



# LEARNER'S RESOURCE PACK

Career Technology **BASIC 7**



**NATIONAL COUNCIL FOR  
CURRICULUM & ASSESSMENT  
OF MINISTRY OF EDUCATION**





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## 1.0 INTRODUCTION

### 1.1 Background Statement

Career Technology (CT), as one of the Common Core Programme (CCP) learning areas encompasses Pre-Technical Skills and Home Economics subjects with the aim of making the learning areas (subject) more achievement-focused and attractive to learners. The Contents have been developed progressively along the grade levels. The Career Technology Curriculum is Standard-Based with the following key components: Strands, Sub-strands, Content Standards, Learning Indicators and Exemplars. These components enhance your understanding of the curriculum and make learning easier.

To help you acquire quality knowledge and skills, your learning will take place in classrooms, workshops, worksites, laboratories, and communities to consolidate effective career skills acquisition. Career Technology provides the needed environment for hands-on and minds-on training for learners to be motivated to choose the programme for advanced studies and for practice in the world of work.

### 1.2 Rationale of the Learner's Resource Pack

This Learner's Resource Pack is meant to serve as a manual to help learners study the Career Technology subject in an exciting way, where you will take responsibility for your learning. Your teacher will serve as a facilitator and suggest alternative activities you may want to carry out.

### 1.3 How to use this Learner's Resource Pack

Before you use this Learners' Resource Pack, read the Section on **Hints to the Learner**, and understand the issues addressed. The teacher should have either completed teaching or in the process of teaching lessons connected to the Content Standard(s) and their related Indicators.

There is a Worksheet with activities, which you will be required to copy and complete on paper or in a book, with suggested instructions for carrying out the activities, as well as resources you will require. An **Assessment tasks** Section is included to help you self-check your understanding of what has been learnt. Finally, you will do **Homework/Project work** to serve as extended learning practice.





## 1.4 Hints to the learner

### 1.4.1 What/how you will learn

The Learner's Resource Pack is written to encourage you to work independently of the facilitator/teacher, and to make decisions concerning how you will approach a Task in your own way. Follow the instructions and steps indicated in the Learner's Resource Pack and work independently or in groups.

You will learn the Strands, Sub-strands, Content Standards and Indicators, as shown in the Career Technology Curriculum. It is the Indicator that determines your attainment of the Content Standard. A Content Standard may have one or more Indicators, so attainment of the Content Standard depends on accomplishing the Indicators under it. The activities you will carry out will be based on the Indicators.

### 1.4.2 How you will be taught

You will be encouraged to work on your own, in pairs, in groups, or together as a class. Teaching is focused on learner-centred and learning approaches that engage learners physically and cognitively in the knowledge, skill and attitude-acquiring process, through a rich and rigorous inquiry and activity-driven environment. Your learning will be enquiry-based where the facilitator will provoke your mind with challenging tasks and you will carry out investigations to undertake activities and present your findings.

### 1.4.3 Strategies for effective learning

The strategies you will adopt shall include:

- i. Spreading out learning opportunities over a period of time.
- ii. Taking short quizzes orally or written or both.
- iii. Summarising your notes from memory or a book.
- iv. Giving concrete examples of concepts learnt.
- v. Describing and explaining why things work.
- vi. Combining verbal representations of information (words) with visual representations (diagrams/pictures/videos).





#### 1.4.4 How you will be assessed

Assessment of your learning will be used to take decisions for remediation, placement, promotion, certification, learner progress, selection, resource allocation, system monitoring, teacher orientation, and intervention in education.

Assessment would be done through Oral Tests, Written Tests, Written Reports, Practical Work /Demonstrations, Projects/Portfolios, and Observations. Note that the teacher will ask questions as the lesson progresses so your active participation is required.





## STRAND 1: HEALTH AND SAFETY

### SUB-STRAND 1: PERSONAL HYGIENE AND FOOD HYGIENE

<b>Content standard</b>	<b>B7.1.1. Demonstrate knowledge of the basic concept of the need to stay healthy.</b>
<b>What you should know already</b>	Learners bath, brush their teeth, wash their hands, wash clothing, handle and eat food at home
<b>What will you learn?</b> <b>What skills will you develop?</b>	<ol style="list-style-type: none"> <li>1. How to stay healthy.</li> <li>2. Importance of taking good care of one's body.</li> <li>3. Consequences of not taking good care of one's body.</li> <li>4. Demonstrate skills in taking good care of one's body.</li> <li>5. Reasons for maintaining food hygiene practises.</li> <li>6. Consequences of eating unwholesome (spoilt) food.</li> <li>7. Skills of handling food hygienically.</li> </ol>
<b>Language and vocabulary you will need to use</b>	Contract Disease, Food Hygiene, Personal Hygiene
<b>Ways to extend your understanding</b>	Research on one environmental health issue that has arisen recently in the world and write a report on how it was dealt with.
<b>Things you will need to remember for future lessons</b>	<p>Keeping ourselves clean using the appropriate cleaning materials to avoid illness.</p> <p>Consequences of not keeping ourselves clean.</p> <p>Proper keeping or preservation of food to avoid spoilage and illness.</p>

**Note: All the activities here are to be done in your exercise books. Do not answer any work in this book. It is not a workbook.**

**Worksheet (i): Complete the worksheet below:**

#### Activity Instructions:

1. Identify the pictures in the table below and state the names of the items and their uses.







S/N	Item	Name of cleaning material	Use(s) of cleaning material
1.			
2.			
3.			
4.			
5.			
6.			

2. Demonstrate the proper ways of washing hands and brushing the teeth by using the appropriate materials.

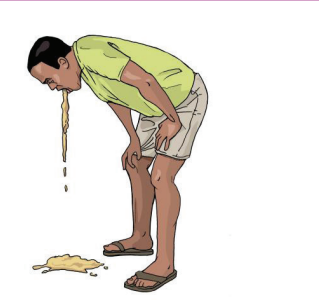

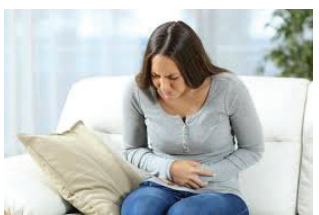





**Worksheet (ii):** Complete the worksheet below:

**Activity Instructions:**

1. Identify the consequences of eating unwholesome food using the images/ pictures in the table below and state their remedies.

S/N	IMAGE/PICTURE	CONSEQUENCES OF EATING UNWHOLESOME FOOD	REMEDY
1.			
2.			
3.			
4.			

**Learning Resources:** Realia or pictures of materials for keeping the body clean, cooked and unwholesome (spoilt) food and ICT tools.





## Assessment Task

### Class Exercise - Answer the following questions:

1. State two reasons why we have to keep our bodies clean.
2. State two ways we can keep our bodies clean.
3. Explain why we should wash our hands often.
4. Explain three (3) causes of food spoilage.
5. State and explain two ways of keeping food safe.
6. What advice will you give to a friend who has contracted cholera?

## Homework Task

1. Find out from your locality, the traditional materials used in keeping the body clean.
2. Research and make a presentation on materials and strategies (ways) that can be used to improve personal hygiene to your class.
3. Find out how to preserve the following foods and report in class:
  - a) Orange
  - b) Cassava
4. Research into best food hygiene practices and present in class.





