Warm Up

Electrical & Electronic Tools and Their Uses

1 Match the correct pictures to the words in the list.



a. Helping hand .....
b. Fish tape .....
c. Electric drill .....
d. Soldering iron .....
e. Wire pliers .....
f. Digital clamp multimeter .....
g. Cordless rotary tool .....
h. Diagonal pliers .....
i. Cordless electric screwdriver .....
j. Circuit braker finder .....
k. Insulated Phillips screwdriver .....
l. Cable cutter .....
m. Hand grinder .....
n. Wire strippers .....
o. Multimeter .....
p. Hex key .....
q. Electronic lubricant oil .....
r. Circuit tester .....
s. Socket wrench .....
t. Terminal crimper .....
u. Needle nose pliers .....
v. Electric motor oil .....

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3 Match each name of tool with its use.

1. Helping hand tool (.....)
2. Fish tape (.....)
3. Electric drill (.....)
4. Soldering iron (.....)
5. Wire pliers (.....)
6. Digital Clamp Multimeter (.....)
7. Cordless rotary tool (.....)
8. Diagonal pliers (.....)
9. Cordless electric screwdriver (.....)
10. Circuit braker finder (.....)
11. Insulated Phillips screwdriver (.....)
12. Cable cutter (.....)
13. Angle grinder (.....)
14. Wire strippers (.....)
15. Multimeter (.....)
16. Hex key (.....)
17. Electronic lubricant oil (.....)
18. Needle nose pliers (.....)
19. Terminal crimper (.....)
20. Circuit tester (.....)
21. Socket wrench (.....)
22. Electric motor oil (.....)

a. measuring voltage without contacting with the wires.
b. locating the correct circuit breaker in an electrical panel.
c. cutting through thick cable and wires with ease.
d. cutting copper, brass, iron, aluminium and steel wire.
e. removing the insulation surrounding a wire.
f. protecting workers against electric shock and arcing.
g. tightening or loosening hexagonal-shaped bolts and screws.
h. bending wire and working with small objects.
i. lubricating mechanical engine components.
j. boring holes in a variety of materials.
k. holding work in a fixed position during soldering.
l. grinding and polishing metal.
m. tightening or loosening bolts and nuts.
n. checking for voltage when installing electrical wiring.
o. routing new wiring through walls.
p. pinching, twisting wires.
q. making secure connections between wires and terminals.
r. jointing between two workpieces.
s. removing rust, and cleaning electrical contacts.
t. reducing the friction coefficient of wires.
u. driving or removing screws effortlessly.
v. measuring the electric current like voltage, current.

LIVEWORKSHEETS

LIVEWORKSHEETS

Exercise

Sequence of Works

4 Use the sequence adverbs to put the instructions in order. Write them on the space provided.

Sequence Adverbs		
First (ขั้นแรก)	Then (ต่อมา)	Next (ต่อไป)
After that (หลังจากนั้น)	Finally (ขั้นสุดท้าย)	

a. Replace an oven timer



....., remove the screws on the top panel to access the timer module.

....., reconnect and turn on the power to the oven.

....., unplug the appliance from the mains.

....., remove the old timer module.

....., fit the new module in place.

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b. Repair an electronic device



....., follow safety precautions.

....., prepare tools and material.

....., repair the device.

....., test the device.

....., diagnose the problem.

c. Repair a circuit board



....., open up the electronics case to access the circuit board.

....., test the power and output.

....., insert the new capacitor.

....., power off and unplug your unit.

....., remove the old capacitor.

LIVEWORKSHEETS

Reading & Writing

Electrical & Electronic Work Instructions

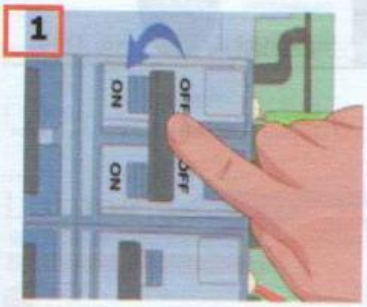
5 Read the work instructions and write the correct order of steps.

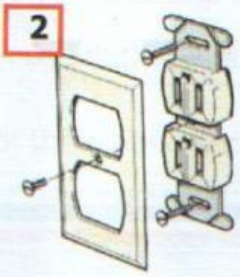
Instruction 1

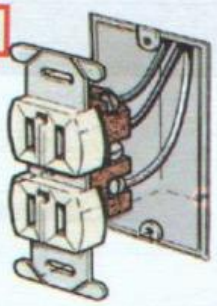
Changing an Electrical Socket

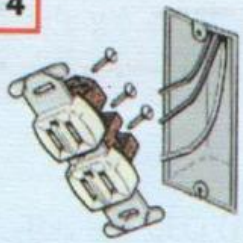
Turn off the main circuit breaker that gives power to the faulty socket. Remove all screws holding the face plate and the receptacle box. Pull the socket from the receptacle box. Unfasten the wires from the old socket. Reconnect the wires into the new socket's terminal. Replace and tighten all screws.

