

7

Lesson Exemplar for TLE

Quarter 4

Lesson

3

Lesson Exemplar for TLE Grade 7
Quarter 4: Lesson 3 (Week 3)
SY 2024-2025

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TLE /QUARTER 4/ GRADE 7

I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES

A. Content Standards	Demonstrate an understanding of the uses and maintenance of hand tools, power tools, instruments, and equipment.
B. Performance Standards	The learners perform mensuration and calculations following safety precautions.
C. Learning Competencies and Objectives	Learning Competency: Identify the uses and maintenance of hand tools, power tools, instruments, and equipment. Learning Objectives: 1. Differentiate the hand tools, power tools, instruments, and equipment. 2. Identify and classify the common hand tools, power tools, instruments, and equipment used in industrial arts. 3. Explain the uses and characteristics of each tool, instrument, and equipment.
D. Content	1. Hand tools 2. Power tools 3. Instruments (analog, digital, and computer-based) 4. Equipment and accessories
E. Integration	The proper use of tools reminds us that “Prevention is better than cure.” Performing safety procedures using hand tools, power tools, instruments, and equipment is highly commendable to avoid malfunction and unplanned or unusual events. This lesson can be integrated and related to: SDG 9: Industry Innovation and Structures, precisely the proper use of hand tools, power tools, instruments, and equipment. Also, which type of tool is right for you? It depends on the task at hand. If you need a tool for a simple job, hand tools will suffice. However, if you require a tool for a more complex task, a power tool is a better option. Tools are indispensable in the vast world of construction, manufacturing, and projects.

II. LEARNING RESOURCES

Fleming, R. (2022, October 20). *What are the types of hand tools and how are they important?* Proline Blog. <https://www.prolinerangehoods.com/blog/types-of-hand-tools/>

Hand and power tools: What you need to know | SafetyCulture. (2023, December 29). SafetyCulture. <https://safetyculture.com/topics/hand-and-power-tools/>

House, D. C. (2023, January 26). *Zebra crossing rules in India*. Blogs - DigitalCarHouse.com. <https://digitalcarhouse.com/blog/zebra-crossing-rules-in-india/>

King, R. (2020, April 21). Hydraulics Vs Pneumatics. *Hydraulics and Pneumatics – What’s the Difference, and Why the Confusion?* <https://www.rowse.co.uk/blog/post/hydraulics-vs-pneumatics>

Prasad, L. (2024, February 17). 23 Different types of air tools (Pneumatic tools) and their uses. ElectronicsHub. <https://www.electronicshub.org/air-tools/>

Robc. (2023, December 4). *Hydraulics and pneumatics – What’s the difference, and why the confusion?* - Worlifts. Worlifts. <https://www.worlifts.co.uk/expert-guides/hydraulics-and-pneumatics-whats-the-difference-and-why-the-confusion/>

Team, L. C. (2023, October 7). 11 Types of hand tools and their usage | Linquip. *Industrial Manufacturing Blog | linquip*. <https://www.linquip.com/blog/types-of-hand-tools/>

Torc Stark. (2023, September 5). *Common Hydraulic Tools: applications, operations*. TorcStark®. <https://torcstark.com/summary-of-common-hydraulic-tools/>

What is meant by “equality of educational opportunity”? Describe how education helps to facilitate social equality. (n.d.). Quora. <https://www.quora.com/What-is-meant-by-equality-of-educational-opportunity-Describe-how-education-helps-to-facilitate-social-equality>