## SUB-STRAND 2: PERSONAL, WORKSHOP AND FOOD LABORATORY SAFETY

<b>Content standard</b>	<b>B7.1.2.1</b> <b>Demonstrate knowledge of preventing accidents in the workshop and food laboratory</b>
<b>What you should know already</b>	Learners apply ointment and water when they have burns. Learners are aware that spills on the floor can cause accidents.
<b>What will you learn? What skills will you develop?</b>	Prevention of accidents. Causes of accidents and application of personal safety measures. Proper arrangements of tools and equipment to prevent accidents in the workshop/site/laboratory. Giving First Aid to injured persons.
<b>Language and vocabulary, you will need to use</b>	Bruises, explosions, First Aid, injuries, methylated spirit, ventilation
<b>Ways to extend your understanding</b>	Research into the following: Ways of preventing accidents in the workshop/site/laboratory. Ways of keeping tools safe to prevent accidents.
<b>Things you will need to remember for future lessons</b>	Prevention of accidents. Maintenance and safety measures. Proper arrangements of tools and equipment to prevent accidents. Proper and timely administration of First Aid.

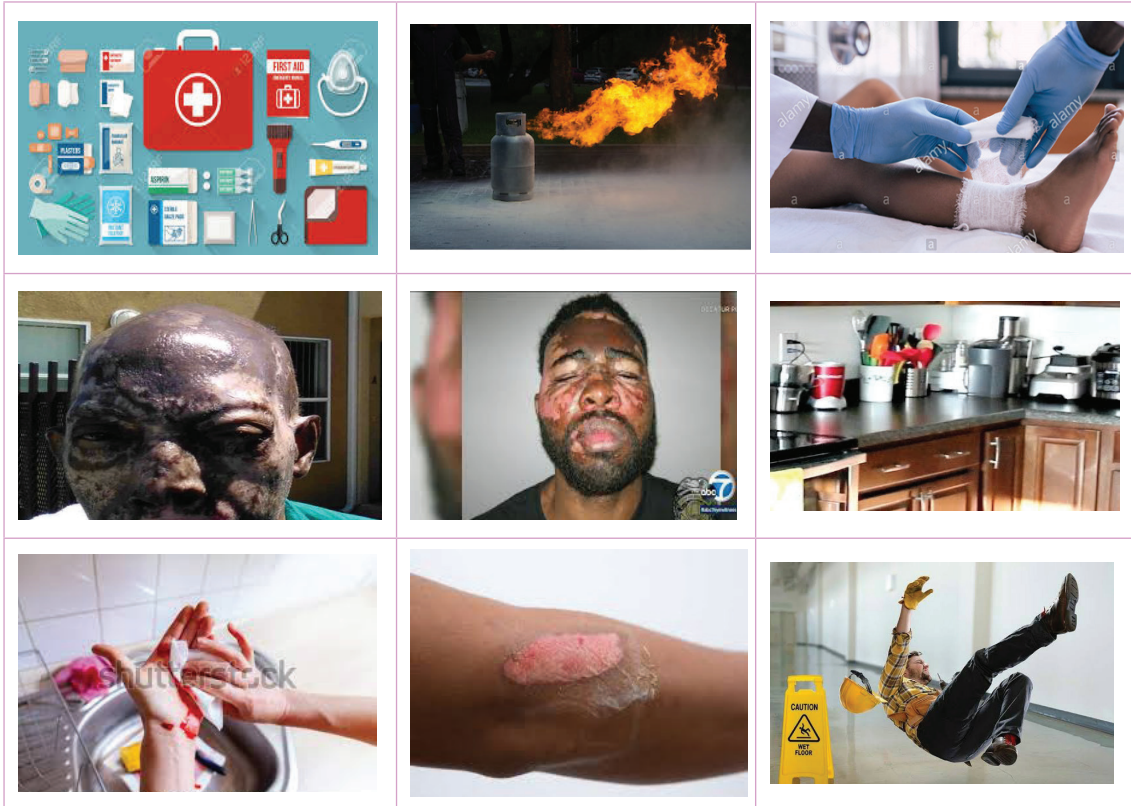




**Worksheet (iii):** Complete the worksheet below:

**Activity Instructions:**

1. In your groups, look at the pictures and talk about them.



2. Explain what is happening in the pictures.
3. State the First Aid techniques or measures you will administer to the persons in the pictures.
4. What measure will you take to prevent those accidents?
5. What do you think caused the accidents in the various pictures?

**Resources:** Items in a First Aid box, charts, pictures, resource persons, videos.





## Assessment Task

### Class Exercise - Answer the following questions:

1. State three (3) types of accidents and injuries in the workshops.
2. Explain two personal safety measures to be taken in the workshop/food laboratory.
3. List two ways to keep tools and equipment safe to prevent accidents in the workshop /food laboratory.
4. Outline three (3) ways of minimising accidents in the workshop and food laboratory.
5. Explain what is meant by First Aid and list five (5) items in a First Aid box.
6. Explain how to administer First Aid to a person suffering from burns.

### Home Work

1. Make a chart of traditional and modern items for treating various accidents in the workshop.
2. Make a chart of five (5) items that you can keep in a First Aid box.

### Project Work

Interview parents/guardians and people in the community on how to prevent frequently-occurring accidents in the workshop and laboratory, and report to your class.





### SUB-STRAND 3: ENVIRONMENTAL HEALTH

Content standard	<b>B7.1.3.1: Demonstrate knowledge of the basic concept of Environmental Health</b>
<b>What you should know already</b>	Sweeping the compound both at school and at home. Scrubbing gutters both at home and school.
<b>What will you learn? What skills will you develop?</b>	Keeping the environment clean. Reasons for keeping the environment clean. Consequences for not keeping the environment clean. How to keep water clean. Methods of preventing pollutions.
<b>Language and vocabulary, you will need to use</b>	Cleaner fuels, disease control, environmental health, preventive measures, safe water
<b>Ways to extend your understanding</b>	Practising environmental hygiene. Research on one environmental health issue that has arisen recently in the world and write a report on how it was dealt with.
<b>Things you will need to remember for future lessons</b>	Keeping the environment clean to prevent diseases. Maintaining clean water. Practising clean sanitation and hygiene. Consequences for not keeping the environment clean.







## Worksheet (iv): Complete the worksheet below:

**Activity Instructions:** Look at the pictures below and perform the activities that follow:



1. Discuss what the pictures are about.
2. What do you think are the causes of the dirty environment?
3. Select one picture of a dirty environment and explain what could be done to improve it in the short term and in the long term.

**Learning Resources:** chart, pictures, video, realia of clean and dirty water

### Class Exercise

1. State three (3) environmental health issues in the community.
2. State three (3) constituents of environmental health.
3. Explain how the environment can be kept clean.
4. What do you think about the current filth in the environment?
5. State four (4) illnesses that are caused by dirty environments.







### Home work

1. Use ICT tools and other sources to find out the causes of the following:
  - a. Air pollution
  - b. Water pollution
  - c. Land pollution
2. Suggest ways of preventing the above pollutions.

### Project work

Plan an educational campaign in the community aimed at eradicating the above-mentioned pollutions.





