

## Chapter 1

## APPETIZERS

**W**

hat do you do to gain the students' attention at a

moment of transition or when things have gotten out of hand? One technique is shown in Figure 1-1. If that doesn't work, this may be followed by the method shown in Figure 1-2, and then by turning off the lights, as in Figure 1-3.

In this entire sequence, the teacher never says a word. She uses the following signals:

- Makes a face;
- Puts her finger to her cheek;
- Stares intently;
- Stands up straight;
- Makes a "V" sign;
- Walks over to the light switch; and
- Turns off the lights.

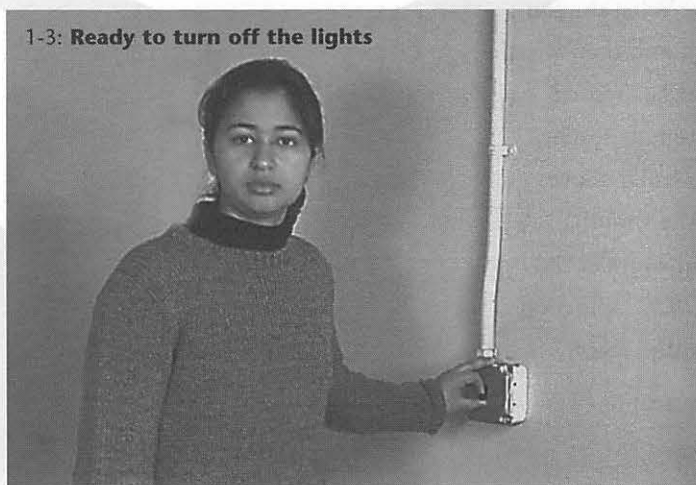
1-1: Finger to cheek



1-2: The "V" sign



1-3: Ready to turn off the lights



Every teacher has a variety of methods for getting the attention of a class. These could include words, nonverbal speech, intonations, a raised voice, gestures, facial expressions, posture, writing something on the board, hitting something with a ruler, turning off the lights, and more. All of these are *signals*, or *symbols*, for conveying the same message: “Pay attention!”

“Pay attention!” is only one of the myriad of messages that people try to send one another. Every message is conveyed by a symbol of some kind. The world is so full of symbols that they are largely taken for granted. This book will help you look at symbols in a different way and support you in making signs, symbols, and codes a part of your curriculum.

To begin with, we recommend that you make a survey of symbols in your own experience. How do *you* get the attention of a class? What do you do first, and then what, and then what? What is *your* method of last resort? Minerva Rivera, a fifth-grade teacher, tries all of the methods listed above. If and when they fail, she simply sits down in a chair and stares at the students. “When I do *that*,” Minerva says, “they know I’m really *ticked!*”

There are some symbols you can physically collect, such the symbols embodied in ads, consumer packages, and instruction manuals. Other items containing symbols cannot easily be removed from where they reside. These include street and wall signs, symbols on large appliances, and body language. You will have to capture them another way—for example, by drawing them, taking photographs, or describing them in words.

The field of symbols is so vast that it helps to divide them into categories. The sections of this chapter reflect one way of dividing up the world of symbols. Figuring out new ways to classify symbols is a worthwhile activity in itself. As you go through this chapter, be on the lookout for different ways of categorizing them.

# Basic Symbols

Why are there spaces between words?

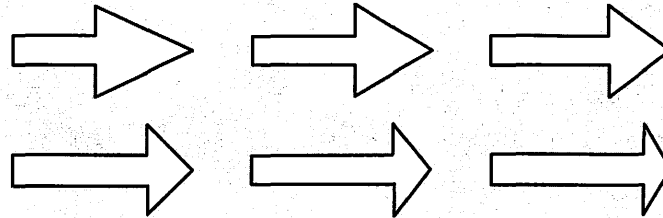
A period means “this is the end of a sentence,” and a comma is a kind of boundary marker within a sentence.

A space represents a kind of boundary too—the boundary between words.

