

INSTRUCTIONS & USER MANUALS

Topics in this section

writing instructions

user manuals

technical instructions

Procedures vs. instructions

A procedure describes how something is done.

Distance is measured using the DME 297 meter.

Broken LEDs can be removed and replaced with careful soldering.

An instruction tells the reader what to do.

Measure the distance with the DME 297 meter.

Carefully unsolder the broken LED
and solder a new one in place of the broken one.

Writing clear instructions

Use imperative verbs (commands).

Mail the parcel to the client.

Insert the flash drive into the USB port.

Defuse the bomb.

Avoid indecisive expressions: *should, would, could, may, might, want to...*

You could mail the parcel to the client.

You want to insert the flash drive into the USB port.

It might be good to defuse the bomb.

Writing clear instructions

Be as specific as possible about the details.



Critique!

Cut the wire into an appropriate length for each connection and strip a short piece of insulation from each end. Install the wire between the correct terminals and pins.



Better!

Cut a 0.62 m length of 10-gauge wire and strip 20 mm of insulation from each end. Solder one end of the wire to terminal 7 and the other end to pin 19.

Writing clear instructions

Use introductory or conditional phrases, if needed.

Before taking the parcel to the post office,
attach the correct packing slip to the parcel.

If you attempt to defuse the bomb,
first write your last will and testament.

Cornered

by Mike Baldwin

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Write clear instructions

There is no room for ambiguity in technical instructions.

Make sure that nothing can possibly be interpreted in more than one way.

Replace any vague descriptions with clearly-stated measurements or quantities.

Critique!

Align the optical sensor so that it is inclined approximately 30° to the horizontal.

Better!

Align the optical sensor so that it is inclined 30° ($\pm 2^\circ$) above the horizontal.

Write clear, short instructions

Keep the steps short and simple, not long and complex.

**Giving Instructions is
one of the most
important skills in the
classroom**

“Giving Instructions in the Classroom”

<http://youtube/pXw7LYWNi5E>

Write clear, short instructions

Keep the steps short and simple, not long and complex.

Break complex instructions into sub-steps.



Critique!

Attach supporting documents, list them in block J of form 658b, and distribute copies of the completed form to the processing centres on floors 2, 6, and 7.



Better!

1. Complete and return form 658b.
 - a. Locate all supporting documents.
 - b. Locate block J on form 658b.
 - c. List all supporting documents in block J.
 - d. Attach the documents to the form.
 - e. Make three copies of the form and documents...

Precautions in instructions

Add cautionary warnings if you need to alert readers to personal danger or possible damage to property if they are not careful.

If there is any risk, this must definitely be done.



Precautions in instructions

Highlight precautions with easily-identifiable graphics, boxes, or other applications of C.R.A.P. principles.

Four levels of warnings are standard in most technical fields, although practice varies among the professions.

Note	Additional explanation, possible problem
Caution	Risk to proper performance
Warning	Risk of minor personal injury or damage to product
Danger	Risk of serious personal injury or death

Precautions in instructions



Note: Use only the 2-inch Robertson screws in the following step.



Caution: Do not use this device in temperatures exceeding 45°C, or the device could be damaged.



Warning: Wear safety goggles and protective gloves when using the band saw.



DANGER: EXTREME ELECTROCUTION HAZARD. DO NOT ATTEMPT THIS STEP WITHOUT TURNING OFF THE POWER.

Precautions in instructions

Another approach: boxes with text indented on both sides.

Note: Use the 2 cm. Robertson screws in the next step.

Caution: Do not use this smart phone in temperatures exceeding 45°C, or it may function improperly.

Warning: Wear safety goggles and protective gloves when using the band saw.

**DANGER: EXTREME ELECTROCUTION
HAZARD. DO NOT ATTEMPT THIS STEP
WITHOUT TURNING OFF THE POWER.**

Precautions in instructions

Always put the precaution BEFORE the step to which it refers.



“Hareless Wolf”

<http://youtube/1D5w-5xoTqA>

Operational checks

Testing

1. Find a tester about as knowledgeable as the final users.
2. Give the instructions to the tester.
3. Observe how well the tester can perform the task.
4. Do not interrupt or guide the tester.
5. Note any problems that the tester has.

Consultation & editing

1. Ask whether any steps need clarification.
2. Rewrite any ambiguous steps.

Retesting

1. Repeat the testing with a new person as the tester.
2. Repeat until testers can follow the instructions easily.

Operational checks



Warning: Releasing instructions without proper testing could be highly hazardous to your organization's reputation and your career!

Summary — instructions

Instructions must be short, unambiguous imperatives.

Precautions must be placed before the step to which they refer.
Different precautions communicate different levels of urgency.

Carefully test your instructions with an operational check.

User manuals

Goal You will be able to write good user manuals.

I assume... that you know how to write instructions.

User manuals

User manuals usually have the following features:

1. a brief description of the product,
2. instructions about how to use the product,
3. suggestions for fixing problems.

