Republic of the Philippines
DEPARTMENT OF EDCUATION

K to 12 BASIC EDUCATION CURRICULUM

TECHNOLOGY AND LIVELIHOOD EDUCATION

TEACHER'S GUIDE

Exploratory Course on

CARPENTRY

INDUSTRIAL ARTS – CARPENTRY
(Exploratory)

TABLE OF CONTENTS

INDUSTRIAL ARTS – CARPENTRY
(Exploratory)

Teacher's Guide for TLE Exploratory Course on CARPENTRY

Introduction

This Teacher's Guide is intended for you, the TLE teacher, who teaches any of the more than 24 TLE exploratory courses in the Grades 7 and 8 of the K to 12 curriculum. To ensure that you teach the TLE exploratory courses the way they were intended to be taught, you must see the big picture of the K to 12 curriculum and the teaching of TLE. Some background information is necessary.

Background Information

1. The Overall Goal of the K to 12 Curriculum

The K to 12 Curriculum has as its overarching goal *the holistic development of every Filipino learner with 21st century skills who is adequately prepared for work, entrepreneurship, middle level skills development and higher education.* The over arching goal of the K to 12 curriculum, tells you that the teaching of TLE plays a very important role in the realization of the overall goal of the curriculum. Whether or not the K to 12 graduate is skilled and ready for work, entrepreneurship and middle skills development depend to a great extent on how effectively you taught TLE.

2. The Conceptual Framework of the Teaching of TLE

Below is a schematic diagram of Technology and Livelihood Education (TLE) framework in general secondary schools. This should guide you in the teaching of the TLE exploratory courses.

INDUSTRIAL ARTS – CARPENTRY
(Exploratory)

