JUNIOR SECONDARY SCHOOL CURRICULUM DESIGN

PRE-TECHNICAL STUDIES FOR LEARNERS WITH PHYSICAL IMPAIRMENT

GRADE 7

KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

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FOREWORD

Curriculum is a tool which a country employs to empower its citizens. The Kenya Institute of Curriculum Development in meeting its core mandate *'to develop curriculum and curriculum support materials'* has spearheaded curriculum reforms in the education sector. The reforms are based on rigorous research, monitoring and evaluation activities conducted on the 8-4-4 system of education to inform the Competency-Based Curriculum through a phase-in phase-out model. The reforms were informed by the Summative Evaluation Survey (2009), Needs Assessment Study (2016) and the Task Force Report on Re-alignment of Education Sector (2012), 21st century learning and approaches, the East Africa Protocol on harmonization of education, among many others.

The curriculum reforms aim at meeting the needs of the Kenyan society by aligning the curriculum to the Constitution of Kenya 2010, the Kenya Vision 2030 and the East African Protocol, among other policy requirements as documented by the Sessional Paper No. 1 of 2019 on 'Reforming Education and Training in Kenya for Sustainable Development'. The reforms adopted the Competency-Based Curriculum (CBC) to achieve development of requisite knowledge, skills, values and attitudes that will drive the country's future generations as documented by the Basic Education Curriculum Framework (BECF). Towards achieving the mission of the Basic Education, the Ministry of Education has successfully and progressively rolled out curriculum implementation for Early Years Education, Grades 4 and 5 and Intermediate Level. The roll out for Grade 6, Junior Secondary (Grade 7-9), and Prevocational Level will subsequently follow.

It is my hope that the curriculum designs for learners with Physical Impairment in Grade 7 will guide the teachers, among other educational stakeholders, for progressive achievement of the curriculum vision which seeks to have engaged, empowered and ethical citizens.

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PREFACE

The Government of Kenya embarked on the national implementation of the Competency Based Curriculum in January, 2019 for Early Years Education (Pre-Primary 1 and 2, and Lower Primary Grade 1, 2 and 3). The implementation progressed to Upper Primary (Grade 4, 5 and 6) an Intermediate Level based on the reorganization of the Basic Education structure. Grade 7 curriculum furthers implementation of the Competency-Based Curriculum to Junior Secondary education level. This level marks the zenith of Middle School education whose main feature is to offer a broad opportunity for the learner to explore talents, interests and abilities before selection of pathways and tracks in Senior Secondary education level. This is similar to the Prevocational and Vocational Level.

The Grade 7 curriculum designs for learners with Physical Impairment in the respective subjects will enable the development of 21st Century competencies. Ultimately, this will lead to the realization of the vision and mission of the Competency-Based Curriculum as documented in the Basic Education Curriculum Framework (KICD, 2017).

It is my hope that all Government agencies among other stakeholders in education will use the designs to guide effective and efficient implementation of the learning activities as well as provide relevant feedback on various aspects of the curriculum. Successful implementation of the Grade 7 curriculum for learners with Physical Impairment will be a significant milestone towards realization of the curriculum mission 'Nurturing Every Learner's Potential'.

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TIME ALLOCATION

	Subject	Number of Lessons Per Week (40 minutes per lesson)
1.	English	5
2.	Kiswahili/KSL	4
3.	Mathematics	5
4.	Integrated Science	4
5.	Health Education	2
6.	Pre-Technical Studies	4
7.	Social Studies	3
8.	Religious Education	3
9.	Business Studies	3
10.	Agriculture	3
11.	Life Skills Education	1
12.	Physical Education and Sports	2
13.	Optional Subject including Braille skills	3
14.	Optional Subject	3
	Total	**45**

NATIONAL GOALS OF EDUCATION

Education in Kenya should:

i) **Foster nationalism and patriotism and promote national unity.**

Kenya's people belong to different communities, races and religions, but these differences need not divide them. They must be able to live and interact as Kenyans. It is a paramount duty of education to help young people acquire this sense of nationhood by removing conflicts and promoting positive attitudes of mutual respect which enable them to live together in harmony and foster patriotism in order to make a positive contribution to the life of the nation.

ii) **Promote the social, economic, technological and industrial needs for national development.**

Education should prepare the youth of the country to play an effective and productive role in the life of the nation.

a) **Social Needs**

Education in Kenya must prepare children for changes in attitudes and relationships which are necessary for the smooth progress of a rapidly developing modern economy. There is bound to be a silent social revolution following in the wake of rapid modernization. Education should assist our youth to adapt to this change.

b) **Economic Needs**

Education in Kenya should produce citizens with the skills, knowledge, expertise and personal qualities that are required to support a growing economy. Kenya is building up a modern and independent economy which is in need of an adequate and relevant domestic workforce.

c) **Technological and Industrial Needs**

Education in Kenya should provide learners with the necessary skills and attitudes for industrial development. Kenya recognises the rapid industrial and technological changes taking place, especially in the developed world. We can only be part of this development if our education system is deliberately focused on the knowledge, skills and attitudes that will prepare our young people for these changing global trends.

iii) **Promote individual development and self-fulfillment**

Education should provide opportunities for the fullest development of individual talents and personality. It should help children to develop their potential interests and abilities. A vital aspect of individual development is the building of character.

iv) **Promote sound moral and religious values.**

Education should provide for the development of knowledge, skills and attitudes that will enhance the acquisition of sound moral values and help children to grow up into self-disciplined, self-reliant and integrated citizens.

v) **Promote social equality and responsibility.**

Education should promote social equality and foster a sense of social responsibility within an education system which provides equal educational opportunities for all. It should give all children varied and challenging opportunities for collective activities and corporate social service irrespective of gender, ability or geographical environment.

vi) **Promote respect for and development of Kenya's rich and varied cultures.**

Education should instill in the youth of Kenya an understanding of past and present cultures and their valid place in contemporary society. Children should be able to blend the best of traditional values with the changing requirements that must follow rapid development in order to build a stable and modern society.

vii) **Promote international consciousness and foster positive attitudes towards other nations.**

Kenya is part of the international community. It is part of the complicated and interdependent network of peoples and nations. Education should therefore lead the youth of the country to accept membership of this international community with all the obligations and responsibilities, rights and benefits that this membership entails.

viii. **Promote positive attitudes towards good health and environmental protection.**

Education should inculcate in young people the value of good health in order for them to avoid indulging in activities that will lead to physical or mental ill health. It should foster positive attitudes towards environmental development and conservation. It should lead the youth of Kenya to appreciate the need for a healthy environment.

LEARNING OUTCOMES FOR MIDDLE SCHOOL

By the end of Middle School, learners should be able to:

1. Apply literacy, numeracy and logical thinking skills for appropriate self-expression.
2. Communicate effectively, verbally and non-verbally, in diverse contexts.
3. Demonstrate social skills, spiritual and moral values for peaceful co-existence.
4. Explore, manipulate, manage and conserve the environment effectively for learning and sustainable development.
5. Practise relevant hygiene, sanitation and nutrition skills to promote health.
6. Demonstrate ethical behaviour and exhibit good citizenship as a civic responsibility.
7. Appreciate the country's rich and diverse cultural heritage for harmonious co-existence.
8. Manage pertinent and contemporary issues in society effectively.
9. Apply digital literacy skills for communication and learning.

ESSENCE STATEMENT

Pre-Technical studies is a subject that prepares learners with Physical Impairment for Technical, Engineering, Career and Technology Studies (CTS) which are tracks in the Science, Technology, Engineering and Mathematics (STEM) pathway. It is anchored on the recommendations by Session Papers No 1 of 2005 and No 14 of 2012 which recommended the promotion of technical and vocational education with an emphasis on Science, Technology and Innovation (ST&I) in the school curriculum.

It builds on the competencies acquired in Science and Technology and other related learning areas at upper primary school. The subject equips learners with Physical Impairment with foundational knowledge, skills, attitudes and values that are a prerequisite in order to specialise in subjects such as metalwork, woodwork, electricity, aviation technology, building and construction, power mechanics, leatherwork, culinary arts, hairdressing and beauty therapy, marine and fisheries, manufacturing and media technology at senior school.

The Pre-Technical studies subject equips learners with Physical Impairment with exploration, imagination, creativity, innovation and hands-on skills through projects and practical activities. Learners with Physical Impairment also acquire hands-on skills as they are exposed to programs in industries that the school collaborates with. After completing junior secondary school, learners with Physical Impairment may select either the Technical or Engineering or CTS track in the STEM pathway at senior school. In making this choice, learner's interests, abilities and personality will be considered.

LEARNING OUTCOMES FOR PRE-TECHNICAL STUDIES

By the end of junior secondary, learners should be able to;

1. Make informed and meaningful career choices in technical and career fields.
2. Apply competencies acquired in workshop safety to prevent accidents and save lives.
3. Use materials and safely dispose waste to promote education for sustainable development.
4. Apply acquired drawing skills to communicate effectively.
5. Apply the acquired competencies to select, use and maintain tools, equipment and materials to support community-based projects.
6. Use available energy resources to solve problems in the community.

STRAND 1.0: SAFETY

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
1.0 Safety	**1.1 Personal safety** (7 lessons)	**By the end of the sub-strand, the learner should be able to:** a) identify potential hazards relating to personal safety in day to day life b) demonstrate safety to self and others while performing tasks in the locality c) handle tools and equipment safely while performing tasks in the locality d) determine the general safety rules and regulations for a given task e) recognise various careers related to safety for knowledge acquisition f) appreciate the role of safety in day to day life.	**Learners are guided individually to:** • In purposive groups discuss the meaning of safety and relate potential hazards to personal safety in day to day life and note them down for future reference. *Leaners with speech difficulties could type , point or sign during discussions.(Apply these adaptations in the subsequent experiences in this sub-strand that involve speech difficulties)* • In purposive pairs role-play on how to observe safety while performing simple tasks in the locality and apply them in their day to day life. *Learners with postural difficulties such as those with scoliosis and spinal injuries could require appropriate positioning devices such as adapted seats and desks. Learners with manipulation difficulties could use alternative functioning parts of the body, assistive devices or be assisted by peers, or learner support assistant to perform activities. Safety precaution should be observed for learners with asthma, epilepsy hemophilia and anaemia. Learners with uncoordinated movements e.g cerebral palsy could use assistive technology such as universal cuffs and hand weights to enhance grip while performing activities. Learners with mobility difficulties like those on wheelchair or crutches could perform activities supported by crutches, while seated on the ground or they can give instructions to others to perform the activities. Learners with brittle bones and muscular dystrophy could carry out activities appropriately to their functional ability. (Apply these adaptations in the*	1. Why is safety important? 2. How do you ensure safety when performing a task? 3. Why should a learner with physical impairments observe safety?

			subsequent experiences in this substrand that involve postural, manipulation, coordination, mobility and strength difficulties)	
			• In purposive groups discuss the safety measures to observe when working with others while performing given tasks	
			• Individually practise using tools and equipment safely while performing simple tasks like cutting grass, weeding and apply the skill in day to day life. *For learners with manipulation difficulties the handles could be adapted to suite their individual needs*	
			• In purposive groups manipulate digital devices to watch video clips, search in print media and discuss safety when handling tools and equipment and take notes. *Learners with short stature could require preferential seating for better or enhanced view while watching the video. Learners with photophobia e.g. epileptic and those with visual difficulties adjust light intensity/control glare on the digital devices to suit their individual needs. Computers with expanded keyboards and sticky keys could be used for learners with coordination difficulties. Head and mouth pointers, joysticks could be used by learners with missing limbs to indicate or manipulate the computer*	
			• In purposive groups brainstorm and develop general safety rules and regulations for a given task and present in class	
			• Individually search on the internet, journals, magazines various careers related to safety and present the findings to the rest of the class	
			• Individually design and perform a task as they practice safety measures related to the task and appreciate the importance of safety	
			• In purposive groups visit a workshop and observe how safety is observed and take notes	

Core Competencies to be developed:
- **Communication and Collaboration** as learners discuss and carry out group activities.
- **Citizenship** as learners observe each other's safety when working in groups.
- **Imagination and creativity** as learners take up different roles while observing safety when working with others.
- **Digital literacy** as learners manipulates digital devices to watch videos on safety.
- **Critical thinking and problem solving** as learners brainstorm during the discussions.

