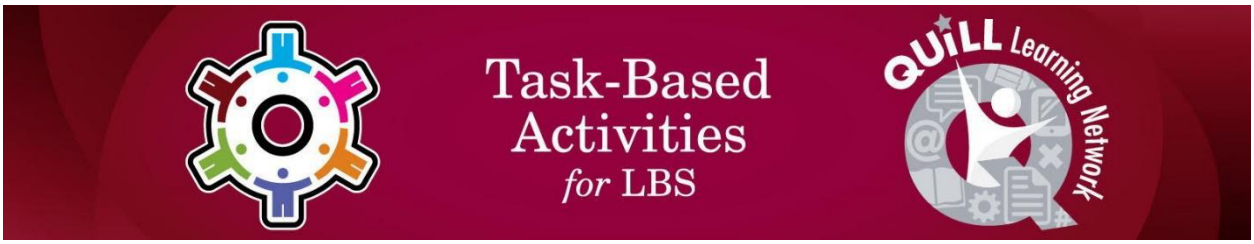


Task Title: Interpret Electrical Measuring Equipment Readings

OALCF Cover Sheet – Practitioner Copy

Learner Name: _____

Date Started: _____

Date Completed: _____

Successful Completion: Yes ☐ No ☐

Goal Path: Employment ☐ Apprenticeship ■

Secondary School ☐ Post Secondary ☐ Independence ☐

Task Description: The learner will find and interpret information about electrical measuring equipment and processes.

Main Competency/Task Group/Level Indicator:

- Find and Use Information/Read continuous text/A1.3
- Find and Use Information/Interpret documents/A2.2
- Find and Use Information/Extract info from films, broadcasts and presentations/A3
- Understand and Use Numbers/Use measures/C3.1
- Use Digital Technology/D.1

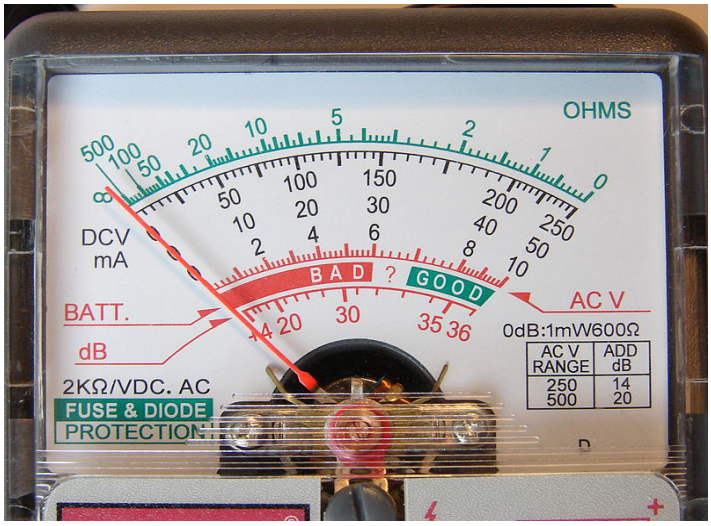
Materials Required:

- Pen/pencil and paper
- Computer or digital device

Learner Information

Electricians use electrical measuring equipment to test systems and components. They use the readings to determine if a component needs to be replaced, if a system has been safely shut down (lock out and tag out), and to determine the voltage, amperage, and wattage of systems and components.

Scan the "Multimeter Images".



Work Sheet

Task 1a: What colour is used to measure the ohms of a circuit?

Answer:

Task 1b: Circle on the picture where the meter setting dial should be set to measure a 9 Volt battery.

Answer: No written response required here.

Task completed: Yes: ☐

Task 1c: Electricians always set the meter slightly higher than the expected voltage being measured. Circle on the picture where the dial should be set to measure a 240 volt AC circuit.

Answer: No written response required here.

Task completed: Yes: ☐

Task 1d: Batteries are considered in working order at 70% voltage or better. A 9 Volt battery reading shows the needle at about 43%. In what range will the needle point?

Answer:

Go to the Lockout/Tag out page on the Canadian Centre for Occupational Health and Safety website:
http://www.ccohs.ca/oshanswers/hsprograms/lockout.html

Task 2a: List three key pieces of information to be included on a tag?

Answer:

Task 2b: An electrician uses a voltmeter to ensure the power to a circuit is safe to complete the lock out/tag out procedure. Explain what the voltage reading should be and why this is the case.