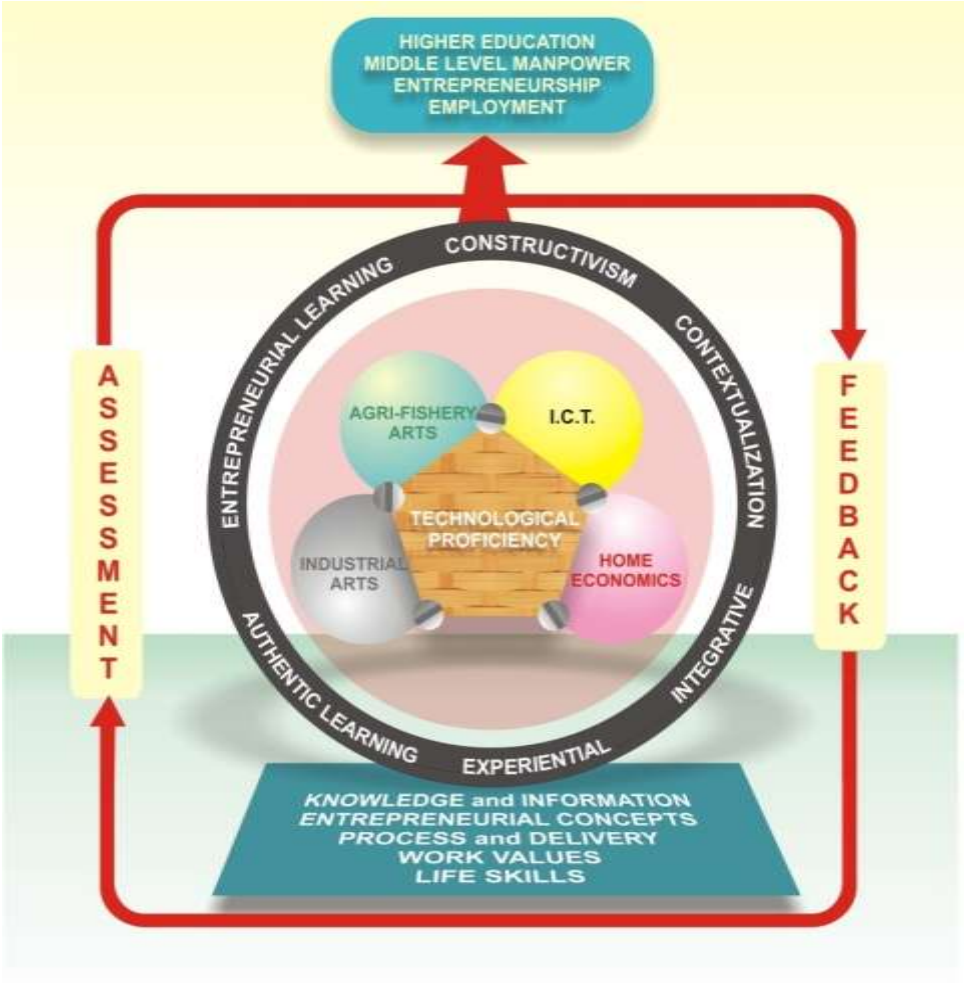

Figure 1.TLE Framework

The diagram shows that Technology and Livelihood Education encompasses the field of Home Economics, Industrial Arts, Agri-Fishery Arts and ICT. The 24 TLE courses can be categorized under any of these fields.

INDUSTRIAL ARTS – CARPENTRY
(Exploratory)

TLE is geared towards the development of technological proficiency and is anchored on knowledge and information, entrepreneurial concepts, process and delivery, work values and life skills. K to 12 TLE is…

a. one that is built on adequate mastery of knowledge and information, skills and processes, acquisition of right work values and life skills;
b. one that equip students with skills for lifelong learning; and
c. one that is founded on cognitive, behavioral or psychomotor and affective dimensions of human development.

The diagram likewise shows that entrepreneurial concepts also form part of the foundation of quality TLE. It is expected that your TLE students, after using the Learning Module on Entrepreneurship, imbibe the entrepreneurial spirit and consequently set up their own businesses in the areas of Agri-Fishery Arts, Industrial Arts, Home Economics, and Information and Communication Technology.

TLE by its nature is dominantly a skill subject and so you must engage your students in an experiential, contextualized, and authentic teaching-learning process. It is a subject where your students learn best by doing. It is integrative in approach. For instance, it integrates entrepreneurship with all the areas of TLE. It integrates concepts, skills and values.

3. The TLE Exploratory Courses

TLE in Grades 7 and 8 are exploratory in nature. Your school will choose at least 4 from the list of 24 courses for which 23 Learning Modules have been prepared. [1]Your school's choice is determined by the availability of its resources (faculty and facilities) as well as the local needs and resources of the community.

The 24 TLE exploratory courses focus on four basic common competencies: 1) use and maintenance of tools and equipment; 2) mensuration and calculation; 3) occupational health and safety procedures, and 4) preparation and interpretation of technical drawing. Why are these competencies called basic? Because they are competencies that you must acquire in order that you can do higher level competencies. They are also described common because these are true to all TR-based TLE courses.

[1] There are 24 TLE courses but there are only 23 Learning Modules because there is one Learning Module for Tailoring and Dressmaking.

INDUSTRIAL ARTS – CARPENTRY
(Exploratory)

The Learning Modules and Lessons

There is a Learning Module for each exploratory course. If there are 24 exploratory courses then you have 24 Learning Modules in your hands. But you will use 4 Modules only for the entire year in Grade 7(plus a fifth one on Entrepreneurship) and another 4 Modules in Grade 8 (plus a fifth one on Entrepreneurship).

Each Learning Module consists of 4 to 5 Lessons[2]. The Lessons are focused on the 4 to 5 basic competencies. To avoid meaningless repetition of the teaching of the 5 common competencies, you have to teach them in the context of the TLE course. For example, you teach "use and maintenance of tools" in beauty care when you are teaching the course on Beauty Care. You teach the same competencies - use and maintenance of tools-in Horticulture but in the context of Horticulture and so your tools will not be entirely the same.

New Feature on the Teaching of TLE

What's new in the teaching of TLE in the K to 12 curriculum? In the K to 12 curriculum, the TLE courses are taught based on the learning outcomes and performance criteria stated on the Training Regulations(TR)from Technical Education and Skills Development Authority (TESDA). They are TR-based.

