AREAS TO BE EMPHASISED FOR
END OF CYCLE ASSESSMENT IN CHEMISTRY
ELEMENTS OF CONSTRUCT

1. THE LEARNER APPRECIATES CONTRIBUTION OF CHEMISTRY TO OUR ECONOMY

ASSESSABLE AREAS

(a) Manufacture of oxygen gas (b) Manufacture of chlorine gas (c) Extraction of metals(Al, Fe, Cu) (d) Manufacture of fertilizers (e) Manufacture of detergents	(f) Manufacture of sodium hydroxide (g) Manufacture of sulphuric acid (h) Manufacture of cement (i) Manufacture of Ethanol (j) Manufacture of bio gas	Process involves V – vessel Cp – Complete processes Cd – conversion to desired product Ch – coherence Pr -purification. pp-physical and chemical processes.

BASIS OF ASSESSMENTAS OF CURRENT

BASIS OF ASSESSMENT		CRITERIA OF ASSESSMENT	SCORE and coded
A	Process of production with raw materials. Pp	All raw material and Process of production with all V, Pp, Cp, Ch, Pr	**P=03**
		Any one raw material and Process of production with any three of V, Cp, Ch, Pr	**P=02**
		Any one raw material and process of production with any two V, PP,	**P=01**
		No any raw material and process of production.	**P=00**
B	Side effects/ dangers of the process of production and mitigation S	Any one danger identified/Side effect identified, Explained and mitigated (Di, De,Dm)	S=03
		Any one danger identified and explained (Di,De) or mitigated	S=02
		Any one danger identified (Di)/ side effect or explained or mitigated	S=01
		No dander identified/side effect no explanation, and no mitigation	S=00
C	Social benefit of the process of production B	Any one social benefit identified, effect of the benefit and impact of the benefit (Bi, Be, Bim)	B=03
		Any one social benefit identified and effect of the benefit OR identified and impact of the benefit OR effect of the benefit and impact of the benefit	B=02
		Any one social benefit identified OR effect of the benefit OR impact of the benefit	B=01
		No social benefit identified	B=00
T	TOTAL SCORE		T=09

2. THE LEARNER APPRECIATES THE APPLICATION OF CHEMISTRY IN DAILY LIFE.

ASSESSABLE AREAS

FOOD ADDITIVES		DRUGS AND MEDICINE	NUCLEAR PROCESSES	DETERGENTS
Flavour enhances Preservatives Glazing agents Gelling agents Glazing agents Anti-oxidants Bulking agents	Beverages Dyes(food colours) Stabilizers Thickeners Biological enzymes Whitening agents Firming agents	Antibiotics (penicillin & streptrine) Herbal medicine (Trachtroul medicine) Analgesics (aspirin, paracetamol codeine)	Nuclear fission Nuclear fusion Nuclear decay and half life	Soapy detergents Soapless detergent

BASIS OF ASSESSMENT

BASIS OF ASSESSMENT		CRITERIA OF ASSESSMENT	SCORE AND CODED
A	Category/type of product and function(s) of the product(s)/ How it works.	Any one product and category/type of product/ process identified (C) Any one function of the product or how it works(F)	T=02
		Any one product or category/type of product /Process identified or Any one function of the product/ how the process works.	T=01
		no product nor category/type of product identified or any function identified	T=00
B	Dangers or Side effects of the product and mitigation NB: "**THE DANGERS MUST BE TO HUMAN LIFE NOT ENVIRONMENT**"	Any one danger identified/Side effect identified, Explained and mitigated (Di, De,Dm)	D=03
		Any one danger identified and explained (Di,De) or mitigated	D=02
		Any one danger identified (Di)/ side effect or explained or mitigated	D=01
		No dander identified/side effect no explanation, and no mitigation	D=00
C	Evaluation of the products/ process	Evaluation of products/processes basing on both similarities and differences(Sm,Df)	E=02
		Evaluation of products/processes basing on either similarities OR differences (Sm or Df)	E=01
		No evaluation of the product/ process	E=00
T	TOTAL SCORE		T=07

3. THE LEARNER APPRECIATES DIVERSITY AND INTERACTIONS OF SUBSTANCES AND THEIR IMPORTANCE IN LIFE.

ASSESSABLE AREAS

(a) Elements, compounds and mixtures (b) The periodic table (c) Trends in the periodic table (d) Reactivity series	(e) Structure and bonds (f) The mole concept (g) Materials other than plastics (h) Polymers and Plastics

BASIS OF ASSESSMENT

BASIS OF ASSESSMENT		CRITERIA OF ASSESSMENT	SCORE AND CODED
A	Identified Category of element, compound, substance or material with a reason and example. (Ci,Cr,Ce)	Identified category of element, compound, substance or material with a reason and example(Ci,Cr,Ce)	C=03
		Identified category of element, compound, substance or material with either example OR reason	C=02
		Identified category of element, compound, substance OR material OR reason only OR example only	C=01
		No identified category of element, compound, substance OR material OR reason OR example	C=00
B	Properties or prediction of properties of element, compound, substance OR material and uses of the element, compound, substances or material.	At least 3-4 properties or characteristics or predictions of trends and Any one use/ application	X=03
		At least 3-4 properties or characteristics or predictions of trends and no use. At least 2 properties and one use/ application	X=02
		Any 1-2 properties or characteristic or prediction of trends and no use/ application At least 1 property or characteristics and any one use/application.	X=01
		No property or characteristic or prediction of trends	X=00
C	Impact/ pollution of environment by element, compound, substance or material and mitigation. (Di, Mi) NB: **THE EFFECT MUST BE TO THE ENVIRONMENT ONLY**.	Any one danger identified/Side effect identified and mitigated (Di,Mi)	I=02
		Any one danger identified/Side effect identified or mitigated (Di or Mi)	T=01
		No identified impact OR mitigation.	T=00
T	Total score	Total score	T=08

