

Project 4: Technical Description

Technical professionals are often required to define or describe a technical object, concept, or process to someone who has little knowledge or experience with the subject at hand. For example, an engineering firm might write a proposal to bid on a contract to develop a helicopter for the Defense Department; one section of the proposal would be a detailed description of the product the company proposes to develop. Technical descriptions are used before products and processes are developed (as part of proposals and planning documents), during development (in progress reports, for instance), and afterwards (as part of marketing and promotional literature and technical support documents).

This project asks you to select a **mechanism** or **process** and write a description of it. It's a good idea to select something with which you are already familiar, so you can focus on learning how to write the description rather than focusing on both learning how to write the description and learning about the mechanism or process.

A **mechanism description (sometimes called a "product" or "object" description)** explains the features of a specific device, such as a scientific instrument or computer program. **Tell us how the parts work together to make the mechanism work.** Possible topics include devices that are specific to your field, or devices you use in everyday life:

- How Manual grass clippers work
- How a Fuel cell works
- How a Battery works
- How a Catalytic converter works
- How a Manual can opener works

Included in this general category are **Objects**. "An object is anything from a natural physical site, such as a volcano, to a synthetic artifact, such as a battery. A tomato plant is an object, as is an automobile tire or a book" (Markel, p 547)

I'd recommend starting your brain storming by thinking about a mechanism or object that is related to the topic of Project 2, in which you addressed a "scientific or technological interest, question, or problem [that] most deeply interests you."

A **process description** explains how a complex event occurs, including a mechanical process (i.e. how donuts are made) or natural event (i.e. how lightning is produced). You can choose a process that is specific to your field, or one that people may be curious about:

- How a specific drug works
- How steel is made
- How a computer compiles and executes a program

- How a microwave works
- How food products are irradiated

It is important to note that an object, mechanism, or process description is not an instruction set. An instruction set provides steps a user would take in order to complete a task (for example, steps to change oil in a car). In contrast, mechanism and process descriptions describe how something works (for example, how oil functions to cool an engine). The contrast is between how to use something and how that thing works—how to use a microwave versus how the microwave heats food. **For this assignment, you should focus on how things work, not on how to use them.**

Audience and Purpose

Select an audience that would be interested in learning about the process or product you explain. For example, you could assume an audience of students reading about your topic in a textbook. You could write a marketing document to persuade people to buy a product. Or, you could write a description that would be part of a proposal being sent to a potential client. In the assignment you should assume that the description is crucial to the work of your audience.

Gathering Information

Take time to learn about the product or process you select. This might require you to read background information or otherwise inform yourself about the topic.

Required Content

For **mechanism descriptions**, start with a sentence definition of the mechanism and its various parts. This could become an extended definition if you think your audience needs more introductory information. Next, describe each part of the mechanism in more detail, including its dimensions, materials, function, and relation to other parts. Conclude with a description of one complete operating cycle for the mechanism.

For **process descriptions**, start with a definition of the process and the different steps it involves. Again, this could become an extended definition if you think your audience needs more introductory information. Next, describe each step in more detail. Conclude with a summary of one complete cycle in the process.

In either case, though, remember to choose contents based on the interests, experiences, and knowledge of your audience.

Format and Organization

Use an organizational pattern suitable for the topic you've chosen. In any case, however, the paper must have an introduction, a body, and a conclusion. I expect that the introduction will function as an advance organizer that presents the topics of the level 1 sections that follow (see Chapter 9). At least one (if not more) of the level 1 sections must break into level 2 sections. Every time a section breaks into subsections, you must have an introduction that functions as an advance organizer.

Include design features to help the reader locate information and understand the product or process better: diagrams, headers, bulleted lists and other technical communication conventions you've learned about. The final paper should be **at least 1000 words** and should be single-spaced. **It must have at least one figure (a visual).**

Visuals

You have two options here. First, you can develop your own visuals (a rough sketch is fine if you don't know how to prepare one with a computer program). Second, you can use a "reference visual," which is a copy of a published image. If you use a published image, be sure to cite the source and discuss any modification that image needs to fit your context. (For example, if you're describing how a snowblower engine works, you might use an image from the manufacturer's website rather than drawing your own. And if you can't find the exact image you need, you could use a similar image and discuss how your ideal image might be different.)

Reference List

While you are not required to use secondary sources, any sources used **MUST** be listed at the end of your document, **along with a sentence or two of annotation**, telling us how you made use of the source in collecting information about your topic or writing your document. Of course, any direct quotations or paraphrases must be indicated in the body of your document by the use of in-text citations.

Evaluation Criteria

I will evaluate the technical description according to these expectations:

Content: The document is complete (it has all the necessary information to describe the mechanism or process, including a sentence or extended definition).

Format and Organization: The introduction effectively sets up the description. The document uses an organizational pattern appropriate to the mechanism or process (functional, spatial, or

chronological). The conclusion includes appropriate information.

Style: The document uses the present tense unless it covers a topic from the historical past. The document uses technical communication conventions.

Audience adaptation: The document uses visuals when necessary to help the designated audience understand how the product or process works.

Mechanics: Spelling, grammar, and punctuation are correct.