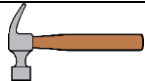
III. TEACHING AND LEARNING PROCEDURE		NOTES TO TEACHERS
A. Activating Prior Knowledge	DAY 1 1. Short Review: I read, and I guess! Directions: The teacher calls a representative from the class. The chosen learners read and identify the pictures. Let the student think about the name of the tool and its uses. 1.  Source: Royalty-Free photo: Orange handle claw hammer PickPik. (n.d.). Www.pickpik.com. Retrieved May 25, 2024, from https://www.pickpik.com/claw-hammer-hammer-tool-construction-work-repair-147415 2.  Source: black and red impact drill free image Peakpx. (n.d.). Www.peakpx.com. Retrieved May 25, 2024, from https://www.peakpx.com/410492/black-and-red-impact-drill 3.  Source: File:Analog multimeter HARTIG & HELLING VM-10K.jpg - Wikimedia Commons. (2020, May 2). Wikimedia.org. https://commons.wikimedia.org/wiki/File:Analog_multimeter_HARTIG_%26_HELLING_VM-10K.jpg 4.  Source: [Hot Item] Auto Repair Tools 3 Ton Hydraulic Car Floor Jack. (n.d.). Made-In-China.com. Retrieved May 25, 2024, from https://autoall.en.made-in-china.com/product/CdemjzwxAWI/China-Auto-Repair-Tools-3-Ton-Hydraulic-Car-Floor-Jack.html 5.  Source: Nexpow OBD2 Scanner, Car Code Reader, Auto Diagnostic Tool for Check Engine Light, Car Scanner for All Vehicles since 1996. (2024). Walmart.com. https://www.walmart.com/ip/Nexpow-OBD2-Scanner-Car-Code-Reader-Auto-Diagnostic-Tool-for-Check-Engine-Light-Car-Scanner-for-All-Vehicles-since-1996/2513707894 2. Feedback (Optional)	Reminder: The writer only suggests the allotment of days. Teachers can determine the allotment depending on their learners' type and the complexity of the given topics and activities. The learners read and identify the picture. Answer key: 1. Hammer/Claw Hammer 2. Electric Drill 3. VOM/Multimeter/Multi-tester 4. Jack/Car Jack 5. OBD scanner

B. Establishing Lesson Purpose	1. Lesson Purpose The teacher asks the learners what tools they have already used and experienced. Then, let them share their personal stories about how they used the tool and state the purpose for which they used it. After the short sharing, the objectives will be introduced. 1. Differentiate the hand tools, power tools, instruments, and equipment. 2. Identify the common hand tools, power tools, instruments, and equipment used in industrial arts. 3. Explain the uses and functions of each tool, instrument, and equipment. 2. Unlocking Content Vocabulary • Hand tools- these are simple tools you use with your hands, usually not powered. (Collins Dictionary) • Power tools - a tool powered by electricity. (Collins Dictionary) • Hydraulic tools are operated by fluids such as water or oil under pressure. (Collins Dictionary) • Pneumatic tools - are operated by air under pressure and are very powerful. (Collins Dictionary)	
C. Developing and Deepening Understanding	SUB-TOPIC 1: Hand Tools 1. Explicitation Hand tools play a vital role in everyday activities. Throughout history, individuals have relied on them to perform various practical tasks. Numerous hand tools are available, each serving a specific purpose. It is essential to have a good understanding of their proper usage to achieve optimal results. Neglecting to use these tools correctly can lead to mistakes and accidents. Therefore, craftsmen must choose the right tools for the job. Hand Tools Classifications Hand tools can be categorized into various groups, each serving specific purposes. Consequently, these groups are utilized in different situations and for other tasks. Here are some prevalent classifications you may encounter regarding hand tools. 1. Holding tools – bench vise, pipe vise, wood lathe machine, clamps 2. Driving tools – hammers, rubber mallets, and screwdrivers 3. Measuring tools – push-pull tape, caliper, ruler, measuring wheel, meter stick, wire gauge 4. Guiding tools- plumb bob, level hose,	You may emphasize that some hand tools, both measuring and guiding tools, can be used. You may also add examples of hand tools that should have been mentioned.

5. Tooth Cutting tools – handsaw, hacksaw, coping saw
6. Marking tools– pencil, chalk line reel, divider, scratch awl
7. Edge cutting tools-chisel, plane, spokeshave,
8. Boring tools- gimlet, bradawl, hand drill
9. Gripping and squeezing tools- pliers, vise grip, wrenches

Note: You may add different types of hand tools.

