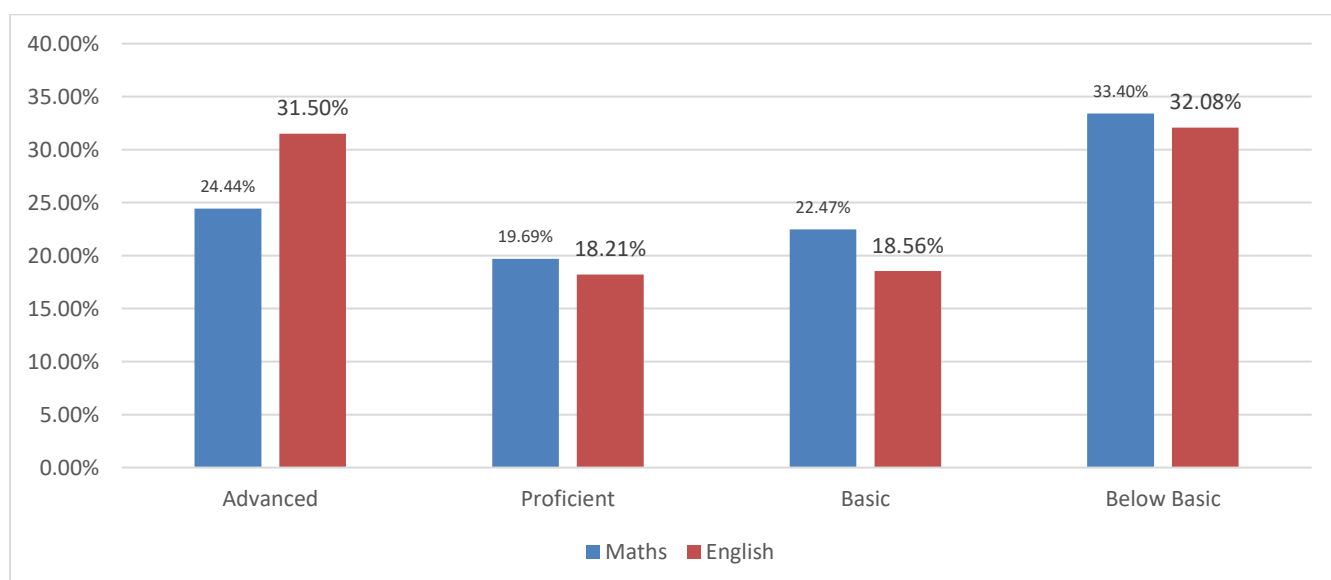
