

**THE NATIONAL EXAMINATIONS COUNCIL OF TANZANIA**



**PUPILS' ITEMS RESPONSE ANALYSIS REPORT  
FOR STANDARD FOUR NATIONAL ASSESSMENT  
(SFNA) 2015**

**02E SCIENCE**

**THE NATIONAL EXAMINATIONS COUNCIL OF TANZANIA**



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(SFNA) 2015**

**05E SCIENCE**

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## **PREFACE**

This report on the analysis of Pupils' responses on Standard Four National Assessment (SFNA) 2015 questions in Science subject has been prepared to give feedback to pupils, teachers, policy makers, curriculum developers and other education stakeholders on how pupils responded to assessment items. Pupils' responses in the assessment items is one of the indicators of what the pupils were able to attain and what they did not manage to learn successfully in their four years in primary education.

The analysis indicates that, the following factors contributed to the pupils' failure to provide correct answers: inability to identify the demands of the questions, inadequate knowledge in the respective topics, inability to transfer knowledge and poor proficiency in English language.

An analysis of each item was conducted indicating the number or percentage of pupils who chose or wrote the correct answer and those who were unable to respond correctly. Possible reasons that have led the pupils to choose or write correct/incorrect answers are provided for each item. Furthermore, charts have been presented to illustrate the pupils' performance.

The Examinations Council believes that, the feedback provided in this report will enable the different stakeholders in education to take the necessary steps in improving the teaching and learning processes, for the purpose of eliminating the shortcomings identified in this report. In addition, the Council is of the opinion that if the recommendations given in this report are implemented accordingly, will enhance improvement of pupils' performance in future assessments.

Finally, the National Examinations Council of Tanzania would like to express sincere gratitude to the Examination Officers and all others who contributed to the preparation of this report. The Council will appreciate any fruitful comments and recommendations from teachers, pupils and other education stakeholders aiming at improving the quality of future Standard Four National Assessment reports.



Dr. Charles E. Msonde  
**EXECUTIVE SECRETARY**



## **1.0 INTRODUCTION**

This report on Standard Four National Assessment (SFNA) 2015 Science subject is based on the performance of pupils who sat for the assessment on 26<sup>th</sup> November, 2015. The assessment was set according to 2005 Science Syllabus for Primary Schools.

The number of pupils who registered for this assessment was 1,036,939 of which 975,328 (94.1%) sat for the assessment. Statistics show that the number of pupils who passed this paper is 872,107 (89.4%) and few pupils 103,221(10.6%) failed.

The Standard Four National Assessment (SFNA) for the year 2015 in Science subject consisted of 25 questions which were derived from different topics. Pupils were required to answer all the questions. The questions were divided into four sections. Section A had multiple choice questions, B matching items, C filling in the blanks and D True or False questions.

## 2.0 ANALYSIS OF PUPILS' ANSWERS

### 2.1 SECTION A: MULTIPLE CHOICE

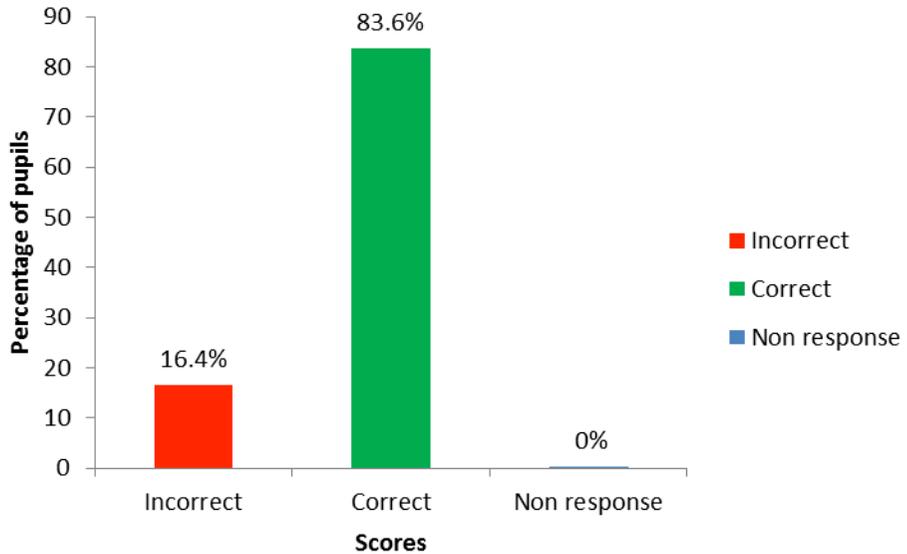
**Question 1:** It is important to clean the environment in order to

- A prevent soil erosion
- B allow plants to increase
- C protect health and clean air
- D bring diseases and bad smell.

The question tested pupils' understanding about environmental cleanliness.

Many pupils (83.6%) chose the correct answer C "protect health and clean air" because they had clear understanding about the importance of cleaning the environment. They were aware of the importance of cleaning the environment which is to protect health and clean air.

A total of 156,434 (16.4%) pupils chose distracters A "prevent soil erosion", B "allow plants to increase" and D "bring diseases and bad smell". Those pupils did not understand that prevention of soil erosion is a means of environmental conservation while "bring diseases and bad smell" are situations which occur after the environment is not cleaned and poor treatment of waste products. In addition, pupils who chose "to allow plants to increase" lacked enough knowledge about the importance of cleaning the environment. **Figure 1** shows that, the general performance of pupils in this question was good.



