

DESIGN & TECHNOLOGY SYLLABUS

GRADE 11

PILOT



MINISTRY OF EDUCATION
AND TRAINING LESOTHO



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GRADE 11 SYLLABUS

DESIGN AND TECHNOLOGY

1. Introduction

Design and Technology syllabus focus on problem-solving design activities which culminate in using practical skills to create models and artefacts. Learners gain knowledge of, and practical experience in using, a range of materials which includes plastics, wood and metal and appropriate modern technologies. Learners will gain technical and design awareness also develop skills such as communication, initiative, resourcefulness, enquiry and ingenuity. Learners need to be creative in their current and future lives. We need learners who are action oriented and perseverant, promoting control and autonomy alongside originality and creativity.

This subject fosters understanding and application of creative concepts, principles, skills, attitudes and values in addressing everyday needs by promoting:

- individual expression, personal and aesthetic development through the practice and appreciation of the creative arts;
- understanding of the physical, socio-economic and technological environment as a prerequisite for learning and living;
- acquisition and application of creative skills in solving everyday life challenges;
- appropriate attitudes and values for a successful, creative culture.

The subject encourage learners to be:

- **confident** in working with information and ideas – their own and those of others
- **responsible** for themselves, responsive to and respectful of others
- **reflective** as learners, developing their ability to learn
- **innovative** and equipped for new and future challenges
- **engaged** intellectually and socially, ready to make a difference.

In Grade 11, the subject builds on and consolidates knowledge and skills acquired in the previous grades whilst introducing some new concepts and content appropriate to the age of learners. The syllabus has a particular focus on the development of creative thinking skills. Teachers are encouraged to use practical and learner-centred methods such as drawing and painting, design and other mini-projects. All of which practical and artistic skills can be displayed or exhibited for immediate or later fulfillment as reward.

Layout and presentation of the syllabus and definitions of terminology used

The syllabus is presented in **themes**, each one divided into a number of **learning outcomes** (the terms “learning objectives” or “learning intentions” are often used in other contexts; **learning outcome** has been retained here since teachers are familiar with this usage from the previous syllabus).

Learning outcome: a statement in measurable terms of what a learner should know, understand or be able to do by the end of a given segment of the syllabus.

For each targeted **learning outcome**, details are given of:

- the key **concepts, skills, values and attitudes** which underpin its successful attainment.
 - **Concept:** a general idea which emerges from a specific situation; once understood it can be applied to different contexts to promote understanding. For example, the concept of the family emerges from awareness of the familiar unit in which people live; it can be applied to groups of animals, plants or words which naturally belong together.
 - **Skills:** abilities which every learner is expected to acquire to help them learn and live well in society; they can be mental, physical or social.
 - **Values:** qualities which are considered to be important, worth preserving and transmitting to the younger generation. For example, Basotho consider honesty and respect to be essential values.
 - **Attitudes:** positions or opinions, what is appreciated or disliked by an individual or a group.
- a list of **suggested learning experiences:** teaching and learning activities designed to enable learners to achieve a given learning outcome. This is not exhaustive and the teacher is free to use other complementary activities.
- **What to assess:** in this column, the **learning outcome** is broken down into several specific, measurable and observable points against which the teacher can check the learners’ progress. These focus on the process and characteristics of learning rather than the final outcome.

a list of **suggested resources:** a list of possible items, materials, persons and others which may be used to help achieve a given learning outcome. This is designed to help all teachers, even though many or few resources may be available in their schools and communities

2. SYLLABUS AIMS

Design and Technology syllabus aims to:

- promote problem-solving design activity
- develop appropriate technical skills to enable the realisation of solutions to design problems
- develop knowledge of a range of materials and the appropriate manipulative skills
- develop an understanding of some aspects of technological activity
- develop appropriate graphical skills to enable full engagement in design activity
- develop awareness of possible hazards associated with practical workshop activities and to encourage habits of safe working.