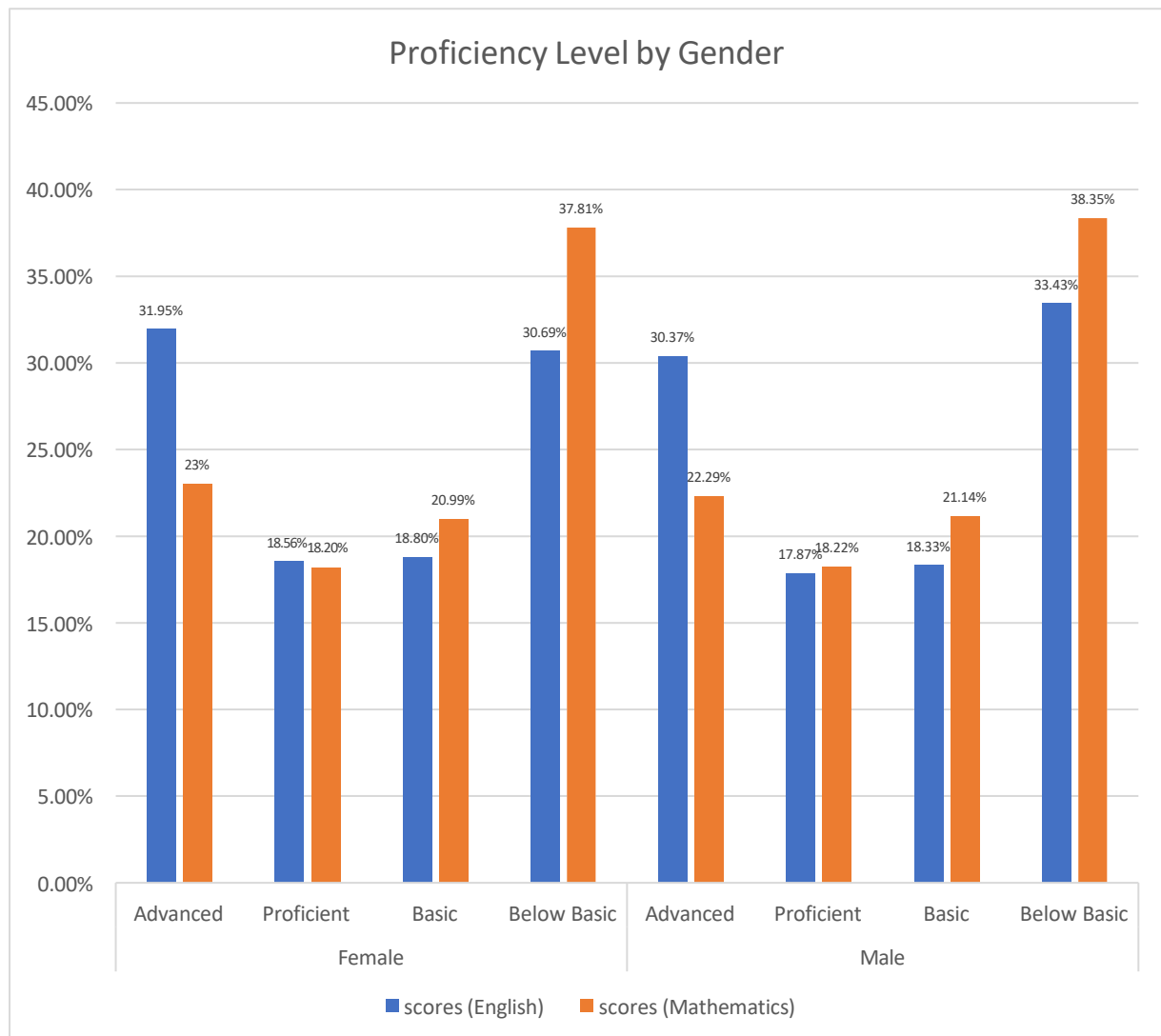