**Figure 1:** Pupils’ answers shows that the performance in this question was good

**Question 2:** Meat, fish and eggs are foods which contain

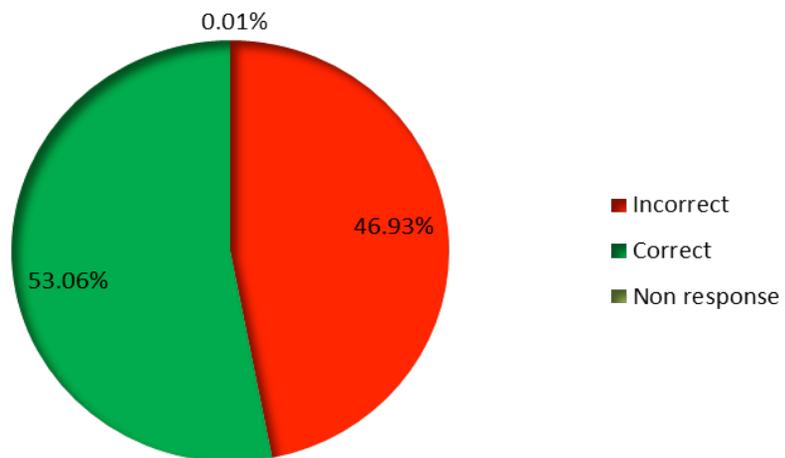
- A Starch
- B Vitamin
- C Protein
- D Minerals.

The question tested the pupils’ knowledge on the groups of foods.

Performance in this question was average where 505,309 (53.1%) pupils failed to identify the specific group of food which include meat, fish and eggs by choosing incorrect answers A “starch”, B “vitamin” and D “minerals”. Such pupils did not have clear understanding on the groups of food as they failed to understand that, foods which are rich in carbohydrates include maize, rice and potatoes. Food rich in minerals are fish, normal salt and vegetables and foods rich in

vitamins are vegetables, fruits like oranges, mangoes, apples and watermelon. Thus, all these foods are not proteins.

However, 446,968 (46.9%) pupils chose the correct answer C “protein” because they were able to identify that meat, fish and eggs are food rich in proteins. The remaining 0.01 percent of the pupils could choose no answer. This question was averagely performed as shown in **Figure 2**.



**Figure 2:** Pupils’ answers shows that the performance in this question was average.

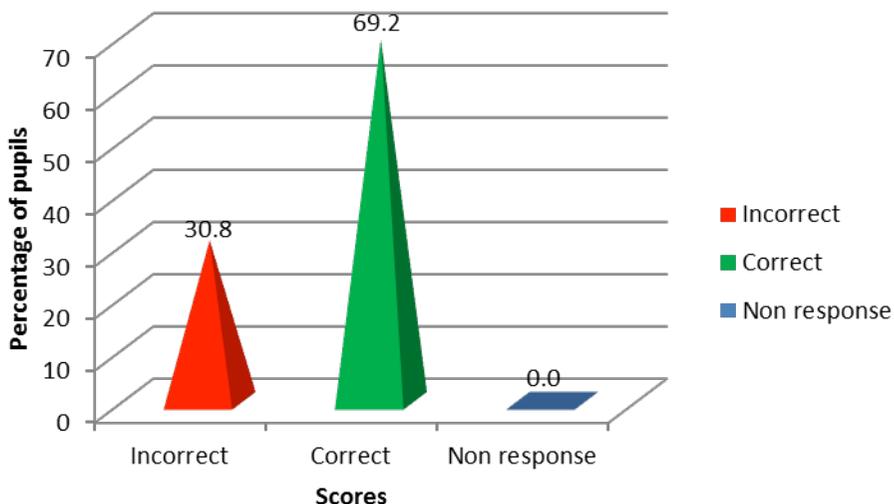
**Question 3:** The part of the body responsible for feeling is

- A Tongue.
- B skin
- C eyes
- D nose.

The question required a pupil to identify a sense organ which is responsible for feeling.

The correct option B “skin” was selected by 69.2 percent of the pupils. Those pupils were able to differentiate and identify the function of each sense organ.

A total of 292,886 (30.8%) pupils opted for distracters A “tongue”, B “eyes” and D “nose” because they lacked the knowledge about sense organs. They failed to understand that tongue, eyes and nose are among the sense organs, but they are not responsible for feeling. Nose, eye and tongue are sense organs responsible for smelling, seeing and tasting respectively. **Figure 3** shows that the general performance of pupils in this question was good.



**Figure 3:** Pupils’ answers shows that the performance in this question was good

**Question 4:** Thermometer is an instrument used to measure

- A Volume of matter
- B Air in the atmosphere
- C Weight of matter
- D Body temperature.

The question tested the pupils' ability about an instrument used to measure body temperature.

The general performance was average because 543,723 (57.1%) pupils chose the correct answer D "body temperature". This shows that the pupils had enough knowledge about the types of instruments used to measure different objects. The pupils were able to recognise that thermometer is an instrument used to measure body temperature.

On the other hand, 408,849 (42.9%) pupils who chose the incorrect options A "volume of matter", B "air in the atmosphere" and C "weight of matter" did not understand that, weight of matter is measured by a beam balance. Air in the atmosphere is measured in two perspectives; one perspective is the direction of wind which is measured by wind gauge and wind speed which is measured by anemometer. In addition, they did not understand that the volume of matter is measured according to the state of matter. Such answers reveal that the pupils lacked knowledge about the types of instruments used to measure different objects.

**Question 5:** All living things respire, eat, grow and

- A play
- B sing
- C die
- D cry.

