

THE NATIONAL EXAMINATIONS COUNCIL OF TANZANIA



**PUPILS' ITEMS RESPONSE ANALYSIS REPORT
FOR STANDARD FOUR NATIONAL ASSESSMENT
(SFNA) 2018**

05E SCIENCE AND TECHNOLOGY

THE NATIONAL EXAMINATIONS COUNCIL OF TANZANIA



**PUPILS' ITEMS RESPONSE ANALYSIS
REPORT FOR STANDARD FOUR NATIONAL
ASSESSMENT (SFNA) 2018**

05 SCIENCE AND TECHNOLOGY

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PREFACE

The report on the analysis of pupils' response for the Standard Four National Assessment 2018 for Science and Technology subject has been prepared so as to give feedback to pupils, teachers, policy makers and other stakeholders in education on how pupils were able to respond to the assessment questions. The Standard Four National Assessment for the year 2018 assessed pupils' competencies in Science and Technology and the effectiveness in the implementation of the new 2016 Science and Technology syllabus for Basic Education standard III – IV. Thus, the analysis of pupils' responses to the assessment questions in year 2018 is one of the indicators which show the level of achievement in implementing the new curriculum which aims at building pupils' competences.

In this report, some of the factors which contributed to pupils' ability to respond correctly or incorrectly to questions have been analyzed. The factors that contributed to good performance to some of the pupils include good competencies on the assessed areas and the ability to read and understand the requirement of the questions. On the other hand, the factors that contributed to poor performance to few pupils include inability to identify the demand of the question, incompetence in the assessed content, poor reading and writing skills and failure to interpret picture and answer the questions correctly. At the end of the report an appendix which illustrates the performance of pupils in each tested competence has been attached.

The National Examinations Council of Tanzania believes that this feedback will enable different stakeholders in education to take measures in order to improve the teaching and learning process. The Council hopes that

respective authorities will make sure that the identified shortcomings in this report will be addressed in order to improve the competencies to pupils who are expected to join standard five.

Lastly, The National Examinations Council would like to convey sincere gratitude to all those who took part in writing this report.

A handwritten signature in black ink, appearing to be 'C. E. Msonde', written in a cursive style.

Dr. Charles E. Msonde
EXECUTIVE SECRETARY

1.0 INTRODUCTION

The report is focused on Standard Four National Assessment for Science and Technology subject conducted on 23rd November 2018. The assessment intended to measure pupils' competencies stipulated in 2016 Science and Technology syllabus for Basic Education Standard III - IV and were set as per 2018 assessment format.

The assessment paper consisted of five (5) questions each carrying 10 marks making a total of 50 marks. The questions were divided into sections A and B. Section A comprised of 3 questions while section B comprised 2 questions and the pupils were required to answer all questions.

The analysis of the assessment results shows that the general performance was good as out of **1,301,543** pupils who sat for the paper, **1,212,896 (93.20%)** passed the assessment and **88,530 (6.80%)** failed.

The pupils' performance in this report is categorized into four groups depending on the marks scored by pupils which are weak (0 - 2), average (4 - 6), good (8) and very good (10) marks. Pupils with weak performance are considered to have failed the assessment while pupils with average, good and very good performance are considered to have passed the assessment.

The report analyses the quality of performance of each question. The performance is ranked as weak, average or good if the percentage of the pupils who passed the question lies in the range 0

– 33, 34 – 66 or 67 – 100 respectively. The report also pinpoints some possible reasons for observed pupil's performance in each question. In addition, statistical charts were used to show pupils' performance in each question. However, samples of pupils' good and weak responses have been extracted and used to exemplify the pupils' performance in some questions.

2.0 ANALYSIS OF PUPILS' PERFORMANCE PER QUESTION

The analysis of pupils' responses was done in five questions divided into two sections. Section A comprised multiple choices, matching and filling in blanks using provided words items. Section B comprised short answer questions namely; rearranging the statements and filling in blanks. The following is the analysis of pupils' responses in each question.

2.1 Section A: Multiple Choice and Matching Items

Section A comprised Multiple Choice Items, Matching Items and Filling in Blanks. All questions in this section were compulsory.

Question 1: Perform Scientific Investigation and Technological Discovery

This question comprised five multiple choice items. In each item (i) to (v), the pupil was required to choose the letter of the correct answer from the given alternatives (A - D) and write the letter in the box provided. This question assessed the pupil's ability to apply specific knowledge, skills and attitudes in investigating things that are found in the immediate environment.