Figure 7 shows learners' proficiency levels by gender. From the graph, 30.37% and 22.29% of male learners attained advanced proficiency in English Language and Mathematics, respectively, whereas 31.95% and 23% of female learners attained advanced proficiency in English Language and Mathematics, respectively. However, 33.43% and 38.35% of male learners had below basic proficiency in English Language and Mathematics, respectively, whilst 30.69% and 37.81% of female learners had below basic proficiency in English Language and Mathematics, respectively. This implies that few female learners had below basic proficiency compared to male learners in both subjects.

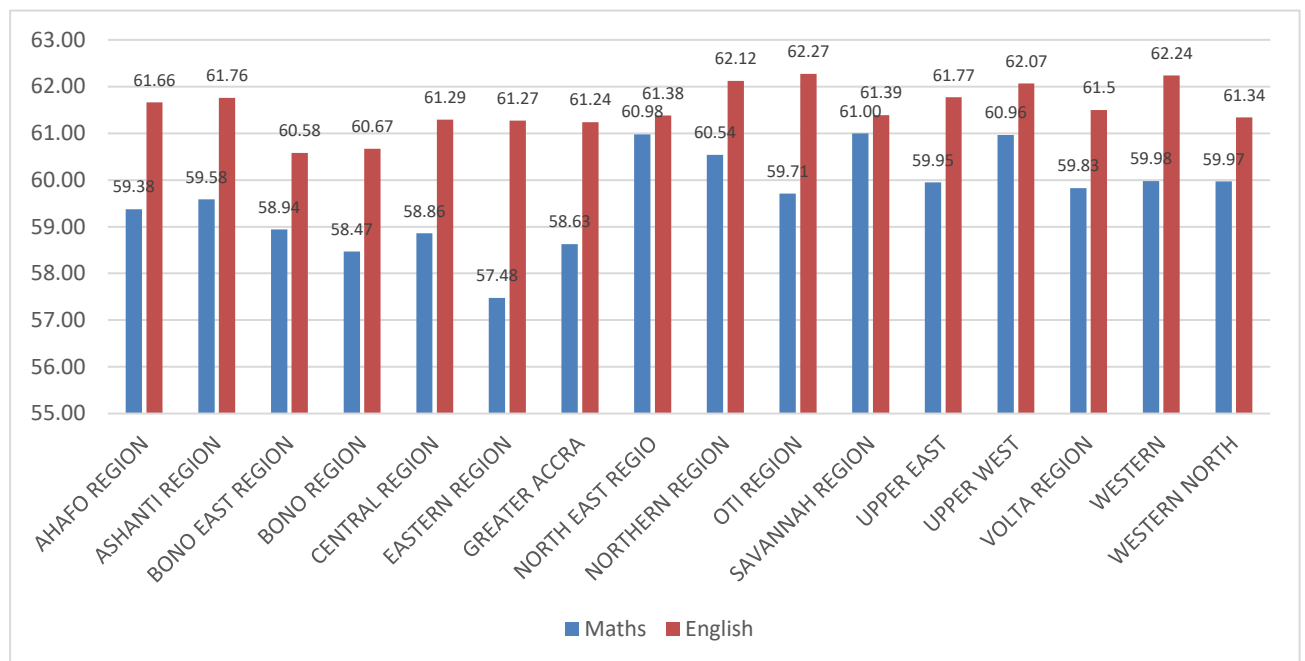
**Figure 7: Proficiency Level by Gender**



## Mean Percent Scores by Regions (P6)

The mean percent scores of primary 6 learners by regions are shown in Figure 8. From the graph, the Oti region recorded the highest mean percent score of 62.27%, whilst the Bono East region recorded the lowest mean percent score of 60.58% in English Language. This implies that schools in the Oti region performed better in the English language test. Schools in the Western North region recorded the highest mean percent score of 59.07% in Mathematics, while schools in the Volta region had the lowest mean percent score of 53.65%, as shown in Figure 8.

**Figure 8: Mean Percent Score by Regions**



## **Benchmarking NST outcomes to Global standards**

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States, sets an indicator for countries to report on the number of learners, by sex, in each country that achieve at least the Minimum Proficiency Level in reading and mathematics at the end of lower primary and the end of primary. Following data analysis and confirmation of test reliability, two Pairwise Comparison Method (PCM) exercises were jointly conducted with ACER UK for each of the four assessments, in line with the PCM Toolkit guidelines (UIS & ACER, 2025). These exercises aimed to establish the cut scores on each National Standardised Test (NST) that define the Minimum Proficiency Levels (MPLs) used for reporting progress on SDG 4.1.1.

The Pairwise Comparison Method (PCM) is an approved approach for benchmark-based linking to the Minimum Proficiency Levels (MPLs). It integrates expert judgement through a structured pairwise or comparative judgement process with statistical linking based on item response theory (IRT). In the NST PCM exercises, participants compared pairs of items drawn from the pre-calibrated Learning Progression Scale (LPS) and the NST assessments. These judgements made it possible to place the NST and the LPS on a shared scale, allowing the MPL benchmark to be transferred to the NST reporting scale and the cut score for minimum proficiency to be established for each assessment. ACER UK provided technical support to NaCCA throughout the design, implementation, and analysis of the PCM exercises.

### **PCM exercise outputs (benchmarking)**

Following the equating undertaken as part of the PCM exercise, the exact mapped logit on NST 2024 and a plausible values methodology, conditioned on gender, was used to estimate the percentage of learners meeting the MPL. The outcomes of the analysis are reported in Table 11 below.