The question tested pupils' ability on the characteristics of living things.

The general performance was average as 508,109 (53.4%) pupils chose the correct option C “die” as they were able to identify that all living things do respire, eat, grow and die.

However, 444,168 (46.6%) pupils chose incorrect options A “play”, B “sing” and D “cry”. Those pupils were attracted by the distracters due to lack of knowledge about the characteristics of living things. In addition, they failed to understand that playing, singing and crying are not characteristics of living things.

**Question 6:** Which method can be used to confirm HIV/AIDS victim?

- A Blood test in hospital.
- B Looking at his/her face.
- C Observing his/her behaviour.
- D Measuring his/her weight.

The question tested pupils’ knowledge on the method which is used to confirm an HIV/AIDS victim.

The general performance of pupils in this question was good due to the fact that a total of 742,009 (77.9%) pupils chose the correct answer A “blood test in hospital”. Those pupils had enough knowledge on the method used to confirm an HIV/AIDS victim since the information on HIV/AIDS is widely provided by different mass media, meeting, workshops, seminars, flyers and posters. In addition, the issue of HIV/AIDS touches everyone in the society to the extent that each family educates their children on the impact of such a deadly disease.

However, 210,278 (22.1%) pupils chose among distracters B “looking at his/her face”, C “observing his/her behaviour” and D “measuring his/her weight”.

The pupils who chose B “looking at his/her face” were attracted by this distracter because majority of the victims of AIDS had weak faces. Other pupils were attracted by distracter C “observing his/her behaviour” because they correlated transmission of HIV with the behaviours like prostitution, drug abuse and alcoholism. In addition, those who chose distracter D “measuring his/her weight” were attracted to this option because people with AIDS always lose weight. Such responses indicate that pupils in this category lacked knowledge on the topic of HIV/AIDS.

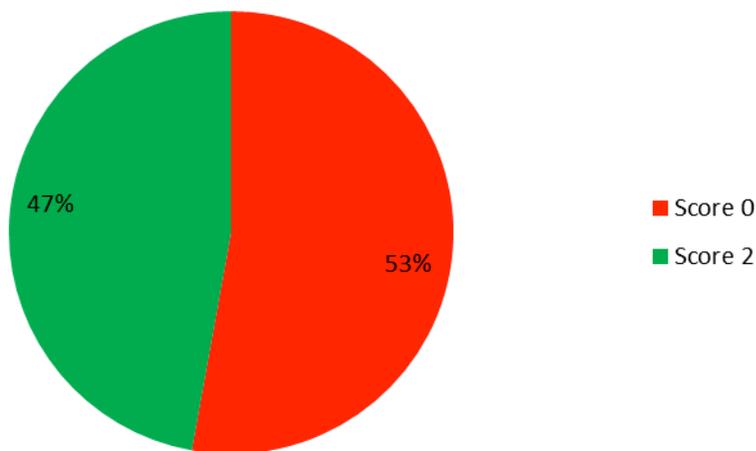
**Question 7:** When iron gets heat it

- A contract
- B expand
- C burn
- D rust.

The question tested the pupils’ ability on the concept of contraction and expansion of iron.

A total of 449,190 (47.2%) pupils chose the correct answer B “expands”. Those pupils had the knowledge of expansion and contraction of matter in their daily life. For example, fitting an axe in an iron handle, construction of railway line and installation of electrical wires takes into consideration the concept of expansion. Pupils who chose distracters A “contract”, C “burn” and D “rust” were 503,107 (52.8%) percent lacked knowlegde on the concept of contraction and expansion of matter. They did not understand that

objects like iron expand when exposed to heat and contract when temperature decreases. In addition, they were not aware that rust occurs when an iron reacts with water and oxygen but not burning. Those who chose burn had confused the word “burn” with “heat” because they have the common source. The general performance of pupils in this question was average as shown **Figure 4**.



**Figure 4:** Pupils’ answers shows that the performance in this question was average.

**Question 8:** The main parts of a plant are:

- A Leaves, stem and flowers
- B Stem, branches and flowers
- C Leaves, stem and roots
- D Roots, stem and flowers.

The question required the pupils’ to identify the main parts of a plant.

The performance was good as majority of the pupils (67.1%) chose the correct answer C “leaves, stem and roots”. Those pupils had

adequate knowledge on main parts of plants which enabled them to identify the correct answer.

However, 313,449 (32.9%) pupils chose among distracters A “leaves, stem and flowers”, B “stem, branches and flowers” and D “roots, stem and flowers”. Some of the pupils who chose incorrect answers were attracted to these distracters due to the presence of “flowers” and “branches” in the given alternatives. They failed to understand that flowers are reproductive parts of the plants and not a main part of the plant “branches” are parts of the plant stem and not one of the main parts of the plant.

**Question 9:** Which among the following is used to recognize the sound of a bell?

- A Eyes.
- B Skin.
- C Tongue.
- D Ear.

The question tested the ability of the pupils to identify a sense organ which responsible for hearing.

The general performance was good as majority of the pupils (81.5%) chose the correct answer D “ear”. Those pupils were able to identify the sense organ responsible for recognising sound.

A total of 176,194 (18.5%) pupils chose among distracters A “eyes”, B “skin” and C “tongue”. Those pupils failed to recognise that, ear are used for hearing. In addition, they did not understand that,

tongue is used for testing; skin is used for touch and detection of temperature; and eyes used to see. In general, these pupils lacked knowledge on sense organs and their functions.

**Question 10:** The best electric conductor among the following materials is

- A plastic
- B copper
- C dry wood
- D human being.

