Karadeniz Teknik Üniversitesi
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TECHNICAL DESCRIPTION

Dersi Veren Öğretim Elemanları:

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Do everything you can to ensure that your readers won’t get hurt.

Types of Technical Description

- Description or a definition of a physical thing
- Instructions on how to perform a work
- Operation principle of a system
TECHNICAL DEFINITION
Technical Definition of a Part

For example, the sentence "A computer diskette is a device used for storing electronic data" is not really description in our sense of the world. It explains the function or purpose but provides little or no physical detail.

However, the sentence "The common computer diskette is 3.5 inches by 3.5 inches and approximately 1/8 inch thick" is very definitely description.
TECHNICAL DESCRIPTION
What is Technical Description?

- It is the detailed discussion of the physical aspects of a thing.

- That means discussing things like color, shape, size, weight, height, width, thickness, texture, density, contents, materials of construction, and so on.

- It also means discussing any quantifiable details such as numbers.
Contents and Organization of Technical Description

Make sure description does all of the following things (but not necessarily in this order) that apply to your particular description:

- Indicate the specific object about to be described.
- Indicate what the audience needs in terms of knowledge and background to understand the description.
- Give a general description of the object and its function, cause, or effect.
- Give an overview of the contents of the description.
Sources of Description

When you write a description, you need to think about the kinds of descriptive detail you can provide. Sometimes, descriptions are rather weak in this area. Use the following list to plan your description or to review a description you have written. Think of the categories of descriptive detail you could provide, or use the following list to identify categories you have not used:

- color
- shape
- height
- width
- depth
- weight
- materials
- texture
- width
- location
- methods of attachment
- amount
- pattern
- design
- ingredients
- age
- subparts
- length
- finish
- temperature
- moisture content
- smell

Remember that this is just a typical or common model for the contents and organization--many others are possible.
Dealing with Numbers in Technical Descriptions

- In descriptions, you'll probably find yourself puzzling over how to handle numbers, abbreviations.

- You should use numerals in running text when the number indicates an exact, measured, or measurable amount or when it represents a critical value.

- For example,
  "The cup is 3 inches in diameter" or
  "Use 4 tacks to fasten the poster to the wall,"

it seems to matter that the numbers are exact.
Use of Abbreviations in Technical Descriptions

• In technical writing, we expect to see abbreviations. Use them in your description freely.

• Remember the rule on punctuating abbreviations—punctuate them only if they spell a word

  for example, inch --- in. but milimeter -- mm

• Remember too that abbreviations do not go up against the number they are used with

  (for example, make that "8 mm tape" or "8-mm tape" but not "8mm tape").
In most descriptions, you'll need at least one illustration of the thing you are describing, with labels pointing to the parts. Create and format graphics, according to the intuitional requirements, and incorporate them into your descriptions.

Fourstar SX-E0906-3A Golf Car

- Maximum speed: 15 km/h
- Forward and backward with 2 speed shift
- Maximum load: 150 kg
- Climbing capacity: 25 degree
- Front and Rear wheel: 13 inches tubeless tire.
- The front and rear with excellent shock absorber
- Foldable
- Rear hydraulic brake
- Transmission: steel chain drive
- Battery: 36 V 6 pcs of 12 V 20 Ah battery
- Recharging time: 8-10 Hours
- Driving time: 5.5-6 Hours after a full charge
Technologies

Electric bikes are not mopeds or scooters — there is no throttle. All a rider has to do is engage the Trek Syn Drive™ and determine a desired level of assistance and go. With breakthrough Ride+ technologies, we like to think of Ride+ really as your power, plus.

Rechargeable battery
Silent Drive™ motor
Syn Drive™
Ride+ console
Regenerative braking

The advanced design of the Ride+ motor system utilizes regenerative braking to maximize battery life. While riding downhill, simply set the bike to regenerative mode — the bike keeps a consistent speed, and also charges the battery. On average, regenerative braking can create up to a 10% increase in battery capacity.

More about regenerative braking.
► Watch Now

Headings in Technical Descriptions

• In descriptions, you'll want to use headings and subheadings to mark off the discussion of the individual parts or characteristics.

• Remember that, ideally, you want to describe each part in a separate paragraph or section--and flag that discussion with a heading.
Listing in Technical Descriptions

- Lists are not nearly so important in descriptions as they are in instructions.
- However, if you itemize parts or subparts or list specifications, these are good situations for lists.
Special Notices in Technical Descriptions

• In descriptions, there is nothing like the important role for special notices as there is in instructions.

• After all, if it really is a description, readers should not be trying to follow any procedure, and therefore should not be running any risks of damaging equipment, wasting supplies, screwing up the procedure, or injuring themselves or others.