Statistics shows that the pupils' performance in this question was good since out of 1,301,566 pupils who attempted the question 1,068,431 (82.1%) pupils passed and 233,135 (17.9%) failed. The performance in this question is summarized in Figure 1.

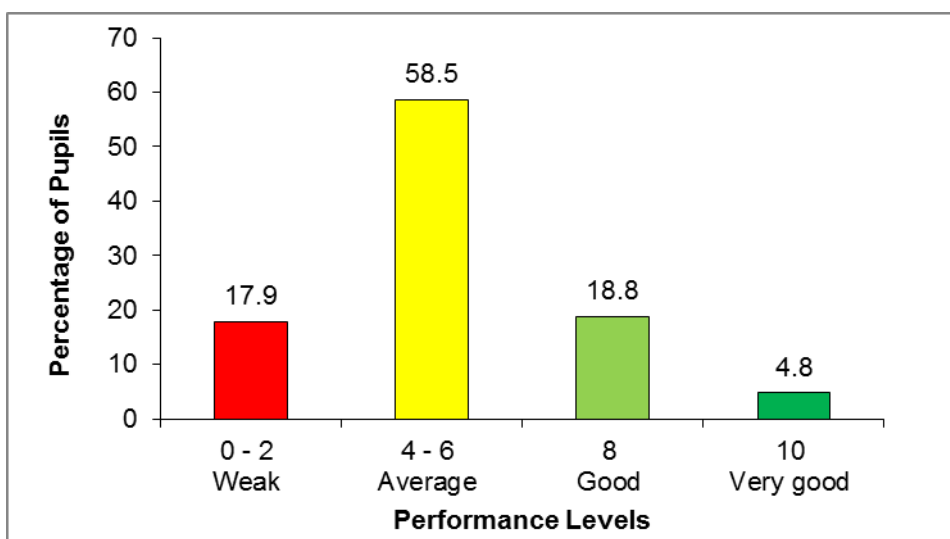


Figure 1: Summary of pupils' performance in question 1

Figure 1 show that the pupils who scored 4 to 10 marks were 82.1 per cent of which 58.5 per cent scored from 4 to 6 marks and 4.8 per cent scored all the 10 marks allotted to this question. Pupils who performed well in this question were competent in investigating things that are found in the environment.

The figure also shows that the pupils who failed the assessment were 17.9 per cent by scoring 0 or 2 marks. These pupils scored 0 or 2 marks because they failed to make correct choices in almost all items or scored only one item. The analysis of pupils' responses indicates that the pupils' failure in this question was due to lack of competence in applying knowledge, skills and attitudes developed in science and technology. For example, in item (i) which assessed pupil's ability to investigate things that are found in the environment by identifying living and non-living things, the question asked:

- (i) Which is the group of living organism only?
- A Leaf, bird and stone
 - B Cat, tree and chicken
 - C Tree, leaf and timber
 - D Chair, leaf and bird.

The analysis shows that many pupils were able to choose the correct response B *Cat, tree and chicken* because they could identify living things in group B by considering the characteristics of living things; namely, nutrition, respiration, reproduction, sensitivity, movement and growth. However, pupils who chose incorrect responses A *Leaf, bird and stone*; C *Tree, leaf and timber* and D *Chair, leaf and bird*, were not competent enough to distinctively identify the group which had living things only and those which had not since *stone, timber* and *chair* in A, C and D are not living things.

Item (ii) assessed pupils' ability to identify the importance of oxygen. The question asked:

- (ii) Oxygen gas helps to burn food so as to get
- A energy
 - B smoke
 - C vapour
 - D air.

The correct response for this item was A *Energy*. Pupils who chose A had an understanding that oxygen is used by living things to burn food during respiration process so as to get energy. On the other hand, pupils who chose incorrect responses B *smoke*, C *vapour* and

D *air* did not realize that oxygen is important in burning food in the body in order to obtain energy. In addition, these pupils failed to identify that smoke, vapour and air are not caused by burning food within the body.

Item (iii) assessed pupil's ability in identifying the importance of cleaning our bodies. The question asked:

- (iii) Why is it important to clean our bodies
- A To prevent diseases.
 - B To smear with oil.
 - C To make skin look good.
 - D To give the body fresh air.

Many pupils had an understanding that cleaning the body is important and thus; they chose the correct response A, *to prevent diseases*. On the other hand, pupils who missed the correct response chose distractors B, C, and D since they did not have good understanding on the importance of cleaning bodies. For example, the pupils who chose response B *to smear with oil*, C *to make skin look good* and D *to give the body fresh air* did not know that those responses do not refer to the importance of cleaning our bodies.