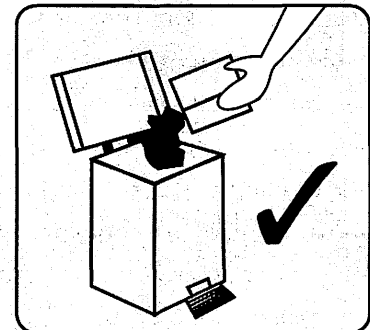
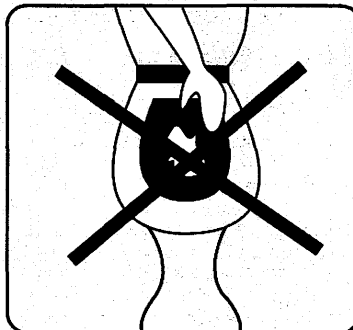
Apparently, a space—the absence of a symbol—is a symbol too! Spaces were not used for this purpose until around the ninth century A.D. Before that, Greek and Latin manuscripts simply ran all the words together. Inscriptions on Roman statues and buildings sometimes used a raised dot to separate the words. Even the lowly space between words had to be invented by someone!

Look at the list of items on the first page of this chapter. Each one is preceded by a little symbol called a “bullet.” This symbol has nothing to do with guns. It means simply, “Here is an item in a list.” Arrows are sometimes used for bullets, and also for many other purposes. An arrow often says, “Move your eyes in this direction.” What does it take to make an arrow convey this message? Figure 1-4 shows a set of arrows that are identical in height and overall length. Can you tell how they differ? Which one looks best? If you don’t like any of them, draw a few arrows that seem better to you. What is different about them?

1-4: Which of these arrows do you like best?



1-5: “Don’t throw trash in the toilet. Do throw it in the trash can.”



Here is another set of very basic symbols: the  $\checkmark$  and X to represent “yes” and “no,” “do” and “don’t,” or “good” and “bad,” respectively. As teachers, we use these all the time, and everyone seems to know what they mean. They can also be used in a humorous way; see, for example, Figure 1-5.

The check sign is also a form of the “tally” mark, used for counting. A stroke or check mark means “one of something.” Figure 1-6 shows an example of counting by tallying. The first three numbers of the Roman numeral system—I, II, and III—seem to be descendants of the tally system.

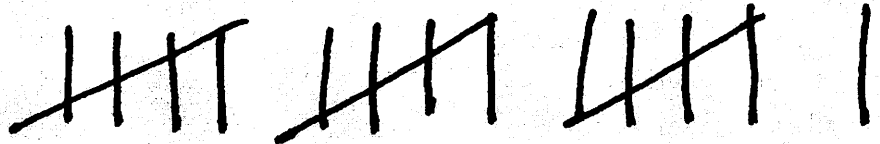
The Arabic number system is much more complex than the tally system, because you have to remember ten different symbols (rather than just two—the vertical line and the slanted line) and because the value of a symbol depends on its position. However, the Arabic system has two great advantages over the tally system:

1. It uses much less space to represent large numbers; and
2. It makes calculation much easier.

As an example of #1, the number in Figure 1-6 is represented by only two Arabic numerals: “16.”

In written English, individual symbols—letters—represent sounds rather than concepts. These letter symbols usually have to be combined into words in order to have any meaning. The ampersand—&— is one of the few exceptions; it is a single symbol that has a meaning. In other language systems, many individual symbols stand for entire words or concepts. This is true of Chinese, stenographer’s short hand, Braille, and American Sign Language. Can you think of other examples? Can you think of other meaningful individual symbols in English, besides “&”?

1-6: Tally system for writing “16”



In this section, we have mentioned the following categories of basic symbol:

- Spaces
- Punctuation marks
- Bullets
- Arrows
- Check marks and “X”s
- Tally marks
- Numerals
- Letters
- Ampersands

What other symbols would you consider basic?

# Graphic Symbols for “Don’t!”

We turn next to the category of graphic symbols. A graphic expresses an idea using a picture that is related to the idea in some way. Graphic symbols can be much more immediate than words. Also, literacy is not a prerequisite for reading them. Some signs tell you something is not allowed; others warn you that something could be dangerous. Most warning signs are too important to be left entirely to words; they need to be grasped quickly and by virtually anyone.

The most commonly used symbol in prohibitions and warnings is the red circle with a diagonal slash across it. Figure 1-7 is one example.