The question required the pupils to identify things which can conduct electricity.

The general performance of the pupils was average as 412,525 (43.3%) pupils chose the correct answer B “copper”. Those pupils had enough understanding about good and poor conductor of electricity hence they understood that, metals like copper are good conductors of electricity. In addition, they understood that, plastic, dry wood and human body are poor conductors of electricity.

A total of 539,760 (56.7%) pupils chose distracters A “plastic”, C “dry wood” and D “human body”. Those pupils failed to understand that, copper is among the things which can conduct electricity. They also failed to understand that, plastic and dry wood are poor conductors of electricity hence they are used to make electric iron handle.

## 2.2 SECTION B: MATCHING ITEMS

This section had two lists, namely A and B. Pupils were required to match items from List A with the corresponding responses from List B. The questions were set from the topic of Changes of Objects, States and Events.

	List A	Letter	List B
11	Gas originating from animal wastes.	( )	A Air
12	Gas given out during respiration.	( )	B Wind
13	Essential gas for the life of living things and combustion.	( )	C Clouds
14	Air which is in motion.	( )	D Carbon dioxide
15	Condensing vapour which causes rain.	( )	E Oxygen
			F Biogas
			G Hydrogen

**Question 11:** This question required the pupils to choose a response from list B which matches correctly with “a gas originating from animal wastes”.

The statistical analysis shows that general performance in this question was average as 385,636 (40.5%) pupils were able to choose the correct answer F “Biogas”. This indicates that those pupils had adequate knowledge on the concept of gas released by decaying matter (biogas). A total of 566,635 (59.5 %) pupils failed to identify the correct response. Among them chose D “carbon dioxide” instead of F “Biogas”. Such pupils could not match the correct

response because they failed to distinguish between biogas and carbon dioxide. Such pupils were supposed to understand that carbon dioxide is a gas which is given out during breathing while biogas is a gas originating from animal wastes such as cow dung. This shows that those pupils had inadequate knowledge on the origin of biogas.

**Question 12:** This question required the pupils to identify a “gas given out during respiration”.

The Analysis shows that the performance in this question was poor as 952,368 (61.5%) pupils failed to choose a response that matches the respective item. Majority of the pupils in this category chose E “oxygen” instead of D “carbon dioxide”. This indicates that those pupils had inadequate knowledge about the gas exchange in the respiratory system. Such pupils were supposed to recognize that carbon dioxide is given out while oxygen is taken in during respiration.

On the other hand, few pupils (38.5%) managed to write the correct answer which was D “carbon dioxide”. Those pupils had enough knowledge on respiration because they were able to identify the relevant gas which is always given out during respiration.

**Question 13:** This question required the pupils to identify an “essential gas responsible for the life of living things and combustion”.

The performance of pupils in this question was poor as 585,181 (61.4%) pupils failed to match the item with the correct answer instead they chose options A “air” and B “wind”. The choice of incorrect options indicates that the pupils had inadequate

knowledge on the importance and function of oxygen gas. Such pupils failed to understand that oxygen is an essential gas for life of living things as it is involved in the respiration process to give out energy that is used for various body activities. Also, oxygen is very essential in the combustion process. However, few pupils (38.5%) managed to match the correct answer E “oxygen”. This indicates that such pupils had enough knowledge about the importance and function of oxygen gas.

**Question 14:** This question required the pupils to identify the name for the “Air which is in motion”.

The analysis shows that the general performance in this question was average as 56.4 percent of the pupils were able to match the item with correct response B “wind”. Those pupils had enough knowledge on various elements of weather. A total of 414,968 (43.6%) pupils failed to identify the correct response. Majority of pupils in this chose A “air”. They did not understand that the air in motion is known as wind. This indicates that those pupils had inadequate knowledge on the subject matter.

**Question 15:** The pupils were required to provide the correct response which matches with “condensing vapour which causes rain”.

The pupils who chose the correct response C “cloud” were 65.7 percent. This indicates that those pupils had enough knowledge on the states of water as well as formation of rainfall. However, few pupils (34.3%) wrote incorrect responses as they failed to recognise that when the temperature raises, water change into vapour which rises in the air. When temperature falls to zero or below zero the

water vapour freezes into a solid state to form clouds. When the temperature rises the cloud melts into liquid form that falls on the ground as rain.

### 2.3 SECTION C: FILLING THE BLANKS

**Question 16:** This question required the pupils to name an instrument used to enlarge very small objects which cannot be seen by eyes.

The general performance of the pupils in this question was poor since the majority of pupils (83.1%) failed to identify and name the instrument used to enlarge very small objects. For example, some of the pupils named the instrument as telescope and others named it as torch. This indicates that those pupils lacked knowledge on the essential instruments and their uses in scientific investigations. Extract 1 is a sample of an answer from one of the pupils who provided incorrect answers to this question.

#### Extract 1

16. Kifaa kinachotumika kukuza vitu vidogo sana visivyoonekana kwa macho huitwa dalobini.

**Extract 1** is a sample of answer from a pupil who wrote the answer as *dalobini* which is not the correct instrument used to enlarge very small objects which cannot be seen by eyes. In addition, he/she failed to write the correct word *darubini*.

Few pupils (16.9%) managed to identify and named “microscope” as the correct answer. Those pupils were aware that microscope is an instrument used to enlarge small objects.

**Question 17:** The question required the pupils to identify the name of the process of extracting salt from a salt solution.