Item (iv) assessed pupils' ability to identify the harmful effects of environmental destruction. The question asked:

- (iv) Which ones are the harmful effects of environment destruction?
- A Disappearance of insects
 - B Spread of dusts
 - C Increasing of animals
 - D Occurrence of diseases.

Many pupils were able to choose the correct answer D *occurrence of diseases* since they had enough understanding that environmental destruction such as dumping garbage and disposal of dirty water create breeding sites for germs which cause infections and spread of diseases such as cholera. Also environmental destruction caused by industrial chemicals or smoke causes harmful effects such as cancer.

However, few pupils failed to answer this item correctly by choosing distractors A, B, and C. These pupils lacked enough understanding of harmful effects of environmental destruction on living things. For example, pupils who chose distractor C *increase of animals* did not know that environmental destruction such as burning and cutting down of trees contributes to destruction of habitats for living things and thus decreasing of animals.

Item (v) assessed pupil's ability to identify the importance of water to living things. The question asked:

- (v) What is the importance of water to living things?
- A Transport of nutrients
 - B Synthesis of food
 - C To dissolve nutrient
 - D To stop thirsty.

Many pupils chose the correct response A *Transport of nutrients* because they had good understanding of the importance of water to living things. These pupils understood that all living things need water to transport nutrients within bodies. On the other hand, pupils who chose incorrect responses B, C and D lacked knowledge about the importance of water to all living things. For example, those who chose distractor B *Synthesis of food* failed to recognize the fact that plants only use water to manufacture their own food and not all living things. Those who chose distractor C *to dissolve nutrients* did not know that only animals need water to dissolve food before digestion process begins, and those who chose distractor D *to stop thirsty* failed to understand that feeling thirst is a characteristic of animals in response to dehydration.

Question 2: Understanding the Basics of Science and Technology

The question comprised of five matching items. In every item (i) to (v), pupils were required to match the statements about parts of a television in **List A** with their corresponding parts in **List B** by writing the letter of the correct answer in the brackets given. The question asked:

Answer items (i) to (v) by matching statements about parts of television in **List A** with their corresponding parts in **List B**. Write the letter of the correct answer in the brackets given.

List A	Answer	List B
(i) A part which displays pictures and texts in the television.	()	A Remote B Buttons C Switch D Wire E Speaker F Antenna G Screen
(ii) A part which produces sound in the television so as to get a message.	()	
(iii) A part used for commanding television at distant.	()	
(iv) A part which picks up signals from the air.	()	
(v) A part which transfers electric power from the socket to the television.	()	

This question assessed the pupil's ability to use Information and Communication Technology (ICT), especially describing the use of a television set. The analysis indicates that the general performance of pupils in this question was good since out of 1,301,713 pupils who attempted this question a total of 1,023,140 (78.6%) passed and 278,573 (21.4%) pupils failed. The pupil's performance in this question is shown in Figure 2.

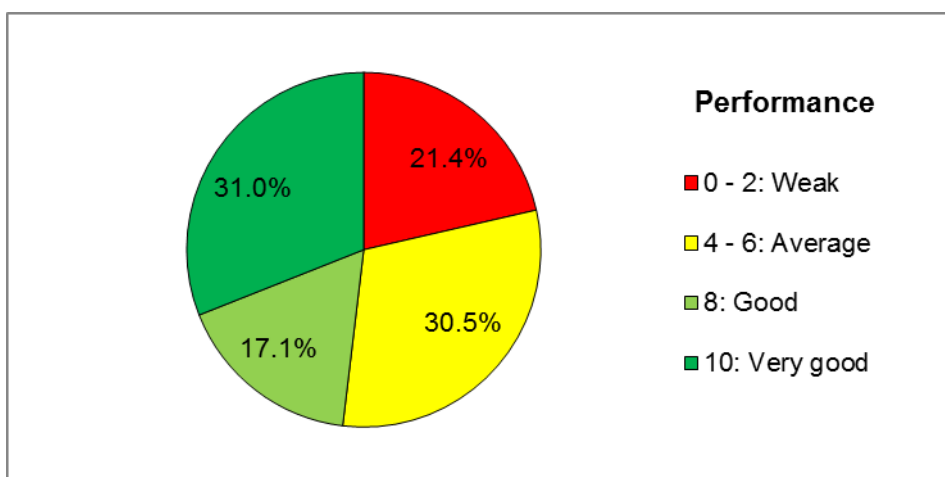


Figure 2: The summary of pupil's performance in question 2

Figure 2 shows that more than three quarters (78.6%) of the pupils performed this question by scoring 4 to 10 marks; out of which 31.0 per cent scored all the 10 marks. The pupils who scored high marks in this question were competent in identifying parts of a television set and their uses.