**Table 11: outcome of the analyses of the PCM exercise outputs**

Grade	Minimum Proficiency Level	Percentage of Assessed Population
Primary 4	<b>MPL a Reading (lower primary)</b>	59.61%
	Girls	59.57%
	Boys	59.64%
	<b>MPL a Mathematics (lower primary)</b>	65.55%
	Girls	65.77%
	Boys	65.43%
Primary 6	<b>MPL b Reading (upper primary)</b>	72.77%
	Girls	74.65%
	Boys	71.79%
	<b>MPL b Mathematics (upper primary)</b>	63.62%
	Girls	63.69%
	Boys	63.57%

**Item-level analysis**

In addition to considering overall performance, we can also look at performance on different areas of the curriculum. This information should be interpreted carefully since the number of items in the assessments in each content area is small and the assessments were not designed to ensure all content areas were assessed to the same level of difficulty. However, the information provided in the following tables might provide some interesting points to start investigating areas of the curriculum that might require more focus.

Full information on the performance of individual items can be found in Appendix B.

For each assessment, the information provided is as follows:

- Content area – the area of the curriculum is covered by the items
- Number of items – the number of items in the assessment that assessed the relevant content area
- Average facility – the average facility (proportion correct) for the relevant items that assessed the relevant content area.

Table 12: P4 English

Content	Number of items	Average facility
Grammar	5	50.0
Word meaning	2	51.0
Simple retrieval	18	61.2
Word meaning in context	1	40.7
Inference	8	54.2
Identifying main ideas	1	44.4

Table 13: P4 mathematics (content areas)

Content	Number of items	Average facility
Number - counting and comparing	2	55.1
Number - equivalent representation	4	59.5
Number – operations	4	61.1
Number - real world problems	3	68.3
Measurement – time	5	51.5
Geometry – shapes	4	61.1
Data handling	6	58.6
Algebra – patterns	3	49.9
Algebra – equivalency	4	52.7

Table 14: P4 mathematics (domains)

Domain	Number of items	Average facility
Number	13	61.4
Measurement	5	51.5
Geometry	4	61.1
Data handling	6	58.6
Algebra	7	51.5

For P4 mathematics, as shown in Table 14, most learners generally answered more items correctly in number and geometry and fewer items correctly in measurement and algebra. This could indicate the items in number and geometry were easier or that these domains are covered more fully in the classroom. Teachers should consider this when planning teaching and learning.

Table 15: P6 English

Content	Number of items	Average facility
Grammar	12	58.6
Word meaning	2	60.1
Retrieval	9	68.8
Word meaning - in context	3	62.5
Inference	8	61.2
Identifying main ideas	3	55.8
Identifying purpose	1	63.1
Rhyme	2	55.5

Table 16: P6 mathematics (content areas)

Content	Number of items	Average facility
Number - counting and comparing	2	67.5
Number - equivalent representation	2	49.2
Number – operations	5	57.8
Number - real world problems	5	64.9
Number – fractions	4	56.0
Number – decimals	3	72.9
Measurement - measure and solve problems	3	58.0
Measurement – time	2	54.1
Geometry – shapes	1	59.2
Geometry - position and direction	2	46.8
Data handling	5	61.6
Algebra – patterns	4	54.3
Algebra – variation	2	64.2

Table 17: P6 mathematics (domains)

Domain	Number of items	Average facility
Number	21	61.4
Measurement	5	56.4
Geometry	3	51.0
Data handling	5	61.6
Algebra	6	57.6

For P6 mathematics, learners generally answered more items correctly in number and Data handling and fewer items correctly in measurement and geometry. This could mean that items in number and data handling were perceived to be easier or that these domains are covered more fully in the classroom. Teachers should consider this when planning teaching and learning.