Many pupils (97.6%) failed to differentiate various methods of separating mixtures. For example, some wrote “water vapour”, others wrote “extraction” and “boiling” instead of vaporization. This response indicates that pupils had inadequate knowledge on the methods of separation of mixtures. In actual fact, such pupils were supposed to understand that vapour is the change of water from liquid to gaseous state and extraction is a process of separating the solute and solvent from a solution while vaporization is a method used in extracting a solute from a solution that involves boiling water in which water will evaporate and salt remains. Extract 2 is a sample of an incorrect answer from one of the pupils.

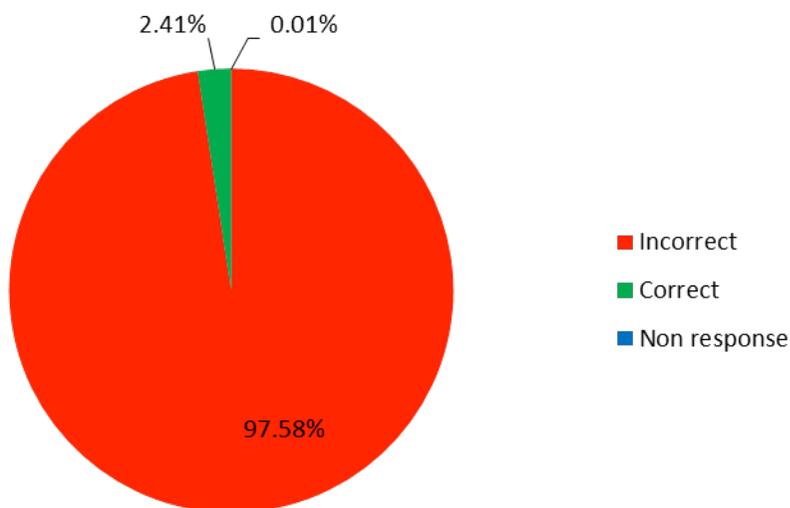
**Extract 2**

17. Mchakato wa kugombo chumvi kwenye myeyuko wa chumvi  
huitwa Kugombo.

**Extract 2** shows a sample of a response from a pupil who wrote the process of extracting salt from a salt solution as extraction instead of vaporization.

On the other hand, few pupils (2.4%) were able to provide the correct answer. Such pupils had adequate knowledge on various

methods used in separating mixtures. **Figure 5** depicts the percentage of the pupils' scores in this question.



**Figure 5** shows that the performance in this question was poor.

**Question 18:** The question required pupils to identify the second group of carbohydrate apart from sugar.

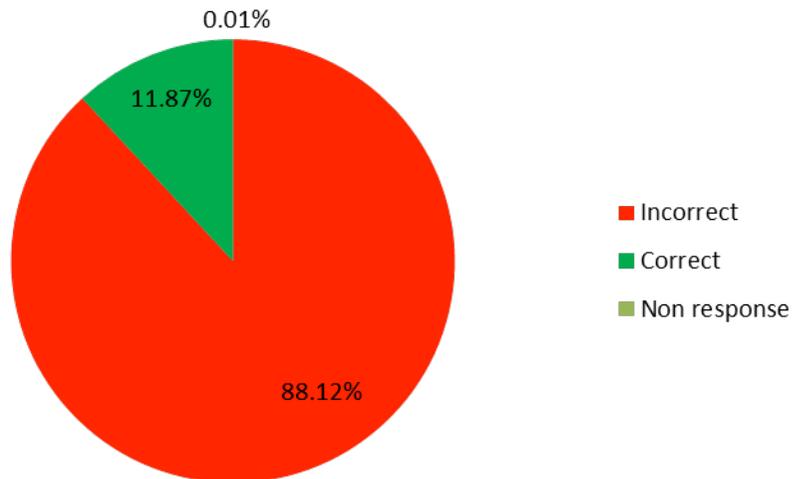
The data indicates that the performance in this question was poor because 839,205 (88.1%) pupils failed to write the correct answer and got a zero mark. Pupils who failed to provide the correct answer did not understand the demand of the question. Majority of the pupils in this category mentioned foods like cassava, and maize flour which are not the group of carbohydrates. Actually they failed to recognize that carbohydrate is divided into two groups which are sugar and starch. The sources of starch nutrient are cassava, potatoes, wheat, maize and the sources of sugar are sugar cane, carrot and ripe fruits. Extract 3 is a sample of an incorrect answer from one of the pupils who provided irrelevant response in this question.

### Extract 3

18. Kabohaidreti imegawanyika katika makundi mawili ambayo ni sukari na  
*asali*.

**Extract 3** is a sample of an incorrect response provided by a pupil who failed to distinguish between the foods rich in sugar and starch.

However, few pupils (11.9%) managed to write “starch” which is the correct answer. The pupils who managed to write the correct answer had adequate knowledge on groups of carbohydrate. Generally, pupils’ performance in this question was poor as depicted in **Figure 6** in which more than three quarter (88.1%) of the pupils failed to identify the correct answer.



**Figure 6:** The response pattern shows that the performance in this question was poor.

**Question 19:** The question required the pupils to identify what the human body will lose as a result of vomiting and diarrhoea.

The performance in this question was poor as majority of the pupils (83%) failed to write the correct answer “water” while only 17 percent got it correctly.

Pupils who scored zero failed to identify the effects of vomiting and diarrhoea to the human body as a result some wrote “life” and others wrote “energy” instead of “water”. Such pupils failed to recognize that the human body loses water when a person is suffering from diarrhoea and vomiting and consequently the loss water may lead to death if proper measures and treatment are not taken effectively. Extract 4 is a sample of an answer from one of the pupils who provided incorrect response.