Link to Pertinent and Contemporary Issues (PCIs) :	**Values:**
• **Disaster risk reduction** is achieved as learners perform tasks while observing safety.	• **Social justice** is enhanced as learners equally take part in role playing while working together.
• **Environmental protection** is enhanced as learners take care of waste materials while practicing tasks like cutting grass.	• **Respect** is promoted as learners recognize the input of every member during discussions.
• **Social cohesion** is promoted as learners interact with the local community.	• **Unity** is enhanced as learners work together as a team.
• **Human rights and responsibilities** are promoted as learners with physical impairments are accorded equal opportunities to role play.	• **Responsibility** is promoted as learners take care of tools and equipment.

Link to other subjects:
- **Health Education** as learners safely handle and dispose waste materials in the community.
- **Computer studies** as learners manipulate computers to watch video clips on safety while handling tools and equipments.
- **Agriculture** as learners use farm tools and equipments.

Suggested Non-formal Activities to support Learning:	**Suggested modes of assessment:**
• Learners generate a catalogue on the workshop rules and regulations on personal safety and safety of others.	• Oral questions
• Learners role play on how to administer first aid to other learners in the school.	• Self Assessment
• Learners design and demonstrate a safety drill at school.	• Peer Assessment
• Learners organize public debates on career choices.	• Observation
	• Written test
	• Practical work.

Suggested learning resources:
- Hand tools such as chisels, hammers, screw drivers, jack planes, mallets, knives, needles.
- Workshop attires such as overcoats, aprons, shoes, goggles, dust masks.
- Career brochures, career magazines, journals.

- Digital devices such as computers with adapted keyboards and relevant softwares, laptops, smart phones, tablets.
- First aid kits.
- Assistive technology such as universal cuffs, hand weights, head pointers, mouth pointers.
- Learner support assistant, occupational therapist, physiotherapist.

Suggested Assessment Rubric

Criteria	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identifying potential hazards in relation to personal safety in day to day life	Explores potential hazards in relation to personal safety in day to day life	Identifies potential hazards in relation to personal safety in day to day life	Outlines potential hazards in relation to personal safety in day to day life	Names potential hazards in relation to personal safety in day to day life
Demonstrating safety while performing given tasks	Applies safety while performing given tasks	Demonstrates safety while performing given tasks	Relates safety while performing given tasks	Recognises safety while performing given tasks
Observing safety while working with others in the locality	Explores safety while working with others in the locality	Observes safety while working with others in the locality	Relates safety while working with others in the locality	Recognises safety while working with others in the locality
Handling tools safely while performing tasks in the locality	Maintains tools safely while performing tasks in the locality	Handles tools safely while performing tasks in the locality	Relates tools safely while performing tasks in the locality	Handles tools while performing tasks in the locality
Determining general safety rules and regulations for a given task	Describes general safety rules and regulations for a given task	Determines general safety rules and regulations for a given task	Outlines general safety rules and regulations for a given task	Identifies general safety rules and regulations for a given task
Recognising various careers related to safety	Explores various careers related to safety and categorises them	Recognises various careers related to safety	Outlines various careers related to safety	Names careers related to safety

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
1.0 Safety	**1.2 Injuries** (5 lessons)	**By the end of the sub-strand, the learner should be able to**: a) identify types of injuries that may occur in the locality b) identify causes of injuries that may occur in the locality c) relate the type of injury and the corresponding first aid requirements d) apply safety measures to minimise injuries in the locality e) recognise the careers related to first aid and management of injuries f) appreciate the importance of observing safety to reduce injuries in the day today activities.	**Learners are guided to:** • In purposive groups watch video clips, search in print media the types of injuries that occur in the locality and take notes. *Learners with short stature could require preferential seating for better or enhanced view. Learners with photophobia, epileptic and those with visual difficulties light intensity/ glare could be adjusted on the digital devices to suit their individual needs. Computers with expanded keyboards and sticky keys could be used for learners with coordination difficulties. Head and mouth pointers, joysticks could be used by learners with missing limbs to feed instructions on the computers* • In purposive groups discuss and identify the causes of injuries at home, school and locality (cuts, burns, scalds, and minor fractures) and present their findings. *Leaners with speech difficulties could type , point or sign during discussions.(Apply these adaptations in subsequent experiences in this substrand that involve speech difficulties)* • In purposive groups discuss the type of injury and the corresponding first aid requirements. Learners to do an assignment on matching injuries and the corresponding first aid and do peer review • In purposive groups discuss ways of preventing cuts, burns, scalds and minor fractures and apply them in day to day life	1. How are injuries caused? 2. How can we minimise injuries at the work place? 3. Why are safety measures important for learners with physical impairment?

			• In purposive groups visit a nearby workshop in the locality to observe how workers practice safety as they perform tasks and write a report and present. *Patience could be observed during mobility for learners with mobility difficulties. Precaution could be taken for learners with epileptic and asthmatic conditions to avoid triggering the attack. (Apply these adaptations in subsequent experiences in this substrand that involve mobility difficulties, allergic conditions and seizures)* • In purposive groups visit health facilities to observe the careers related to the management of injuries and appreciate the role of medical practitioners • In purposive pairs role-play first aid procedures on management of cuts, burns, scalds, and minor fractures and apply in real life situation. *Learners with postural difficulties such as those with scoliosis and spinal injuries could require appropriate positioning devices such as adapted seats. Learners with manipulation difficulties could use alternative functional parts of the body, assistive devices, be assisted by peers, or learner support assistant to perform activities. Learners with coordination difficulties e,g cerebral palsy could use assistive devices such as universal cuffs, stabilizers and hand weights to enhance grip while performing activities. Learners with mobility difficulties like those on wheelchair could perform activities while on wheelchair or seated on the ground. Learners with brittle bones and muscular dystrophy could carry out activities*	

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| | | | | *appropriately to their functional ability. Care could be taken to avoid injuries for learners with hemophilia and anaemia. (Apply these adaptations in subsequent experiences in this sub strand that involve postural, manipulation, coordination, mobility, strength difficulties and other health conditions)*
• In purposive groups discuss ways in which they can reduce injuries while in school, at home or in the community and pin precaution notices on areas that require caution
• In purposive groups visit a nearby road to observe safe use of the road and role play the same in school | |

Core Competencies to be developed:
- **Critical thinking and problem solving** as learners discuss ways of preventing cuts, burns, scalds and minor fractures.
- **Self-efficacy** as learners express themselves during role playing on first aid.
- **Digital literacy** as learners manipulate digital devices to search and watch video clips on safety practices while performing given tasks.
- **Communication and collaboration** as learners develop precaution notices and display them on surfaces.
- **Citizenship** as learners display precaution notices in the community to prevent injuries.

Pertinent and Contemporary Issues (PCIs):	**Values:**
• **Social cohesion** is enhanced as learners interact with the locals in the locality. • **Education for sustainable development** (Road safety) is promoted as learners learn how to use the highway. • **Human rights and responsibilities** are advanced as learners with physical impairment are accorded equal opportunities to role play.	• **Unity** is enhanced as learners embrace teamwork in groups. • **Respect** is enhanced as learners recognise the input of every member in the group. • **Integrity** is promoted as learners collect, use, care for, and safely store items and equipment. • **Responsibility** is enhanced as learners pin notices that display precautionary measures.

Link to other subjects:
- **Health education** as learners discusses how to perform first aid on cuts and bruises.
- **Social studies** as learners practice safe use of roads.

- **Computer science** as learners manipulates digital devices to watch videos on types of injuries and corresponding first aid.
- **English** as learners communicate in English language during discussions.
- **Life skills** as learners help one another when handling cases on cuts and bruises.

Suggested Non formal Activities to support Learning:	Suggested modes of assessment:
- Learners generate a catalogue on the workshop rules and regulations on personal safety and safety of others. - Learners role play on how to administer first aid to peers in the school. - Learners organise public debates on career choices.	- Oral questions. - Observation. - Peer Assessment - Self Assessment - Written test. - Practical work.

Suggested Learning Resources:
- Career brochures, career magazines, journals.
- First aid kit.
- Digital devices such as computers with expanded keyboards and relevant software, laptops, smart phones, tablets, joysticks, head and mouth pointers.
- Glue, pins, cello tape, manila papers, marker pens.
- Hand tools such as chisels, hammers, screw drivers, jack planes, mallets, knives, needles.
- Workshop attires such as overcoats, aprons, shoes, goggles, dust masks.
- Learner support assistant, occupational therapist, physiotherapist.
- Assistive technology such as page turners, book holders, universal cuffs, pen and pencil holders.