Why is this necessary? To prepare the K to 12 graduate for lucrative work, he/she must earn a National Certificate (NC)I, II or even an NC of higher level that is required by industries. This he/she earns after passing an assessment given by TESDA.

How can you ensure that the K to 12 high school student (Grade 9 to 12) pass TESDA assessment and obtain an NC? By seeing to it that you teach the TLE course in accordance with the performance criteria and learning outcomes laid down in the TESDA Training Regulations.

Do the exploratory courses enable the high school student to earn already an NC? Not yet. Completion of the exploratory courses may not yet qualify a high school student to take an assessment for an NC. Instead, it helps him/her earn a Certificate of Competency (COC) at least in Grade 9 that will lead eventually him/her to an NC. In short, the COC paves the way to the earning of an NC.

[2] Some Learning Modules combined use and maintenance of tools to make one Lesson, so the number of Lessons amount to 4; others made separate Lessons for use of tools and for maintenance of tools, thus the total is 5 Lessons.

INDUSTRIAL ARTS – CARPENTRY
(Exploratory)

Student's choice of TLE specialization begins in Grades 9.Afterhaving been exposed to an array of TLE courses during the exploratory phase in the first two years, the student will be most benefited, if in Grades 10,11, or 12 he/she continues with a TLE course in which he/she already has a COC. In that way, he/she will get an NC faster.

About the Learning Module

1. Design of the Module

   a. The Module is designed to be a teacher-assisted learning kit or a self-learning kit on competencies that a Grade 7 TLE ought to possess. It explores the course on Carpentry which helps your student earn a Certificate of Competency in Grade 9which leads to a National Certificate Level I / II (NCI / II)in Grades 10, 11 or 12.

   b. The Learning Module is made up of 4 to 5 Lessons based on the competencies. Each Lesson contains the following:
      1) Learning Outcomes
      2) Performance Standards
      3) Materials/Resources
      4) Definition of Terms
      5) What Do You Already Know?
      6) What Do You Need to Know?
      7) How Much Have You Learned?
      8) How Do You Apply What You Learned?
      9) What Is Your Score?
      10) References

      There are some TLE Modules which have a section on "How Do You Extend Your Learning?", This section is meant for enrichment. It is usually given as an assignment for not everything can be taught and done in the classroom given a limited time.

   c. The **Self-check** can also serve as the posttest of the lesson.

INDUSTRIAL ARTS – CARPENTRY
(Exploratory)

2. Parts of the Lesson. -The following explain the parts of each Lesson and describe what your students'- as well as your tasks are.

Part of the Lesson	Students' Task	Teacher's Task
1. Learning outcomes are what your TLE student is supposed to know and be able to do after using the module. Since our TLE courses are TR-based, all learning outcomes are lifted from the TESDA TR. In the Curriculum Guide (the matrix which contains Content Standard, Performance Standard, Learning Competencies, Projects/Activities, Assessment, Duration), the identified Learning Outcomes are written in the column of Learning Competencies.	Students acquaint themselves with the learning outcomes and performance standards and make them their personal goals.	You introduce the learning outcomes to your students and make sure that they understand them and make these learning targets their own. Make these your goals for instruction.
2. Performance Standards are referred to as "performance criteria" in the TESDA TR. They are more specific descriptions of the student's behavior that serve as evidence that the expected learning outcomes have been realized with the expected level of proficiency or in accordance with established standards. The learning outcomes and performance standards set the direction of your lessons. These are what you should teach and, in turn, what you should assess. They are identified and are written for you in the Curriculum Guide.	Students clearly understand the performance standards and make them their own learning goals.	You introduce the performance standards to your students and make sure that they understand them and make these performance standards their own. Let these standards give your lesson its specific direction.
3. Materials/Resources and References To teach effectively, you need **materials** and	Get to know the materials. They are part of the Lesson.	Prepare the materials you need in advance. For gadget, tool or equipment, it is always wise to