## **Findings**

1. Among the 472,878 Primary 4 (P4) learners assessed, 59.61% achieved the Global Minimum Proficiency Level (MPL) in reading, whereas 65.55% attained the MPL in Mathematics.
2. For the upper primary (P6), 72.77% of the learners assessed met the Global Minimum Proficiency Level (MPL) in reading, while 63.62% met the MPL in Mathematics.
3. Primary 4 learners in the Western North Region recorded the highest scores in English Language, while those in the Bono Region achieved the highest scores in Mathematics compared to learners in other regions.
4. Primary 6 learners in the Oti and Western North regions recorded higher scores in the English language and Mathematics tests.
5. Among learners who participated in the P4 NST assessment, males constituted 63%, while females accounted for 37%, indicating higher male participation.

## **Recommendations**

1. The Ministry of Education, through its agencies, should strengthen reading interventions in schools to close the literacy gap.
2. Diagnostic assessment should be strengthened in schools to identify foundational learning gaps early, and appropriate teaching interventions should be implemented at the school level.
3. Effective practices within regions recording higher scores should be monitored and shared with regions with low scores.
4. It is recommended that school-level engagement and strategies should be reinforced to increase learners' participation in the NST assessment.
5. To increase female engagement at the P4 level, it is recommended that targeted girl-child participation and retention strategies and gender-responsive policies should be reinforced to ensure equitable access and participation in national assessments and classroom instruction.
6. NaCCA, in collaboration with the Ministry of Education, should build a test bank for learners to use as preparatory items and for teachers to use for formative assessment to improve teaching and learning. These items should be uploaded on a portal for teachers, parents and learners to access.

## Appendix A: Statistical linking

Ensuring that standards are maintained over time in assessment is essential to ensure that that data can be appropriately interpreted. Between the NST 2022 and NST 2024, the P4 assessments in English and mathematics were amended to ensure alignment with international standards. Since no two assessments are likely to be of the same difficulty, no matter how well they are constructed, a statistical linking or equating was done to maintain standards between the two assessments.

Statistical linking provides information on the relative difficulty of the two assessments. This information can then be used to scale performance on one assessment to align with the other. For example, if an assessment is easier, you will need to score more marks on it to show the same level of ability.

To statistically link the NST 2022 and NST 2024, a common-item equating approach was used. Fifteen items per subject from P4 NST 2022 were included unchanged in the 2024 NST – these are known as the anchor items. Since these items were unchanged between the administrations, they could be used to link the data from the two assessments.

Prior to conducting the statistical linking, we must first check that the anchor items performed similarly across the two administrations. This is done by conducting a differential item functioning (DIF) analysis. Tables 18 and 19, detail the differential item functioning of the anchor items. Items that were flagged as exhibiting DIF between the two administrations were dropped in the statistical linking exercise. This left 11 items in English and 10 items in mathematics for use in the statistical linking.

**Table 18: DIF analysis on Anchor items for English**

Anchor item	Item label 2022	Corresponding items in 2024	Flagged items
1	Q9	R31	non-DIF
2	Q10	R32	non-DIF
3	Q11	R33	non-DIF
4	Q13	R34	DIF
5	Q14	R35	non-DIF
6	Q20	R21	DIF
7	Q21	R22	non-DIF
8	Q22	R23	non-DIF
9	Q24	R24	non-DIF
10	Q25	R25	non-DIF
11	Q26	R26	DIF
12	Q28	R27	DIF
13	Q29	R28	non-DIF
14	Q31	R29	non-DIF
15	Q32	R30	non-DIF

**Table 19: DIF analysis on Anchor items for Mathematics**

Anchor item	Item label 2022	Corresponding items in 2024	Flagged items
1	Q3	R21	DIF
2	Q6	R22	DIF
3	Q9	R23	non-DIF
4	Q11	R24	non-DIF
5	Q12	R25	non-DIF
6	Q16	R26	non-DIF
7	Q17	R27	non-DIF
8	Q19	R28	DIF
9	Q20	R29	non-DIF
10	Q23	R30	non-DIF
11	Q24	R31	non-DIF
12	Q26	R32	DIF
13	Q28	R35	DIF
14	Q29	R33	non-DIF
15	Q30	R34	non-DIF

Once the anchor items were confirmed, statistical linking was carried out using a Rasch item response theory model. This indicated that the 2024 NST was slightly easier than the 2022 NST in both English and mathematics. As a result, a learner would score higher on the NST 2024 than they would on the NST 2022.