## STRAND 2: MATERIALS FOR PRODUCTION

### SUB-STRAND 1: COMPLIANT MATERIALS

<b>Content standard</b>	<b>B7.2.1.1: Demonstrate knowledge of the basic concept of compliant materials</b>
<b>What you should know already</b>	Learners have seen and handled or worked with paper/card, fabric/textiles.
<b>What will you learn? What skills will you develop?</b>	Understanding of what compliant materials are. Knowledge of the characteristics of compliant materials. Understanding how compliant materials are used.
<b>Language and vocabulary you will need to use</b>	Compliant materials, textiles, card, paper, characteristics
<b>Ways to extend your understanding</b>	Look for information from different sources including online, on the various compliant materials. Visit factories where compliant materials are made and note the following: how they are made, the raw materials used, and what finishing is applied. Use compliant materials to make mock-ups on your own.
<b>Things you will need to remember for future lessons</b>	Compliant materials are paper, card, fabric, textiles. Compliant materials are materials that have recognised, predictable and consistent properties. Compliant materials can be used to make many products.





### Worksheet (v): Complete the worksheet below:

**Activity Instructions:** List three (3) products each that can be made from the compliant materials shown in the Table below:

Compliant Materials	Three Products Each
	
	
	

**Learning Resources:** realia of compliant materials, charts, pictures, videos, internet facilities, ICT tools.

### Assessment Task

#### Class exercise

1. Explain what is meant by compliant materials and give two (2) examples.
2. State two (2) characteristics each of the following compliant materials: Paper, card, textiles and fabric.

#### Homework

Design and make a pop-up card; or design and make a decorative mat to put under a hot cup.





## SUB-STRAND 2: RESISTANT MATERIAL

Content standard	<b>B7.2.2.1: Demonstrate knowledge of the basic concept of resistant materials</b>
<b>What you should know already</b>	Learners see and use resistant materials in the environment.
<b>What will you learn? What skills will you develop?</b>	Understand what resistant materials are. Classify resistant materials according to their characteristics. Sort out resistant materials according to types.
<b>Language and vocabulary, you will need to use</b>	thermoplastics, thermosetting, ferrous metals, non-ferrous metals, non-ferrous alloys, resistant materials.
<b>Ways to extend your understanding</b>	Read more on resistant materials from different sources Make simple products from resistant materials. Select a specific resistant material and make a presentation on its properties and uses.
<b>Things you will need to remember for future lessons</b>	Characteristics of resistant materials. How resistant materials are sorted into the following categories: Plastics – thermosetting plastics and thermoplastics Wood – hardwoods and softwoods Metals – ferrous metals, non-ferrous metals, non-ferrous alloys How the following Resistant Materials are obtained: <b>Plastics:</b> are obtained from natural and synthetic sources <b>Wood:</b> solid timber is made from harvested trees or similar natural sources, whereas man-made boards are often produced from small pieces of wood or waste wood <b>Metals:</b> the raw material is mined from the earth; it undergoes processes such as crushing, washing and grading; several other processes are carried out to get it in a refined form





**Worksheet (vi): Complete the worksheet below:**

**Activity Instruction:** Identify the picture of the product in column one of the tables below and state the name and use of the product

No.	Pictures of the various resistant materials/products	Name of material/product	One use each
1.			
2.			
3.			
4.			





**Activity Instruction:** Copy and complete the table below by stating the name of a resistant material and one product made from it.

Name of resistant material	Name of one product each
1.	
2.	
3.	
4.	

**Resources:** Realia, pictures, charts.

### Assessment Task:

#### Class Exercise

1. Explain what is meant by resistant materials and give three examples.
2. State two examples each of the following resistant materials:
  - i. Wood
  - ii. Metal
  - iii. Plastic

#### Homework Task

1. Sketch one product made from a resistant material.
2. State the type of resistant material used.
3. Design and make a simple mock-up of the product from any resistant material.





## SUB-STRAND 3: SMART AND MODERN MATERIALS

<b>Content standard</b>	<b>B7.2.3.1</b> <b>Demonstrate understanding of properties of smart and modern materials</b>
<b>What you should know already</b>	Learners have been handling smart and modern materials in the school and home.
<b>What will you learn? What skills will you develop?</b>	<ol style="list-style-type: none"><li>1. Understand what is meant by smart and modern materials.</li><li>2. Understand the properties of smart and modern materials.</li><li>3. Give examples of the use of smart and modern materials in products.</li></ol>
<b>Language and vocabulary you will need to use</b>	Graphene oxide, Kevlar, Shape Memory Alloys (SMA), Thermochromic Pigments.
<b>Ways to extend your understanding</b>	<ol style="list-style-type: none"><li>1. Research on smart and modern materials and write a report for presentation.</li><li>2. Collaborate with other teachers, especially Science to experiment on the properties of smart and modern materials.</li></ol>





### Worksheet (vii): Complete the worksheet below:

**Activity Instruction:** Copy and complete the table below by providing the type of material and effects on the given factors:

	Factors that affect smart and modern materials	Type of material	Effect(s)
1.	Temperature		
2.	Light		
3.	Moisture		

**Learning Resources:** realia of smart and modern materials/charts/pictures/video of smart and modern materials, internet facilities, manila card, markers.

### Assessment Task:

#### Class Exercise:

1. Briefly explain smart and modern materials.
2. Give two examples of smart and modern materials
3. State two properties of smart and modern materials.

#### Homework Task

Research in the environment and collect samples of smart and modern materials. Record your findings in your journal.











**Worksheet (viii):** Complete the worksheet below:

**Activity Instruction:** Complete the table below, by providing the properties and uses of the products:

No.	Product	One Property Each	One Use Each
1.	 Fiber optic cable		
2.	 Bulletproof amour vest made from Kevlar		
3.	 Metal foam		
4.	 Titanium hip replacement		





## SUB-STRAND 4: FOOD COMMODITIES (ANIMAL AND PLANT SOURCES)

Content standard	<b>B7.2.4.1: Demonstrate knowledge of basic food commodities</b>
<b>What you should know already</b>	<ol style="list-style-type: none"><li>1. Learners know food commodities.</li><li>2. Learners eat different foods.</li></ol>
<b>What will you learn? What skills will you develop?</b>	<ol style="list-style-type: none"><li>1. What is meant by food and food commodities?</li><li>2. Differences between food and food commodities.</li><li>3. Classification of food commodities under plant and animal sources.</li><li>4. Reasons for eating food.</li></ol>
<b>Language and vocabulary, you will need to use</b>	Edible substance, food commodities, liquid, maintain life, solid.
<b>Ways to extend your understanding</b>	<ol style="list-style-type: none"><li>1. Read from different sources on food commodities and classification of food.</li><li>2. Find out from the community other food commodities and record in your journal.</li></ol>
<b>Things you will need to remember for future lessons</b>	<ol style="list-style-type: none"><li>1. Food commodities are the food stuffs/ ingredients used for cooking food.</li><li>2. Food commodities are classified under plant and animal sources.</li></ol>





### Worksheet (ix): Complete the worksheet below:

**Activity Instruction:** Identify the food stuffs in your work sheet and classify them under plant and animal sources.



**Learning Resources:** realia of food commodities/charts/pictures of food commodities, manila cards, markers, poster colours.

### Assessment Task:

**Class Exercise: Answer the following questions:**

1. What is the difference between food and food commodities?
2. Give **three** reasons why we eat food.
3. What happens if we do not eat food?