4. THE LEARNER APPRECIATES THE EXISTENCE OF NATURAL RESOURCES IN THE ENVIRONMENT AND THEIR IMPORTANCE IN EVERYDAY LIFE

ASSESSABLE AREAS

(a) Air (b) Water (c) Rocks and mineral resources	(d) Carbon based fuels (e) Fossil fuels

BASIS OF ASSESSMENT

BASIS OF ASSESSMENT		CRITERIA OF ASSESSMENT	SCORE AND CODED
A	Identity of category of natural resource, reason and example. Composition of natural resource	Identified category of natural resource with a reason and example (Ci,Cr,Ce) Any three(3) components of natural resource(Co)	N=03
		Identified category of natural resource with a reason ony OR Any one component of natural resource	N=02
		Identified category of natural resource OR example and any one component of the natural resource.	N=01
		No identified category of natural resource or example or components.	N=00
B	Impact of the human activities on the on natural resources on env)ironment, how it occurs, and mitigation (H, I,M)	Anyone Impact of the **Human activity** on natural resource on the environment (H), how it occurs (I), and its mitigation (Mi)	M=03
		Anyone Impact of the **huma activity** on natural resource on the environment(H) and how it occurs (I) OR Anyone Impact of the **human activity** on natural resource on the environment (H), and its mitigation (I)	M=02
		Anyone Impact of the **Human activity** on natural resource on the environment (H)OR how it occurs (I) OR its mitigation	M=01
		No Impact of the **Human activity** on natural resource on the environment, how it occurs, and its mitigation	M=00
C	Benefit/importance of natural resource	Any one benefit/importance of natural resource identified(Bi)and explained(e)	Be=02
		Any one benefit identified (Bi) or explained(e)	Be=01
		No benefit/importance of natural resource	Be=00
T	Total score	Total score	T=08

5. THE LEARNER UNDERSTANDS THAT CHEMISTRY IS A PROCESS OF EVIDENCE-BASED ENQUIRY INVOLVING THE COLLECTION OF EVIDENCE AND THE DEVELOPMENT OF THEORIES THAT HELP US EXPLAIN THE EVIDENCE

(SCIENCE PROCESS SKILLS)

BASIS OF ASSESSMENT

Basis of assessment	Assessment criteria	Scoring
Aim of the experiment	• Aim of experiment with both key words	**A=02**
	• Aim of experiment with one key word	**A=01**
	• No aim of the experiment	**A=00**
Variable for the experiment	• Independent, dependent and controlled	**V=03**
	• Independent and dependent or independent and controlled or dependent and controlled variable	**V=02** **V=01**
	• Independent or dependent or controlled variable	**V=00**
	• No variable	
Hypothesis	• Hypothesis related to experiment with both key words	**H=02**
	• Hypothesis related to experiment with one of key words	**H=01**
	• No / wrong hypothesis of the experiment	**H=00**
Procedure of the experiment	• Relevant material, relevant procedure, coherent procedure of the experiment	**P=03**
	• Relevant materials and procedure	**P=02**
	• Either relevant material or relevant procedure	**P=01**
	• No relevant material and procedure	**P=00**
Risks and mitigations	• Any one risk identified and mitigated	**R=02**
	• Any one risk identified or mitigated	**R=01**
	• No risk identified or mitigated	**R=00**
Presentation of data	• 2/3 of required sets of data appropriately presented	**P=04**
	• 1/3 of required sets of data appropriately presented	**P=03**
	• Data appropriately presented without required sets	**P=02**
	• Data partially appropriately presented without required sets	**P=01**
	• No set of data presented	**P=00**
Recording of data	• Appropriate recording of data within the error margin	**Dr=04**
	• Partial appropriate recording of data within the error margin	**Dr=03**
	• Appropriate recording of data outside the error margin	**Dr=02**
	• Partial appropriate recording of data outside error margin	**Dr=01**
	• No data recorded/ data recorded outside error margin	**Dr=00**
Data analysis and interpretation	Method used is: • Appropriate and accurate	**I=03**
	• Appropriate and partially accurate	**I=02**
	• Appropriate and inaccurate	**I=01**
	• Inappropriate and inaccurate	**I=00**

Conclusion	• Conclusion based on data interpretation	**Co=01**
	• No conclusion based on data interpretation	**Co=00**

PRACTICAL ASSESSABLE AREAS

• Chemical reaction rates • Energy changes during chemical reactions • Formulae, stoichiometry and mole concept	• The reactivity series • Solubility of Salts • Soapy detergents and hardwater