To account for this, learner outcomes on the NST 2024 were scaled down to ensure that scores could be compared to NST 2022. Tables 20 and 21 show how the scores from NST 2024 were scaled to show their equivalent score in NST 2022 for English and mathematics respectively. These equivalent scores on the NST 2022 were used to calculate the number of learners that achieved each of the proficiency levels based on the boundaries provided in Table 5: NPLAF Proficiency Levels.

**Table 20: Scaling of NST 2024 to NST 2022 English.**

Score on NST 2024	Equivalent score on NST 2022	Equivalent Percent score on NST 2022	Proficiency levels
0	0	0.00	Developing (D)/ Below Basic Proficient
1	1	2.86	
2	2	5.71	
3	2	5.71	
4	3	8.57	
5	4	11.43	
6	5	14.29	
7	6	17.14	
8	6	17.14	
9	7	20.00	
10	8	22.86	
11	9	25.71	
12	10	28.57	
13	11	31.43	
14	12	34.29	
15	13	37.14	
16	13	37.14	
17	14	40.00	
18	15	42.86	
19	16	45.71	
20	17	48.57	
21	18	51.43	Approaching Proficiency (AP)/ Basic Proficient
22	19	54.29	
23	20	57.14	
24	21	60.00	
25	23	65.71	Proficient (P)/ Proficient
26	24	68.57	
27	25	71.43	
28	26	74.29	
29	27	77.14	
30	28	80.00	Highly Proficient (HP) / Advanced Proficient
31	29/30	82.86/85.71	
32	31	88.57	
33	32	91.43	
34	33	94.29	
35	35	100.00	

**Table 21: Scaling of NST 2024 to NST 2022 mathematics.**

Score on NST 2024	Equivalent score on NST 2022	Equivalent Percent score on NST 2022	Proficiency levels
0	0	0	Developing (D)/ Below Basic Proficient
1	1	2.86	
2	1	2.86	
3	2	5.71	
4	3	8.57	
5	4	11.43	
6	5	14.29	
7	5/6	14.29/17.14	
8	6	17.14	
9	7	20.00	
10	8	22.86	
11	9	25.71	
12	10	28.57	
13	11	31.43	
14	12	34.29	
15	13	37.14	
16	14	40.00	
17	15	42.86	
18	16	45.71	
19	17	48.57	
20	18	51.43	Approaching Proficiency (AP)/ Basic Proficient
21	19	54.29	
22	20/21	57.14/60.00	
23	22	62.86	Proficient (P)/ Proficient
24	23	65.71	
25	24	68.57	
26	25	71.43	
27	26	74.29	
28	27	77.14	
29	28	80.00	Highly Proficient (HP) / Advanced Proficient
30	29/30	82.86/85.71	
31	31	88.57	
32	32	91.43	
33	33	94.29	
34	34	97.14	
35	35	100.00	

## Appendix B: Item level statistics

The following tables show the performance of the items in the assessments.

Each table shows the following information:

- Question number – the order in which the items appear in the assessment
- GPF reading content descriptor – the content of the item referenced to the Global Proficiency Framework
- Facility – the percentage of learners who answered the item correctly
- Discrimination – an estimate of how well the item discriminated between high and low performers in the assessment
- DIF – differential item functioning, which is whether the item performed differently for girls and boys of the same ability

**Table 22: P4 English**

Question number	GPF reading content descriptor	Facility	Discrimination	DIF
1	R1.2.1_M	62.858	0.594	NO
2	R1.2.1_M	62.812	0.632	NO
3	R1.2.1_M	64.518	0.623	NO
4	R1.2.1_M	64.631	0.625	NO
5	R1.2.1_E	54.919	0.63	NO
6	R1.2.1_E	61.251	0.6	NO
7	R1.2.1_M	68.758	0.463	NO
8	R1.2.1_E	59.697	0.597	NO
9	R1.2.1_M	58.537	0.621	NO
10	R1.2.1_E	57.266	0.606	NO
11	R1.1.1_M	47.619	0.588	NO
12	R1.2.1_E	59.704	0.659	NO
13	R1.2.1_M	62.49	0.403	NO
14	R1.2.1_M	68.141	0.409	NO
15	R1.1.1_E	54.432	0.6	NO
16	R1.2.1_M	52.807	0.527	NO
17	R1.2.1_E	68.735	0.382	NO
18	R1.2.1_E	66.957	0.428	NO
19	R1.2.1_M	48.774	0.613	NO