#### **Extract 4**

19. Kutapika na kuhara husababisha mwili wa binadamu kupoteza nguvu

Extract 4 shows an incorrect answer of the pupil wrote the human body will lose “energy” instead of “water”.

**Question 20:** The question required the pupils to identify the device used to attract metallic things.

The analysis indicates that the pupils’ performance in this question was average as 58.4 percent of the pupils managed to name the correct device which is a “magnet”. This indicates that such pupils had enough knowledge on the characteristics of metals.

However, a total of 395713 (41.6%) pupils failed to identify the correct device. Those pupils had inadequate knowledge on characteristics of metals. The incorrect answers given include northern pole, magnetic field, energy and southern pole. Some pupils failed to identify the demand of the question as revealed from one of the pupils who wrote the device used to attract metallic things is “hand” which is not a device but a part of human body used to hold things. Extract 5 is a sample of an incorrect answer from a pupil who failed to identify the characteristics of metals.

### **Extract 5**

20. Vitu vyenye asili ya chuma huweza kuvutwa kwa kutumia mikono

**Extract 5** shows the answer of the pupil who did not understand the device used to attract metallic things, he/she wrote “hand” instead of “magnet”.

**Question 21:** The question required the pupils to identify the part of the human body which is attacked by HIV.

A total of 860,282 (90.3%) pupils who scored zero wrote “body immunity” while others wrote “blood cells”. These answers indicate that the pupils had inadequate knowledge on the topic of HIV/AIDS. Those pupils failed to recognize that when HIV enters into the human body it does not attack all blood cells because there are three types of blood cells which have different functions. These blood cells include the red blood cell, white blood cell and platelets. Normally, HIV attacks the white blood cells which are responsible for safe guarding the body immunity, to the extent that the immunity becomes weak and unable to fight against infectious diseases.

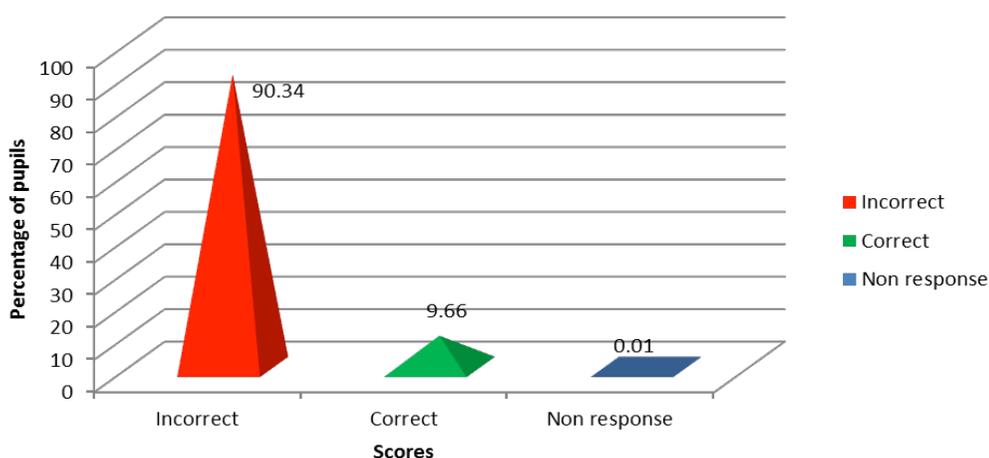
Extract 6 is a sample of answer from a pupil who provided incorrect answers to this question.

### Extract 6

21. VVU vinapoingia kwenye mwili wa binadamu hushambulia seli

Extract 6 shows the answer of the pupil who had inadequate knowledge about blood cell which is attacked by HIV.

However, few pupils (9.7%) managed to provide the correct answer “white blood cell” as shown in **Figure 7**.



**Figure 7:** The response pattern shows that the performance in this question was poor.

**Question 22:** The question required the pupils to identify the gas needed by plants to manufacture their own food.

The analysis indicates that the performance in this question was poor since few pupils (21.5%) managed to write “carbon dioxide” which is

the gas needed by plants to manufacture their own food by the process known as photosynthesis.

Majority of the pupils (78.5%) failed to identify the correct answer “carbon dioxide”. Those pupils lacked knowledge on gases needed by plants and their importance. For example, the majority of the pupils mentioned oxygen gas though oxygen is needed by plant in respiration to produce energy used for various functions such as transport of food and nutrients, but not for manufacturing food. Some pupils wrote the word “carbon dioxide” wrongly. For example, one pupil wrote “kakodaisini” and another wrote “kabonikisini”. This shows that some pupils had inadequate skills of reading and writing. Extract 7 is a sample of an answer from a pupil who provided an incorrect answer in this question.

### Extract 7

22. Gesi inayohitajika na mmea katika utengenezaji wa chakula huitwa <u>Oksijeni</u> .
-------------------------------------------------------------------------------------------

**Extract 7** shows the answer of the pupil who had inadequate knowledge about gas which are needed by plants to manufacture their own food as he/she wrote “oxygen” gas instead of “carbon dioxide”.

## 2.4 SECTION D: TRUE or FALSE

In this section, pupils were required to write “True” for correct statement and False for an incorrect statement in the blank spaces provided.

**Question 23:** “Tuberculosis is spread by drinking unsafe water”.

The data indicates that the general performance in this question was average. A total of 532,116 (55.9%) pupils managed to recognize that the correct answer was “False”. Such pupils had adequate knowledge on communicable diseases.