2.1 OBJECTIVES

01 Investigate, research, identify and define design problems

- Identify clearly, from a problem situation, a specific need for which a solution is required.
- Define and analyse a problem by considering any relevant functional, aesthetic, human, economic and environmental factors.
- Investigate, research, collect and record relevant information.

02 Apply knowledge to new situations

- Demonstrate the ability to apply previously learned knowledge to solve problems or provide solutions.
- Exercise judgement relating to appropriate functional, technological and aesthetic factors.

03 Explore and develop ideas

- Develop ideas towards a final solution.

04 Formulate production plans and manufacture artefacts

- Plan and organise the work procedures and processes involved in the realisation of a solution.
- Realise a solution in appropriate material(s), using suitable techniques.
- Demonstrate knowledge of materials, by showing an understanding of their characteristics in relation to using appropriate techniques and processes.

05 Understand technological and cultural responsibilities

- Demonstrate a knowledge and awareness of the technological and cultural environment.

06 Evaluate performance

- Evaluate design ideas, test and evaluate design solutions.

07 Effectively communicate

- Demonstrate ability to use various media and techniques to communicate information.

3 RELATIONSHIP BETWEEN OBJECTIVES AND COMPONENTS

The approximate weightings allocated to each of the objectives are summarised below.

Objectives	Paper 1	Paper 2	Weighting for qualification
A01 Investigate, research, identify and define design problems	5%	5%	10 %
A02 Apply knowledge to new situations	22.5%	5%	27.5 %
A03 Explore and develop ideas	2.5%	5%	7.5 %
A04 Formulate production plans and manufacture artefacts	10%	20%	30 %

A05 Understand technological and cultural responsibilities	2.5%	5%	7.5 %
A06 Evaluate performance	2.5%	5%	7.5 %
A07 Effectively communicate	5%	5%	10 %
Total	50%	50%	100 %

4.1 PART 1 TECHNOLOGY

Assessment Guide

The examination is taken at the end of grade 11

Paper 1

2 ½ hours, 100 marks

The paper is a formal, timed examination in which Learners will be required to show their knowledge and understanding of materials, processes and tools associated with the use of metal, plastic and wood in the production of artefacts made to satisfy needs. They will be expected to call upon experience of working these materials (see core content) and to demonstrate that their knowledge of at least one of the identified materials has been extended beyond that of the core experience.

Learners are expected to study all types of materials including metal, plastic and wood – local materials being part of materials studied. They should also have a good working experience of metal, plastic and wood, and some knowledge of the local material is expected.

Learners will be expected to give evidence of regard for the environment and sustainability in their answers.

Part a (28% of Paper 1 marks)

Ten questions requiring short answers, based on a wide knowledge of materials, processes, tools, equipment terminology, graphic representation and interpretation.

Part b (72% of Paper 1 marks)

Section 1 Tools and materials

Section 2 Processes

4.2 PART 2 DESIGN PROJECT

The Design Project is completed by the learners in response to a project theme

The project will consist of two parts:

Part A The design folio

Part B The design artefact

The paper represents 50% of the marks available for the overall syllabus and is assessed out of a maximum of 100 marks.

Part A The design folio

The learners are expected to explore a theme set, in order to identify a design problem area which is then further analysed to identify a specific design brief. The design brief is developed and clarified by the learner to a point where the learner can manufacture an artefact. The record of the road map is kept in a folio.

The folio shows progression from the initial analysis of the theme through to a detailed design brief and specification. Once the problem brief has been clarified, the learner generates a range of ideas which are then evaluated by the learner to allow the development of a final proposed solution; details of materials, sizes and construction methods need to be included at this stage. This work then leads the learner to develop a detailed production plan (which could be presented in the form of a flow diagram) which is further elaborated by sketches to clarify some of the critical stages.

The folio should finally include a section on evaluation and testing which follows the completion of the artefact. The learner should identify a method which can be used to test the artefact and so allow the performance to be checked against the original specification which was set out at the design brief stage of the folio. Conclusions leading to proposals for further development are also expected.