20	R1.2.1_E	58.747	0.625	NO
21	R2.2.1_E	68.749	0.392	NO
22	R2.2.1_E	57.766	0.259	NO
23	R2.2.1_M	55.721	0.542	NO
25	R2.2.1_E	45.913	0.499	NO
25	R2.2.1_E	58.192	0.617	NO
26	R2.2.1_E	41.371	0.462	NO
27	R2.2.1_E	59.134	0.612	NO
28	R2.2.1_E	46.443	0.462	NO
29	R2.1.1b_E	40.728	0.444	NO
30	R2.3.1_E	44.392	0.431	NO
31	GRAMMAR	51.92	0.402	NO
32	GRAMMAR	53.694	0.443	NO
33	GRAMMAR	53.616	0.26	NO
34	GRAMMAR	46.464	0.521	NO
35	GRAMMAR	44.423	0.479	NO

**Table 23: P4 mathematics**

Question number	GPF mathematics content descriptor	Facility	Discrimination	DIF
1	N1.2.1_P	63.159	0.446	NO
2	N1.1.2_M	41.636	0.314	NO
3	N1.3.7_M	62.456	0.456	NO
4	N1.4.1_M	65.234	0.49	NO
5	N1.3.1_M	61.967	0.473	NO
6	N1.4.1_M	70.372	0.489	NO
7	A3.2.3_E	57.346	0.444	NO
8	G1.1.9_M	49.449	0.351	NO
9	S1.1.1_P	73.115	0.515	NO
10	S1.1.2_E	71.225	0.547	NO
11	S1.1.2_M	62.173	0.535	NO
12	M2.2.1_M	67.637	0.48	NO

13	M2.1.2_E	49.61	0.309	NO
14	N1.1.1a_E	68.47	0.452	NO
15	N1.2.2_E	61.826	0.496	NO
16	N1.3.2_M	54.064	0.498	NO
17	N1.3.2_M	65.954	0.454	NO
18	A1.1.1_M	59.566	0.433	NO
19	G1.1.4_M	67.111	0.484	NO
20	G1.1.1_M	58.893	0.472	NO
21	N1.4.1_E	69.4	0.451	NO
22	N1.2.2_M	59.266	0.466	NO
23	A1.1.2_E	40.006	0.361	NO
25	A3.2.1_P	60.127	0.449	NO
25	A3.2.1_P	53.944	0.526	NO
26	A1.1.2_E	50.23	0.448	NO
27	A3.2.1_M	39.423	0.396	NO
28	M2.2.2_M	34.859	0.29	NO
29	M2.2.2_M	57.224	0.496	NO
30	M2.2.2_E	48.046	0.369	NO
31	S1.1.4_E	58.913	0.408	NO
32	S1.1.2a_M	22.905	-0.084	NO
33	S1.1.1_P	63.046	0.463	NO
34	N1.2.2_E	53.914	0.438	NO
35	G1.1.2_M	68.758	0.474	NO

**Table 24: P6 English**

Question number	GPF reading content descriptor	Facility	Discrimination	DIF
1	R1.2.2_M	63.122	0.422	NO
2	R2.2.2_M	72.416	0.551	NO
3	R2.2.2_M	63.058	0.481	NO
4	R2.3.1_M	52.874	0.351	NO