Assume that the reader has only slight technical knowledge, unless the target audience consists of experts only.

User manuals — identify the readers

Figure out who will use the product and how much they know.

important for any writing

mandatory for writing user manuals

It is easy for an expert technician to overestimate the ability of the readers and write a manual that is too hard.

Such manuals may feel too complex or even incomplete to the average reader.

User manuals — organization

User manuals are structured in sequential order
(usually considerations of time, importance, or space).

The outline should focus on the user
and the tasks that the user will perform.

Use clear, simple language;
assume that the reader has limited technical knowledge.

Writing plan for a manual



Summary

Explain what the product is and what it can do.

Product description

Explain all the elements of the product.

Operating instructions

Give step-by-step instructions for all tasks that the user will perform with the product.

Troubleshooting

Explain how to diagnose and solve problems that may occur.

Operating instructions

Identify the audience.

Perform a task analysis.

Group and label each task.

Write the steps for each task.

Writing operating instructions

Identify the audience.

Perform a task analysis.

Group and label each task.

Write the steps for each task.

Task analysis

Start with brainstorming in no particular order.

Describe the tasks using *gerunds* (-ing verbal nouns).

printing the report
writing the code
walking the dog

List everything that users might want to do with the product.

Focus on the tasks that users will perform,
not what the product can do.

Group and label tasks

Review the list of tasks from the previous analysis.

Organize those tasks into associated groups.

Organize the groups into a logical sequence for the intended audience.

Write the steps

For each task, write the instructions that the user will perform to accomplish the task.

Each step should be a short, numbered command.

Troubleshooting

Tell the reader what to do if the product does not work.

Each step should be a short, numbered command.

Troubleshooting directions are really just
a special kind of instruction.

Exercise — organize the yard work!



Task analysis

Logical grouping of tasks

Tools

Precise instructions

Summary — user manuals

User manuals are written for non-technical users.

Focus on describing the tasks that the user will perform, not the capabilities of the product.

Break up tasks (gerunds) into step-by-step instructions (imperatives).

Summary — user manuals

User manuals are written for non-technical users.

Focus on describing the tasks that the user will perform, not the capabilities of the product.

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Technical instructions

Goal You will be able to write
properly-formatted technical instructions

I assume... that you know how to write instructions.

Technical instructions

Technical instructions are written for technical experts, not the general public.

Technical instructions involve detailed and exact procedures such service and repair procedures.

Like all instructions, they tell someone to do something.

They may outline exact, step-by-step details, or they may define what has to be done and leave the method to the reader.

Knowing the reader's expertise will influence the level of detail.

Technical instructions

The reader's expertise will influence the level of detail required in the instructions.

If the product is new and not well known, be very specific.

Find the hinged cover plate at the bottom rear of the cabinet. Open it by inserting a Robertson No. 2 screwdriver into the narrow slot just above the hinge and then rotating the screwdriver half a turn counter-clockwise.

If a lot of background knowledge can be assumed, be brief.

Open cover.

Writing plan for technical instructions



A vertical light blue line with a downward-pointing arrow at the bottom, passing through the center of three blue rectangular boxes. The first two boxes are enclosed in a red rounded rectangle.

Summary

Explain what has to be done.

Purpose

Explain why it has to be done.

May be combined if short.

Tools & materials

List all necessary equipment.
Diagrams may help.

Technical instructions



Carpenter's level



Drill

1/8" drill bit

1/4" drill bit

7/16" drill bit



Hacksaw



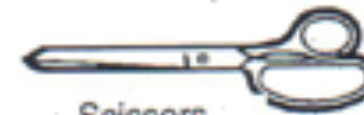
Pencil



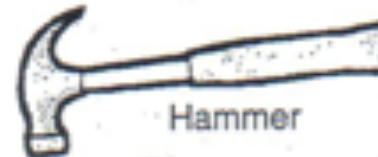
Pliers



Center punch



Scissors



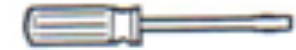
Hammer



Tape measure



Phillips screwdriver



Slot screwdriver



File

Writing plan for technical instructions



A vertical flowchart with four blue rectangular boxes connected by a light blue line. The boxes are labeled 'Summary', 'Purpose', 'Tools & materials', and 'Steps' from top to bottom. A light blue arrow points downwards from the 'Steps' box. A red rounded rectangle encloses the 'Summary' and 'Purpose' boxes.

Summary

Explain what has to be done.

May be combined if short.

Purpose

Explain why it has to be done.

Tools & materials

List all necessary equipment.
Diagrams may help.

Steps

Explain in short, authoritative steps
how the work is to be done.

Summary — technical instructions

Technical instructions explain tasks that must be performed.

They are written for technical people.

Proper format includes summary, purpose, tools, and steps.

References

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Lannon, J. & Klepp D. (2012). *Technical Communication*, 5th Cdn. Edition. Toronto: Pearson Canada Inc.