• However, you may find the note special notice to be useful to emphasize important points or exceptions.
Example 1

The Rayovac Workhorse is a hand-sized plastic flashlight, easily portable, which will fit into most automobile glove compartments. (See Figure 1.) The Workhorse's overall length is 6 inches, with a diameter of 2 inches at the head of the flashlight, tapering to 1-1/4 inches in diameter at the battery compartment. The body of the Workhorse, basically cylindrical in shape, is of matte black, high-impact plastic, ribbed for a secure handgrip. The Workhorse flashlight consists of two major parts: (a) the body, containing the battery compartment and the switch, and (b) the bulb assembly, containing the reflector, the bulb, and the connector. The flashlight is powered by two 1.5 volt size C batteries.

Figure 1. Rayovac Workhorse Flashlight
Body
The body of the Rayovac Workhorse Flashlight is 5-5/8 inches, with a diameter of 2 inches at the screw, or head end, tapering to 1-1/4 inches at the battery compartment. The interior of the screw end is threaded, allowing for connection with the bulb assembly. (See Figure 2 for an illustration of the complete flashlight assembly.)
Technical Description: Rayovac Workhorse Flashlight

Battery compartment. The battery compartment holds the batteries, the power source for the flashlight. The compartment is cylindrical, 3-1/2 inches long and 1-1/4 inches in diameter, with a coiled metal spring on the interior of the closed end, and a 1/4-inch wide strip of gold-colored metal running along one interior side of the compartment. The compartment holds two 1.5-volt C batteries, in a stacked position, with the negative end of the lowermost battery in contact with the spring, and the positive end of the lowermost battery supporting the negative end of the uppermost battery. The open end of the battery compartment closes with the insertion of the bulb assembly.
**Switch.** The switch turns the flashlight on and off. The flashlight switch is located on the body of the Workhorse 1-1/2 inches from the screw end. The switch is of round white plastic, designed to be activated with the thumb of the hand holding the flashlight. When the switch is pushed forward, towards the larger end of the flashlight, the light turns on. When the switch is returned to the original position, the light turns off.
**Technical Description:**

**Rayovac Workhorse Flashlight**

**Bulb Assembly**
The bulb assembly of the flashlight consists of the reflector, the bulb, and the connector. When fully assembled, the bulb assembly is 2 inches long, with a diameter of 2 inches at the reflector end reducing to 3/4 inch at the contact end of the connector. The bulb assembly completes the flashlight by screwing into the end, or head end of the body of the flashlight.

**Reflector.** The reflector magnifies and projects the light generated by the battery-powered bulb. When viewed from the larger end, the reflector consists of a transparent flat plastic cover over a chrome-colored reflective plastic concavity with a central hole. The reflector screws into the connector on one end, and the midsection of the reflector provides the main screw for attachment to the flashlight body.
**Bulb.** The light source for the Workhorse is a glass bulb, 1/2 inch long, permanently fused onto a cylindrical metal base 1/2 inch long and 3/8 inch in diameter. The bottom of the metal base has a protrusion, providing the electrical connection between the bulb and connector. The bulb itself contains a metallic filament, one-half the length of the glass portion of the bulb, surrounded, at a point halfway up the length, by a clouded white plastic-like material.
**Connector.** The connector connects the reflector and bulb to the battery power source. The connector is of black plastic, ringed with a metallic collar 3/8 inch wide. The closed end of the connector is mounted with a 5/6 inch-square gold-colored metal strip. The metal strip facilitates the connection between the bulb and the batteries. The open end of the connector is threaded to allow joining with the bulb and reflector.

When fully assembled, the Rayovac Workhorse Flashlight is a sturdy easily held tool providing light sufficient for regular outdoor and emergency use. The compact size makes the flashlight easily portable, and batteries and bulb are readily accessible for replacement.
In the fall of 1988, a construction crew found a primitive stone scraper next to a driveway in an area that had been dug for the installation of a drainage pipe. The tool can be described both in terms of its characteristics and recognizable parts.

**Characteristics of the Stone Scraper**

The shape, size, color, and texture of the stone scraper distinguish it as one that was made and used approximately 10,000 years ago in Central Texas.
**Primitive Stone Scraper**

*Shape.* Figure 1, the top view of the scraper, best reveals its shape. The tool has an irregular, slightly less than half-moon shape, with one end tapering to more of a point than the other. The curved sides taper from a relatively flat base to the top.

![Flaked area](image)

![Unworked area](image)

**Figure 1.** Top view of the implement. The key for flaked and unworked surfaces in this figure also applies to subsequent illustrations.
**Primitive Stone Scraper**

**Size.** The tool is approximately 3-3/4 inches long, 1-5/8 inches high at its tallest point, and 1-5/8 inches thick at its thickest point. The stone weighs 8-1/2 ounces.

**Color.** The flaked areas expose the core of the stone which ranges in color from reddish to yellowish brown. The natural, unworked outer surface of the stone is irregularly colored, with areas of light brown, gray, white, and reddish brown.