Suggested Assessment Rubric				
Criteria	**Exceeds expectation**	**Meets expectation**	**Approaches expectation**	**Below expectation**
Identifying types of injuries that may occur at the locality	Classifies types of injuries that may occur at the locality	Identifies types of injuries that may occur at the locality	Outlines types of injuries that may occur at the locality	Names types of injuries that may occur at the locality
Identifying causes of injuries that may occur at the locality	Describes causes of injuries that may occur at the locality	Identifies causes of injuries that may occur at the locality	Outlines causes of injuries that may occur at the locality	Lists causes of injuries that may occur at the locality
Relating the type of injury and the corresponding first aid requirements	Explores types of injuries and the corresponding first aid requirements	Relates the type of injury and the corresponding first aid requirements	Matches the type of injury and the corresponding first aid requirements	Recognises types of injuries
Applying safety measures to minimise injuries in the locality	Designs safety measures to minimize injuries in the locality	Applies safety measures to minimize injuries in the locality	Demonstrates safety measures to minimize injuries in the locality	Identifies safety measures to minimize injuries in the locality
Recognising the careers related to first aid and management of injuries	Classifies the careers related to first aid and management of injuries	Recognises the careers related to first aid and management of injuries	Outlines the careers related to first aid and management of injuries	Lists the careers related to first aid and management of injuries

STRAND 2.0: MATERIALS

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
2.0 Materials	**2.1 Common materials** (9 lessons)	**By the end of the sub-strand, the learner should be able to:** a) identify the common materials found in the locality b) categorise the common materials in the locality into metals and non-metals c) distinguish metallic and non-metallic materials in the locality d) describe the physical properties of common materials found in the locality e) recognize careers related to materials in the locality, f) embrace the importance of different materials found in the locality.	**Learners are guide to:** • In purposive groups walk around the locality to identify, collect and record common materials and come up with a catalogue. *Learners with postural difficulties such as those with scoliosis and spinal injuries could require appropriate positioning devices such as adapted seats. Learners with manipulation difficulties could use alternative functioning parts of the body, assistive devices, be assisted by peers, or learner support assistant to perform activities. Safety precaution should be observed for learners with asmatic and epileptic conditions. Learners with coordination difficulties e.g cerebral palsy could use assistive devices such as universal cuffs, hand weights, to enhance grip while performing activities. Learners with brittle bones and muscular dystrophy could carry out activities appropriately to their functional ability. Learners with hemophilia and anaemia, care could be taken to avoid injuries. (Apply these adaptations in subsequent experiences in this substrand that involve postural, manipulation, strength, coordination difficulties and other health conditions)* • Individually observe a chart, list common materials in the locality and present in class. *Learners with manipulation difficulties could use*	1. Why are materials important? 2. How can materials be categorised? 3. 3. How can common materials be adapted?

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universal cuffs, pen holders, point at materials, type the names of the materials or mention the name of the material. Adapted pens and pencils could be used as well as a communication board

- In purposive pairs collect, sort and distinguish metallic and non-metallic materials for peer review. *Learners with missing or paralysis of the upper limbs, cerebral palsy and other health conditions causing manipulation difficulties could use any alternative functional parts of the body, appropriate assistive devices or be assisted by peers to sort and distinguish metallic and non-metallic materials*

- In purposive groups search on journals and magazines the physical properties of materials, discuss them(color, texture, hardness, shape, fire resistance) and take notes. *Leaners with speech difficulties could type , point or sign during discussions.(Apply these adaptations in subsequent experiences in this substrand that involve speech difficulties)*

- In purposive groups tour the locality to identify the various careers related to the use of common materials and write a report and present in class

- In purposive groups watch videos clips and search on print media the categorization and identification of physical properties of materials and their importance and do a power point presentation. *Learners with short stature could require preferential seating for better or enhanced view while watching the video. Learners with photophobia e.g epileptic and*

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			those with visual difficulties light intensity could be adjusted on the digital devices to suit their individual needs. Computers with expanded keyboards and sticky keys could be used for learners with coordination difficulties. Head and mouth pointers, joysticks could be used by learners with missing limbs to feed instructions on the computer	

Core competencies to be developed;
- **Digital literacy** as learners manipulate the computer to watch video clips identifying the uses of various metals.
- **Communication and Collaboration** as learners work in groups.
- **Critical thinking and problem solving** as learners distinguish metallic and non-metallic materials.
- **Learning to learn** as learners use journals and magazines to do research.

Pertinent and Contemporary Issues (PCI's):	**Values:**
- **Self-awareness** is developed as learners interact with the environment. - **Social cohesion** is enhanced as learners work together in groups. - **Environmental conservation** is harnessed as learners interact with the environment while sorting out materials.	- **Unity** is enhanced as learners work together in groups. - **Responsibility** is enhanced as learners work with different materials and take good care of them. - **Respect** is enhanced as learners acknowledge each other's contributions during group discussions.

Link to other subjects:
- **Integrated Science** as leaners investigate the physical properties of materials.
- **Computer science** as learners manipulate computers to watch videos.
- **English** as learners communicate using English language.
- **Mathematics** as learners collect, sort and distinguish metals and non- metals.

Suggested Non formal Activities to support Learning:	**Suggested modes of assessment:**
- Learners go round the compound and collect available materials and write down how each is used. - Learners form a pre-tech club and debate on materials that are metallic and non-metallic during their free time.	- Oral questions - Observation - Written test - Practical work - Self-Assessment

| | | | | Peer Assessment |

Suggested Learning Resources:
- Stones, clay, sand, timber, sisal, ballast, grass, water, trees, minerals.
- Career brochures, career magazines, journals.
- Digital devices such as computers with adapted keyboards and relevant softwares, laptops, smart phones, tablets
- Charts, books, adapted pens and pencils, assistive technology such as universal cuffs, head pointers, mouth pointers, book holders, page turners.
- Physiotherapist, occupational therapist.

Suggested Assessment Rubric

Criteria	Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Identifying the common materials found in the locality	Describes common materials found in the locality	Identifies common materials found in the locality	Outlines common materials found in the locality	Lists common materials found in the locality
Categorising common materials in the locality	Analyses common materials in the locality	Categorises common materials in the locality	Discusses common materials in the locality	Lists common materials in the locality
Distinguishing metallic and non-metallic materials	Analyses metallic and non-metallic materials	Distinguishes metallic and non-metallic materials	Outlines metallic and non-metallic materials	Defines metallic and non-metallic materials
Describing physical properties of the common materials found in the locality	Illustrates physical properties of the common materials found in the locality.	Describes physical properties of the common materials found in the locality.	Outlines physical properties of the common materials found in the locality.	Lists physical properties of the common materials found in the locality.
Recognizing careers related to materials in the locality	Classifies careers related to materials in the locality	Recognises careers related to materials in the locality	Outlines careers related to materials in the locality	Names careers related to materials in the locality

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
2.0 Materials	**2.2 Metals** (10 lessons)	**By the end of the sub-strand, the learner should be able to:** a) identify different types of metals in the locality b) describe physical properties of ferrous and non-ferrous metals in the locality c) examine the uses of metals in the locality d) recognise careers related to use of metals and develop learner interest e) appreciate the importance of metals in the locality.	**Learners are guided to:** • Individually develop a checklist for identifying different types of metals for peer review. *Learners with coordination and manipulation difficulties could use universal cuffs, pen holders, large print, type on computers with expanded keyboards and with sticky keys while making the check list. Learners with amputation and missing limbs could use alternative parts of the body to develop a checklist* • In purposive pairs sort metals (as either ferrous or non-ferrous, magnetic or non-magnetic, conductors of heat and electricity) and display in class. *Learners with postural difficulties such as those with scoliosis and spinal injuries could require appropriate positioning devices such as adapted seats and desks. Learners with manipulation difficulties could use alternative functional parts of the body, assistive devices, be assisted by peers or learner support assistant to perform activities. Learners with coordination difficulties e,g cerebral palsy could use assistive devices such as universal cuffs, hand weights to enhance grip while sorting the metals. Care could be taken for learners with haemophilia, sickle cell anaemia to avoid injuries. (Apply these adaptations in subsequent experiences in this substrand that involve postural, manipulation, coordination difficulties and other health conditions)* • In purposive groups watch video clips, search in print media the various types of metals and develop a power point presentation. *Learners with short stature could require preferential seating for better or enhanced view*	1. Why are metals identified as ferrous and non-ferrous 2. Why are metals important? 3. How can we identify the uses of metals in the locality?

| | | | *while watching the video. Learners with photophobia e.g epileptic and those with visual difficulties, light intensity could be adjusted on the digital device to suit their individual needs. Computers with expanded keyboards and sticky keys could be used for learners with coordination difficulties. Head and mouth pointers, joysticks could be used in manipulating the computers by learners with missing limbs*

• In purposive groups discuss the various uses of metals in the locality and list them for reference. *Leaners with speech difficulties could type ,write down the answer, point or sign during discussions. Patience could be observed during the discussion when a response is expected from a learner with speech difficulties. (Apply these adaptations in subsequent experiences in this substrand that involve speech difficulties)*

• In purposive groups discuss careers related to metals under the guidance of a resource person(s), and develop learner interest in them for informed career choices. Tour the locality and observe various places, tools, buildings and instances where metals have been used including workshops. Come up with a list of places where metals are used vastly and present in class | |

Core competencies to be developed:

• **Digital literacy** as learners manipulate the computers to watch video clips to identify the uses of various metals.
• **Communication and Collaboration** as learners work in groups.
• **Critical thinking and problem solving** as learners distinguish ferrous and non-ferrous metals.
• **Learning to learn** as learners tour the locality and identify places where metals are used as they come up with a list.
• **Imagination and creativity** as learners develop a checklist.
• **Self efficacy** as learners with physical impairments manually sorts out metals on their own.

Pertinent and Contemporary Issues (PCI's):	Values:
• **Self-awareness** is nurtured as learners with physical impairment interact with the resource person(s). • **Disaster risk reduction** is achieved as learners study the characteristics of metals and their conductivity to heat and electricity. • **Social cohesion** is enhanced as learners interact with the community.	• **Unity** is promoted as learners work in groups. • **Respect** is enhanced as learners acknowledge each others contribution during group discussions. • **Responsibility** is enhanced as learners take care of each other during tours.

Link to other subjects:
- **Integrated Science** as learners group metals as either magnetic or non-magnetic.
- **Computer science** as learners manipulate and use digital media to watch video clips on types of metals.
- **Mathematics** as learners develop a checklist for identifying different types of metals.
- **English** as learners prepare a checklist.

Suggested Non formal Activities to Support Learning:	Suggested modes of assessment:
• Learners play games to differentiate ferrous and non ferrous metals. • Learners role play as they collect samples of ferrous and non ferrous metals then display in a science club.	• Oral questions • Self Assessment • Peer Assessment • Observation • Written test • Practical work

Suggested Learning Resources:
- Metals and non metals.
- Career brochures, career magazines, checklists.
- Digital devices such as computers with expanded keyboards and relevant software, laptops, smart phones, tablets, joysticks, head and mouth pointers.
- Learner support assistant, resource persons, occupational therapist.
- Adapted technology such as universal cuffs, page turners, book holders, adapted writing materials.