Despite the good performance in this question, 21.4 per cent of the pupils performed poorly as they scored 0 to 2 marks. Pupils who scored low marks in this question failed to select the correct responses in almost all items or some of them got only one item right. The analysis of the pupils' responses shows that the majority were incompetent in identifying the television's parts and their uses. In addition, responses of some pupils indicate that they failed to make correct matches because they were incompetent in reading the question and identifying its demands.

For example, the majority of pupils incorrectly selected A *remote* instead of G *screen* in item (i) which required them to match a part

of television set which displays pictures and text in the television. These pupils confused uses of a screen and that of a remote control because all of the two parts are related to pictures and text. They failed to recognize that the part of a television that displays pictures and texts is called screen and the remote is used for commanding television at a distant in order to display pictures and texts. These responses indicate that the pupils failed to understand the requirements of this question.

Item (ii) required the pupils to match a part which produces sound so as to get a message in television. The correct answer was E *Speaker*. The pupils who failed this question selected D *Wire* because they had insufficient knowledge about parts of the television and their corresponding uses. These pupils failed to distinguish a part which produces sound on the television *speaker* so as to get a message and *wire* which transfers electric power from the socket to the television.

Item (iii) which required the pupils to match a part used for commanding television at a distant. The correct answer was A *Remote*. Majority of the pupils who failed this item chose G *Screen* and some of them B *Buttons*. These pupils had insufficient knowledge of the uses of the parts of a television.

Item (iv) required pupils to match a part which picks up signals from the air. The correct answer was F *Antenna*. Majority of the pupils who failed this item chose G *Screen*. These pupils had insufficient knowledge on parts of a television because they failed to understand that information on the screen is displayed after being received from the air by an antenna.

Item (v) required pupils to match a part which transfers electric power from the socket to the television. The correct answer was D *Wire*. Majority of pupils who failed this item chose C *Switch*. These pupils confused the uses of a *switch* and that of a *wire* because all of them relate to electricity. They failed to identify that the switch turns electric power on and off and is useful in turning the television on and off while the wire transfers electricity from the socket to the television. The incorrect responses are due to failures of the pupils to understand the parts of the television and their uses.

Question 3: Understanding the Basics of Science and Technology

The question consisted of five items. In every item (i) to (v), pupils were required to choose the correct word from the box and write it in the space provided, the question asked:

Answer item (i) - (v) by choosing the correct word from the box and write it in the space provided.

charger, SIM card, screen, antenna, microphone, battery

- (i) Which part is used to display names and numbers in the telephone? _____
- (ii) The part which receives the picture and sound waves is known as _____
- (iii) What is the name of the part that is used for entering electrical power to the telephone? _____
- (iv) Which part keeps electrical power in the telephone? _____

- (v) What part is used to connect the telephone to the cellular network? _____

This question tested the pupil's ability to use the Information and Communication Technology (ICT), especially describing the uses of a telephone. The data indicates that out of 1,301,677 pupils who attempted this question, 702,086 (53.9%) passed the question. However, 599,591 (46.1%) pupils failed. This shows that the performance in this question was average as shown in Figure 3.