1-7: This sign is intended for people, not dogs



Because the symbol is so clear, the words are redundant. Figure 1-8 shows a New York City “NO PARKING” sign. This sign has one very clever touch: the broom handle, which indicates “STREET SWEEPING,” doubles as the red diagonal slash that means “DON’T.” However, the “P” is not a graphic symbol at all. If you don’t know that “P” stands for “PARKING,” you won’t understand the sign. It could even cost you a parking ticket!

“WARNING” signs are more important than prohibitions. They tell you about things that could be harmful or fatal. Additional graphic elements

1-8: New York City “No Parking” sign



sometimes help to convey this message of “DANGER.” Figure 1-9 is a warning sign from a vending machine. Besides the red circle and slash, it shows a triangle and warning exclamation point. These suggest the harm that could result from tipping the machine. Although the message is quite clear, it is undermined somewhat by the words “Vending machine will not dispense free product.” In other words, even if the threat of injury or death isn’t important to you, you still shouldn’t expect a free soda!

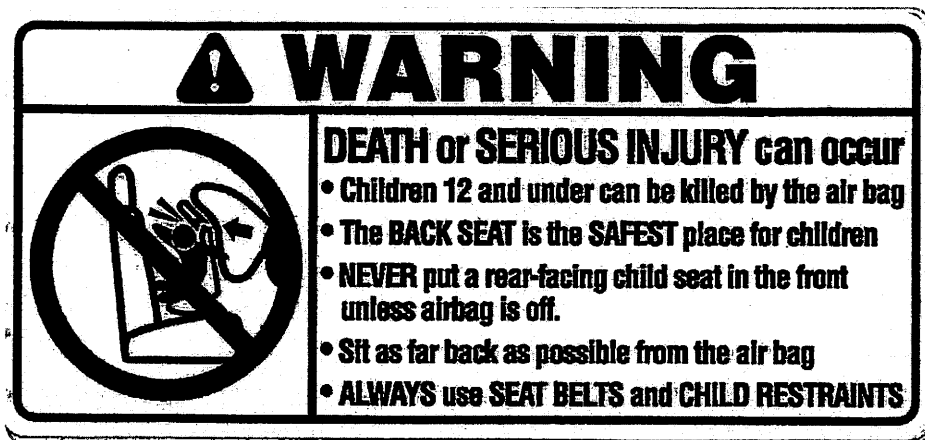
1-9: “Never rock or tilt”



A graphic warning symbol from the sun visor of a car is shown in Figure 1-10. Next to the symbol is a bulleted list of warnings and safety tips, which convey a lot more information than the graphic symbol does. Evidently, the designers of this sign had more to say than they could fit in the graphic symbol, but the graphic is much more immediate than the list. Notice the child seat breaking, and the “action lines” suggesting harm to the baby. This symbol is hard to ignore.

Warning symbols and prohibitions are easy to find. How many can you spot? Good places to look for them are in places where dangers or rules abound, such as airports, government buildings, hospitals, and trains. Children tend to be intrigued by warnings and prohibitions. Given the chance to make their own signs for the school, they usually create prohibition signs.