Suggested Assessment Rubric				
Criteria	**Exceeds Expectation**	**Meets Expectation**	**Approaches Expectation**	**Below Expectation**
Identifying different types of metals found in the locality	Categorises different types of metals found in the locality	Identifies different types of metals found in the locality	Outlines metals found in the locality	Lists metals found in the locality
Describing physical properties of ferrous and non-ferrous metals in the locality	Analyses physical properties of ferrous and non-ferrous metals commonly found in the locality	Describes physical properties of ferrous and non-ferrous metals commonly found in the locality	Outlines physical properties of ferrous and non-ferrous metals commonly found in the locality	States physical properties of metals commonly found in the locality
Outlining the uses of metals in the locality	Elaborates uses of metals found in the locality	Outlines the uses of metals found in the locality	Lists the uses of metals found in the locality	Identifies metals found in the locality
Recognising careers related to use of metals	Classifies careers related to use of metals	Recognises careers related to use of metals	Outlines careers related to use of metals	Names careers related to use of metals

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
2.0 Materials	**2.3 Non-metallic materials** (10 lessons)	**By the end of the sub-strand, the learner should be able to:** a) distinguish between synthetic and natural non-metallic materials in the locality b) categorise the non-metallic materials as either synthetic or natural non-metallic materials c) describe physical properties of non-metallic materials in the locality d) identify the uses of non-metallic materials in the locality	**Learners are guided to:** • Individually research and develop a checklist for classifying non-metallic materials and do a presentation *Learners with coordination and manipulation difficulties could use large print or type on computers with expanded keyboards and with sticky keys. They could also use universal cuffs, pen and pencil holders while making the check li*st. *Learners with amputation or missing limbs could use alternative functional parts of the body to develop the checklist*	1. How can materials be distinguished? 2. Why are non-metallic materials important?

		e) recognise careers related to the processing and use of non-metallic materials in the country f) Appreciate the importance of non-metallic materials in the locality.	• In purposive pairs sort non-metallic materials (as either synthetic or natural). Display synthetic and natural non metallic materials for peer review. *Learners with postural difficulties such as those with scoliosis and spinal injuries could require appropriate positioning devices such as adapted seats and desks. Learners with manipulation and coordination difficulties e.g cerebral palsy could use assistive devices such as universal cuffs, hand weights to enhance grip while sorting the synthetic and natural materials. Those with missing limbs could use alternative functional parts of the body, assistive devices, be assisted by peers or learner support assistant to perform activities. Care could be taken for learners with hemophilia and sickle cell anaemia to avoid injuries. Materials could be carefully selected to avoid the ones that may trigger allergic reactions. (Apply these adaptations in subsequent experiences in this substrand that involve postural, manipulation and other health conditions)* • In purposive groups search in print media, watch video clips on the physical properties of non-metallic materials and develop a power point presentation. *Learners with short stature could require preferential seating for better or enhanced view while watching the video. Learners with photophobia e.g*	

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			epileptic and those with visual difficulties, light intensity could be adjusted on the digital devices to suit their individual needs. Computers with expanded keyboards and sticky keys could be used by learners with coordination difficulties. Joysticks, head and mouth pointers could be used by learners with missing limbs to feed instructions to the computer • In purposive groups discuss the various uses of non-metallic materials in the locality and take notes. *Leaners with speech difficulties could type, write down the answer, point or sign during discussions. Patience could be observed during the discussion when a response is expected from a learner with speech difficulties (Apply these adaptations in subsequent experiences in this substrand that involve speech difficulties)* • In purposive groups discuss careers related to non-metallic materials under the guidance of resource person(s) and take notes.	
	Project activity1 (12 lessons)	**By the end of the sub-strand, the learner should be able to:** a) identify problems in their community which requires a solution using skills in the technical fields b) describe how problems affects the community c) identify skills needed to solve problems in the community.	**Learners are guided to:** • In purposive groups outline and discuss the existing problems in their community that require a solution using skills in the technical fields and present findings in class • In purposive groups watch videos using digital devices, listen to life testimonies and moral stories to point out problems in their community that require solutions using skills in the technical field and present a report	1. How do problems affect the community? 2. How can problems in your society be solved using skills in technical areas?

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			• Individually suggest the technical skills that may be used to solve the identified problems and apply the skills to solve the problems	

Core competencies to be developed:
- **Digital literacy** as learners manipulate digital devices to watch video clips to identify the properties of various non-metallic materials.
- **Communication and collaboration** as learners work in groups.
- **Critical thinking and problem** solving as learners distinguish different non-metallic materials.
- **Imagination and creativity** as learners come up with a project to solve problems in the community.

Pertinent and Contemporary Issues (PCI's):	**Values:**
• **Self-awareness** is developed as learners interact with resource persons(s). • **Social cohesion** is enhanced as learners interact with the local community while carrying out their project to solve problems. • **Environmental conservation** is achieved as learners solve current problems in the environment.	• **Unity** is enhanced as learners work in groups. • **Respect** is promoted as learners acknowledge each others contribution during group discussions. • **Peace** is enhanced as learners interact with the local community while solving their problems.

Link to other subjects:
- **Science and technology** as learners group non-metallic materials as either natural or synthetic.
- **Computer science** as learners manipulate digital media to watch video clips on the physical properties of non-metallic materials.
- **Social studies** as learners create solutions to teething problems in the community.
- **English** as learners communicate using English language.

Suggested Non formal Activities to support Learning:	**Suggested modes of assessment:**
• Learners debate on metallic and non metallic materials and classifies them. • Learners come up with exhibitions of metallic and non metallic materials.	• Oral questions • Written questions • Self Assessment • Peer Assessment • Observation • Project

	• Practical work

Suggested Learning Resources:
- Non-metals, synthetic materials.
- Career brochures, career magazines.
- Digital devices such as computers with expanded keyboards and relevant softwares, laptops, projectors, smart phones, tablets, joysticks.
- Resource person, learner support assistant, occupational therapist.
- Note books, adapted pens and pencils, chalk board.
- Assistive technology such as page turners, book holders, head and mouth pointers.

Suggested Assessment Rubric

Criteria	Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Distinguishing between synthetic and natural non-metallic materials	Distinguishes between synthetic and natural non-metallic materials giving examples	Distinguishes between synthetic and natural non-metallic materials	Describes synthetic and natural non-metallic materials	Identifies synthetic and natural non-metallic materials
Categorising non-metallic materials as either synthetic or natural non-metallic materials	Analyses non-metallic materials as either synthetic or natural non-metallic materials	Categorises non-metallic materials as either synthetic or natural non-metallic materials	Describes non-metallic materials non-metallic materials	Lists non-metallic materials
Describing physical properties of non-metallic materials in the locality	Explores physical properties of non-metallic materials in the locality	Describes physical properties of non-metallic materials in the locality	Outlines physical properties of non-metallic materials in the locality	Lists non-metallic materials in the locality
Identifying uses of non- metallic materials in the locality.	Illustrates uses of non-metallic materials in the locality.	Identifies uses of non-metallic materials in the locality.	Outlines uses of non-metallic materials in the locality	Lists uses of non-metallic materials in the locality

STRAND 3.0: TOOLS

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
3.0 Tools	**3.1 Household hand tools** (9 lessons)	**By the end of the sub-strand, the learner should be able to:** a) identify household hand tools in the locality b) categorise household hand tools according to their uses c) use household hand tools to perform given tasks correctly d) care and maintain household hand tools appropriately after use e) recognise the careers related to household hand tools f) appreciate the role of household tools in the community.	**Learners are guided to:** • In purposive groups observe realia visual aids and identify house hold hand tools used in the locality and display in class for peer review • In purposive pairs download, watch video clips and observe charts on house hold hand tools then do an assignment and submit. *Learners with short stature could require preferential seating for better or enhanced view while watching the video. Learners who are photophobic e.g epileptic and those with visual difficulties, light intensity could be adjusted on the digital devices to suit their individual needs. Computers with expanded keyboards and sticky keys could be used for learners with coordination difficulties. Joysticks, head and mouth pointers could be used by learners with missing limbs to feed instruction on the computer* • Individually, draw and categorise household tools according to use and present in class. *Learners with manipulation difficulties could use universal cuffs, pen and pencil holders while drawing. Learners with missing limbs could use alternative functional parts of the body to draw* • In purposive pairs role-play safe use and storage of household hand tools and apply the	1. How are household hand tools categorized? 2. Why are household tools important? 3. Why are household hand tools maintained?

| | | | skill at home. *Learners with postural difficulties such as those with scoliosis and spinal injuries could require appropriate positioning devices such as adjustable beds or seats .Learners with missing limbs could use alternative functional parts of the body, assistive devices, be assisted by peers , or learner support assistant to perform activities.. Learners with manipulation and coordination difficulties e,g cerebral palsy could use assistive devices such as universal cuffs, hand weights to enhance grip while role playing. Learners with brittle bones and muscular dystrophy could carry out activities appropriately to their functional ability. Precaution could be taken for learners with hemophilia, sickle cell anaemia, spina bifida, poliomyelitis and paraplegia to prevent injuries when handling sharp objects. Learners with uncoordinated movements could be accorded enough space while role playing. (Apply these adaptations in subsequent experiences in this substrand that involve postural, strength manipulation difficulties and other health conditions)* | |
| | | | • In purposive groups discuss the proper care, maintenance and safe storage of household hand tools and take notes. *Learners with speech difficulties could type, write down the answer, point or sign during discussions.(Apply these adaptations in subsequent* | |

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experiences in this substrand that involve speech difficulties)

- In purposive groups discuss careers related to household hand tools and take notes
- Individually collaborate with the teachers, parents and guardians to perform simple tasks using household hand tools and discuss feedback with peers .

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Core competencies to be developed:
- **Communication and collaboration** as learners discuss the use of household hand tools in the locality.
- **Critical thinking and problem solving** as learners choose tools to solve a problem in the community.
- **Digital literacy** as learners download and watch video clips on household hand tools.
- **Citizenship** as learners display and discuss items made to solve a problem in the community.
- **Innovation and creativity** as learners draw household hand tools.

Pertinent and Contemporary Issues (PCI's):	Values:
- **Environmental conservation** is championed as learners use household tools to perform tasks correctly and also take care of and maintain them in the environment. - **Education for sustainable development (gender equity)** is promoted as both genders take part in role-playing while storing household tools.	- **Responsibility** is enhanced as learners take care of tools in the locality. - **Love** is promoted as learners share items as they practice use of tools. - **Respect** is promoted as learners recognise the contribution of every member during group discussions. - **Integrity** is promoted as learners care for hand tools in the locality.

Link to other subjects:
- **Computer science** as learners download and watch video clips on the uses of household hand tools.
- **Home science** as learners clean and store household hand tools.
- **Health education** as learners maintain cleanliness of household hand tools and use them safely.
- **English** as learners communicate in English language during the discussion.

Suggested Non formal Activities to support Learning:	Suggested modes of assessment:
- Learners visit the school kitchen or home science laboratory during free time to observe how household hand tools are used and maintained. - Learners model household hand tools during their free time.	- Oral questions - Self Assessment - Peer Assessment - Observation

	• Written test	
	• Practical work	

Suggested Learning Resources:
- Scissors, razor blades, brooms, brushes, needles, screw drivers, moppers, nail cutters, knives, pliers, axes.
- Clay, water, plasticine.
- Career brochures and career magazines.
- Digital devices such as computer with expanded keyboards and relevant softwares, laptops, smart phones, tablets, joysticks, head and mouth pointers, projectors.
- Resource person, learner support assistant, occupational therapist.
- Note books, adapted pens and pencils, chalk board.
- Assistive devices such as book holders, page turners, universal cuffs.