references. Materials may include equipment, hand tools or consumables. The **references** are the books, magazines, articles, websites you yourself and your students will read or refer to in order to gain greater understanding of the lesson. They are either in soft copy or hard copy.	By all means, read the references for lesson mastery.	prepare, check and try them in advance to ensure that they function when you use them. As the saying goes "forewarned is forearmed." Be resourceful in the preparation of materials. You are strongly encouraged to use appropriate local materials as substitute for listed materials that are not available. For effective teaching, your lesson preparation should include reading the list of references. Do not limit yourself to the list of references. If you discover good reference material/s, add to the list of references. Introduce the references to your students. Motivate them to read these references as they go through the module for mastery of the lesson.
4. The **definition of terms** and **acronyms** will help you understand the meaning of key words in your lesson. Defining key words as they are used in your lesson will ensure that the key terms in your lesson mean one and the same for everyone in class and so avoid misunderstanding.	Refer to the definition of terms for greater understanding of the lesson.	Remind your students to refer to the definition of terms and acronyms for clearer understanding of the lesson.
5. The section **"What Do You Already Know"** is intended to determine entry knowledge and skills of your students to find out if you have to teach the lesson, teach some parts of the	Take the test honestly. Check answers against the answer key provided.	Tell your students to accomplish the pretest. Explain that the purpose of the pretest is to find out how much they already know about the lesson in order to determine your next steps. It is,

lesson or skip it entirely because your students already know it. This is done by way of a pretest.		therefore, necessary that they take the test honestly, if they want to learn or want to be helped. Make it clear to them that their scores will not be recorded for grading purposes and will not be taken against them. If you find out that your students already know what you are about to teach, logic dictates that you do not need to teach it anymore. You may as well proceed to the next lesson. If, however, you find out that they do not yet know what you are about to teach, then by all means teach. Or if you discover that your students have some erroneous concepts, then teach and correct their misconceptions. To know what your students already know and do not yet know will guide you in adjusting your instruction.
6. "What Do You Need To Know?"- This section contains one or more Information Sheets and for some modules an Operation Sheet. These are important notes for the TLE student to read after which he/she is asked to do a Self-check to determine how much he/she has learned. The self-check functions as a pretest.	Read and understand the Information Sheet/s and /or Operation Sheet. Be prepared For a Self-check which serves as a posttest. Correct answers by referring to the answer key.	Make sure students are engaged in reading the Information Sheet/Observation Sheet and in answering the self-check. Give assistance to your students where needed.
7. "How Do You Apply What You Learned?" – In this section, you give your student the opportunity to transfer what he/she has learned	Do the Activity. To determine level of performance, use the	Find a way to test real life application of what your students have learned.

in another activity or in real life situation. Ideally, this should be a performance test, what you usually call practical test. If "the proof of the pudding is in the eating", then your student must be able to apply what she/he learned in real-life setting or must be able to come up with a product as an evidence of learning.	scoring rubrics or check answers against the answer key, which ever is applicable. Reflect on assessment results.	Do not hesitate to use ways of determining how your students can apply learned facts and concepts which are more authentic and realistic than that/those given in the Module. Reflect on assessment results. Use assessment results in planning your instruction.
8. How Do You Extend Your Learning? – As the word implies, this activity is done outside class hours for enrichment purposes. This can reinforce lesson mastery.	Do the task assigned outside class hours.	Motivate the students to do the task by making clear what the enrichment activity is about –why it is given, how it is done, how it relates to the class lesson .

Reflection

It is a good habit to reflect on your teaching for the day – what went well, what did not go well, why this activity went well with this group, why it didn't work well with the other group. What are your realizations? What are lessons learned? Jot them down in your diary. Commit them to your memory. If you do this consistently, you will find your delivery improve substantially.

INDUSTRIAL ARTS – CARPENTRY
(Exploratory)

Curriculum Guide for the Exploratory Course on CARPENTRY

For you to get a complete picture of the complete TLE exploratory course on Carpentry, you are hereby provided with the Curriculum Guide on Carpentry.