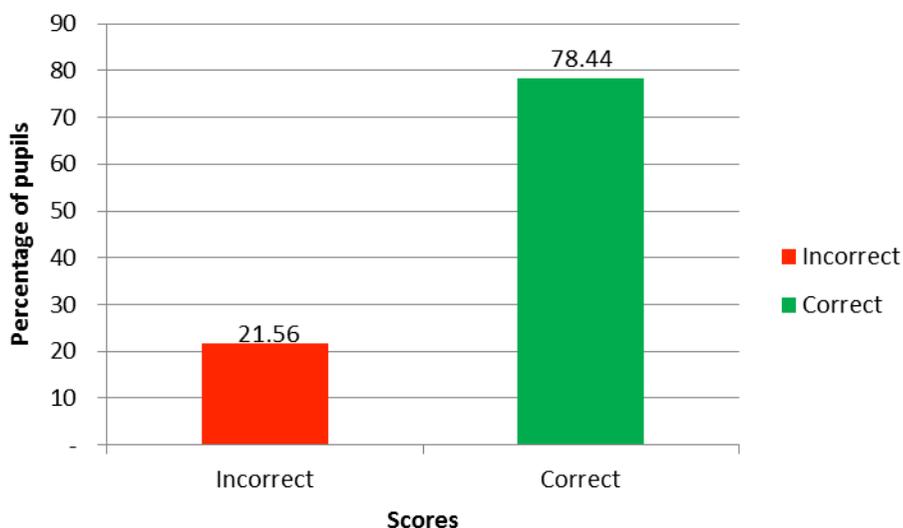
However, 420,184 (44.1%) pupils scored zero as they wrote “True” for incorrect statement. Those pupils failed to understand that tuberculosis can be transmitted from one person to another through air and sometimes when sharing utensils. In addition they failed to understand that diseases which are transmitted through drinking contaminated water are cholera, diarrhoea, and typhoid. This indicates that such pupils had inadequate knowledge on communicable diseases.

**Question 24:** “Maintaining clean environment all the time causes various diseases”.

Majority of the pupils (78.4%) were able to provide the correct answer “false”. This implies that those pupils were aware that cleaning environment prevents and it does not cause diseases as stated. Performance of pupils in this question was generally good as shown in **Figure 8**.

However, few pupils (21.56 %) scored zero by writing “True” for incorrect statement. This indicates that such pupils did not understand the importance of cleaning the environment. They failed to understand that cleanliness makes the environment safe and

clean, hence protect us against pandemic diseases, injury, insect bites and with sharp objects.



**Figure 8:** The response pattern shows that the performance in this question was good.

**Question 25:** “First Aid is given depending on the problem”.

The analysis shows that pupils’ performance in this question was good as 648,433 (68.1%) pupils were able to provide the correct answer “True”. This indicates that pupils had enough knowledge on procedures of rendering First aid to various victims. Few pupils 303,552 (31.9%) scored zero by writing “False” though the statement was correct. Those pupils failed to understand that First Aid is given to the victim depending on the problem encountered. For example, First aid offered to a faint person is different from nose bleeding, snake bites or broken bone.

### **3.0 EVALUATION OF PUPILS' PERFORMANCE IN EACH TOPIC**

The analysis of the pupils overall performance in the Science subject in Standard Four National Assessment 2015 indicates that the general performance was average.

The pupils' performance is categorized into three groups namely poor, average and good. The poorly done topics had a performance from 0 – 40% (red), averagely performed topics had a performance ranging from 41 – 60% (yellow) and the well performed topics had a performance ranging from 61 – 100 (green). In general the performance of pupil's topics wise was average since only one topic had good performance whereas six topics had average performance and only one had poor performance.

The topic which had good performance was First Aid (68.1%). The topics which had average performance were; Health, Health Services and Methods of Preventing Diseases (58.7%); Living Things (52.8%); HIV/AIDS (43.8%); Energy, Machine and Work (49.2%); Changes of Objects, States and Events (42.8%); and Essential Needs for Health and Living (48.8%). The poorly performed topic was Methods and Procedures in Science (30.4%). (Refer **Appendix A** which shows a summary of pupils' performance topic wise).

### **4.0 CONCLUSION**

The analysis conducted on the responses indicated that there were challenges observed on pupils' responses to the questions that intended to assess various concepts in the Science subject in the Standard Four National Assessment (SFNA) 2015. The following are factors that contributed to failure of some pupils to respond correctly to assessment questions.

- (a) Failure to identify the demand of the question; this may have been attributed to lack of students' concentration when reading questions before attempting them.
- (b) Inadequate knowledge in some pupils as they provided responses which had no relationship with the questions. This implies that there was less participation of students in teaching and learning process.
- (c) Furthermore, inability to spell some words correctly was another factor which lost the intended meaning. This has been attributed by the lack of reading and writing skills among pupils.

## **5.0 RECOMMENDATIONS**

In order to improve the performance of the pupils in this subject the following are recommended:

- (a) Teachers should teach and guide the students to read the question(s) carefully in order to identify the demand of the question(s) before attempting them.
- (b) Teachers should make sure that all topics in the syllabus are covered before pupils sit for SFNA. This will help the pupils to synthesize the knowledge which could help them to give logical responses in the assessment.
- (c) Teachers should help the pupils to revise all topics in the science syllabus to make a thorough revision. This is to ensure that they have enough knowledge on the topics tested in the assessment questions.