### Homework Task

Using pictures of the various food commodities shown in the above pictures, classify food commodities under their sources (plant and animal), in a chart form.





## STRAND 3: TOOLS, EQUIPMENT AND PROCESSES

### SUB-STRAND 1: MEASURING AND MARKING OUT TOOLS AND EQUIPMENT

<b>Content standard</b>	Demonstrate understanding of identification and classification of measuring and marking out tools and equipment.
<b>What you should know already</b>	How much quantity of water is added to a cup of rice when cooking? The length of a table is measured with a rule.
<b>What will you learn? What skills will you develop?</b>	Measuring and marking out tools and equipment used in production. Relate the tools and equipment to the specific task area. How the tools are used effectively to avoid wasting material. How to ensure that safety measures are adhered to. Why it is necessary to take care of the tools.
<b>Language and vocabulary, you will need to use</b>	Measuring, marking out, weighing scale, dot punch, mortise gauge, surveyor's tape, centre punch.
<b>Ways to extend your understanding</b>	Make further research from tradesmen and women and food vendors/caterers in the community on how they ensure minimal or no waste of material used in production (i.e. accurate measurement).
<b>Things you will need to remember for future lessons</b>	Make accurate measurements of materials to avoid wastage. Good mix ratios are achieved if correct measuring tools and equipment are used effectively.





### Worksheet (x): Complete the worksheet below:

Activity Instruction: Identify any **three** measuring and marking out tools and equipment used in the following:

Place of Work	Names of three (3) measuring and Marking out tools Each
a) Food laboratory (kitchen)	
b) Sewing workshop/laboratory	
c) Building site	
d) Wood workshop	
e) Metal/Plastic workshop	

### Assessment Task:

#### Class Exercise

Answer the following questions by supplying the words to complete the sentences:

1. The method of measuring the quantity of flour for baking cake is known as .....
2. The most suitable tool for taking short measurements on a piece of wood is .....
3. The method of measuring cement and sand for making mortar is known as .....
4. The most suitable tool used for creating a pilot hole in a metal piece before drilling is .....

#### Homework Task

Make a freehand sketch of a tool or kitchen equipment used for taking measurements and label two parts.





**Project work:**

- a. Using the table below, record all the measuring and marking out tools you used last week from Monday to Friday.

Day	Tool Used
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

- b. Classify the tools under measuring and marking out.  
c. Which tool is often used by you?  
d. How do you ensure that the tool is always in good condition?





## SUB-STRAND 2: CUTTING/SHAPING TOOLS AND EQUIPMENT FOR PRODUCTION

Content standard	B7.3.2.1: Demonstrate understanding of cutting/shaping tools and equipment for production
<b>What you should know already</b>	<ul style="list-style-type: none"><li>- Materials are measured, marked out before cutting.</li><li>- The right tool should be used on the right job.</li></ul>
<b>What will you learn? What skills will you develop?</b>	<ul style="list-style-type: none"><li>- Identification of different cutting/ shaping tools</li><li>- Skills used in performing cutting/shaping processes.</li><li>- How to care for and maintain cutting/shaping tools.</li></ul>
<b>Language and vocabulary, you will need to use</b>	Mould, pinking shears, seam ripper, coping saw, spoke shave
<b>Ways to extend your understanding</b>	<ul style="list-style-type: none"><li>- Select a task and list all the cutting/shaping processes you will use for making the tasks.</li><li>- Relate each of the cutting/shaping processes to the appropriate tool used.</li></ul>
<b>Things you will need to remember for future lessons</b>	Make a chart showing names of cutting/shaping tools, their uses and how to care for them.





**Worksheet (xii): Complete the worksheet below:**

**Activity instruction:** Match the correct cutting/shaping tool in Box A with the appropriate area of work in Box B.

BOX A	BOX B
Firmer chisel Paring knife Hand file Coping saw Pinking shears Pair of snips Brick hammer Seam ripper Rip saw Biscuit cutter	Food laboratory Sewing workshop Wood workshop Building site Metal/Plastic workshop

**Assessment task:**

**Class Exercise**

1. Indicate the appropriate tool from the given list of tools that would be used in performing the activities below:

**List of tools:** paring knife, coping saw, tenon saw, square file, seam ripper.

**Activity A:**

1. Enlarging a square hole in a metal piece.....
2. Peeling cucumber to prepare vegetable salad.....
3. Removing the waste from a halving joint for drawer construction.....
4. Opening up a stitch in a baby's dress.....
5. Shaping a curved pattern in a can opener.....







**Activity B:**

State how to care for and maintain each of the tools identified in **A** above using the table below:

Name of Tool	How to Care for and Maintain the Tool

**Homework Task**

Write down one tool each used in carrying out the following operations:

Cutting a sheet metal .....

1. Cutting a piece of fabric .....
2. Cutting bread .....
3. Cutting a piece of wood along the grain .....



## SUB-STRAND 3: JOINING AND ASSEMBLING MATERIALS, TOOLS AND EQUIPMENT

<b>Content standard</b>	<b>B7.3.3.1: Demonstrate understanding of joining and assembling materials, tools and equipment used for production</b>
<b>What you should know already</b>	Component parts of artefacts are put together to complete the project using different methods.
<b>What will you learn? What skills will you develop?</b>	Identification of joining and assembling materials, tools and equipment used for making artefacts/ products. Using appropriate skills for joining and assembling artefacts using materials, tools and equipment. Demonstration of how to care for and maintain joining and assembling tools used for production.
<b>Language and vocabulary, you will need to use</b>	Adhesives, assembling, float, flux, folding bar, joining, mallet, solder and soldering iron/bit.
<b>Ways to extend your understanding</b>	Gather different pieces of materials in the community. Experiment using different materials or methods to join them. Make a record of your findings.
<b>Things you will need to remember for future lessons</b>	Safety measures involved in using adhesives. Selecting a joining method depends on the material and intended purpose of the design.





## Worksheet (xiii): Complete the worksheet below:

### Activity 1:

Identify **two** joining and assembling materials, tools and equipment used on each of the following:

- i. Sewing and crocheting
- ii. Woodwork
- iii. Metalwork
- iv. Plastic
- v. Building

### Activity 2:

In groups, research further on joining and assembling materials, tools and equipment, using ICT tools and other sources, and present in class.

## Assessment Task:

### Class Exercise

1. Write the appropriate joining material used for the following tasks:
  - i. Fixing melamine surface to a chipboard to be used in the kitchen.
  - ii. Gluing mortise and tenon joint on a coffee table.
  - iii. Attaching a plastic name plate to a brass sports trophy.
  - iv. Joining parts of garment to get a dress.
  - v. Decorating the cement-mortar wall of a nursery class.

### Homework Task:

1. Make a visit to tradesmen and women in your community. Engage them in a conversation on how they join/assemble their products.
2. Prepare notes on joining/assembling materials, tools and equipment used in the following areas from your visit:
  - i. Sewing laboratory





- ii. Wood workshop
- iii. Metal workshop
- iv. Building site

3. Present the outcome of your visit in a table/chart in class.

**Learner Resources:** Charts outlining the processes involved in joining/ assembling products in the sewing workshop, metal/plastic workshop, wood workshop, building site.

**Sample Chart:**

Arrange the parts to be joined (ensuring they are clean).

Select the needed tools and materials.