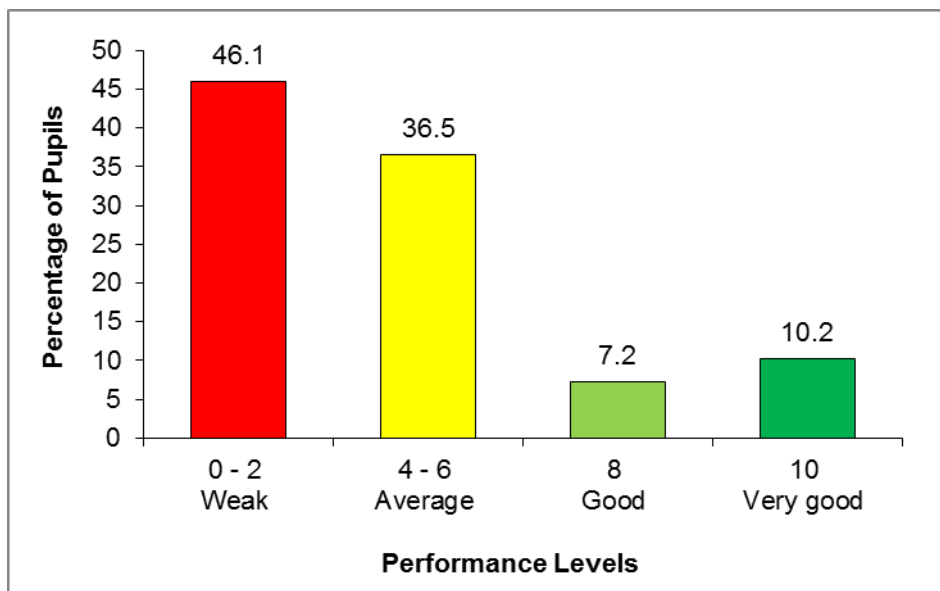


Figure 3: The summary of pupil's performance in question 3

Figure 3 shows that 53.9 per cent of the pupils passed this question by scoring from 4 to 10 marks, of which 36.5 per cent scored from 4 to 6 and 10.2 per cent scored all the 10 marks. The pupils who scored higher marks were competent in identifying the correct words related to parts of a telephone. Extract 1.1 represents a sample of good response from the pupils.

Extract 1.1

(i)	Which part is used to display names and numbers in the telephone? <u>Screen</u>
(ii)	The part which receives the picture and sound waves is known as <u>antenna</u>
(iii)	What is the name of the part that is used for entering electrical power to the telephone? <u>charger</u>
(iv)	Which part keeps electrical power in the telephone? <u>Battery</u>
(v)	What part is used to connect the telephone to the cellular network? <u>SIM Card</u>

Extract 1.1 shows responses from a pupil who correctly identified the parts of the telephone and their uses in all items of the question.

Furthermore, Figure 3 shows that 46.1 per cent of students scored from 0 to 2. These pupils scored low marks because they failed to choose correct responses in almost all items and some of them got only one item correct. The analysis of the pupils' responses shows that the majority of these pupils were incompetent in identifying parts of the telephone.

For example, item (i) required the pupils to choose a word that illustrates a part of the telephone used to display names and numbers. The correct answer was *screen*. The analysis of the pupils' responses shows that pupils who failed this item selected the word *SIM card*. These pupils chose incorrect word since both parts *screen* and *SIM card* are involved in using numbers. In addition, these pupils failed to recognize that users of telephones see names, numbers and read messages on telephone screens. The pupils also failed to understand that *SIM card* is used to store names and

numbers in the telephone and to connect telephones to cellular networks.

Item (ii) required pupils to choose a word that refers to a part of the telephone which receives pictures and sound waves. Majority of the pupils chose incorrect answer *screen* instead of the correct answer *antenna*. These pupils failed to differentiate receiving the pictures and sound waves (which are the functions of an antenna) from displaying pictures (which are functions of screen). They failed to understand the fact that in order for a picture to be seen on the screen the picture must have been received by the antenna.

Furthermore, item (iii) required pupils to choose a word that refers to a part of the telephone that is used to connect electric power to the telephone. Pupils who selected the word *charger* were right. These pupils had sufficient knowledge of the parts of a telephone. The pupils knew that a charger connects the telephone to an electric socket. The analysis indicates that the majority of the pupils who performed poorly selected the incorrect response *battery* because they failed to distinguish the uses of a charger and battery. They failed to recognize that the battery stores electrical power and not connecting telephone to a power source. A big number of pupils who could not recognize the uses of a telephone indicate that the pupils were not exposed in using telephone during the teaching and learning process. Extract 1.2 presents a sample of irrelevant responses provided by the pupils.

Extract 1.2

(i)	Which part is used to display names and numbers in the telephone? <u>SIM card</u>
(ii)	The part which receives the picture and sound waves is known as <u>screen</u>
(iii)	What is the name of the part that is used for entering electrical power to the telephone? <u>battery</u>
(iv)	Which part keeps electrical power in the telephone? <u>charger</u>
(v)	What part is used to connect the telephone to the cellular network? <u>Antenna</u>

Extract 1.2 shows incorrect responses from a pupil who failed to identify correct words that represent the uses of parts of a telephone which contributed to poor performance.

2.2 Section B: Short Answer Questions

The analysis of students' performance in section B is based on questions which required the pupils to rearrange statements and use of a picture to fill in blanks. The pupils were required to attempt all questions in this section.

Question 4: Health Care and Environment

The question comprised five jumbled statements describing procedures of washing socks. Pupils were required to rearrange the jumbled statements to form a logical flow step by step in the space provided. The question asked:

You are given the steps A - E for washing socks. Arrange the step in sequence from the first to the last step by writing the required sentence in the space provided.

- A Rinse the socket with clean water to remove the soap.
- B Knead well the upper and lower parts of the socks.
- C Hung the socks on the rope to dry up.
- D Put the socks in the basin with clean water and soap them.
- E Prepare clean water and soap.