**Texture.** The rock used to make the implement is chert, commonly called "flint." When struck with another harder stone, layers of chert flake off, leaving smooth, flat surfaces with relatively sharp edges. Certain edges of the implement have been filed or ground to make it possible to hold and use the stone comfortably. The bottom of the stone is entirely unworked. Its surface is irregular and worn, with a scattering of pock marks.
Primitive Stone Scraper

Parts of the Stone Scraper
The scraper fits naturally and comfortably into my hand. Holding the tool makes it easy to imagine how it was used and to identify the parts of the scraper. Figure 2A shows the thumb rest and scraping or digging edge of the tool. Figure 2B is an illustration of the tool as it is held. It is quite possible that the scraping edge at one time extended farther and was capable of cutting as well as scraping or digging.

Figure 2. (a) Parts of the tool. (b) The tool as held and used.
TECHNICAL DESCRIPTION: 
PRINCIPLE OF OPERATION
Technical Description - Principle of Operation

• Describing the principle of operation — the way something works — is an effective way to develop an extended definition, especially for an object or a process.
**Technical Description - Principle of Operation**

**Example**

The system maintains the host vehicle’s following interval by adjusting its speed.

- **If the target vehicle speeds up, increasing the following interval between the two vehicles, the system informs the engine control module to accelerate and increase the vehicle’s speed until either the set following interval or the cruise control preset speed are reached.**

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Technical Description - Principle of Operation

Example (Cont.)

- However, if the gap between the target and the host vehicles is decreasing, the system informs the engine control module to reduce the vehicle’s speed.

- The engine control module then issues a command to dethrottle the engine (e.g., by reducing fuel), apply the engine brake, and, when available, downshift the automated transmission.

INSTRUCTIONS
Technical Description

Assembly Instructions

A well-designed instruction page;

- Contains appropriate amount of info,

- Simple two-column format (instructions-figures),

- Effective use of page,

- Horizontal rules separating the steps
Technical Description –
Important Points in Writing Instructions

• Number your steps instead of bulleting
• Use highlighting techniques
• Write short steps to avoid overloading your reader
• Develop points thoroughly
• Use short words and phrases
• Start your step with a verb
• Personalize text
• Do not omit articles
Technical Description - Installation Instructions

TerraLUX TLE-20 LED Lightbulb Upgrade converts your flashlight from a “battery hog” to a brilliant white light source that never burns out and extends battery life, usually about 6-fold!

Perfect LED upgrade for incandescent bulb in 2 Cell MiniMag® flashlights that use AA or AAA batteries.

To install in Mini Maglite®:
1. Unscrew head from flashlight body and remove bulb.
2. Unscrew the two parts of the head. Remove old reflector.
3. Insert TerraLUX reflector and reassemble the head.
4. Insert TerraLUX LED bulb. If LED is not lit, remove LED, rotate it 180° and reinsert to correct the polarity.
5. Screw flashlight head onto body.

Remove old reflector
Insert TerraLUX reflector
(to small size for AAA, large for AA)
Pull out old bulb
Insert TerraLUX LED
(do not remove)

**Technical Description – Example**  

**Instructions for Installing a Water Sprinkle System**  
*(Antelco Shrubble Spike)*

1. Plan your system. Where will you place the 13mm poly tube to distribute the water? Where will you cut the tube? Where will you put the emitters? **TIP:** Before you start, uncoil the tube & lay it out in the sun to soften & make it easier to handle.

2. Lay out the 13mm poly tube according to your plan. To change direction or add another route, cut the tube and use the elbows and tees.

3. Attach the pressure regulator to the garden tap (or the tap timer if you have one fitted). Use the tap adaptor if the tap connection is too large. **NOTE:** If the water is non-potable, you may need filtration.

4. Screw the $\frac{3}{4}''$ nut & tail onto the pressure regulator & connect the 13mm poly tube onto the tail, securing it with the ratchet clamp.  

**TIP:** It is easier to push the tube onto fittings if you CAREFULLY dip the end of the tube into a container of hot water for a few seconds.

5. Using the Key Punch supplied, make a hole in the 13mm poly tube where you want an emitter to be placed.

6. Break off the adaptor from the side of the Shrubbler Spike.
Technical Description –
Instructions for Installing a Water Sprinkle System

7. Push the soft 4mm uPVC tube onto the end of the adaptor, then push the adaptor into the hole in the 13mm poly tube.

8. Cut the 4mm tube to a suitable length then push it onto the barb on the Shrubbler Spike.

9. Push the Shrubbler Spike into the soil near the plant so that the water will wet the rootzone effectively. Install further Shrubbler Spikes until you have completed the installation according to your plan.
Technical Description –
Instructions for Installing a Water Sprinkle System

10. If you change your mind about the location of an emitter after punching the hole, insert a Goof Plug to block the opening.

11. Now secure the 13mm poly tube by pushing Hold Down Stakes into the soil at regular intervals along the tube.

12. Before you install the End Plugs to seal the ends of the 13mm poly tube, turn on the tap & flush out any pieces of plastic or soil. Turn off the tap and insert the End Plugs.

13. Finally, with the water turned on, rotate the cap of each Shrubbler Spike to get the desired wetting performance. You have now successfully installed your Shrubbler Spike system.