Suggested Assessment Rubric

Criteria	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identifying household hand tools in the locality	Describes household hand tools in the locality	Identifies household hand tools in the locality	Outlines household hand tools in the locality	Names household hand tools in the locality
Categorising household hand tools according to the uses	Analyses household hand tools according to the uses	Categorises household hand tools according to the uses	Describes household hand tools	Identifies household hand tools
Using household hand tools to perform given tasks correctly	Explores household hand tools to perform given tasks correctly	Uses household hand tools to perform given tasks correctly	Uses household hand tools to perform the given tasks	Identifies household hand tools
Caring and maintaining household hand tools appropriately after use	Conserves household hand tools appropriately after use	Cares and maintains household hand tools appropriately after use	Cares for household hand tools after use	Keeps household hand tools after use
Recognising the careers related to household hand tools	Classifies the careers related to household hand tools	Recognises the careers related to household hand tools	Outlines the careers related to household hand tools	Cites the careers related to household hand tools

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
3.0 Tools	**3.2 Farm hand tools** (10 lessons)	**By the end of the sub-strand, the learner should be able to:** a) identify farm hand tools in the locality b) categorise farm hand tools according to their uses c) use farm hand tools safely to perform given tasks for skill perfection d) care and maintain farm hand tools appropriately after use to prevent loss and damage e) recognise the careers related to farm hand tools for proper decision making f) appreciate the importance of farm hand tools in the community.	**Learners are guided to:** • In purposive groups observe realia and visual aids to identify farm hand tools used in the locality and display them in class for viewing. *Learners with manipulation difficulties could use universal cuffs while handling the realia and visual aids. Learners who are photophobic e.g epileptic and those with visual difficulties, light intensity could be adjusted on the digital devices to suit their individual needs. Visual aids could be described for learners with visual difficulties* • In purposive groups download and watch video clips, observe charts on farm hand tools and do a presentation in class. *Learners with short stature could require preferential seating for better or enhanced view while watching the video. Learners who are photophobic e.g epileptic and those with visual difficulties, light intensity could be adjusted on the digital devices to suit their individual needs. Computers with expanded keyboards and sticky keys could be used for learners with coordination difficulties. Joysticks head and mouth pointers could be used by learners with missing limbs to manipulate the computers*	1. Why are farm hand tools important? 2. Why are farm hand tools categorised? 3. How are farm hand tools maintained?

			• Individually draw and categorise farm hand tools according to use and display in class for others to see. *Learners with manipulation difficulties could use universal cuffs, pens and pencil holders while drawing. Learners with missing limbs could use alternative functional parts of the body to draw* • Individually practise safe use of farm hand tools and apply the skills in day to day life. *Learners with missing limbs could use alternative functional parts of the body, assistive devices, be assisted by peers or learner support assistant to perform activities. Learners with coordination and manipulation difficulties e,g cerebral palsy could use assistive devices such as universal cuffs, hand weights, to enhance grip while using the hand tools. Handles of the farm hand tools could be adapted appropriately to suit the needs of the learner. Learners with mobility problems like those on wheelchair or crutches could perform activities while on wheelchair, supported by crutch or seated on the ground. Learners with brittle bones and muscular dystrophy could carry out activities appropriately to their functional ability. Precaution could be taken for learners with hemophilia, sickle cell anaemia, spina*	

			bifida, poliomyelitis and paraplegia to avoid injuries when handling sharp objects. Learners with uncoordinated movements could be accorded enough space while using farm hand tools. (Apply these adaptations in subsequent experiences in this sub strand that involve manipulation, coordination, mobility, strength difficulties and other health conditions) • In purposive groups discuss on the proper care, maintenance and safe storage of farm hand tools and take notes. *The leaner with speech difficulties could type ,write down the answer, point or sign during discussions.(Apply these adaptations in subsequent experiences in this sub strand that involve speech difficulties)* • In purposive pairs observe and relate farm hand tools to careers and draw a chart to present in class. • Individually collaborate with teachers, parents and guardians to perform simple tasks using farm hand tools and provide feedback for peer review	
	Project activity 2 (12 lessons)	**By the end of the sub-strand, the learner should be able to:** a) suggest items that may solve problems identified in project activity 1	**Learners are guided to:** • Individually use visual aids to design items that may solve the problems identified in project activity 1 and present in class for other to see and critique. *Learners who are photophobic e.g epileptic and those with*	How can problems in your community be solved?

		b) design items that may solve problems identified in project activity 1 c) Prepare cost estimates for designed items.	*visual difficulties, light intensity could be adjusted on the digital devices to suit their individual needs. Visual aids could be described for learners with visual difficulties*	

Core competencies to be developed
- **Communication and collaboration** as learners discuss the use of farm hand tools in the locality.
- **Critical thinking and problem solving** as learners choose the farm hand tools to solve a problem in the community.
- **Digital literacy** as learners use digital devices to categorise tools.
- **Citizenship** as learners display and discuss the items made to solve a problem in the community.
- **Learning to learn** as learners search and download video clips on farm hand tools.

Pertinent and Contemporary Issues (PCI's):	**Values:**
• **Environmental conservation** is advanced as learners use farm hand tools to perform good farming practices. • **Parental empowerment engagement** is promoted as learners collaborate with their parents to perform simple tasks.	• **Responsibility** is enhanced as learners take care of tools in the locality. • **Love** is promoted as learners share items as they practice use of tools. • **Respect** is enhanced as learners recognize the contribution of every member during group discussions. • **Unity** is fostered as learners work together to accomplish tasks.

Link to other subjects:
- **Agriculture** as learners practice the care and maintenance of farm hand tools
- **Computer science** as learners manipulate digital gadgets to watch video clips on categorizing of farm hand tools
- **Health education** as learners practice safe use of farm hand tools

Suggested Non formal Activities to support Learning:	**Suggested modes of assessment:**
• Learners visit the school farm to observe how farm hand tools are used. • Learners make simple farm hand tools and display for peers to see.	• Oral questions • Self Assessment • Peer Assessment • Observation • Written test • Project • Practical work

Suggested Learning Resources:

- Jembes, ploughs, rakes, spades, pangas, screw drivers, grass cutters, pliers.
- Career brochures and career magazines.
- Digital devices such as adapted computers with expanded keyboards and relevant softwares, laptops, smart phones, tablets, joysticks, head and mouth pointers.
- Charts, photos, handbooks, adapted writing materials.
- Resource person, learner support assistant, occupational therapist.

Suggested Assessment Rubric

Criteria	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identifying farm hand tools in the locality	Describes farm hand tools in the locality	Identifies farm hand tools in the locality	Outlines farm hand tools in the locality	Names farm hand tools in the locality
Categorise farm hand tools according to the uses	Illustrates farm hand tools according to the uses	Categorises farm hand tools according to the uses	Relates farm hand tools to the uses	Identifies farm hand tools
Using farm hand tools safely to perform given tasks	Modifies farm hand tools to perform given tasks safely	Uses farm hand tools safely to perform given tasks	Uses farm hand tools to perform given tasks	Recognises the use of farm hand tools
Caring and maintaining farm hand tools appropriately after use	Conserves farm hand tools appropriately after use	Cares and maintains farm hand tools appropriately after use	Cares for farm hand tools appropriately after use	Locates farm hand tools

STRAND 4.0: DRAWING

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
4.0 Drawing	**4.1 Types of drawings** (5 lessons)	**By the end of the sub strand, the learner should be able to:** a) identify different types of drawings used in the technical fields b) distinguish between artistic and technical drawings in the technical field c) describe the use of artistic and technical drawings in different fields d) recognise the application of drawings in various careers e) appreciate the importance of drawing in day to day life.	**Learners are guided to:** • In groups research and identify different types of drawings used in the technical fields and present to the rest of the class. *While doing research using the internet learners with coordination difficulties could use computers with expanded keyboards and with sticky keys. Learners with missing upper limbs could use text to audio software or type using alternative functional parts of the body. Learners who are photophobic e.g epileptic and those with visual difficulties, light intensity could be adjusted on the digital devices to suit their individual needs. (Apply these adaptation in subsequent experiences in this substrand that involve coordination, manipulation difficulties and photophobia)* • In purposive pairs observe digital images and charts to distinguish between artistic or technical drawings and display for others to see • In purposive groups watch downloaded video clips, observe realia and discuss the use of artistic and technical drawings and take notes. *Learners with speech difficulties could type, write down the answer, point, scroll on the computer to display the picture or sign during discussions. Patience could be observed during the discussion when a response is expected*	1. How are drawings used in various careers? 2. Why are drawings important in our day to day lives?

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			from a learner with speech difficulties. (Apply these adaptations in subsequent experiences in this sub strand that involve speech difficulties) • In purposive pairs discuss careers related to use of drawings under the guidance of a resource person(s) and take notes. • Individually identify objects at home, school or in the community where drawing has been used to make them and list them for peer review.	

Core competencies to be developed:
- **Communication and collaboration** as learners discuss careers related to the use of drawings.
- **Citizenship** as learners recognise the role of drawing in national economic development.
- **Digital literacy** as learners manipulate digital devices to watch video clips on artistic and technical drawings.
- **Critical thinking and problem solving** as learners relate the application of drawings to the built environment.

Pertinent and Contemporary Issues (PCI's):	**Values:**
• **Creative thinking** is developed as learners effectively use drawing instruments. • **Social cohesion** is promoted as learners discuss careers while interacting with the resource person.	• **Respect** is enhanced as learners recognise the contribution of every member in group discussions. • **Unity** is promoted as learners work together in groups during the discussion.

Link to other subjects:
- **Visual arts** as learners identify various drawings.
- **Computer science** as learners manipulate digital devices to watch video clips that describe the use of artistic and technical drawings.
- **Social studies** as learners make drawings such as maps.

Suggested Non Formal Activities to Support Learning:	**Suggested modes of assessment:**
• Learners role play on how to draw different objects during their free time. • Learners organise debates on career choices related to drawing during their free time. • Learners generate a catalogue on artistic and technical drawings.	• Oral questions • Self Assessment • Peer Assessment • Observation • Written test

	• Practical work

Suggested Learning Resources:
- Drawing charts, heavy gauge drawing papers/books, page turners and book holders.
- Career brochures, career magazines.
- Assistive technology like pen and pencil holders, adapted pencils with grips, universal cuffs.
- Adapted digital devices such as computers with expanded keyboards and a relevant softwares, laptops, smart phones, tablets, joysticks, head and mouth pointers.