Trial-assemble the parts (to ensure parts are cut to desired sizes).

Apply the required material (e.g. white glue) on the surfaces to be joined.

Put the joining surfaces together.

Clamp work pieces till they set.





## SUB-STRAND 4: KITCHEN ESSENTIALS

<b>Content standard</b>	<b>B7.3.4.1</b> <b>Demonstrate knowledge and understanding of basic concept of Kitchen Essentials</b>
<b>What you should know already</b>	Kitchen equipment and tools used at home
<b>What will you learn? What skills will you develop?</b>	<b>What is meant by kitchen essentials?</b> <b>Skills in the classification of kitchen essentials</b>
<b>Language and vocabulary, you will need to use</b>	Kitchen essentials, mechanical equipment
<b>Ways to extend your understanding</b>	Learners find out from their homes/ communities and other sources examples of kitchen essentials. Learners make a chart on the classification of the kitchen essentials.
<b>Things you will need to remember for future lessons</b>	Learners understand what kitchen essentials are. Learners use kitchen essentials appropriately.





**Worksheet (xiv): Complete the worksheet below:**

**Activity Instruction:**

1. In groups, identify in your worksheet the names and uses of the kitchen essentials.
2. List **five** of these kitchen essentials.



**Learning Resources:** realia of kitchen essentials, pictures of small, large and mechanical equipment.





### **Assessment Task:**

Draw and label **three** kitchen essentials

### **Homework Task**

1. Read more on kitchen essentials, make notes and present in class.
2. Create a photo album on kitchen essentials and exhibit for appraisal.





## SUB-STRAND 5: FINISHES AND FINISHING

Content standard	<b>B7.3.5.1.1: Demonstrate knowledge of finishes and finishing</b>
<b>What you should know already</b>	Learners see painted articles and objects in their schools, homes and communities.
<b>What will you learn? What skills will you develop?</b>	<ol style="list-style-type: none"><li>1. Understand what is meant by finishing and types of finishes.</li><li>2. Develop the skills to apply common finishes to artefacts.</li><li>3. Understand and use finishing processes on the raw edges of articles in sewing</li></ol>
<b>Language and vocabulary, you will need to use</b>	Finishing, finishes, thinner, priming coat, second coat, under coat, spray can/gun, roller turn a lay and edge fix, piping, facing, binding, pinking, tasseling
<b>Ways to extend your understanding</b>	Searching for more information from the internet and other sources and sharing the results with friends Practising the skills in real life situations
<b>Things you will need to remember for future lessons</b>	When applying finishes on artefacts, it must be done in a well-ventilated place, and one must wear protective clothing.







**Work sheet (xv): Complete the worksheet below:**

**Activity 1**

1. State **two** reasons for applying finishes on artefacts.
2. List three materials that can be used in finishing artefacts.
3. State two tools needed for applying finishes on artefacts.

**Activity 2**

Use the under listed materials to complete the table below:

**Materials:** *Thinner; Turpentine; Water*

Type of finish	Type of thinning material to use
Oil paint	
Emulsion paint	
Lacquer	

**Assessment Task:**

**Class Exercise**

Replace the numbers in the spaces with the appropriate words provided below:

**Words:** *types, finishing, seams, process, over casting, garments.*

Edge Finishing is the .....1..... of neatening the raw edges of articles or garment. Necklines, hems or low edges, open .....2....., waist lines of .....3..... and skirts require different .....4..... of finishes.

The edge .....5..... processes include pinking ...6..... edge-stitching, zigzag finish and bond finishing.





## Homework task

**Activity 1:** Your Career Technology Teacher has assigned you in groups to design and make the following projects. Suggest a suitable finish that you can apply on the projects to make them more attractive.

- i. A wooden stand to be used in the washroom.
- ii. A swing in the children's playground.
- iii. A ceramic flower vase for the head teacher's office.
- iv. An acrylic plant holder for the staff common room.
- v. A garden seat at the back of the classroom block.
- vi. A fixed broken wall at one side of the science lab.

**Activity2:** Complete the table by supplying the type of article/garment to be finished

Edge Finish	Edge of article/garment to be finished
Scallops	
Blanket/loop stitch	
Turning a hem	
Edge stitching	





## STRAND 4: TECHNOLOGY

### SUB-STRAND 1: SIMPLE STRUCTURES AND MECHANISMS, ELECTRIC AND ELECTRONIC SYSTEMS




<b>Content standard</b>	<b>B7.1.1.1 Demonstrate understanding of structures in frame construction</b>
<b>What you should know already</b>	Understand that tables, chairs, cars, buildings we use in school and home are all made of structures.
<b>What will you learn? What skills will you develop?</b>	Basic knowledge on simple structures. Classification of structures into natural and man-made as well as frame and shell. Discussion of reasons why structures can fail, causes and effects of structural failures and remedies for structural failures. Planning, sketching and making of mock-ups and artefacts of simple frame and shell structures using compliant materials.
<b>Language and vocabulary, you will need to use</b>	Causes of structural failures, effects of structural failures, natural structure, man-made structure, structural failure, frame structure and shell structure, remedies for structural failure.
<b>Ways to extend your Understanding</b>	Observe different types of structures both in the classroom and outside the classroom environment Study structures in your local environment and write a report to indicate whether they are 'natural or man-made structures'; 'frame or shell structures'. Use basic ICT tools available to search for structures that have failed, stating causes, effects and remedies and discuss in class.
<b>Things you will need to remember for future lessons</b>	Everything on earth, including human beings, is made of structures. Structures can be classified into natural and man-made; frame and shell.





**Worksheet (xvi): Complete the worksheet below:**

**Activity Instructions:** Observe the images/pictures in the table below and answer the questions that follow:


Images/pictures of structures	Indicate by ticking (✓) whether structure is natural or man-made		Indicate by ticking (✓) whether structure is frame or shell	
	Natural	Man-made	Frame	Shell
				
				
				
 				





### Worksheet (xvii): Complete the worksheet below:

**Activity Instruction:** Observe the images/pictures in the table below and answer the questions that follow:

Image/picture 	Briefly describe what you see in the image/picture.	State three (3) causes of the scene in the image/picture.	State three (3) effects of the scene to the human/the environment.	Suggest three (3) solutions to avoid the occurrence of the scene

**Learning Resources:** Sample frame and shell structures, images and pictures of structures and those that had failed.

### Assessment Task

**Class Exercise: Answer the following questions:**

1. Explain what is meant by structures.
2. List **two (2)** examples each of natural and man-made structures.
3. State **three (3)** things that can cause a building to fail/collapse.
4. Suggest **three (3)** effects of the collapse of a building.
5. What advice will you give to your friends in class who want to build a house in future to avoid collapse/failure.

### Homework Task

- Identify some structures in your home and group them into frame and shell structures.
- On your way to school, count the number of structures that have failed and describe the nature of failure.





- Discuss with your parents and siblings, the reasons why some structures fail.
- Discuss with your parents/siblings some causes and effects of structural failures.
- Discuss with your parents/siblings some measures to take to avoid structural failures.

### Project work

1. Move out of the classroom to find out some structures that have failed in your locality.
2. State the causes and effects of the structural failures.
3. Recommend solutions to the structural failures.
4. Make sketches and or take pictures of the structures that have failed.
5. Make a photo album and display in class for appraisal.