Content Standard	Performance Standard	Learning Competencies	Project/ Activities	Assessment	Duration
LESSON 1: PREPARE CONSTRUCTION MATERIALS AND TOOLS					
Demonstrate understanding of/on: • Types and uses of construction materials • Kinds of carpentry tools • Description of materials and tools • Listing of materials as per company standards. .	1. Tools and materials are identified as per job requirements. 2. Tools are classified according to their functions per job requirements. 3. Materials are classified according to their uses in a specific construction project. 4. Tools and materials are selected per job requirement.	LO1. Identify materials and tools applicable for a specific construction job.	1. Enumerating and describing the tools and materials used in carpentry works.	• Written test • Performance test	6 hours
• Sample requisition form • Requested tools and materials according to list • Requisition procedures	1. Needed materials and tools are listed as per job requirement. 2. Materials and tools are requested according to the list prepared. 3. Requests are done as per company's standard operating procedures (SOP). 4. Materials and tools are	LO2. Request appropriate materials and tools.	1. Fill up necessary forms as per job requirement.	• Written test • Performance test	3 hours

INDUSTRIAL ARTS – CARPENTRY
(Exploratory)

Content Standard	Performance Standard	Learning Competencies	Project/ Activities	Assessment	Duration
	substituted and provided for unavailable ones without sacrificing cost and quality of work.				
• Acquire and inspect materials/tools - Procedures in receiving tools and materials - Proper inspection of tools and materials received. - Proper handling of tools and materials.	1. Materials and tools as per quantity and specification based on requisition are received and inspected. 2. Tools and materials are checked for damages and manufacturing defects. 3. Materials and tools received are handled with appropriate safety devices. 4. Materials and tools are stored in aside to appropriate locations nearest the workplace.	LO3. Receive and inspect materials	1. Writing the possible defects and/or damages of materials and tools used in carpentry.	• Written test • Performance test	2 hours
LESSON 2: MAINTAINING TOOLS AND EQUIPMENT					
Demonstrate understanding of/on: • Classification of hand tools and equipment • Procedure in segregating and labeling non-functional tools and equipment. • Procedure in checking	1. Tools and equipment are identified according to classification/specification and job requirements. 2. Functional andnon-functional tools and equipment are segregated and labeled	LO1. Check condition of tools and equipment.	1. Performing the actual segregation of functional and non-functional tools and equipment.	• Performance test • Written test	3 hours

INDUSTRIAL ARTS – CARPENTRY
(Exploratory)

Content Standard	Performance Standard	Learning Competencies	Project/ Activities	Assessment	Duration
condition of Personal Protective Equipment (PPE).	according to classification. 3. Safety of tools and equipment are observed in accordance with manufacturer's instructions. 4. Conditions of PPE are checked in accordance with manufacturer's instructions.				
• Lubricating tools and equipment • Preventive maintenance techniques and procedures • Steps in filling out inspection report form	1. Lubricants are identified according to types of equipment. 2. Tools and equipment are lubricated according to preventive maintenance schedule or manufacturer's specifications. 3. Measuring instruments are checked and calibrated in accordance with manufacturer's instructions. 4. Tools are cleaned and lubricated according to standard procedures. 5. Defective equipment and tools are inspected and replaced according to manufacturer's specification. **6.** Work place is cleaned and kept in safe state in line with OSHC regulations	LO2. Perform basic preventive maintenance.	1. Performing the proper selection and application of lubricants used for preventive maintenance.	• Written test • Performance test	4 hours

INDUSTRIAL ARTS – CARPENTRY
(Exploratory)

Content Standard	Performance Standard	Learning Competencies	Project/ Activities	Assessment	Duration
LESSON 3: PERFORM MENSURATION AND CALCULATION					
Demonstrate understanding of/on: • Types of Measuring tools • Proper handling of measuring instruments • Linear measurement for 6 faces lumber	1. Measuring tools are selected/identified as per object to be measured or job requirements. 2. Correct specifications are obtained from relevant sources. 3. Measuring instruments are selected according to job requirements. 4. Alternative measuring tools are used without sacrificing cost and quality of work. 5. Measurements are obtained according to job requirements.	LO1. Select measuring instruments.	1. Demonstrating the proper handling of measuring tools.	• Actual demonstration • Direct observation • Written test/questioning	2 hours
• Systems of measurement • Reading of measuring instrument/tools • Converting fraction to decimal • Converting units of measure • Taking Dimensions • Calculating boardfoot of lumber	6. Accurate measurements are obtained according to job requirements. 7. Work pieces are measured according to job requirements	LO2. Carry out measurement and calculations.	1. Measuring lengths, width, and thickness of pieces of wood.	• Written Test • Performance Test	4 hours