Suggested Assessment Rubric

Criteria	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identifying various types of drawings	Classifies various types of drawings	Identifies various types of drawings	Outlines various types of drawings	Recognises drawings
Distinguishing between artistic and technical drawings	Distinguishes between artistic and technical drawings with illustrations	Distinguishes between artistic and technical drawings	Outlines artistic and technical drawings	Identifies drawings
Describing uses of artistic and technical drawing as used in various fields.	Demonstrates uses of artistic and technical drawing as used in various fields	Describes uses of artistic and technical drawing as used in various fields	Outlines uses of artistic and technical drawing as used in various fields	Lists uses of drawings
Recognising the application of drawings in various careers	Explores the application of drawings in various careers	Recognises the application of drawings in various careers	Outlines the application of drawings in various careers	Identifies the application of drawings

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
4.0 Drawing	**4.2 Drawing instruments and equipment** (5 lessons)	**By the end of the sub strand, the learner should be able to:** a) identify drawing instruments and equipment in technical drawing b) describe the use of drawing instruments and equipment in technical drawing c) draw lines and shapes using drawing instruments and equipment d) demonstrate proper care and maintenance of drawing instruments and equipment e) appreciate the use of drawing instruments and equipment in various careers.	**Learners are guided to:** • Individually draw and name the various drawing instruments and equipment and display for peer review. *Large and high gauge drawing surfaces could be provided for learners with coordination difficulties. Learners with missing upper limbs could use alternative functional parts of the body. Learners with manipulation difficulties could use pencil holders or universal cuffs to hold the pencil while drawing. Patience could be exercised to allow learners with manipulation difficulties to make the drawings. (Apply these adaptations in subsequent experiences in this sub strand that involve coordination and manipulation difficulties)* • In purposive groups observe realia and watch video clips to discuss the use of various drawing instruments and equipment and take notes. *The leaner with speech difficulties could type ,write down the answer, point, scroll on the computer to display the video clip or sign during discussions.* *(Apply these adaptations in subsequent experiences in this sub strand that involve speech difficulties). Learners with short stature could require preferential seating for better or enhanced view while watching the video. Learners who are photophobic e.g epileptic and those with visual difficulties, light intensity*	1. How are drawing instruments and equipment used? 2. Why do we care for and maintain drawing instruments and equipment?

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could be adjusted on the digital devices to suit their individual needs. Computers with expanded keyboards and sticky keys could be used for learners with coordination and manipulation difficulties. Joysticks, head and mouth pointers could be used by learners with missing upper limbs. (Apply these adaptations in subsequent experiences in this substrand that involve coordination, manipulation difficulties, photophobia and dwarfism)

- Individually use drawing instruments to draw given lines and shapes (draw the national flag)and display in class for peer review
- In purposive pairs role play on how to care for and maintain drawing instruments and equipments and demonstrate in class
- In purposive groups search in print media, manipulate digital devices to watch video clips on the use of drawing instruments and equipment in various careers and take notes

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Core competencies to be developed:
- **Communication and collaboration** as learners work in groups while they role play on how to care and maintain drawing instruments and equipment.
- **Learning to learn** as learners use and maintain technical drawing instruments.
- **Digital literacy** as learners manipulate digital devices to watch video clips.
- **Creativity and innovation** as learners use drawing instruments to draw lines and shapes and display them.

Pertinent and Contemporary Issues (PCI's):	**Values:**
- **Decision making** is enhanced as learners effectively use drawings. - **Creative thinking** is developed as learners with physical impairment creatively come up with different drawings and how to draw them.	- **Responsibility** is promoted as learners take care of drawing instruments. - **Integrity** is enhanced as learners use digital devices appropriately for the intended purpose.

| | • **Respect** is enhanced as learners recognise the contribution of every member in group discussions. |
| | • **Patriotism** is enhanced as learners recognise the use of lines and shapes as used in the national flag and traffic signs. |

Link to other subjects:
- **Visual arts** as learners draw shapes.
- **Agriculture** as learners draw farm tools and equipment.
- **Mathematics** as learners draw given lines.
- **Computer science** as learners manipulate digital devices to watch video clips on the use of various drawing instruments.

Suggested Non formal Activities to support Learning:	**Suggested modes of assessment:**
• Learners play games on drawing and coloring at their own free time. • Learners collect drawings and arrange them to come up with a visual story then display for others to see in a drawing club.	• Oral questions • Peer Assessment • Self Assessment • Observation • Written test • Practical work

Suggested Learning Resources:
- Drawing tables
- Adapted drawing materials and instruments (pencils with grips, rulers with gripped handles, large T-squares, large set squares)
- Career brochures and career magazines.
- Digital devices such as adapted computers with expanded keyboards and relevant softwares, laptops, smart phones, tablets, joysticks, head and mouth pointers.
- Photos, handbooks, adapted writing materials.
- Learner support assistant, occupational therapist, physiotherapist

Suggested Assessment Rubric

Criteria	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identifying drawing instruments and equipment	Classifies drawing instruments and equipment	Identifies drawing instruments and equipment	Outlines drawing instruments and equipment	Names drawing instruments and equipment
Describing the uses of drawing instruments and equipment	Explores the uses of drawing instruments and equipment	Describes the uses of drawing instruments and equipment	Outlines the uses of drawing instruments and equipment	Lists the uses of drawing instruments and equipment
Drawing lines and shapes using drawing instruments and equipment	Designs lines and shapes using drawing instruments and equipment	Draws lines and shapes using drawing instruments and equipment	Sketches lines and shapes using drawing instruments and equipment	Sketches lines using drawing instruments and equipment
Demonstrating proper care and maintenance of drawing instruments and equipment	Applies proper care and maintenance of drawing instruments and equipment	Demonstrates proper care and maintenance of drawing instruments and equipment	Describes proper care and maintenance of drawing instruments and equipment	Outlines proper care and maintenance of drawing instruments and equipment

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
4.0 Drawing	**4.3 Free hand sketching** (10 lessons)	**By the end of the sub strand, the learner should be able to:** a) sketch lines using free hand in drawing b) sketch two dimensional shapes using free hand c) sketch still life objects in perspective drawing d) recognise the use of free hand sketches in expression of artistic ideas in different career fields	**Learners are guided to:** • Individually sketch lines using pencils and drawing papers and display for peer review. *Large drawing surfaces could be provided for learners with coordination difficulties. Learners with missing upper limbs could use alternative functional parts of the body. High gauge drawing materials e.g manila papers could be used by learners using alternative body parts to avoid damage to the drawing materials. Learners with manipulation difficulties could use adapted pencils, pencil holders or universal cuffs to hold the pencil while sketching.*	Why is free hand sketching important?

		e) appreciate the importance of free hand sketching in day to day life.	*They could also use rulers with definite shapes of objects while making the sketches. (Apply these adaptations in subsequent experiences in this sub strand that involves coordination and manipulation difficulties)* • Individually use pencils and drawing papers to sketch two-dimensional shapes and display for peer review • In purposive pairs use realia to sketch still life objects and display for peer review • In purposive groups use print media, digital media to observe how free hand sketches express artistic ideas in different career fields and take notes. *Learners with short stature could require preferential seating for better or enhanced view while watching the video. Learners who are photophobic e.g. epileptic and those with visual difficulties, light intensity could be adjusted on the digital devices to suit their individual needs. Computers with expanded keyboards and sticky keys could be used for learners with coordination difficulties. Head and mouth pointers could be used by learners without limbs* • Individually take photos of the sketches and drawings and develop portfolios. *Automatic cameras with stands could be used by learners with cerebral palsy, muscular dystrophy and those with multiple disabilities while taking the photos*	

Core competencies to be developed:

- **Communication and collaboration** as learners in purposive groups use digital media to observe how free hand sketches express artistic ideas in different career fields and take notes.
- **Learning to learn** as learners use free hand sketches to communicate.
- **Digital literacy** as learners take photographs using digital devices.

• **Critical thinking and problem solving** as learners discuss and make free hand sketches.	

Pertinent and Contemporary Issues (PCI's):	Values:
• **Decision making** is enhanced as learners effectively use drawing instruments.	• **Responsibility** is enhanced as learners take care of drawing instruments.
• **Creative thinking** is developed as learners use free hand sketches to express artistic ideas.	• **Respect** is promoted as learners recognise the contribution of every member in group discussions.
	• **Patriotism** is promoted as learners recognise the use of lines and shapes as used in the national flag and traffic signs.

Link to other subjects:
- **Visual arts** as learners draw objects using free hand sketches.
- **Mathematics** as learners draw shapes that are studied in mathematics.

Suggested Non formal Activities to Support Learning:	Suggested modes of assessment:
• Learners generate a catalogue on sketches.	• Oral questions
• Learners draw various objects and display during an exhibition in school.	• Peer Assessment
	• Self Assessment
	• Observation
	• Written test
	• Practical work

Suggested Learning Resources:
- Adapted drawing materials such as adjustable drawing tables, high gauge drawing papers/books, adapted rulers with handles and adapted pencils with grips.
- Career brochures and career magazines.
- Digital devices such as adapted computers with expanded keyboards and relevant softwares, laptops, smart phones, tablets, joysticks, head and mouth pointers.
- Samples of free hand sketches
- Two dimensional shapes
- Assistive technology such as universal cuffs, page turners, book holders.