The learner should use appropriate graphical methods throughout the folio, including shading and colour where appropriate. Sequential, exploded or enlarged sketches may help to clarify detail. Notes should generally be succinct and used where details are not clear from graphical representation.

To aid effective communication and to ensure the folio can provide comprehensive evidence for the assessment objectives, it is important that learners are advised to set out their folio in a clear and logical format.

Part B The design artefact

The learner is expected to complete the developed design solution (artefact) to demonstrate refined workmanship, sensitive use of materials and appropriate construction methods.

Learners need not restrict their design solutions to the three main materials identified in the syllabus (metal, plastic and wood). The syllabus encourages a wide knowledge of developing technologies which may, for example, include simple control systems, electronic circuits, pneumatics, and the general application of mechanical principles.

GRADE 11 DESIGN AND TECHNOLOGY SYLLABUS

OVERVIEW

Learning Outcomes at the end of Grade 11, Learners should be able to:

1.DRAWING

- 1.1 sketch design ideas and artifacts in freehand
- 1.2 apply pictorial drawings and others in designs

2. DESIGN

- 2.1 apply design process and content
- 2.2 discuss designs in society
- 2.3 apply supporting technologies in designs
- 2.4 use local material in designs

3. MATERIALS

- 3.1 discuss preservation of timber
- 3.2 discuss finishing on wood, metal and plastic

4.TOOLS

- 4.1 care for maintain and make simple tools

5.PRACTICAL PROCESSES and SAFETY

- 5.1 apply practical processes
- 5.2 observe safety codes and practices

ACTIVITY PLAN

Learning outcomes: at the end of Grade 11, learners should be able to:	Concepts, skills, values and attitudes	Suggested learning experiences	What to assess: The teacher should assess learners' ability to:	Suggested Resources
1.DRAWING				
1.1 Sketch design ideas and artifacts in freehand.	<p>Concepts</p> <p>Freehand sketching of artifacts design ideas using exploded views on:</p> <ul style="list-style-type: none"> -isometric -oblique <p>rendering techniques:</p> <ul style="list-style-type: none"> Shadowing Toning Texturing <p>Skills: Manipulation Effective Communication Creativity Tidiness Design Workmanship Imagination Analysis</p> <p>Values and attitudes: Confidence Honesty Awareness</p>	<p>Teacher:</p> <ul style="list-style-type: none"> • demonstrates freehand sketching of artifacts and design ideas by exploded views • demonstrates rendering techniques on plain paper on artifacts • demonstrates freehand sketching of exploded views <p>Learner:</p> <ul style="list-style-type: none"> • Sketch exploded view of objects in isometric and oblique • sketch artifacts on plain paper in oblique • sketch artifacts on plain paper in isometric • apply shadow on sketches on plain paper • apply tone on the sketches on plain paper • apply texture on the sketches on plain paper 	<p>sketch artifacts in oblique on plain paper</p> <p>sketch artifacts in isometric on plain paper</p> <p>Sketch artifacts in two point perspective on plain paper</p> <p>apply shadow on sketches on plain paper</p> <p>apply tone on the sketches on plain paper</p> <p>apply texture on the sketches on plain paper</p> <p>sketch exploded view of objects in isometric and oblique</p>	<p>soft pencils</p> <p>pencil sharpener</p> <p>rubber</p> <p>plain sheets</p> <p>coloured pencil</p>

Learning outcomes: at the end of Grade 11, learners should be able to:	Concepts, skills, values and Attitudes	Suggested learning experiences	What to assess: teacher should assess learners' ability to:	Suggested Resources
1.2 apply pictorial drawings and others in designs	<p>Concepts</p> <p>Pictorial drawings: Isometric Oblique Perspectives</p> <p>Others: Exploded views Sectioning</p> <p>Skills: Observation Creativity Interpretation Analysis Tidiness Workmanship Critical Thinking Decision Making Artistry Effective Communication</p> <p>Values and Attitudes Awareness Confidence Patience</p>	<ul style="list-style-type: none"> • Teacher and learners revise pictorial drawings and others • Teacher and learners discuss situations where each drawing communicate effectively • Teacher demonstrate different types of drawings usage at different situations • Learners use each drawing to communicate their designs • Learners explore pictorial drawings and other to communicate their designs effectively • Learners draw designs in a specific better communicating drawing 	<p>use each drawing to communicate their designs</p> <p>explore pictorial drawings and others to communicate their designs effectively</p> <p>draw designs in a specific better communicating drawing</p>	<p>Models</p> <p>Charts</p> <p>Designs</p> <p>Magazines</p> <p>Technical drawing books</p>