## STRAND 5: DESIGNING AND MAKING OF ARTEFACTS PRODUCTS

### SUB-STRAND 1: COMMUNICATING DESIGNS

Content standard	<b>B7.5.1: Demonstrate knowledge and skills of identification of drawing materials, instruments, lines and their applications, and freehand sketching</b>
What you should know already	Learners make drawings/freehand sketches of objects, handle some drawing materials, instruments and equipment.
What will you learn? What skills will you develop?	<p>Identification of drawing materials, instruments and equipment.</p> <p>Names and uses of drawing materials, instruments and equipment.</p> <p>Appropriate care and maintenance of drawing materials, instruments and equipment.</p> <p>Identification and drawing of various types of lines and illustrations of applications of lines.</p> <p>Application of lower- and upper-case letters in drawing.</p> <p>Drawing of title blocks indicating the general information required.</p> <p>Using charts and models to illustrate the techniques of sketching objects in both two-dimensional (2-D) and three-dimensional (3-D).</p>
Language and vocabulary, you will need to use	2-dimensional, 3-dimensional, lower-case letters and upper-case letters, title block
Ways to extend your understanding	<p>Practise how to manipulate the drawing materials, instruments and equipment.</p> <p>Practise how to sketch objects, instruments, tools and equipment in two- and three-dimensional forms.</p>







<p>Things you will need to remember for future lessons</p>	<p>Manipulation of drawing instruments and equipment correctly.          Demonstration of care and maintenance of drawing materials, instruments and equipment.          Difference between 2-dimensional and 3-dimensional objects and skills of sketching them.          Use of lower case and upper case letters and title block in drawing.</p>
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**Worksheet (xviii): Complete the worksheet**


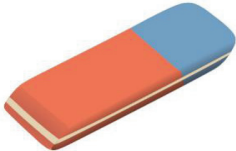

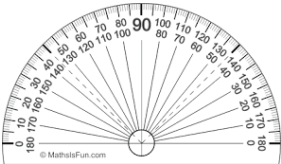

**Activity Instruction (A):** Carefully, observe the images/pictures of the drawing materials, instruments and equipment in the table below and write the name, use and how to care and maintain each equipment.

Picture/image of drawing material/instrument/equipment	State the name of material/instrument/equipment	State one use of material/instrument/equipment	State one way of caring for and maintaining material/instrument/equipment
			
			














**Activity Instruction (B):** Identify the shape of the image/object in the table below and indicate with a tick (✓) whether it 2-D or 3-D

Image/picture of object	Shape of object	Tick if 2-D or 3-D	
		2-D ✓	3-D ✓
			
			
			

**Resources:** Charts, drawing materials, instruments and equipment.

### Assessment Tasks:

#### Homework

1. Prepare a chart to show types of lines and their applications/uses.
2. Prepare a chart to show lower case and upper-case letters.
3. Prepare a title block and indicate the following information on it: Your name, school, class, subject, drawing number, and date.
4. Prepare a chart to show sketches of 2-D and 3-D objects.





## SUB-STRAND 2: DESIGNING

Content standard	B7.5.1: Demonstrate understanding of Designing
What you should know already	Learners are aware of problems in the school and home.
What will you learn? What skills will you develop?	<ol style="list-style-type: none"><li>1. Identification of problems in the environment, writing of problem statement and design brief.</li><li>2. Analysis and investigation of the problem and writing of specifications based on analysis factors.</li><li>3. Generation of ideas/possible solutions with descriptive/annotated notes.</li><li>4. Selection and drawing of final solution in pictorial.</li><li>5. Development of final solution and preparation of working drawings with detailed dimensions.</li><li>6. Preparation of folios and mock-ups with compliant materials.</li><li>7. Planning and following the operational sequence to make the artefact.</li><li>8. Exhibition of folios and artefacts for appraisal/evaluation and making modifications on artefacts.</li></ol>
Language and vocabulary you will need to use	Design brief, analysis factors, working drawings, folios, mock-ups, operational sequence, appraisal, modifications
Ways to extend your understanding	Research further on the following: <ol style="list-style-type: none"><li>1. How to find problems in the environment, analyse and state specifications, using ICT and other sources.</li><li>2. Generating solutions to identified problems.</li><li>3. Follow the design process to solve problems.</li><li>4. Preparing folios and mock-ups.</li><li>5. Reasons for exhibiting and appraising made artefacts.</li></ol>





Things you will need to remember for future lessons

1. Knowledge of the design process in solving problems.
2. Skills of sketching solutions in 3-dimension and developing them.
3. Preparations of folios, mock-ups and artefacts.
4. Development of checklists/tools for appraising made artefacts.
5. Skills required for modifying artefacts.

**Worksheet (xix): Complete the worksheet below:**

**Activity Instructions A:** Briefly explain the following key words and vocabularies in designing and making:

- i. Situation
- ii. Design brief
- iii. Analysis
- iv. Specifications
- v. Possible solutions
- vi. Working drawings

**Activity Instruction B:** Write **three** (3) methods each for carrying out the following activities in designing and making:

- i. Collecting data
- ii. Recording data

**Learning Resources:** Flow charts, illustrations/sketches, realia, ICT tools, mock-ups





## Assessment Tasks:

### Homework



**Activity Instruction:** Carefully, observe/identify what you see in the picture above and discuss them with your parents and siblings. Use the outcome of the discussions to solve the baby's problem following the design process below:

#### The design process:

1. Briefly, describe what you see/identify in the picture indicating the need(s) of the baby.
2. Write a design brief.
3. Analyse the situation with two questions each on function, material and construction.
4. Write two specifications each on ergonomics, appearance and construction.
5. Generate three (3) possible solutions with annotated/descriptive notes and select one.
6. Draw the final solution in isometric.
7. Prepare a folio and mock-up and present in class for appraisal.





## SUB-STRAND 3: PLANNING FOR MAKING ARTEFACTS/ PRODUCTS

<b>Content standard</b>	<b>B7.5.3.1 Demonstrate understanding of planning for making artefacts/products</b>
<b>What you should know already</b>	Learners eat at home. Learners have families of different sexes and ages. Learners have seen sewing tools and equipment. Learners see people sew, crocheting articles and making garments. Learners wear dresses.
<b>What will you learn? What skills will you develop?</b>	Factors for meal planning. Planning a meal for the family. Identification of basic tools and materials for sewing. Work basic stitches for sewing. Identification of basic crocheting stitches. Work the basic crocheting stitches.
<b>Language and vocabulary, you will need to use</b>	Crocheting, chain, double crochet, treble stitches, over sewing, overcasting, blanket stitches, food, meal.
<b>Ways to extend your understanding</b>	Research to find other ways of planning meals for the family. Practices how to stitch using simple stitches. Visit a site online to identify different crocheting stitches and practice. Identify people in your locality who make crocheting and observe the following: i. Materials and colour combination being used; ii. Designs being made; iii. The skills/techniques in making the design.
<b>Things you will need to remember for future lessons</b>	The need to plan healthy meals for the family. Basic tools and materials for sewing and Working of basic stitches for sewing and crocheting.