1-10: Warning against putting a baby in the front seat



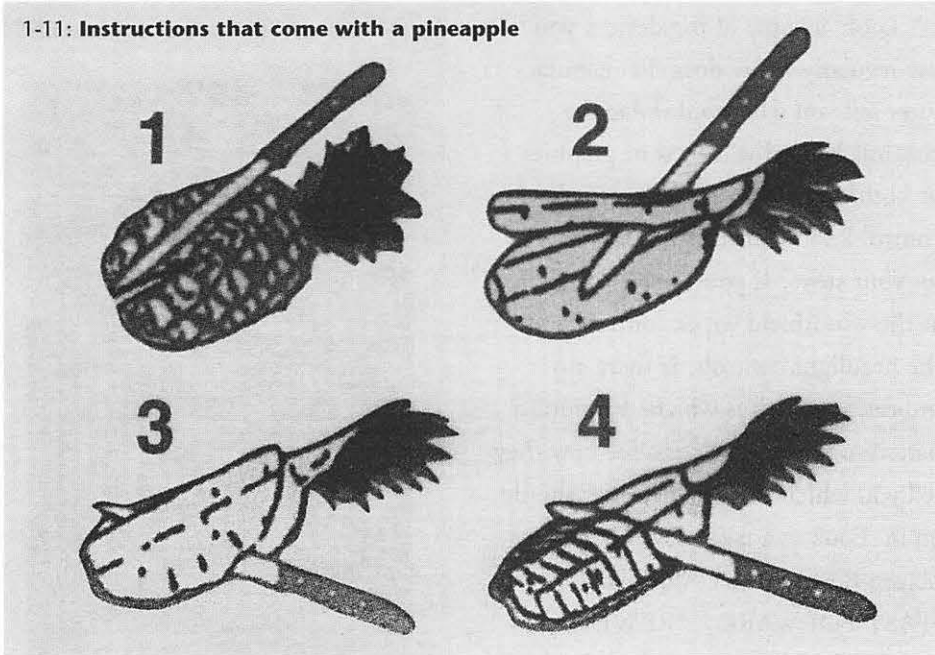
## Graphic Instruction Manuals

Graphics are also used to convey information. Many products require some sort of explanation, so the user will know what to do with them. Design of such a product includes the design of a set of instructions. Often, these instructions are best presented in graphic form.

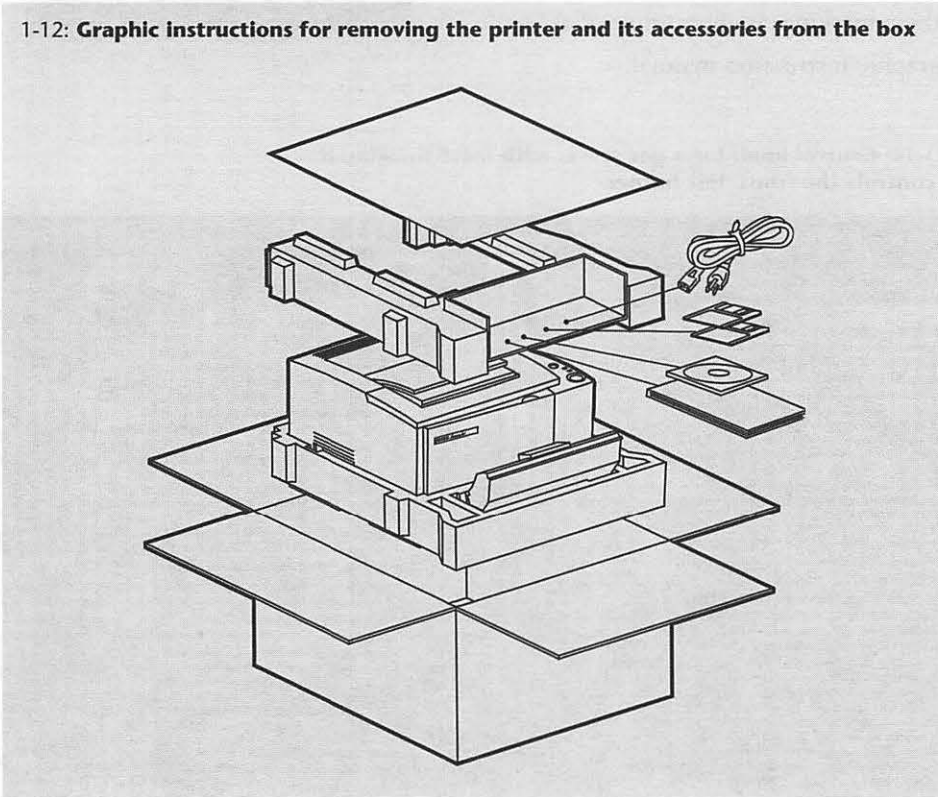
You are likely to find a graphic instruction manual enclosed with the following items:

- an electronic device that has to be hooked up;
- a tool or appliance that comes with attachments;
- a food product requiring special preparation (see Figure 1-11);
- furniture you have to assemble yourself;
- a construction toy.

1-11: Instructions that come with a pineapple



1-12: Graphic instructions for removing the printer and its accessories from the box



It is worth studying these manuals carefully, and gauging your own reactions to them. How clear are the directions? Do the instructions skip too many steps? Do the pictures correspond clearly with the parts? Can you tell what goes where? What other elements make an instruction manual work or not work?