2. DESIGN				
Learning outcomes: at the end of Grade 11, learners should be able to:	Concepts, skills, values and Attitudes	Suggested learning experiences	What to assess: teacher should assess learners' ability to:	Suggested Resources
apply design process and content.	<p>Concepts</p> <p>Design process</p> <ul style="list-style-type: none"> - theme - general analysis - development - realisation - effectiveness <p>Design content</p> <ul style="list-style-type: none"> - aesthetics - anthropometrics and ergonomics - data collection/ information reference sources research and observation natural forms and man-made environment materials processes on the shape of man-made artefacts - awareness understand 	<ul style="list-style-type: none"> • Teacher and learners revise design process • Teacher discusses and demonstrates appropriate use of line, shape, form, proportion, space, colour and texture • Teacher discusses ergonomics and the incorporation of anthropometric data in design, where appropriate • Teacher discusses methods of data collection • Teacher and learners discuss design evolution and the influence of the evolution • Teacher and learners discuss importance of sequential sketches and diagrams to communicate their designs effectively 	<p>design artifacts following design process</p> <p>demonstrates appropriate use of line, shape, form, proportion, space, colour and texture in designs</p> <p>demonstrates ergonomics and the incorporation of anthropometric data in designs</p> <p>collect data to generate and modify designs</p> <p>design the artifacts incorporating previous designers ideas</p>	<p>Theme</p> <p>Internet</p> <p>Research: People</p> <p>Magazines</p> <p>Newspapers</p> <p>Local places</p> <p>Workshop and equipment</p> <p>Materials</p>

	<p>shapes in designs observe patterns in designs appreciate design evolution understand influence on design evolution understand designers response to evolution sequential sketches and flow diagrams</p> <p>Skills Creativity Analysis Tidiness Workmanship Critical Thinking Decision Making Interpretation Artistry Effective Communication</p> <p>Values and Attitudes Awareness Competence Patience</p>	<ul style="list-style-type: none"> • Learners design artifacts following design process • Learners demonstrates appropriate use of line, shape, form, proportion, space, colour and texture in designs • Learners demonstrates ergonomics and the incorporation of anthropometric data in designs • Learners collect data to generate and modify designs • Learners design the artifacts incorporating previous designers ideas • Learners use sequential sketches and diagrams to communicate their designs effectively 	<p>use sequential sketches and diagrams to communicate their designs effectively</p>	
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Learning outcomes: at the end of Grade 11, learners should be able to:	Concepts, skills, values and Attitudes	Suggested learning experiences	What to assess: teacher should assess learners' ability to:	Suggested Resources
discuss designs in society	<p>Concepts</p> <p>Designs and Technologies in</p> <ul style="list-style-type: none"> - transport - infrastructure - health - communication - environment - banking - Economy - e-learning - Agriculture <p>Skills</p> <p>Observation Analysis Critical Thinking Decision Making Interpretation Effective Communication</p> <p>Values and Attitudes</p> <p>Awareness Honesty Confidence Patience</p>	<ul style="list-style-type: none"> • Teacher discuss the rationale for designs • Teacher and learners revise design evolution • Teacher and learners discuss local designs with trade marks • Teacher and learners discuss local designs and technologies in Lesotho • Learners design artifacts which incorporate local designs and technologies • Learners sketch ideas to modify local designs and technologies • Learners make models to improve local designs and technologies 	<p>design artifacts which incorporates local designs and technologies</p> <p>sketch ideas to modify local designs and technologies</p> <p>make models to improve local</p>	<p>Field Trip</p> <p>Local places</p> <p>Internet</p> <p>Research: People</p> <p>Magazines</p> <p>Newspapers</p> <p>Workshop and equipment</p> <p>Materials</p>