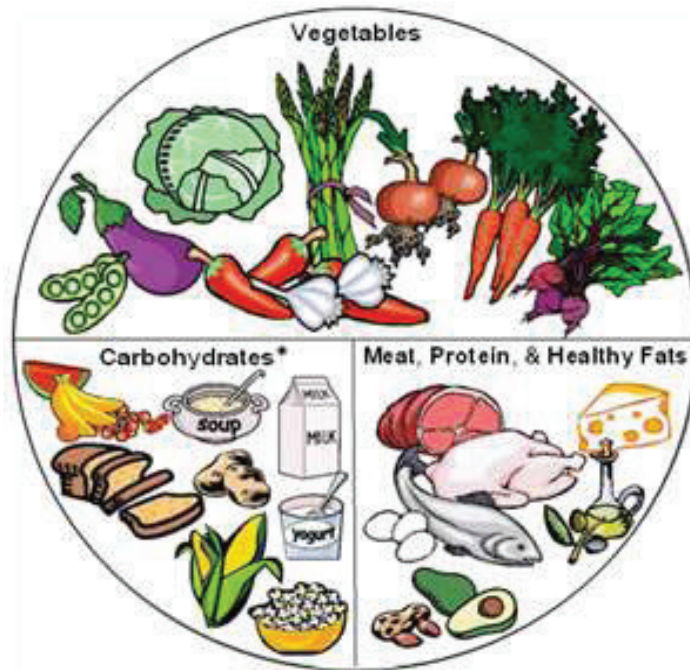
**Worksheet (xx):** Complete the worksheet below:

**Table 1:** Look at the pictures in table below and answer the questions that follow:



A B C

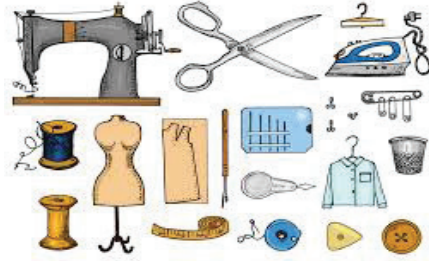
**Table 2:** The picture shows the three foods group. Look at it and answer the questions below:







**Table 3:** Look at the pictures in the table and answer the questions below:



**Table 4:** Look at the pictures in the table and answer the questions below:







### Activity Instructions

1. Look at the pictures in **Table 1** and select the one you prefer.
2. Give **two** reasons for your choice in **Question 1** above.
3. Select foods from the picture in **Table 2** and plan a healthy breakfast for yourself.
4. Identify the tools and materials in **Table 3** and name them.
5. State the uses of the various tools and materials named in **Table 3**.
6. Identify the tools and materials in **Table 4** and name them.
7. State the uses of the various tools and materials named in **Table 4**.

**Learning Resources:** realia, charts, pictures, samplers, ICT tools, internet facility

### Assignment: Class Exercise

1. Plan a meal for breakfast, and supper.
2. List the items required for making crocheting stitch sampler.
3. State the procedure for making a stitch sampler.





## SUB-STRAND 4: MAKING ARTEFACTS FROM COMPLIANT, RESISTANT MATERIALS AND FOOD INGREDIENTS

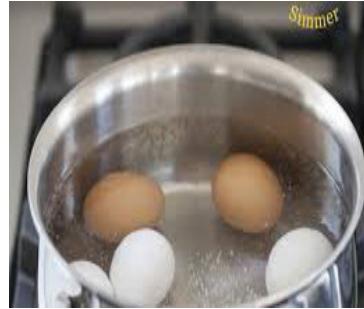
<b>Content standard</b>	<b>Demonstrate skills of making artefacts/products</b>
<b>What you should know already</b>	Learners see their parents and people in their community cook and they also cook themselves. Learners stitch their clothes when torn. Learners have seen seamstresses and tailors in their community sewing and crocheting.
<b>What will you learn? What skills will you develop?</b>	Cooking food using the moist method. Types of boiling and the foods that can be stewed. Principles and guideline for boiling. Types of stitches. Basic crocheting stitches. Skills of making stitches and crocheting.
<b>Language and vocabulary, you will need to use</b>	Soluble nutrients, immersed, specimen.
<b>Ways to extend your understanding</b>	Research using ICT tools and other sources to find more ways of cooking using the moist method. Practise how to cook using the moist method. Research to find other ways of stitching and crocheting. Practise how to make simple stitches and simple crocheting articles.
<b>Things you will need to remember for future lessons</b>	The three types of boiling. Cooked food should be palatable and healthy. Food can be stewed to make it soft and edible. Crocheting stitches can be used to make household articles.



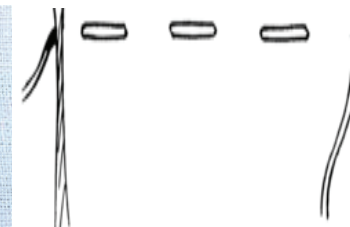
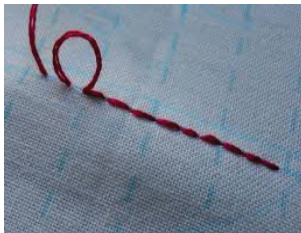
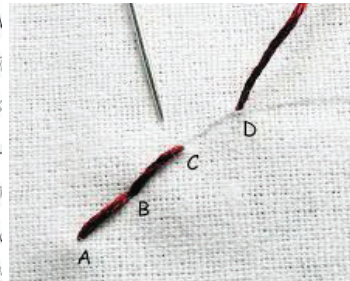
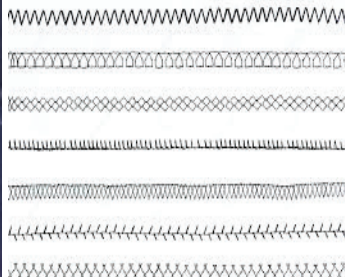


**Worksheet (xxi):** Complete the worksheet below:

**A:** Look at the pictures below.



**B:** Look at the pictures below.





C: Look at pictures below.



### Activity instructions:

1. Answer the following questions on **Picture A**
  - i. State the type of cooking method used in preparing each of the foods.
  - ii. Discuss the various types of boiling methods you see in the picture.
  - iii. How many stews do you see in the picture?
2. Answer the following questions on **Picture B**:
  - i. Identify and name the various stitches you see in picture.
  - ii. Group them according to the classes of stitches.
3. Answer the following questions on **Picture C**:
  - i. Identify the various crocheting stitches in the picture.
  - ii. Discuss which one you prefer to use.

**Learning Resources:** realia, charts, pictures, ICT tools, internet facilities

### Class Exercises





1. State two reasons for cooking food.
2. Identify and classify the different methods of cooking under moist method and dry method.
3. List the ingredients and method of preparing boiled rice.
4. List the ingredients and method of preparing palava sauce.
5. State two advantages and two disadvantages of boiled and stewed foods.
6. State two classes of stitches.
7. Draw two types of stitches based on the classes of stitches.
8. List three household articles made from crocheting.

### Homework

1. Make a picture album of boiled foods and stewed foods and present for appraisal.
2. Draw two dishes that can be boiled and stewed and present for appraisal.
3. Make specimen or samples of basic sewing stitches individually. Present specimens for appraisal.
4. Use internet and ICT tools to research for types of stitches (sewing and crocheting) and present for appraisal.
5. Visit a seamstress or a tailor in your community and interview them on the types of stitches (sewing and crocheting) they use and present in class for appraisal.