INDUSTRIAL ARTS – CARPENTRY
(Exploratory)

Content Standard	Performance Standard	Learning Competencies	Project/ Activities	Assessment	Duration
LESSON 4: INTERPRETING DRAWINGS AND PLANS					
Demonstrate understanding of/on: • Drawing symbols and signs • Uses of alphabet of lines	1. Signs, symbols, and data are identified according to job specifications. 2. Signs, symbols, and data are determined according to classification or appropriateness in drawing.	LO1. Analyze signs, symbols, and data.	1. Drawing and describing the different signs and symbols used in the project plans.	• Written test • Performance test	4 hours
• interpret simple isometric drawing of center table	1. Necessary tools, materials, and equipment are identified according to the plan. 2. Components, assemblies or object are recognized as per job requirement. 3. Dimensions and specifications are identified according to job requirements.	LO2. Interpret technical drawings and plans.	1. Explaining the specific uses of lines in the drawing.	• Performance test • Written test	2 hours
• Procedure in sketching isometric box • Steps in sketching orthographic drawing	4. Correct freehand sketching is produced in accordance with the job requirements	LO3.Apply freehand sketching	2. Demonstrating freehand sketching	• Performance test • Written test	

INDUSTRIAL ARTS – CARPENTRY
(Exploratory)

Content Standard	Performance Standard	Learning Competencies	Project/ Activities	Assessment	Duration
LESSON 5: PRACTICING OCCUPATIONAL HEALTH AND SAFETY PROCEDURES					
Demonstrate understanding of/on: • Hazards and risks identification and control - Working condition that can produce hazards - Signs, signals and barricades - Accidents prevention signs and tags	1. Workplace hazards and risks are identified and clearly explained. 2. Hazards/risks and their corresponding indicators are identified in accordance with the company procedures. 3. Contingency measures are recognized and established in accordance with organizational procedures.	LO1. Identify hazards and risks.	1. Listing down the possible hazards and risks common in the workplace.	• Performance test • Written test	
• Safety regulations ➢ PPE and uses • Occupational health and safety (OHS) procedure in controlling hazards and risks • Procedure in dealing with workplace, accidents, fire and emergencies • Role playing creating a team and audience judges	1. OHS procedures for controlling hazards and risks are strictly followed. 2. Procedures in dealing with workplace accidents, fire, and emergencies are followed in accordance with the organization's OHS policies. 3. Personal protective equipment (PPE) is correctly used in accordance with organization's	LO2. Control hazards and risks.	1. Writing the importance of knowing the hazardous and risky objects/fixtures in the workplace.	• Written test • Performance test	4 hours

INDUSTRIAL ARTS – CARPENTRY
(Exploratory)

Content Standard	Performance Standard	Learning Competencies	Project/ Activities	Assessment	Duration
on planning and controlling risk and hazards	OHS procedures and practices. 4. Procedures in providing appropriate assistance in the event of workplace emergencies are identified in line with the established organizational protocol.				
• What is 5's - How to practice 5's - What an individual gain from 5's - A healthy shop is a safe shop	1. Procedures in emergency related drill are strictly followed in line with the established organizational guidelines and procedures. 2. OHS personal records are filled up in accordance with workplace requirement 3. PPEs are maintained in line with organizational guidelines and procedures.	LO3. Maintain occupational health and safety awareness.	1. Explain the advantages of practicing safety precautions in the work area.	• Written test • Performance test	3 hours
					39hours

"By three methods we may learn wisdom: First, by reflection, which is noblest; second, by imitation, which is easiest; and third by experience, which is the bitterest."

- Confucius