Answer:

Watch this video about using digital and analog ohmmeters:
http://www.youtube.com/watch?v=ocvaqGzvE2I

Task 3a: How does an electrician test the ohmmeter to be sure it is working?

Answer:

Task 3b: How does an electrician 'zero' out the analog ohmmeter?

Answer:

Task 3c: Using a meter reading at the two terminals, how do you know if a stove element is working?

Answer:

Task 3d: Draw a line to the dial to be used when 'zeroing' this analog meter.

Answer: No written response required here.

Task completed: Yes: ☐


Simpson
20,000 D.C. OHMS PER VOLT 1,000 A.C.
Simpson
-10A.
+10A.
OUT PUT
A.C.
D.C.
500 M.A.
100 M.A.
2.5 V.
10 V.
50 V.
250 V.
1000 V
5000 V.
ZERO OHMS
R×1
R×100
R×10,000
COMMON
D.C. 5000 V.
A.C. 5000 V.
MODEL 260

Answers

Task 1a: What colour is used to measure the ohms of a circuit?

Answer: Green

Task 1b: Circle on the picture where the meter setting dial should be set to measure a 9 Volt battery.

Answer: 9 V (green circle)

Task 1c: Electricians always set the meter slightly higher than the expected voltage being measured. Circle on the picture where the dial should be set to measure a 240 volt AC circuit.

Answer: 250 (blue circle)

Task 1d: Batteries are considered in working order at 70% voltage or better. A 9 Volt battery reading shows the needle at about 43%. In what range will the needle point?

Answer: Depending on which sensor image the learner views, the needle will either point to "Replace" or "Bad" range. Either answer is acceptable.

Go to the Lockout/Tag out page on the Canadian Centre for Occupational Health and Safety website:
http://www.ccohs.ca/oshanswers/hsprograms/lockout.html

Task 2a: List three key pieces of information to be included on a tag?

Answer:

- Why the lockout/tag out is required (repair, maintenance, etc.).
- Time of application of the lock/tag.
- The name of the authorized person who attached the tag and lock to the system.

Task 2b: An electrician uses a voltmeter to ensure the power to a circuit is safe to complete the lock out/tag out procedure. Explain what the voltage reading should be and why this is the case.

Answers may vary but should be similar to: The reading should show 0 volts. This has to be the reading because there should not be any electrical power at the lock out/tag out site. This is for safety reasons.

Watch this video about using digital and analog ohmmeters:
http://www.youtube.com/watch?v=ocvaqGzvE2I

Task 3a: How does an electrician test the ohmmeter to be sure it is working?

Answer: Turn the meter to the lowest setting. Place the two leads across the switch. The ohmmeter should go to 0.

Task 3b: How does an electrician 'zero' out the analog ohmmeter?

Answer: Touch the two leads together and adjust the dial until the ohmmeter reaches 0 ohms. Then take the leads and place them across the thermostat. It should go to zero.

Task 3c: Using a meter reading at the two terminals, how do you know if a stove element is working?

Answer: The ohmmeter should display some value if the stove element is working.

Task 3d: Draw a line to the dial to be used when 'zeroing' this analog meter.

Answer:

Performance Descriptors

Levels	Performance Descriptors	Needs Work	Completes task with support from practitioner	Completes task independently
A1.3	integrates several pieces of information from texts			
	manages unfamiliar elements (e.g. vocabulary, context, topic) to complete tasks			
	skims to get the gist of longer texts			
	infers meaning which is not explicit in texts			
	uses organizational features, such as headings, to locate information			
	follows the main events of descriptive, narrative, informational and persuasive texts			
	identifies sources, evaluates and integrates information			
A2.2	uses layout to locate information			
	makes connections between parts of documents			
	makes low-level inferences			
A3	extract information from films, broadcasts and presentations			

Task Title:
InterpretElectricalMeasuringEquipmentReadings_A_A1.3_A2.2_A3_C3.1_D.1

Levels	Performance Descriptors	Needs Work	Completes task with support from practitioner	Completes task independently
C3.1	recognizes values in number and word format			
	understands numerical order			
D.1	follows simple prompts			
	follow apparent steps to complete tasks			
	interprets brief text and icons			
	locates specific functions and information			

This task: Was successfully completed ☐ Needs to be tried again ☐

Learner Comments:

Instructor (print): _____

Learner (print): _____