Different Types of Hand Tools

Hand Tool	Picture	Characteristic	Usage
1. Hammer	 Source: https://images.ap.p.goo.gl/QMhiH6m3LK6kNfAZ8	Hammers are versatile tools with a metal head for striking force and a handle for gripping and control.	They are essential for driving nails, shaping metal, and breaking objects apart.
2. Screwdrivers	 Source: https://images.ap.p.goo.gl/6YPt9Fw9iAAuhGpYA	Screwdrivers are hand tools with a handle and a shaft ending in a tip, designed to fit into the head of a screw to turn it. They come in various types and sizes, each suited for specific screw head types and applications.	Driving or removing screws.
3. Wrenches	 Source: https://images.ap.p.goo.gl/Tyck1cRjt_vf1cyRUA	It comes in different types, including open-end, box-end, and adjustable wrenches, each tailored for specific tasks and fastener types.	Turning nuts, bolts, and other fasteners.
4. Calipers	 Source: https://images.ap.p.goo.gl/MtFewAEC4FxZCMkq6	Adjustable jaws for measuring internal and external dimensions.	Precise measurement of physical dimensions.

	5. Precision Screwdrivers	 Source: https://images.app.goo.gl/Rr46iFpTKGHj9YS56	Small-scale screwdrivers, often with a revolving top for ease.	Working with tiny screws, often in electronics.
	6. Riveters	 Source: https://images.app.goo.gl/QAWtKtkphGZRnj6p7	A hand tool used to apply rivets.	Joining two pieces of metal or other materials.
	7. Handsaw	 Source: https://outgoodvs.live/product_details/108447490.html	Handheld device to drive metal staples into materials.	Fastening paper, cloth, or other materials together.
	8. Pliers	 Source: https://commons.wikimedia.org/wiki/File:Jewellery_pliers_(2).jpg	Pliers are hand tools with two levers joined at a fulcrum, featuring jaws or pincers at one end and handles at the other. They are used for gripping, bending, cutting, and holding objects. Pliers come in various types, such as needle-nose, cutting, and locking pliers, each suited for specific tasks and materials.	It is commonly used to grip and twist wires, bend metal components, hold objects firmly in place, and cut wires or cables.
	9. Digital Tape Measures	 Source: https://images.app.goo.gl/ZYwobLk6sX7de5Pi9	Digital display, often with memory functions.	Measuring distances with digital readout.

10. Laser Levels	 Source: https://images.app.goo.gl/d9eb5cf83C3FekLu5	Project a laser line to establish straight and level lines.	Ensuring straight and level lines for construction.
11. Digital multi-meters	 Source: https://images.app.goo.gl/R2fvKPSbM2Mf6SSS8	Digital display: measure voltage, current, resistance, etc.	Testing and troubleshooting electrical components.

Essentials: Common Hand Tools

- Hammers** – are used to drive nails, fit parts, forge metal, and break apart objects.
 - Claw Hammer: Most used for driving and removing nails.
 - Ball-peen Hammer: For peening rivets and shaping metal.
 - Sledgehammer: Heavy-duty hammer for more significant tasks.
- Screwdrivers** - essential for driving or removing screws.
 - Flat head: For slotted screws.
 - Phillips: Cross-shaped, for Phillips screws.
- Wrenches** - gripping, fastening, turning, or loosening objects.
 - Open-end and Box-end Wrenches: For nuts and bolts.
 - Adjustable Wrench: Jaws can be adjusted for various sizes.
- Calipers** - used to measure the distance between two opposite sides of an object.
 - Vernier Caliper: Offers precision measurements.
 - Digital Caliper: Provides digital reading.
- Precision screwdrivers** - for delicate tasks like repairing electronics or eyeglasses.
 - Flathead, Phillips, and Torx: Available in much smaller sizes.
- Riveters** - used to drive rivets.
 - Hand Riveter: Manual tool requiring physical force.
- Handsaw** - a manual cutting tool with a toothed blade designed for cutting wood or other materials by hand.
 - Rip saw, Crosscut saw, Combination Rip and Crosscut saw, Hacksaw, Coping saw

2. Worked Example

- Have a group activity. Let the students think of at least five hand tools commonly used in carpentry/masonry and electrical work in their respective households and their uses.

You may add some tools you believe are essential in another industry sector.

- Let them present their work in class.
- Facilitate the discussion, especially when students need further explanations.