The question assessed pupils' ability to observe procedures of cleanliness. Generally, the question assessed the ability to apply cleanliness principles for health and environment specifically identifying the steps to follow in washing clothes.

The pupils' performance in this question was average since out of 1,301,710 pupils who attempted this question 845,468 (65.0%) passed the question. However, 456,242 (35.0%) pupils failed. Figure 4 presents the summary of pupils' performance in this question.

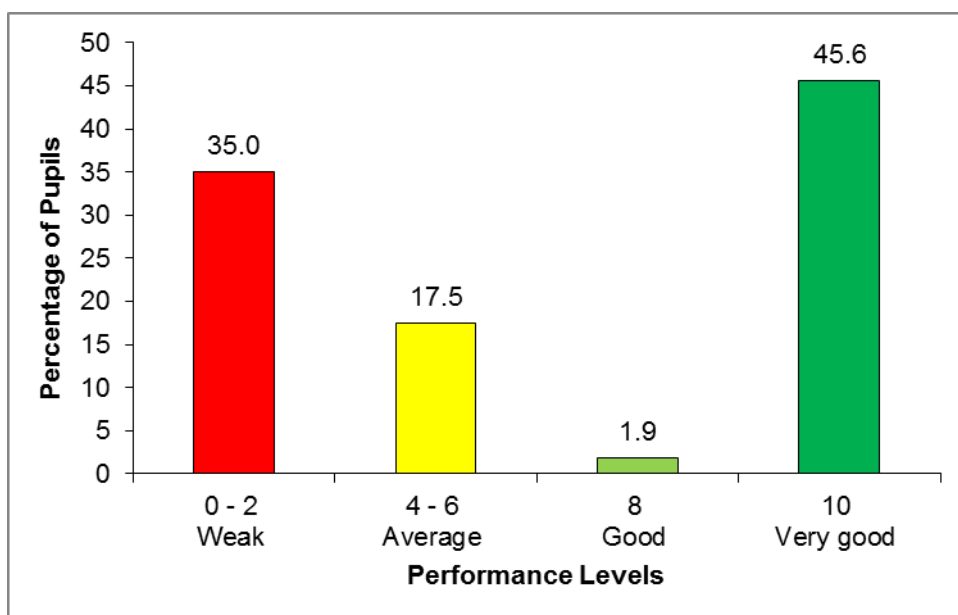


Figure 4: The summary of pupils' performance in question 4.

Figure 4 shows that more than a half (65.0%) of the pupils who attempted this question scored 4 to 10 marks out of which 45.6 per cent scored all the 10 marks allocated to this question. These pupils were competent in applying cleanliness principles for health and good environment, thus they were able to rearrange 2 to 5 statements logically as expected. In addition, these pupils had good reading and writing skills which enabled them to read the sentences, understand and write in sequence from the first step to the last step. Extract 2.1 is a sample of good responses from the pupils.

Extract 2.1

Steps	Answers
Step 1	Prepare clean water and soap.
Step 2	Put the socks in the basin with clean water and soap them.
Step 3	Knead well the upper and lower part of the socks.
Step 4	Rinse the socks with clean water to remove the soap.
Step 5	Hung the socks socks on the rope to dry up.

Extract 2.1 shows the responses of a pupil who correctly arranged all the steps to follow in washing socks.

Apart from the good performance in this question, Figure 4 also shows that 35.0 per cent of the pupils failed the question, of which a few (7.5%) scored 2 marks. Pupils who scored 2 marks got the first statement correct and the rest scored 0. These pupils who scored lower marks in this question were incompetent in applying cleanliness principles for health and good environment. In rearranging the statements, most of them started with step D *Put the socks in the basin with clean water and soap* instead of starting with step E *Prepare clean water and soap* which is a step to prepare tools for washing clothes. Poor rearrangement was due to carelessness in reading and understanding the sentences and not knowing proper steps to follow in washing socks. Moreover, the analysis indicates that some of the pupils who failed this question wrote poor sentences with unrecognized words and others failed to attempt the question completely. This indicates that they lacked reading and writing skills which made them fail to read and

rearrange sentences logically. Extract 2.2 shows a sample of weak response from the pupils.

Extract 2.2

Steps	Answers
Step 1	Put the socks in the basin with clean water and soap them.
Step 2	Rinse the socks with clean water to remove the soap.
Step 3	Prepare clean water and soap.
Step 4	Knead well the upper and lower parts of the socks.
Step 5	Hung the socks on the rope to dry up.