5	R2.1.1b_E	54.663	0.529	NO
6	R2.1.1b_E	73.412	0.535	NO
7	R1.2.2_M	71.181	0.567	NO
8	R1.3.2_M	68.541	0.503	NO
9	R1.2.2_M	75.928	0.478	NO
10	R1.2.2_P	79.834	0.509	NO
11	R1.2.2_M	59.567	0.541	NO
12	R2.2.2_P	57.075	0.444	NO
13	R1.2.2_P	65.695	0.583	NO
14	R2.2.2_M	67.922	0.491	NO
15	R2.3.1_P	56.739	0.329	NO
16	R1.3.2_M	72.408	0.508	NO
17	RHYME	49.079	0.394	NO
18	GRAMMAR	56.58	0.43	NO
19	GRAMMAR	53.908	0.502	NO
20	GRAMMAR	48.738	0.345	NO
21	GRAMMAR	58.563	0.503	NO
22	GRAMMAR	61.503	0.497	NO
23	GRAMMAR	75.004	0.441	NO
24	R2.3.1_M	57.924	0.548	NO
25	RHYME	62.009	0.514	NO
26	R1.1.1_M	59.488	0.518	NO
27	R1.2.3_M	62.642	0.428	NO
28	R2.2.2_P	68.493	0.49	NO
29	R1.1.1_E	60.808	0.461	NO
30	R3.1.1_M	63.09	0.516	NO
31	R2.1.1b_E	59.284	0.385	NO
32	R2.2.2_M	50.408	0.495	NO
33	R2.2.2_M	71.285	0.457	NO
34	R2.2.2_E	39.341	0.306	NO
35	GRAMMAR	50.18	0.473	NO

36	GRAMMAR	56.73	0.41	NO
37	GRAMMAR	67.806	0.468	NO
38	GRAMMAR	60.752	0.444	NO
39	GRAMMAR	58.845	0.538	NO
40	GRAMMAR	54.625	0.293	NO

**Table 25: P6 mathematics**

Question number	GPF mathematics content descriptor	Facility	Discrimination	DIF
1	N1.2.2_M	66.454	0.41	NO
2	N1.1.1b_M	79.702	0.373	NO
3	N1.1.2_E	55.24	0.276	NO
4	N1.2.3_E	31.995	0.238	NO
5	N2.1.2_P	61.731	0.476	NO
6	N3.2.2_E	65.546	0.34	NO
7	N2.2.1_P	63.589	0.481	NO
8	N1.4.1_P	67.833	0.4	NO
9	N1.4.2_M	63.998	0.539	NO
10	N1.3.6_P	68.722	0.479	NO
11	N1.3.1_M	47.184	0.391	NO
12	A1.1.2_P	67.678	0.48	NO
13	N1.4.1_P	64.874	0.551	NO
14	N1.4.1_P	64.972	0.542	NO
15	M1.1.3b_M	68.142	0.531	NO
16	G1.1.1_P	59.193	0.331	NO
17	A1.1.2_P	54.322	0.398	NO
18	A1.1.2_P	54.004	0.395	NO
19	A3.1.1_M	67.763	0.587	NO
20	A3.1.1_M	60.644	0.547	NO
21	S1.1.5_E	56.282	0.539	NO
22	S1.1.5_E	67.933	0.523	NO

23	S1.1.5_E	63.766	0.413	NO
25	N2.1.4_M	54.395	0.297	NO
25	N3.1.2_M	77.696	0.452	NO
26	N2.3.1_P	44.242	0.452	NO
27	N3.4.1_E	75.46	0.44	NO
28	N1.3.6_P	54.049	0.454	NO
29	N1.3.1_M	57.347	0.482	NO
30	N1.4.1_E	63.064	0.499	NO
31	N1.3.1_P	61.828	0.447	NO
32	A1.1.2_P	41.251	0.35	NO
33	M1.2.1_P	37.072	0.379	NO
34	M1.2.3_E	68.77	0.366	NO
35	M2.1.3_M	52.309	0.482	NO
36	M2.2.2_M	55.838	0.384	NO
37	G3.1.2_M	45.763	0.373	NO
38	S1.1.5_P	73.455	0.458	NO
39	S1.1.2_P	46.343	0.446	NO
40	G3.1.3_E	47.924	0.325	NO

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