Sample

Hand tools	Uses
1. Plier/Combination Pliers	Cutting and twisting wires

3. Lesson Activity: Family Tools Word Search

Directions: Find the following words in the puzzle. Encircle them with a ballpoint pen, pencil, or use a highlighter to highlight them.

(See worksheet for the activity which students will accomplish.)

DAY 2

SUB-TOPIC 2: Power Tools

1. Explication

Most modern construction or manufacturing applications will likely utilize one or a combination of two (2) power sources: hydraulic and pneumatic. Although specific actuators and lifting devices may operate solely on electricity through a screw system, most applications will involve some form of fluid power. This leaves you with the option of choosing between hydraulics and pneumatics.

The distinction between pneumatics and hydraulics is based on the medium used for power transmission. Pneumatics rely on compressible gases such as air or pure gas. At the same time, hydraulics use incompressible liquids like mineral oil, ethylene glycol, water, synthetic fluids, or high-temperature resistant fluids to enable power transmission.

Common Pneumatic Tools



1. Air impact wrenches - powerful tools commonly used for

loosening or tightening bolts and nuts with high torque.

Source:
<https://www.electronicshub.org/air-tools/>



2. Pneumatic drill - a handheld air-powered tool that drills holes

or destroys hard surfaces such as rock, concrete, and roads (Kolstad, n.d.)

Source:
<https://www.keygree.com/portable-welding-machine-220v/>



3. Air hammer - It uses compressed air to drive a

hammering piston that delivers repeated impacts to the attached chisel or tool bit.

Source: https://res.cloudinary.com/rsc/image/upload/b_rgb:FFFFFF,c_pad,dpr_2.625,f_auto,h_535,q_auto,w_950/c_pa_d,h_535,w_950/F1370893-01?pgw=1&pgwact=1

Answer key:

H	A	X	P	H	I	L	I	P	S	H	G	B	B	C
V	A	A	S	D	F	G	H	J	K	L	Q	A	H	A
B	Q	M	A	S	D	V	C	D	S	D	F	L	T	L
G	F	G	M	H	J	K	L	O	V	S	S	L	R	I
T	Z	X	C	E	H	J	K	L	M	R	A	P	E	P
R	Z	D	E	R	M	N	B	V	E	G	E	Q	E	
E	P	O	I	Y	I	Q	W	E	R	L	H	E	K	R
W	F	G	H	J	V	Y	U	I	O	P	J	N	J	S
Q	A	S	D	F	E	G	F	D	S	A	K	H	Z	R
Y	M	N	B	V	T	A	H	Y	U	T	L	G	S	T
F	L	A	T	H	E	A	D	O	O	S	O	F	D	U
J	M	N	B	C	R	G	C	I	R	T	C	E	L	E
K	Q	W	E	R	S	T	Y	U	I	O	P	I	L	M
S	C	R	E	W	D	R	I	V	E	R	S	G	O	N
L	U	Y	T	R	Q	A	S	E	H	C	N	E	R	W

Note: You may add other power tools and pneumatic and hydraulic tools.

V. Synthesis/Extended Practice/Differentiation:

After the activity, asks the learners to give the function of each word.



4. Tire inflator—A simple tire inflator is a popular air tool, even with general consumers (rather than industrial

workshop users). There are several tire inflators; some use air pumps (cars and bikes), balls, mattresses, etc., to inflate tires. A tire inflator with a dedicated air compressor will be necessary for heavy workloads and inflating large tires (for trucks and semi-trucks).

Source: <https://www.electronicshub.org/air-tools/>



5. Paint sprayer - Spray painting is another essential application of compressed air. One of the simplest paint sprayers is an airbrush. You can use these sprayers with cars, mural painting, artists, building models, and even tee shirt painting. A slightly advanced paint sprayer is a Paint Gun. This paint sprayer has a paint pot at the bottom of the handle and is often used for painting large equipment and surfaces. The Gravity Feed Paint Sprayer is a trendy paint gun in the automotive paint industry. A paint reservoir is at the top of the handle, and the paint flows through the trigger handle to the nozzle.