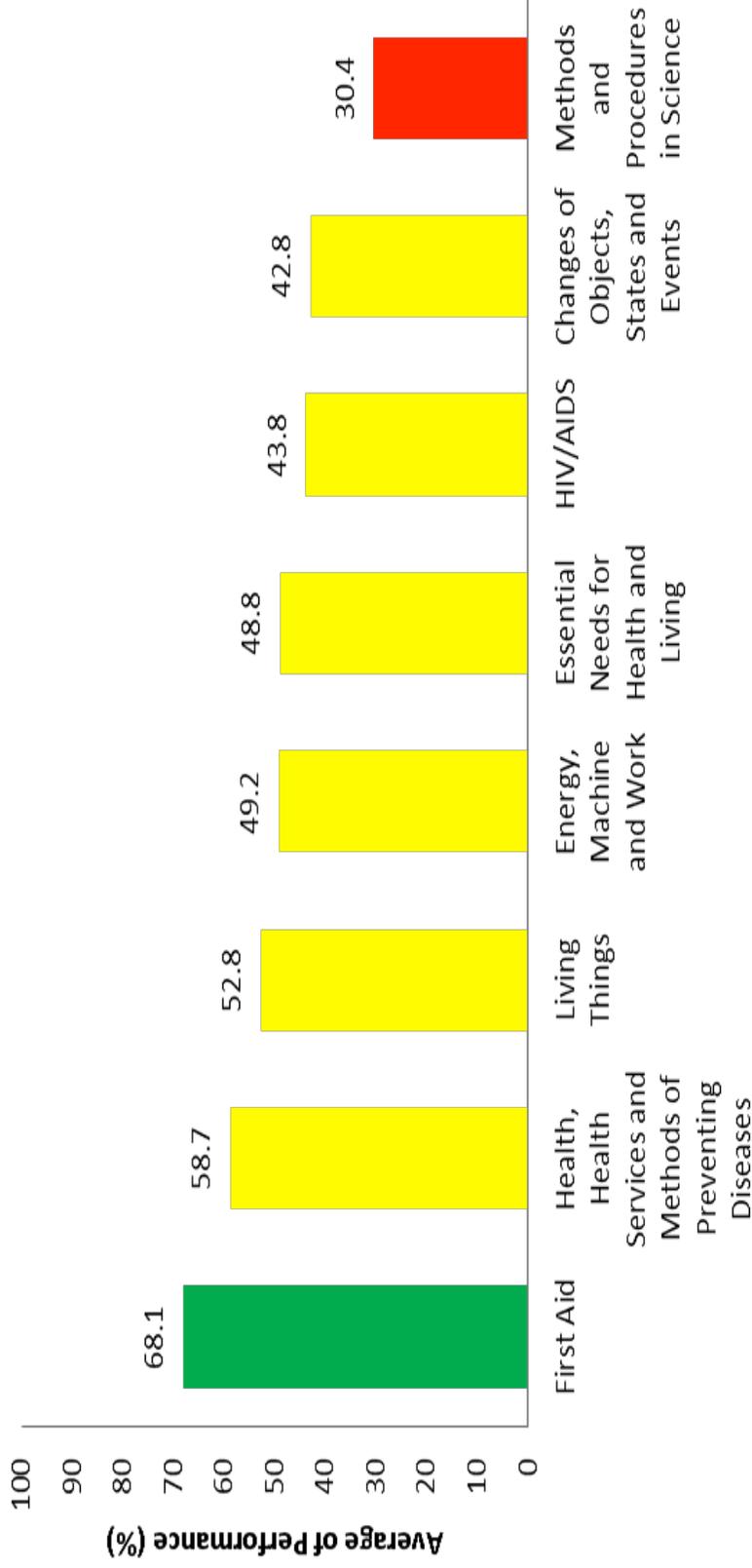
(d) Pupils should be given questions on the various topics to assess the skills and ability on the knowledge they receive in the classroom which are related to their daily learning environment. In addition, the pupils should be given feedback on the correct answers of the questions so that they can discover reasons for the incorrect options though they look similar to the correct answer.

## APPENDIX 1

### ANALYSIS OF PUPILS' PERFORMANCE IN EACH TOPIC IN STANDARD FOUR NATIONAL ASSESSMENT IN SCIENCE SUBJECT FOR THE YEAR 2015

S/N	TOPIC	PERFORMANCE IN EACH QUESTION		AVERAGE PERFORMANCE (%)	REMARKS
		NO.OF QUESTION	PERFORMANCE (%)		
1	First Aid	25	68.1	68.1	Good
2	Health, Health Services and Methods of Preventing Diseases	1	83.6	58.7	Average
		19	17.0		
		23	55.9		
		24	78.4		
3	Living Things	3	69.2	52.8	Average
		5	53.4		
		8	67.1		
		22	21.5		
4	Energy, Machine and Work	4	57.1	49.2	Average
		7	47.2		
		10	43.3		
5	Essential Needs for Health and Living	2	53.1	48.8	Average
		9	81.5		
		18	11.9		
6	HIV/AIDS	6	77.9	43.8	Average
		21	9.7		
7	Changes of Objects, States and Events	11	40.5	42.8	Average
		12	38.5		
		13	38.5		
		14	56.4		
		15	65.7		
		16	16.9		
8	Methods and Procedures in Science	17	2.4	30.4	Weak

**APPENDIX 2**  
**PERFORMANCE OF THE PUPILS IN EACH TOPIC IN STANDARD FOUR NATIONAL ASSESSMENT IN SCIENCE**  
**SUBJECT FOR THE YEAR 2015**



**Topics**