## STRAND 6: ENTREPRENEURIAL SKILLS

### SUB-STRAND 1: CAREER PATHWAYS AND CAREER OPPORTUNITIES

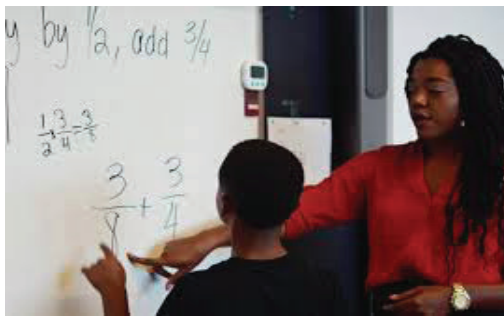
<b>Content standard</b>	<b>B7.6.1.1</b> <b>Demonstrate awareness of own learning styles, interests, biases, beliefs and reasons for pursuing Career Technology</b>
<b>What you should know already</b>	<ol style="list-style-type: none"> <li>1. Learners are aware of their own biases, interests and beliefs.</li> <li>2. Learners have ideas about the vocations in Career Technology and what they want to do.</li> </ol>
<b>What will you learn?</b> <b>What skills will you develop?</b>	<ol style="list-style-type: none"> <li>1. Evaluation of own learning styles, interests and reasons for pursuing career technology.</li> <li>2. Examination of own biases and beliefs as male or female about some vocations in Career Technology</li> <li>3. Decision-making skills.</li> <li>4. Skills in looking for information to make informed decisions.</li> </ol>
<b>Language and vocabulary, you will need to use</b>	Career pathways, career opportunities, learning styles, interest, pursuing a career
<b>Ways to extend your understanding</b>	<ol style="list-style-type: none"> <li>1. Examine own biases and beliefs as male or female about some vocations in career technology.</li> <li>2. Find out how these biases can affect your future?</li> <li>3. Research online and other sources, careers that are pursued by both women and men elsewhere in the world.</li> <li>4. Talk to your parents and opinion leaders or others about the trends in modern day careers.</li> </ol>
<b>Things you will need to remember for future lessons</b>	<ol style="list-style-type: none"> <li>1. Our cultural beliefs and our own biases limit our aspirations and advancement as males or females.</li> <li>2. We need to deal with biases and misconceptions about cultural beliefs.</li> <li>3. Consider your interests and strengths in choosing a career.</li> </ol>







**Worksheet (xxii):** Complete the worksheet below:



**Activity Instruction:** Discuss the different jobs/vocations and professions in the above work sheet (xxii), in groups and answer the questions that follow:





1. What do you think about the jobs/vocations and professions?
2. Which ones are you interested in?
3. Do you have the necessary knowledge/skills and aptitude for the job?

**Learning Resources:** Pictures of jobs, professionals and artisans, Internet facility.

### **Assessment Task:**

#### **Class Exercise**

1. Explain why we need to consider our interests before choosing a career.
2. What are the beliefs, biases and stereotypes about careers engaged in by females and males in your community?
3. How do these beliefs, biases and stereotypes limit our inspirations and our future careers?

#### **Homework Task**

1. Find out from the community the various beliefs/biases and stereotypes about careers that men and women should have. Report in class for further discussion.
2. Suggest how these stereotypes and biases can be changed.







## SUB-STRAND 2: ESTABLISHING AND MANAGING A SMALL BUSINESS ENTERPRISE

Content Standard	B7.6.2.1 Demonstrate Understanding of Establishing and Managing a Small Business Enterprise
<b>What you should know already</b>	<ol style="list-style-type: none"><li>1. Learners see enterprises and entrepreneurs around them.</li><li>2. Learners have some ideas about enterprises and entrepreneurs.</li></ol>
<b>What will you learn? What skills will you develop?</b>	<ol style="list-style-type: none"><li>1. Understand the terms 'entrepreneurship' and 'entrepreneur'.</li><li>2. Understand the characteristics of a successful entrepreneur.</li><li>3. Be able to describe the various forms of business, e.g. sole proprietorship, limited liability, partnership and cooperatives.</li><li>4. Develop decision making skills.</li></ol>
<b>Language and vocabulary, you will need to use</b>	Entrepreneurship, entrepreneur, sole owner business, limited liability, partnership, cooperatives, entrepreneurial opportunity,
<b>Ways to extend your understanding</b>	<ol style="list-style-type: none"><li>1. Investigate the operations of enterprises and businesses by talking to entrepreneurs and business men and women in your locality. Find out:<ol style="list-style-type: none"><li>i. their successes and business challenges</li><li>ii. the skills needed to operate small enterprises</li></ol></li><li>2. Think about how you will prepare for your future career as an entrepreneur.</li></ol>
<b>Things you will need to remember for future lessons</b>	The characteristics of a successful entrepreneur How to establish a small business.





**Worksheet (xxiii): Examples of Businesses (Different Trade Areas)**



*Shoe making*



*Hairdressing*



*Car-servicing*



*Welding*



*Wood-working*

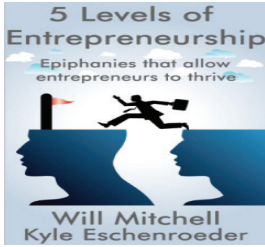


*Baking*





**Worksheet (xxiv):** The pictures below show examples of characteristics that lead to successful entrepreneurship:



*Risk taking*



*Opportunity seeking*



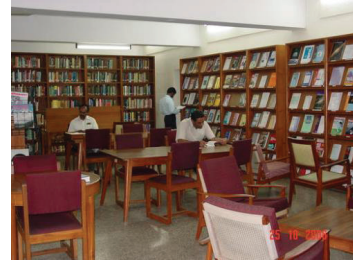
*Perseverance and persistence*



*Commitment to Work*



*Goal Setting*



*Information seeking*



*Planning*



*Networking*



*Self confidence*





**Activity Instructions:** Answer the questions that follow. You may refer to the pictures above for better understanding:

### Assessment Task:

#### Class Exercise

1. Look at the pictures of various entrepreneurs provided in worksheet (xxiii) and discuss what entrepreneurship means, in groups.
2. Discuss the forms of businesses (sole proprietorship, limited liability, partnership, and cooperatives), in groups.
3. Discuss the different trades such as welding, hairdressing, car washing, catering, masonry, carpentry, tiling, wood-working, mechanical engineering, in groups.

#### Home work

1. Explain the characteristics of an entrepreneur. You may use the pictures on worksheet (xxiv) to facilitate your understanding.
2. Using illustrations, ICT tools, and any other skills, discuss the characteristics that lead to successful entrepreneurship.
3. Discuss the advantages and disadvantages of being an entrepreneur, in groups.
4. Look at a picture of a Career Technology entrepreneur, and explain what is meant by Career Technology Entrepreneurship. You may observe the pictures on worksheet (xxiii) to facilitate your understanding.
5. Give examples of different trade areas.

#### Project work

1. Explore your locality, observe, and interact with entrepreneurs.  
**Note:** Take into consideration your safety and welfare.
2. Research for entrepreneurial opportunities in your locality.
3. Write down the names of some popular enterprises in your locality.





### Learning Resources:

Flip charts, brochures, job sheets, handouts, posters, diagrams, graphs, overhead projectors (OHP), radio cassette recorders, flash drive (memory stick), television, videos, pictures, real objects, drawing book, map.







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