Source: https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcOiYmSD8rfMj9nlFK0qHhTpbsOv_D4aUVBXwvt-BEdYrq-qMm32

Air Tools make the job easy and fast, whether drilling holes, tightening/loosening nuts/bolts, demolishing roads/buildings, inflating tires, painting, etc. They are also known as Pneumatic Tools as they use compressed air as the energy source (in contrast to fuel electricity). We saw the basics of air tools, how they work, and different types of air tools, along with their uses.

Common Hydraulic Tools



Hydraulic Wrench - A conventional hydraulic torque wrench kit generally comprises a hydraulic torque wrench, a particular hydraulic pump station for hydraulic torque wrenches, a double high-pressure hose, and a high-strength heavy-duty socket.



Hydraulic Jack - a jack that uses a plunger or a hydraulic cylinder as a rigid jacking member. Simple lifting equipment is generally only equipped with a lifting mechanism to lift heavy objects. It is simple in structure, light in weight, easy to carry, and easy to move.



Hydraulic puller—This is an ideal new tool to replace traditional pullers. It has a compact structure, flexible use, convenient carrying and operation, fewer restrictions on site, etc. It is suitable for various maintenance places. If the handle slightly swings back and forth, the hydraulic starting lever moves forward, the hook claws retreat correspondingly, and the object can be pulled out.



Hydraulic nut cutters - are also called nut cutters. In some industries, for rusted nuts that cannot be disassembled, a nut cutter can be used to cut the bolt without damage to the bolt easily, and the bolt can be used next time.



Hydraulic press - is a mechanical press that utilizes hydraulic cylinders to generate compression force. It uses the hydraulic equivalent of a mechanical lever, also known as a Brahma press.



Hydraulic crimpers are tools used to connect the ends of two cables, wires, or similar flexible materials, such as hydraulic hoses, to match hose ends. The tool allows the user to create a crimp connection through a hydraulic fluid mechanism that transfers force from the user to the tool.

2. Worked Example

- Have a group activity. Let the students think of 6 power tools, 3 pneumatic and 3 hydraulic tools.
- Let them present their work in class.
- Facilitate the discussion, especially when students need further explanations.

Hydraulic Tools	Pneumatic
1.	
2.	

3. Lesson Activity: Identify and Classify the Different Types of Tools

Directions: Identify and classify each one into the corresponding category: hand tool or power tool. (See worksheet for the activity which students will accomplish.)

DAY 3

SUB-TOPIC 3: Instruments (Analog, Digital, and Computer-based) and Equipment and Accessories

1. Explication

What is an Analog Instrument?

An analog instrument shows the measurement results either in a wave or by the deflection of a pointer on an analog scale. Analog instruments work on the principle of electromagnetic induction, consisting of a magnet (permanent or electromagnet) and a coil through which the current flows. The measurement is then performed by the interaction between the magnet's magnetic field and the magnetic field produced by the electric current in the coil, and the results of the measurement are generally shown by the deflection of a pointer on a scale.

V. Synthesis/Extended Practice/Differentiation

After the activity, ask the learners about the learning and realization of the classification of tools.

(To apply what the students learned during the lesson, an additional activity will be given. See worksheet # 3 for the activity which students will accomplish.)

Examples of analog instruments include:

1. Analog multimeter – a device that measures electrical quantities such as voltage, current, and resistance.
2. Analog thermometer – a device that measures temperature using a liquid-filled tube or coil that expands or contracts in response to temperature changes.
3. Analog pressure gauge – a device used to measure the pressure of gases or liquids using a mechanical mechanism to display the pressure reading on a dial physically.
4. Analog oscilloscope – a device used to measure and display voltage signals over time using a cathode-ray tube to represent the signal visually.
5. Analog caliper – a device used to measure the distance between two points using a slider with a scale and pointer to indicate the measurement.

What is a Digital Instrument?

A digital instrument is a measuring instrument that represents the output in the form of digits on a screen (LCD or LED). The principle of a digital instrument is based on the binary number system where two binary digits (0 and 1) denote two distinct values. Digital instruments are made of solid-state devices such as diodes, transistors, MOSFETs, LEDs, etc. The results shown by the digital instruments are straightforward and accurate. Some common examples of digital instruments are digital multimeters, digital ammeters and voltmeters, digital energy meters, digital speedometers, etc.