Extract 2.2 shows responses from a pupil who failed to arrange correctly the steps to be followed in washing socks. The pupil got the last step (5) right.

Question 5: Health Care and Environment

The question had five items. In each item (i) to (v), pupils were required to study the picture and answer the question that followed. The question asked:

Study the following pictures and then answer the questions that follow.



- (i) Mention the activity done by the two people floating in the water?

- (ii) Apart from human being, what other animal is floating on water.

- (iii) Which disease can be spread by the floating animals?

- (iv) Mention the symptom of the disease you mentioned.
• _____
• _____
- (v) Which organs of the body are affected by that disease?

The general performance of the pupils in this question was average since statistics shows that out of 1,301,633 pupils who attempted the question 726,006 (55.8%) pupils passed. Conversely, 575,627

(44.2%) pupils failed. The analysis of pupils' performance in this question is summarized in Figure 5.

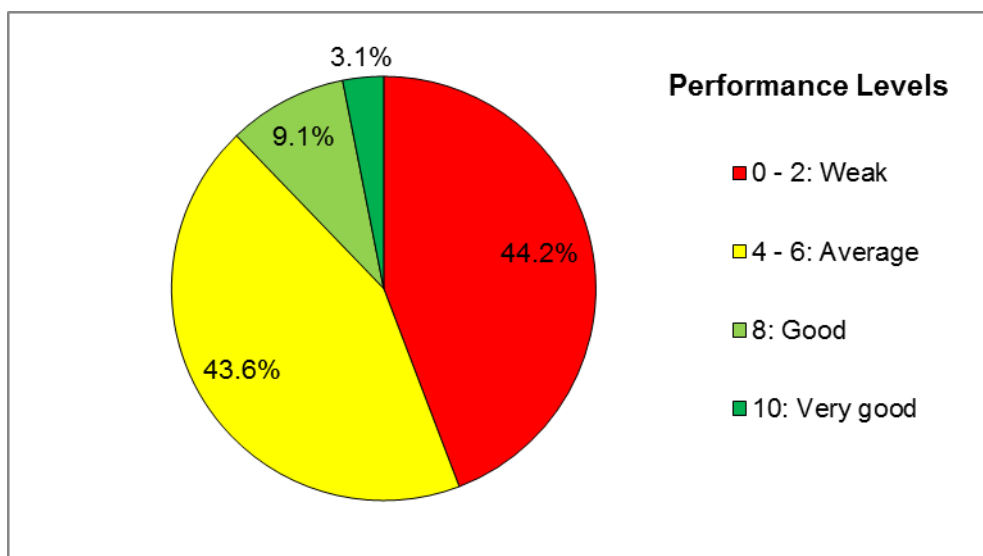


Figure 5: Summary of pupils' performance in question 5

Figure 5 shows that about half (55.8%) of the pupils passed the question out of which 43.6 per cent scored 4 to 6 marks and few (3.1%) were able to score all the 10 marks allotted to this question. The pupils who scored higher marks in this question were competent in applying cleanliness principles for health and good environment. These pupils were competent in investigating and interpreting pictures which enabled them to attempt question items correctly as illustrated in extract 3.1.

Extract 3.1

- (i) Mention the activity done by the two people floating in the water.

Swimming

- (ii) Apart from human being, what other animal is floating on water?

Snails.

- (iii) Which disease can be spread by the floating animal?

Bilharzia.

- (iv) Mention the symptom of the disease you mentioned.

• To urinating blood.

• To remove lances which have drops of blood.

- (v) Which organs of the body are affected by that disease?

kidney and rectum.

Extract 3.1 shows responses from a candidate who answered all the items correctly.

Moreover, figure 5 also shows that a total of 44.2 per cent of the pupils performed poorly since they scored 0 or 2 marks. These pupils failed to supply correct answers in almost all items and some of them had only one item correct. The analysis of pupils' responses indicates that most of these pupils were incompetent in interpreting pictures and others failed to identify the demands of the question.

For example in answering item (i) which asked: Mention the activity done by the two people floating in the water, pupils who got the item correct, *swimming* understood the demand of the question and were able to interpret the picture correctly. On the other hand, pupils who failed to identify the said activity wrote incorrect responses such as: *urinating*, *standing* and *sitting on water*. Others wrote *they are fishing* and *they are rescuing*. These responses indicate that the pupils could not understand demands of the question.

Similarly, in responding to item (ii) which asked: Apart from human being, what other animal is floating in water?

The pupils who failed to correctly respond to this item wrote answers which do not relate to the picture. Some of them wrote *fish, duck, crocodile, bee* and *bird* instead of the correct response *snail*. The incorrect responses indicate that apart from pupils' failure to interpret the picture given, they failed to identify demands of the question.