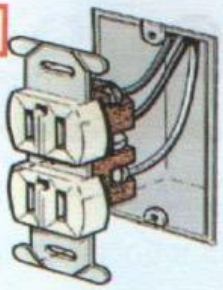
There are 6 steps in changing an electrical socket. (in)

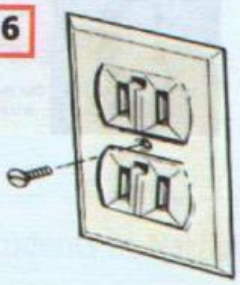
1 

2 

3 

4 

5 

6 

LIVEWORKSHEETS

Instruction 2

Send a Video Online

Select a video you've recorded from your device and upload it to your selected application. Edit your videos with an online video editor before sharing them. Click on 'Export'. Click on 'Share'. Copy the link or the embed code. Paste it to your desired location or folder.

There are ..... (in)













LIVEWORKSHEETS

6 Read these sentences and mark them true (✓) or false (×).

- ☐ 1. You need to turn off the main circuit breaker that gives power to the faulty socket first.
- ☐ 2. Replace all screws holding the face plate and the receptacle box to pull the socket out.
- ☐ 3. The socket is in the receptacle box.
- ☐ 4. Reconnecting the wires into the new socket's terminal is the final step in changing an electrical socket.
- ☐ 5. Before replacing the new socket, you need to tighten the wires from the old socket.
- ☐ 6. You need to select your video first before uploading it to your selected application.
- ☐ 7. Before uploading the video, you need to close your device first.
- ☐ 8. You must edit your videos every time before sharing them.
- ☐ 9. An online video editor is used to edit your videos.
- ☐ 10. You need to copy the link or the embed code before clicking on 'Export'

Listening

7 Listen to the conversation and complete the sentences.

a. instance	b. breaker	c. connect	d. applicant	e. good
f. remove	g. installing	h. breakfast	i. proportion	j. protection
k. appliance	l. place	m. outlet	n. power	o. factories
p. safety	q. collect			

At Electrical Appliance Class

A = Arjan Wutti
B = Students

This is a GFCI (1) ..... demonstration for Electrical Power students at Nakhon Sawan Technical College.

A : Good morning class. I'm very glad to see everybody in electrical (2) ..... class.

B : Good morning Arjan Wutti. Nice to be with you too.

LIVEWORKSHEETS

Instruction 2

Send a Video Online

Select a video you've recorded from your device and upload it to your selected application. Edit your videos with an online video editor before sharing them. Click on 'Export'. Click on 'Share'. Copy the link or the embed code. Paste it to your desired location or folder.

There are ..... (in)













LIVEWORKSHEETS

A : OK. Today, I will demonstrate how to install Ground Fault Circuit outlets or GFCI outlets. They are vital (3) ..... features for your works because they provide (4) ..... against electric shock.



B : Is it easy to do?

A : Yes, I will show you first before you do it in groups.

B : That sounds interesting.

A : First, turn off power at the circuit (5) ..... Then (6) ..... the existing outlet. Next, remove strip and (7) ..... wires to GFCI receptacle. After that, (8) ..... the wired GFCI outlet back into the electrical wall box. Finally, turn the (9) ..... back on and test your GFCI outlet.

B : It's very useful for wiring installation in (10) .....

A : Every group tries to do it now. I hope you will improve your understanding of this topic.

Language Learning

Asking and Giving Correct Sequencing

การสนทนาเพื่อถาม–ตอบข้อมูลเกี่ยวกับขั้นตอนหรือลำดับการปฏิบัติงานก่อน–หลังเป็นสิ่งที่จำเป็นเพราะทำให้การปฏิบัติงานสำเร็จอย่างปลอดภัยทั้งต่อผู้ปฏิบัติงานและต่อบุคคลอื่น รวมถึงไม่ก่อให้เกิดความเสียหายต่องาน เครื่องจักรและอุปกรณ์ ทำให้งานต่าง ๆ สำเร็จลุล่วงไปได้ด้วยดี

ประโยคพื้นฐานที่มักจะพบในการสนทนาเพื่อถาม–ตอบข้อมูลเกี่ยวกับขั้นตอนหรือลำดับการปฏิบัติงานมีตัวอย่างดังต่อไปนี้

ประโยคสนทนาที่ใช้เพื่อถาม–ตอบขั้นตอนหรือลำดับการปฏิบัติงานของอุปกรณ์ เครื่องจักร เครื่องมือต่าง ๆ ที่ใช้ในการปฏิบัติงาน

Ask : – How can I/ you use .....?
(this equipment/ machine/device ; a washing machine)
– How can I/ you operate .....? (this equipment/ machine/ device)
– How can I/ you make .....? (something ; a tasty sandwich)
– How can I/ you repair .....?
(this equipment/ machine/ device ; a washing machine)
– How can I/ you .....? (perform work ; align tires)

LIVEWORKSHEETS