Examples of Digital instruments include:

1. Digital Caliper



Source: Free Images : hand, tool, meter,

measuring instrument, digital caliper, vernier caliper, calipers 2448x3264 - - 736588 - Free stock photos - PxHere. (n.d.). Pxhere.com. Retrieved May 25, 2024, from <https://pxhere.com/en/photo/736588>

2. Digital Multimeter



Source: Cjp24. (2011, November 10). Français : Multimètre à affichage numérique (modèle Voltcraft 401).English: Digital multimeter (model Voltcraft 401). Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Digital_multimeter.jpg

3. Digital Measuring Tape



Source: LCD Display 2-in-1 Digital Tape Measure - 16Ft, USB Philippines | Ubuy. (n.d.). Ubuy Philippines. Retrieved May 25, 2024, from <https://www.ubuy.com.ph/product/4S8BAFCFC-acpotel-2-in-1-digital-tape-measure-lcd-display-16ft-tape-measure-usb-rechargeable-instant-data-display-tape-measure-20-groups-historical-memory>

4. Digital Weighing Scale



Source: Digital Kitchen Scale Royalty-Free Images, Stock Photos & Pictures. (n.d.). Shutterstock. Retrieved May 25, 2024, from <https://www.shutterstock.com/search/digital-kitchen-scale>

What is a Computer-Based Instrument?

Computer-based instruments are devices used for measuring, monitoring, controlling, and analyzing various processes within the industrial arts field. Their computing capabilities allow them to perform tasks more accurately and efficiently than traditional instruments.

Some examples of computer-based instruments in industrial arts include:

1. Car Scanner – a car scanner is a common tool in the automotive industry used by automotive technicians and engineers to read trouble codes generated by the vehicle system
2. Oscilloscope—An oscilloscope is a device that measures and displays voltage signals as a waveform. It is commonly used in electronics and telecommunications to analyze and diagnose circuit problems.
3. Spectrum Analyzer—A spectrum analyzer is a device used to measure the frequency spectrum of a signal. It is commonly used in telecommunications, audio engineering, and radio frequency (RF) testing to analyze and diagnose signals.
4. Logic Analyzer—A logic analyzer is a device used to capture and analyze digital signals in a system. It is commonly used in computer hardware development and debugging to test and diagnose digital circuits.
5. Data Acquisition System—A data acquisition system is a computer-based instrument that measures and records physical phenomena such as temperature, pressure, or vibration. It typically consists of sensors, signal conditioning hardware, and software for data analysis.
6. Power Quality Analyzer—A power quality analyzer is a device used to measure and analyze electrical power quality in a system. It is commonly used in industrial and commercial applications to monitor voltage sags, harmonics, and other power disturbances.
7. Temperature Calibrator—A temperature calibrator is a device that calibrates and tests temperature sensors and instruments. It can simulate different temperature ranges to ensure the accuracy of temperature measurement devices.
8. Pressure Gauge Calibration System – a pressure gauge calibration system is a computer-based instrument to calibrate and test pressure gauges and sensors. It can generate and measure pressure levels to verify the accuracy of pressure measurement devices.

Equipment and Accessories:

1. Construction services—Equipment and accessories could include concrete mixers, dump trucks, loaders, cranes, scaffolding, and safety gear.
2. Electro-mechanical services—Equipment and accessories could include electronic components such as circuit boards, machinery parts such as gears and motors, and tools such as soldering irons.
3. Electrical services—Equipment and accessories could include wiring, switches, outlets, and tools such as wire cutters and voltage testers.