Furthermore, in item (iii) which asked: Which disease can be spread by the floating animal?

The pupils who failed this item wrote diseases which are not spread by snails. Some of the pupils wrote *HIV/AIDS, malaria, cholera, headache* and *fever* indicating that their responses were not based on the picture provided. These pupils did know that snails living in stagnant water spread bilharzia.

Moreover, item (iv) required the pupils to mention the symptom of the disease identified.

Many pupils failed to mention the symptoms such as *blood in the urine and faeces, pain in the lower abdomen, fever* and *lack of blood in the body*. Some of the incorrect responses from the pupils were *headache, stomachache* and *worm diseases*. Other pupils wrote *fungi* and *bacteria*. These responses reveal that the pupils were incompetent on health care and environment which contributed to poor performance in this question.

In addition, item (v) required the pupils to mention the organs of the body that are affected by the disease.

Most of the pupils failed to identify the organs such as *kidney, urinary bladder, liver and rectum* which are affected by bilharzia. Instead, some pupils wrote incorrect responses such as *brain, spinal cord, legs and the face*, while others wrote *urinating blood, vomiting blood, blood comes out*. These responses show that the pupils were incompetent in understanding bilharzia thus could not identify the organs that are affected by the disease. Extract 3.2 shows the sample of weak responses from pupils.

Extract 3.2

- (i) Mention the activity done by the two people floating in the water.
Fishing in water
- (ii) Apart from human being, what other animal is floating on water?
Crocodile
- (iii) Which disease can be spread by the floating animal?
Bilharziosis
- (iv) Mention the symptom of the disease you mentioned.
• Fever
• Headache
- (v) Which organs of the body are affected by that disease?
Urinating blood

Extract 3.2 shows responses from a pupil who answered incorrectly parts (i), (ii) and (v).

3.0 EVALUATION OF PUPILS' PERFORMANCE IN EACH COMPETENCE

Science and Technology subject paper assessed three competencies as listed in the Syllabus of Science and Technology (2016). Out of three competencies tested, pupils had good performance of 82.1 in *Perform Scientific Investigation and Technological Discovery*. However, the pupils had average performance of 66.3 per cent in *Understand the Basics of Science and Technology* (66.3%) and *Health Care and Environment* (60.4%). None of the competencies had poor performance. Appendix A and B summarize the pupils performance in SFNA 2018 topic-wise.

In the appendices, the competencies are rated as weak (red colour), average (yellow colour) and good (green colour) if the percentage of the pupils who passed the competence lies between 0 - 33, 34 - 66 and 67 - 100 respectively.

4.0 CONCLUSION

The general performance of the pupils in Standard Four National Assessment of 2018 in 05 Science and Technology subject was good since 69.6 per cent of the pupils' had average to very good performance. However, the competence *Perform Scientific Investigation and Technological Discovery* had better performance as compared to other competencies.

The good performance of the pupils in this assessment was contributed by pupils' competencies in investigating things that are found in the environment, applying information and communication

technology and applying cleanliness principles for health and good environment. Also they had good reading and writing skills and ability to understand the demand of the questions.

However, few pupils (6.8%) failed to give correct responses due to inadequate mastery of the assessed competences. Some pupils encountered problems in understanding the demand of the questions and others showed lack of reading and writing skills.

5.0 RECOMMENDATIONS

In order to improve the performance of the pupils in Standard Four National Assessment in 05 Science and Technology subject, the following are recommended:

- (a) Pupils should be advised to read carefully and understand demands of the questions before attempting.
- (b) Teachers should use improvised locally available materials such as cellular phones and televisions in teaching science and technology concepts particularly in teaching Information and Communication Technologies.
- (c) Teachers should provide test and exercises that require pupils to read, write, investigate and interpret information.

APPENDIX A

A COMPARISON OF THE PUPILS' PERFORMANCE IN EACH COMPETENCE ASSESSED IN SFNA 2018

05 SCIENCE AND TECHNOLOGY

S/N	Competence	SFNA 2018			
		Performance on each Question		Average Performance (%)	Remarks
		Question Number	% Performance		
1.	Perform Scientific Investigation and Technological Discovery	1	82.1	82.1	Good
2.	Understand the Basics of Science	2	78.6	66.3	Average
		3	53.9		
3.	Health Care and Environment	4	65	60.4	Average
		5	55.8		

**A COMPARISON OF THE PUPILS' PERFORMANCE IN EACH
COMPETENCE ASSESSED IN SFNA 2018**

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