Learning outcomes: at the end of Grade 11, learners should be able to:	Concepts, skills, values and Attitudes	Suggested learning experiences	What to assess: teacher should assess learners' ability to:	Suggested Resources
<p>apply supporting technologies in designs.</p>	<p>Concepts Supporting technologies: pneumatics mechanisms hydraulics electronics micro-computing</p> <p>Skills Creativity Analysis Tidiness Workmanship Critical Thinking Decision Making Interpretation Artistry Effective Communication</p> <p>Values and Attitudes Awareness Honesty Confidence Patience</p>	<ul style="list-style-type: none"> • Teacher and learners discuss the supporting technologies • Teacher and learners discuss application of supporting technologies • Teacher and learners explore and identify supporting technologies in day to day use • Learners use supporting technologies in models • Learners use supporting technologies in designs 	<p>use supporting technologies in models</p> <p>use supporting technologies in designs</p>	<p>Field Trip</p> <p>Local places</p> <p>Internet</p> <p>Research: People</p> <p>Workshop equipment</p>

Learning outcomes: at the end of Grade 11, learners should be able to:	Concepts, skills, values and Attitudes	Suggested learning experiences	What to assess: teacher should assess learners' ability to:	Suggested Resources
use local material in designs.	<p>Concepts Local materials in their vicinity</p> <p>Skills Creativity Analysis Tidiness Workmanship Critical Thinking Decision Making Interpretation Artistry Effective Communication</p> <p>Values and Attitudes Awareness Honesty Confidence Patience</p>	<ul style="list-style-type: none"> • Teacher and learners discuss the properties of stones, clay, grass, leather and cloth • Teacher and learners discuss how local materials make designs • Teacher and learners discuss uses of local materials • Learners use local materials for models • Learners use local material in designs 	<p>use local materials for models</p> <p>use local material in designs</p>	<p>Stones</p> <p>Clay</p> <p>Grass</p> <p>Leather</p> <p>Cloth</p> <p>Field Trip</p> <p>Local places</p> <p>Internet</p> <p>Research: People</p>

3. MATERIALS				
Learning outcomes: at the end of Grade 11, learners should be able to:	Concepts, skills, values and Attitudes	Suggested learning experiences	What to assess: teacher should assess learners' ability to:	Suggested Resources
3.1 discuss preservation of timber.	<p>Concepts</p> <p>Preservatives -types of preservatives water-borne preservatives oil-borne preservatives light organic solvent preservatives -properties of preservatives toxic to fungi, pests, marine organisms non harmful non corrosive cheap</p> <p>Skills:</p> <p>Manipulation Effective Communication Creativity Tidiness Design Workmanship Imagination Analysis</p> <p>Values and attitudes:</p> <p>Patience Confidence Awareness</p>	<p>Teacher:</p> <ul style="list-style-type: none"> discusses the rationale for using preservatives defines and discusses types of uses preservatives of timber discusses properties of preservatives <p>Learners:</p> <ul style="list-style-type: none"> explain rationale for preservation of timber define preservatives discuss types of preservatives and their respective uses discuss properties of preservatives 	<p>explain rationale for preservation of timber</p> <p>define preservatives</p> <p>discuss types of preservatives and their respective uses</p> <p>discuss properties of preservatives</p>	<p>Samples of preservatives</p> <p>Text-books</p> <p>Chart</p> <p>Internet</p>