	4. Automotive and small engine services – equipment and accessories could include diagnostic tools such as OBD scanners, replacement parts such as spark plugs and filters, and maintenance tools such as wrenches and socket sets. 2. Worked Example • Divide the class into 4 groups. • Let them differentiate between analog, digital, and computer-based tools. • Let them also consider the equipment and accessories for construction, electromechanical, electrical, automotive, and small engine services. • Let them present their answer in class and facilitate the discussion. 3. Lesson Activity: Identification of Tools Objectives: 1. Identify the tools classified as analog, digital, and computer based. 2. Determine the equipment and accessories for construction, electro-mechanical, electrical, automotive, and small engine services. Instructions: • Have a group activity. Let the students think of 9 tools, 3 analog, 3 digital, and 3 computer-based. Also, 3 Equipment and Accessories in each area, construction services, electro-mechanical, electrical, and automotive, and small engine services • Let them present their work in class. • Facilitate the discussion, especially when students need further explanations.	
D. Making Generalizations	DAY 4 1. Learners' Takeaways: Pass the Ball! Activity Mechanics: 1. The teacher prepares 5 questions on the bond paper and forms it into a ball. 2. The learners pass the ball while singing, and when the teacher says STOP, the learner opens the first bond paper and answers the question. 3. After answering the question, the learners pass the ball until they answer all the questions. Sample questions: 1. This tool is used to drive nails, fit parts, forge metal, and break apart objects. 2. A tool powered by electricity. 3. It is the one that shows the results of measurement either in the form of a wave or by the deflection of a pointer. 4. It is a simple tool you use with your hands and is usually not powered.	The teacher can use any song for this activity. They can also use speakers to make it lively. You may revise or develop another activity that aligns with the objective. Answer key: 1. Hammer 2. Power tool 3. Analog instrument 4. Hand tools

	5. It is the measuring instrument which represents the output in the form of digits on a screen, 2. Reflection on Learning The learners answer the following phrase: I know _____ I will apply _____ I will share _____	5. Digital instrument
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IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION		NOTES TO TEACHERS												
A. Evaluating Learning	DAY 4 1. Formative Assessment I. Multiple Choice Directions: Choose the letter of the correct answer. - Which hand tool measures the distance between two opposite sides of an object? a. Caliper b. wrench c. hammers d. screwdrivers - Which tool is used for gripping, fastening, turning, or loosening objects? a. Hammer b. riveters c. staplers d. wrench - Which tool is used to drive nails, fit parts, forge metal, and break apart objects? a. Screwdrivers b. hammers c. wrench d. caliper - What tool is used to drive rivets using air pressure for efficiency? a. pneumatic riveter b. hand riveter c. manual riveter d. machine riveter - What tool measures the distance between two opposite sides of an object that offers precision measurements? a. digital caliper b. caliper c. vernier caliper d. hand caliper II. Name each tool and, in 1 sentence, explain each use. (2 points each) Category/Classification: Hand tool, Power Tool/Pneumatic or Hydraulic Analog/Digital/Computer Based <table border="1"> <thead> <tr> <th>Tools</th><th>Category/Classification</th><th>Use</th></tr> </thead> <tbody> <tr> <td>1. </td><td></td><td></td></tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Tools</th><th>Category/Classification</th><th>Use</th></tr> </thead> <tbody> <tr> <td>4. </td><td></td><td></td></tr> </tbody> </table>	Tools	Category/Classification	Use	1. 			Tools	Category/Classification	Use	4. 			The formative assessment could be answered in an activity notebook. Answer key: a. Caliper d. Wrench b. Hammers a. Pneumatic riveter c. Vernier caliper
Tools	Category/Classification	Use												
1. 														
Tools	Category/Classification	Use												
4. 														

	2.  3. 	5. 		
B. Teacher's Remarks	<i>Note observations on any of the following areas:</i>	Effective Practices	Problems Encountered	The teacher may take note of some observations related to the effective practices and problems encountered after utilizing the different strategies, materials used, learner engagement and other related stuff. Teachers may also suggest ways to improve the different activities explored/ lesson exemplar.
	strategies explored			
	materials used			
	learner engagement/ interaction			
	others			
C. Teacher's Reflection	Reflection guide or prompt can be on: <u>principles behind the teaching</u> What principles and beliefs informed my lesson? Why did I teach the lesson the way I did? <u>students</u> What roles did my students play in my lesson? What did my students learn? How did they learn? <u>ways forward</u> What could I have done differently? What can I explore in the next lesson?			Teacher's reflection in every lesson conducted/ facilitated is essential and necessary to improve practice. You may also consider this as an input for the LAC/Collab sessions.