Suggested Assessment Rubric

Criteria	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Sketching lines using free hand	Designs different types of lines using free hand	Sketch lines using free hand	Sketches crooked lines	Identifies lines
Sketching two dimensional shapes using free hand	Designs two-dimensional shapes using free hand	Sketches two-dimensional shapes using free hand	Sketches crooked two-dimensional shapes using free hand	Sketches lines using free hand
Sketching still life objects in perspective drawing	Designs still life objects in perspective drawing	Sketches still life objects in perspective drawing	Sketches crooked still life objects in perspective drawing	Outlines objects in perspective drawing

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
4.0 Drawing	**4.4 Geometrical construction** (10 lessons)	**By the end of the sub strand, the learner should be able to:** a) construct different angles in plane geometry b) construct different types of quadrilaterals in plane geometry c) construct different types of circles in plane geometry d) construct combined shapes in plane geometry e) identify different career fields where the knowledge of geometrical construction could be applied in the locality f) appreciate the importance of geometrical construction in everyday life.	**Learners are guided to:** • In purposive groups search in print media, manipulate digital devices to watch simulations on construction of angles, discuss how to construct different geometrical angles and construct them. *Learners with speech difficulties could be lip read by peers, learner support assistant as they use residual speech , sign, point , write, type, scroll, use multipurpose communication board, speech generating device, eye tracking devices or be allowed extra time while expressing their views. Patience could be exercised for learners with speech difficulties during the discussion (Apply these adaptations in subsequent experiences in this substrand that involve*	1. How are geometrical construction drawings done? 2. How is geometrical construction applied? 3. Why do we do geometrical construction?

			speech difficulties). Learners with short stature could require preferential seating for better or enhanced view while watching the video. Learners who are photophobic e.g epileptic and those with visual difficulties, light intensity could be adjusted on the digital devices to suit their individual needs. Computers with expanded keyboards and sticky keys could be used for learners with coordination and manipulation difficulties. Head and mouth pointers could be used by learners without upper limbs. (Apply these adaptations in subsequent experiences in this sub strand that involve dwarfism, photophobia , coordination and manipulation difficulties) • Individually construct different angles and triangles in plane geometry and do an assignment. *Adapted construction tools (enlarged pair of compasses and dividers with grips, enlarged ruler with handles, enlarged and high gauge construction papers e.g manila papers) could be provided for learners with manipulation and coordination difficulties such as cerebral palsy and those using alternative functional parts of the body* • Individually construct quadrilaterals in plane geometry and do an assignment • Individually construct circles in plane geometry and do an assignment	

			• Individually construct various combined shapes and demonstrate how to construct given various shapes to the rest of the class • In purposive groups discuss application of geometry in different career fields and take notes • Individually construct shapes of objects found at school, at home and in the community using geometric construction and appreciate the relevance of construction	
	Project activity 3 (13 Lessons)	**By the end of the sub-strand, the learner should be able to:** a) suggest the materials for making the item designed in project activity 2 b) gather the materials for making the item designed in project activity 2 c) store the prepared materials for making the item designed in project activity 2.	**Learners are guided to:** • In purposive groups observe and pick out the materials used to make the item designed in project activity 2 from visual aids and categorise them for analysis by peers • In purposive pairs find and collect the materials chosen and display them for peer review and evaluation. *Learners with mobility difficulties like those on crutches, wheelchair and those with cerebral palsy could be offered physical assistance to ensure barrier free environment. Learners with manipulation and coordination difficulties could use alternative functional parts of the body, assistive devices such as prosthesis and universal cuffs, be assisted by peers or learner support assistant. Care could be taken for learners with haemophilia and sickle cell anaemia to prevent cuts while collecting the materials. (Apply these adaptations in subsequent experiences in this substrand that involve*	How are materials identified for a project activity?

				mobility, coordination, manipulation difficulties and other health conditions) • Individually keep the collected materials safely for future reference	

Core competencies to be developed:

- **Communication and collaboration** as learners discuss in groups.
- **Digital literacy** as learners manipulate digital devices to watch simulations.
- **Critical thinking and problem solving** as learners relate the application of plane geometry to different careers.
- **Creativity and innovation** as learners come up with different projects and execute them.
- **Learning to learn** as learners share ideas on the various projects they can come up with.

Pertinent and Contemporary Issues (PCI's):	**Values:**
• **Social cohesion** is enhanced as learners work together in groups as they carry out project work. • **Critical thinking and problem solving** is developed as learners with physical impairment are able to do activities with adaptations. • **Assertiveness** is enhanced as learners come up with projects and execute them	• **Responsibility** is enhanced as learners take care of drawing instruments. • **Respect** is promoted as learners recognise the contribution of every member in group discussions. • **Unity** is promoted as learners work together in groups during project work.

Link to other subjects:

- **Visual Arts** as learners construct different shapes.
- **Mathematic**s as learners undertake geometrical constructions.
- **Agriculture** as learners draw farm tools and equipment.

Suggested Non formal Activities to support Learning:	**Suggested modes of assessment:**
• Learners come up with alternative methods of constructing different angles in a mathematics club during free time. • Learners play construction games during free time. • Learners come up with construction models during free time.	• Oral questions • Self-assessment • Peer Assessment • Observation • Project • Practical work

Suggested Learning Resources:

- Adapted construction materials (Ruler/Straight edges, set squares, T-squares, pairs of compasses and dividers)

- Drawing tables, high gauge drawing papers/books and adapted pencils with grips.
- Career brochures and career magazines
- Digital devices such as adapted computers with expanded keyboards and relevant softwares, laptops, smart phones, tablets, joysticks, head and mouth pointers.
- Photos, handbooks and adapted writing materials.
- Learner support assistant, occupational therapist.

Suggested Assessment Rubric

Criteria	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Construct different angles in plane geometry	Analyses different angles in plane geometry	Constructs different angles in plane geometry	Describes different angles in plane geometry	Identifies different angles in plane geometry
Constructing different types of quadrilaterals in plane geometry	Explores different types of quadrilaterals in plane geometry	Constructs different types of quadrilaterals in plane geometry	Sketches different types quadrilaterals in plane geometry	Identifies different types of quadrilaterals in plane geometry
Constructing different types of circles in plane geometry	Analyses different types of circles in plane geometry accurately	Constructs different types of circles in plane geometry	Draws circles in plane geometry	Sketches circles in plane geometry
Constructing combined shapes in plane geometry	Analyses combined shapes in plane geometry	Constructs combined shapes in plane geometry	Draws combined shapes in plane geometry	Sketches combined shapes in plane geometry
Identifying different career fields where the knowledge of geometrical construction could be applied in the locality	Classifies different career fields where the knowledge of geometrical construction could be applied	Identifies different career fields where the knowledge of geometrical construction could be applied	Outlines different career fields where the knowledge of geometrical construction could be applied	Names different career fields where the knowledge of geometrical construction could be applied

STRAND 5.0: ENERGY RESOURCES

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
5.0 Energy Resources	**5.1 Sources of energy** (5 lessons)	**By the end of the sub-strand, the learner should be able to:** a) identify the sources of energy within the locality b) classify the sources of energy in the locality as either renewable or non-renewable c) describe the advantages and disadvantages of different sources of energy in the locality d) identify different careers which are related to energy in the locality e) appreciate the importance of energy in our lives.	**Learners are guided to:** • In purposive groups discuss the concept of energy and take notes. *Learners with speech difficulties could be lip read by peers or learner support assistant as they use residual speech , sign, point , write , use multipurpose communication board, speech generating device, eye tracking devices or be allowed extra time while expressing their views. (Apply these adaptations in subsequent experiences in this substrand that involve speech difficulties)* • In purposive groups discuss the different sources of energy within the locality and present in class • In purposive pairs search in print media, manipulate digital media to explore other sources of energy and present. *Learners with coordination and manipulation difficulties could use voice recognition software to search or find out other sources of energy. Computers with expanded key boards and sticky keys could be used. Learners with missing limbs could use computers and mobile phones with onscreen keyboards and joy sticks. (Apply these adaptations in subsequent experiences in this sub strand that involve coordination and manipulation difficulties). Learners with short stature and those on wheelchair could be accorded preferential seating positions while watching the videos*	1. How is energy important? 2. How is energy relevant in life?

| | | | In purposive pairs use flash cards to group various sources of energies as renewable and non-renewable and display for peer review In purposive groups discuss the advantages and disadvantages of the different sources of energy and present in class In purposive pairs search in print media, manipulate digital devices to research on the skills required for particular energy related careers and take notes In purposive groups tour the locality to observe and record the various careers related to energy and do an assignment. *Learners with mobility difficulties like those on crutches, prosthesis, wheelchair and those with cerebral palsy could be offered physical assistance to ensure barrier free environment to enable full participation while touring the locality. Learners with manipulation and coordination difficulties could use alternative functional parts of the body, assistive devices such as universal cuffs, adapted pens with grips, large and high gauge writing materials* In purposive groups discuss how important energy is to our everyday life and take notes | |

Core competencies to be developed:

- **Communication and collaboration** as learners identify sources of energy in the locality.
- **Critical thinking and problem solving** as learners discuss the concept of energy.
- **Creativity and imagination** as learners think about the advantages and disadvantages of different sources of energy.
- **Digital literacy** as learners manipulate digital devices to explore other sources of energy.
- **Self-efficacy** as learners express themselves during group discussions.
- **Learning to learn** as learners research on energy.

Pertinent and Contemporary Issues (PCIs):	Values
• **Environmental awareness** is enhanced as learners identify the different methods of energy conservation. • **Disaster risk reduction** is achieved as learners identify safe methods of harnessing and using energy • **Critical and creative thinking** are developed as learners think of ways of applying energy in everyday lives.	• **Responsibility** is enhanced as learners take good care of digital devices while using them. • **Unity** is promoted as learners carry out learning activities together harmoniously. • **Respect is enhanced** as learners recognise each other's contribution during group activities.

Link to other subjects:
- **Computer science** as learners search for information on the internet and watch video clips.
- **Integrated science** as learners discuss the different sources of energy.
- **Life skills** as learners tour the locality to observe and record various careers related to energy.

Suggested Non formal Activities to support Learning:	Suggested modes of assessment:
• Learners form an energy conservation club and come up with ways on how to conserve energy. • Learners compose and sing songs on conservation of energy during free time.	• Oral questions • Observation • Self Assessment • Peer Assessment • Written test • Practical work

Suggested Learning Resources:
- Wind, Solar energy, Electric energy, Gas, Firewood, Coal (whichever is available in the locality).
- Career brochures, career magazines, flashcards, reference books.
- Digital devices such as adapted computers with expanded keyboards and relevant softwares

, laptops, smart phones, tablets, joysticks, head and mouth pointers.

- Learner support assistant
- Assistive technology such as high gauge writing materials, adapted pens and pencils, book holders and page turners, universal cuffs

Assessment Rubric

Criteria	Exceeds expectation	Meets expectation	Approaches expectation	Below expectation
Identifying sources of energy within the locality	Explores sources of energy within the locality	Identifies most sources of energy within the locality	Outlines sources of energy within the locality	States sources of energy within the locality
Classifying sources of energy as renewable or non-renewable	Analyses sources of energy as renewable or non-renewable	Classifies sources of energy as renewable or non -renewable	Outlines sources of energy	Lists sources of energy
Describing the advantages and disadvantages of different sources of energy in the locality	Analyses the advantages and disadvantages of different sources of energy in the locality	Discusses the advantages and disadvantages of different sources of energy	Outlines either the advantages or the disadvantages of different sources of energy	Lists advantages of different sources of energy
Identifying different energy related careers	Explains different energy related careers	Identifies different energy related careers	Outlines different energy related careers	States different energy related careers

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
5.0 Energy Resources	**5.2 Uses of energy** (5 lessons)	**By the end of the sub-strand, the learner should be able to:** a) identify the different forms of energy in the environment b) classify the different forms of energy into either kinetic or potential energy c) identify the uses of different forms of energy in the locality d) recognise the different types of careers which require the use of energy within the locality	**Learners are guided to:** • In purposive groups search print media, manipulate digital media to identify the different forms of energy and present to class. *Learners with coordination and manipulation difficulties could use voice recognition software to search for information on the media or use computers with expanded key boards and sticky keys. Learners missing limbs could use computers and mobile phones with onscreen keyboards and joy sticks. (Apply these adaptations in subsequent experiences in this sub strand that involve coordination and manipulation difficulties). Learners with short*	1. How does energy affect our daily lives? 2. How is energy useful in our lives?