Learning outcomes: at the end of Grade 11, learners should be able to:	Concepts, skills, values and Attitudes	Suggested learning experiences	What to assess: teacher should assess learners' ability to:	Suggested Resources
2.1 discuss finishing on wood, metal and plastic.	<p>Concept Rationale for finishing: Withstand; corrosion heat liquids stains improve appearance</p> <p>Finishing on: Wood -finishing process planning sanding brushing/spraying -finishing tools smoothing plane scrapers abrasive papers wire wool brushes rollers spray gun</p> <p>-types of finishes which penetrates the wood which does not penetrate</p>	<p>Teacher:</p> <ul style="list-style-type: none"> • rationale for finishing on resistant materials • discusses and explains finishing process, tools and types in wood • discusses and explains finishing process, tools and types in metal • discusses and explains finishing process, tools and types in plastic <p>Learners:</p> <ul style="list-style-type: none"> • explain rationale for finishing • define finishing on wood, metal and plastic • outline and explain finishing tools and their uses • discuss process of finishing in metal 	<p>explain rationale for finishing</p> <p>define finishing on wood, metal and plastic</p> <p>outline and explain finishing tools and their uses</p> <p>discuss process of finishing in metal</p> <p>outlines tools used in metal finishing</p> <p>explain the stages in metal finishing</p> <p>explain the processes of fluidisation, anodizing and electroplating in reference to two major finishing processes</p> <p>discuss finishing processes in plastics</p>	<p>Samples of preservatives</p> <p>Samples of finishes</p> <p>Text-books</p> <p>Chart</p> <p>Internet</p>

	<p>the wood</p> <p>Metal</p> <ul style="list-style-type: none"> -finishing process <ul style="list-style-type: none"> finish with heat finish without heat -finishing tools <ul style="list-style-type: none"> emery cloth files -types of finishes <ul style="list-style-type: none"> metal plating brushed metal buff polishing sand blasting powder coating hot blackening <p>Plastic</p> <ul style="list-style-type: none"> -finishing processes <ul style="list-style-type: none"> filling painting polishing coating fluidisation electroplating -finishing tools <ul style="list-style-type: none"> emery cloth files buffing cloth - types of plastic finishes <ul style="list-style-type: none"> paints stains 	<ul style="list-style-type: none"> • outlines tools used in metal finishing • explain the stages in metal finishing • explain the processes of fluidisation, anodizing and electroplating in reference to two major finishing processes • discuss finishing processes in plastics • outlines tools used in plastic finishing • explain the stages in plastic finishing • explain the processes of powder coating and galvanizing in reference to two major finishing 	<p>outlines tools used in plastic finishing</p> <p>explain the stages in plastic finishing</p> <p>explain the processes of powder coating and galvanizing in reference to two major finishing</p>	
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	<p>dip coating powder coating plating galvanizing enameling polishing</p> <p>Skills Manipulation Effective Communication Creativity Tidiness Design Workmanship Imagination Analysis</p> <p>Values and attitudes Patience Confidence Awareness</p>			
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4.TOOLS				
Learning outcomes: at the end of Grade 11, learners should be able to:	Concepts, skills, values and Attitudes	Suggested learning experiences	What to assess: teacher should assess learners' ability to:	Suggested Resources
4.1 care for maintain and make simple tools	<p>Concepts Care for tools: -preventive measures -corrective measures Maintenance of tools - exchange and replace worn out parts</p> <p>Skills Decision-making Problem-solving Observation Tidiness Workmanship</p> <p>Values and Attitudes Tidiness Competence Awareness</p>	<ul style="list-style-type: none"> • Teacher and learners discuss preventive way to care for tools before the harm • Teacher and learners discuss corrective ways after the tools have been damaged • Teacher and learners discuss the safety and risk on caring and maintaining tools • Teacher and learners demonstrate exchange and replacement of worn out parts in tools • Teacher and learners make simple tools to help in practical processes • Learners replace and exchange parts on worn out tools • Learners make simple tools to help in practical processes • Learners practice preventive and corrective ways to care and maintain tools. 	<p>replace and exchange parts on worn out tools</p> <p>make simple tools to help in practical processes</p> <p>practice preventive and corrective ways to care and maintain tools.</p>	<p>Tools</p> <p>Worn out tools</p> <p>Magazines</p> <p>Storages</p> <p>Oil/grease</p> <p>Textbooks</p> <p>Internet</p> <p>Grinding stone</p> <p>Sharping stone</p>