		e) appreciate the role of energy in the day to day life.	*stature and those on wheelchair could be accorded preferential sitting positions while watching the videos* • In purposive pairs design a chart to classify the different forms of energy as either kinetic or potential and display. *The height of the chart could be adjusted to suit the needs of a learner on wheelchair, short stature and the ones with postural difficulties. Splints could be adjusted accordingly for learners with postural difficulties. Learners on wheelchair, those with short stature , those without limbs could use pointers to communicate information on the chart* • In purposive pairs discuss the uses of energy within the locality and take notes. *Learners with speech difficulties could be lip read by peers or learner support assistant as they use residual speech , sign, point , write, use multipurpose communication board, speech generating device, eye tracking devices or be allowed extra time while expressing their views. (Apply these adaptations in subsequent experiences in this sub strand that involve speech difficulties)* • In purposive groups search in print media, manipulate digital devices to explore different uses of energy and take notes • In purposive groups walk around the locality to observe and record the different energy uses and write a report. *Learners with mobility difficulties like those on crutches, prosthesis, wheelchair and those with cerebral palsy could be offered physical assistance to ensure barrier free environment.*	

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Learners with manipulation and coordination difficulties could use alternative functional parts of the body, assistive devices such as universal cuffs, adapted pens with grips, large and high gauge writing pads to write. Care could be taken for learners with allergic conditions such as asthma to avoid exposing them to conditions that may trigger the attack. (Apply these adaptations in subsequent experiences in this sub strand that involve mobility, manipulation, coordination difficulties and other health conditions)

- In purposive groups visit the locality to observe and record the various careers related to uses of energy within the locality and take notes
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Project activity 4

(13 lessons)
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By the end of the sub-strand, the learner should be able to:
a) identify the safety precautions to observe when working with tools to make the item designed in project activity 2
b) use appropriate tools to prepare the materials collected in project activity 3
c) use appropriate tools to make the item designed in project activity 2
d) display the item made for others to see and appreciate.
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Learners are guided to:
- In purposive groups discuss the safety precautions to observe when working with tools to make the item designed in project activity 2 and take notes. (Apply the adaptations made in project activities 2 and 3)
- In purposive pairs select and use appropriate tools to prepare the materials collected in project activity 3 and demonstrate to peers. *Learners with brittle bones and muscular dystrophy could carry out activities appropriately to their functional ability. (Apply this adaptation in subsequent experiences in this substrand that involve strength)*
- In purposive pairs select and use appropriate tools to make the item designed in project activity 2 and demonstrate to peers
- In purposive pairs display the item made for others to see and appreciate
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How can safety precautions be observed while working with tools?
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Core competencies to be developed:
- **Communication and collaboration** as learners discuss in groups.
- **Critical thinking and problem solving** as learners discuss safety precautions to observe while working with tools.
- **Creativity and imagination** as learners select and use appropriate tools to prepare materials used in the project.
- **Digital literacy** as learners manipulate digital devices to watch video clips and search for information online.
- **Self-efficacy** as learners express themselves during group discussions.
- **Citizenship** as learners think of how to solve problems in the community.

Pertinent and Contemporary Issues (PCIs):	**Values**
• **Critical thinking** is developed as learners discuss uses of energy within the locality. • **Social cohesion** is promoted as learners visit locality to observe and record various careers related to use of energy as they interact with locals. • **Problem solving** is achieved as learners come up with projects to solve problems in the society.	• **Responsibility** is enhanced as learners take care of the tools and materials collected during project work. • **Patriotism** is enhanced as learners take care of the environment by suggesting appropriate use of energy within the environment. • **Unity** is developed as learners carry out learning activities together. • **Respect** is enhanced as learners recognise each other's contribution during group activities.

Link to other subjects:
- **Computer science** as learners search for information on the internet and watch video clips.
- **Integrated science** as learners discuss the different forms of energies.
- **Life skills** as learners discuss practical uses of energy within the localities.

Suggested Non formal Activities to support Learning:	**Suggested modes of assessment:**
• Learners form an environmental club to discuss sustainable sources of energy in the environment. • Learners compose and sing songs on environmental conservation.	• Oral questions • Observation • Self Assessment • Peer Assessment • Written test • Project • Practical work

Suggested Learning Resources:
- Career brochures, career magazines, journals.

- Digital devices such as adapted computers with expanded keyboards and relevant softwares, large mouse, laptops, smart phones, tablets, joysticks, head and mouth pointers.
- Learner support assistant, occupational therapist.
- Heavy gauge writing materials, adapted pens and pencils, book holders and page turners.
- Assistive technology like universal cuffs, pen and pencil holders.

Assessment Rubric				
Criteria	**Exceeds expectation**	**Meets expectation**	**Approaches expectation**	**Below expectation**
Identifying different forms of energy in the environment	Explores different forms of energy in the environment	Identifies different forms of energy in the environment	Outlines forms of energy in the environment	Names different forms of energy in the environment
Classifying different forms of energy as either kinetic or potential	Illustrates different forms of energy as either kinetic or potential	Classifies different forms of energy as either kinetic or potential	Describes different forms of energy	Identifies forms of energy
Identifying uses of different forms of energy in the locality	Explores uses of different forms of energy in the locality	Identifies uses of different forms of energy in the locality	Outlines uses of different forms of energy in the locality	Lists uses of different forms of energy in the locality
Recognising different types of careers which require the use of energy within the locality	Classifies different types of careers which require the use of energy within the locality	Recognises different types of careers which require the use of energy within the locality	Identifies different types of careers which require the use of energy within the locality	Names a career which requires the use of energy within the locality

COMMUNITY SERVICE-LEARNING CLASS ACTIVITY

Community Service Learning (CSL) is an experiential learning strategy that integrates classroom learning and community service to enable learners reflect, experience and learn from the community. The CSL project is expected to benefit the learner, the school and local community. Knowledge and skills on how to carry out a CSL project have been covered in Life Skills Education (LSE).

All learners with physical impairment in Grade 7 will be expected to participate in a CSL class activity. The activity will give learners an opportunity to practise the CSL Project skills covered under LSE. This activity will be undertaken in groups where learners with physical impairment will be purposively grouped to complement each other. Learners will be expected to apply the steps provided to carry out the CSL project.

The activity will take the form of a whole school approach, where the entire school community will be engaged in the learning process. Teachers will guide learners with physical impairment to execute a simple school based CSL class activity. This activity can be done in 1-2 weeks outside the classroom time. The duration may be adjusted accordingly to accommodate learners with physical impairment who may require more time to implement the CSL project.

CSL Skills to be covered
   i)   **Research:** Learners will develop research skills as they investigate PCIs to address, ways and tools to use in collecting data, analysing information and presenting their findings.
  ii)   **Communication:** Learners will develop effective communication skills as they engage with peers and school community members. These will include listening actively, asking questions, and presentation skills using varied modes.
 iii)   **Citizenship:** Learners will be able to explore opportunities for engagement as members of the school community and provide a service for the common good.
  iv)   **Leadership**: Learners will develop leadership skills as they take up various roles within the CSL activity.
   v)   **Financial Literacy Skills:** Learners will consider how to source and utilise resources effectively and efficiently.
  vi)   **Entrepreneurship**: Learners will consider ways of generating income through innovation for the CSL class activity.

Suggested PCIs	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Questions
Learners will be guided to consider the various PCIs provided in the subject in Grade 7 and choose one suitable to their context and reality	By the end of the CSL class activity, the learner should be able to: a) identify a problem in the school community through research; b) develop a plan to solve the identified problem in the community c) design solutions to the identified problem d) implement solution to the identified problem e) share the findings to relevant actors f) reflect on own learning and relevance of the project g) appreciate the need to belong to a community.	**The learners are guided to:** • In purposive groups brainstorm on pertinent and contemporary issues in the community that need attention and share in class. Learners with speech difficulties could be lip-read by peers, teacher, learner support assistant as they use residual speech or sign, point, write, use multipurpose communication board, speech generating device, eye tracking device or be allowed extra time to express their views. (*Apply this adaptation to subsequent learning experiences involving use of speech).* • In purposive groups discuss various PCIs within the school community and identify the one that requires immediate attention giving reasons for their choice. • In purposive groups discuss possible solutions to the identified issue and propose the most appropriate solution to the problem. • In purposive pairs brainstorm on the resources needed for the activity and source for them. • In purposive groups discuss different methods and tools of collecting data and determine the ones suitable for the selected project. • Individually develop appropriate tools (*Questionnaires, interview schedule, observation checklist)* for collecting data with the guidance of the teacher. Learners with manipulation difficulties could be provided with adapted writing materials such as pen/pencils with grip, weighted pens/pencils or writing claws. They could type on tablet or be	1. How does one determine community needs? 2. Why is it necessary to be part of a community?

		assisted by a scribe or learner support assistant to develop their tools.	
		• In purposive groups collect data and record findings. Learners with mobility difficulties could collect data remotely or be supported by peers and learner support assistant during data collection. Apply the adaptation on manipulation above here.	
		• In purposive groups discuss their findings, develop various reporting documents and use them to report on their findings. *Apply adaptation on the use of speech and manipulation in this experience.*	
		• Individually implement a project to get solutions to the identified problem based on the research report. *Apply adaptation on the use of speech, manipulation and mobility in this experience. Ensure the safety of the learners as they manipulate the tools, materials, equipment and as they explore the environment.*	
		• Individually use feedback from peers and the school community to improve on the implementation of the project.	
		• In purposive groups discuss the successes, challenges faced while implementing the project activities and lessons learnt; write a report and share through various media to peers and the school community. *Apply adaptation on the use of speech and writing above.* Learners with manipulation difficulties could be provided with adapted digital resources with appropriate accessibility features or be supported by peers, learner support assistant or teacher to manipulate the digital resources. Light intensity should be controlled for learners with epilepsy and those with visual impairment.	

| | | Individually reflect on how the project enhanced learning while at the same time facilitating service to the school by providing solutions to the identified issue(s). | |

Assessment Rubric

Criteria	Exceeds Expectation	Meets Expectation	Approaches Expectation	Below Expectation
Identifying a pertinent issue in school the community to be addressed.	Gives Justification for the identified pertinent issue in the school community to be addressed.	Identifies a pertinent issue in the school community to be addressed.	States a pertinent issue in the school community to be addressed.	Recalls a pertinent issue discussed in class.
Planning to solve the identified issue.	Designs and develops a step-by-step plan of the activities to be carried out in the process of solving the problem.	Plans to solve the identified issue.	Outlines a plan to solve the identified problem.	States activities to be included in a plan to solve the identified problem.
Designing and implementing solutions to the identified problem.	Designs, analyses and implements solutions to the identified problem.	Designs and implements solutions to the identified problem.	Designs solutions to the identified problem.	Suggests solutions to the identified problem.