5. PRACTICAL PROCESSES and SAFETY

Learning outcomes: at the end of Grade 11, learners should be able to:	Concepts, skills, values and Attitudes	Suggested learning experiences	What to assess: teacher should assess learners' ability to:	Suggested Resources
5.1 apply practical processes.	<p>Concept</p> <p>-shaping: deforming and reforming</p> <p>Wood grain raising vacuum forming</p> <p>Metal -cold forming of metals simple bends bending sheet metal spinning pressing</p> <p>-beaten metal work hollowing sinking raising planishing</p> <p>-folding and seaming press forming of sheet metals casting sand casting die casting</p> <p>Plastic -moulding</p>	<p>Teacher:</p> <ul style="list-style-type: none"> discusses and demonstrates: Shaping: deforming and reforming: <p>wood plastic metal</p> <p>Wastage and addition</p> <p>wood plastic metal</p> <p>Learners: demonstrate safe and proper use of tools in practical processes when: -shaping: deforming and reforming;</p> <p>Wood Metal Plastic</p>	<p>demonstrate safe and proper use of tools in practical processes when:</p> <p>shaping:</p> <p>deforming and reforming:</p> <p>wood, metal and plastic</p> <p>Wastage and addition</p> <p>metal wood plastic</p> <p>special treatment</p>	<p>holding tools</p> <p>cutting tools</p> <p>driving tools</p> <p>shaping tools</p> <p>deforming and reforming tools</p> <p>welding equipment</p>

	<p> injection blow moulding vacuum forming compression moulding extrusion sculpturing -Wastage and addition Metal -turning .surfacing or facing off .sliding or parallel turning .taper turning .drilling .boring .knurling -welding .oxy-acetylene .silver soldering .brazing .spot welding Wood -sculpturing Plastics -gluing .pvc weld .cements -special treatment Skills: </p>	<p> -Wastage and addition Wood Metal Plastic Special treatment </p>		<p> special treating equipment finishes material videos </p>
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	<p>decision -making responsibility self-esteem analysis coordination workmanship</p> <p>Values and attitudes:</p> <p>tidiness competence commitment patience confidence experimentation</p>			
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Learning outcomes: at the end of Grade 10, learners should be able to:	Concepts, skills, values and Attitudes	Suggested learning experiences	What to assess: teacher should assess learners' ability to:	Suggested Resources
5.2 observe safety codes and practices also disposal of wastes.	<p>Concept</p> <p>Safety -Safety codes -safety hazards -Safe practices Sustainability and disposal of Wood Metal Plastic Local materials Workshop equipment</p> <p>Skills</p> <p>Awareness Analysis Observation Tidiness Critical thinking Cooperation</p> <p>Values and attitudes Responsibility Confidence Respect Honesty Tolerance</p>	<p>Teacher</p> <ul style="list-style-type: none"> discusses safety codes on conduct, clothing, handling and machine use discusses the safety hazards on breathing, skin, eyes and ears demonstrates and discusses safe practices, application of safety codes and safety signs and symbols Teacher and learners discuss sustainable ways of using handling and disposing materials and equipment Teacher and learners discuss hazards around their environment due to workshop equipment 	<p>discuss safety codes</p> <p>identify safety hazards and suggest preventive measures</p> <p>apply safe working practices</p> <p>identify safety signs and symbols</p> <p>draw safety signs and symbols</p> <p>dispose workshop equipment in safe places</p> <p>use measures to combat unsustainable and unsafe use of materials and equipment</p>	<p>Tools</p> <p>Safety gear</p> <p>Machinery</p> <p>Charts</p> <p>Audio visual</p>

		Learners <ul style="list-style-type: none">• discuss safety codes• identify safety hazards and suggest preventive measures• apply safe working practices• identify safety signs and symbols• draw safety signs and symbols• dispose workshop equipment in safe places• use measures to combat unsustainable and unsafe use of materials and equipment		
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