Instruction manuals come in many forms. The first question about a product is often, "How do I get it out of the box?" Some boxes have the answer to this question printed right on them. For example, Figure 1-12 is a diagram from the side of a box that contained a computer printer. It shows the packing material, accessories, and the printer itself, in the order they should be removed.

The accessories, including the line cord, disks, and manual, are shown larger than scale, with "callouts" indicating their locations in the box. The diagram also shows how the flaps should be opened. It provides more information than is typical. Too often, the directions for opening the box are buried somewhere inside, making them useless!

Another issue calling for directions is how to clean a product. Nearly every article of clothing has “Care Instructions” sewn onto it, sometimes with graphic symbols for messages like “USE COLD WATER,” “NO BLEACH,” “MAY BE DRY CLEANED,” etc. Figure 1-13 shows an example.

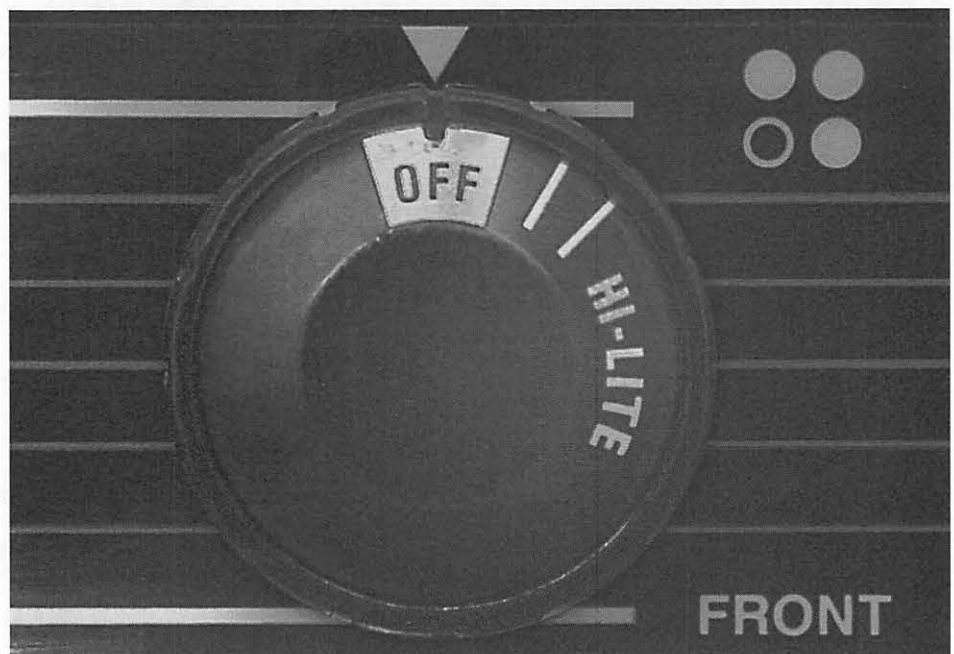
Directions for using an appliance are often printed, painted, or stamped right onto the device itself. Most battery-operated devices have a little graphic showing you which way to insert the batteries. An electric or a gas range typically has a knob for controlling each of four burners. The burners are usually laid out in a square or rectangle, but the control knobs are often arranged in a line. Which control knob is for which burner? Figure 1-14 shows one way of providing this information. There is a little graphic next to each control knob, showing which burner is controlled by that knob.

Look at some of the devices you use regularly. How does the manufacturer tell you what to do? Are the controls labeled with text or graphics or both? How do you know which control knob controls which burner on your stove? If you drive a car, look at the windshield wiper controls and the headlight controls. Is there any indication which is which? Examine a battery-operated device to see how they tell you which way the batteries should go in. Look at a tape player or CD player: how are the “FORWARD,” “FAST FORWARD,” “REWIND,” and “STOP” buttons marked? Each of these markings is an example of a graphic instruction manual.



1-13: How to take care of a garment

1-14: Control knob for a gas stove, with inset showing it controls the front, left burner





# Graphic Persuasion

When you read a sentence or a paragraph, you may or may not accept what it says. As you are reading, you are also thinking. Often as not, the people who promote products and services would prefer that you didn't think too hard about the messages they are sending you. They would rather appeal directly to your emotions and sentiments, which they can control more readily than your thoughts. Graphics are their medium of choice, as you can see by looking at most magazine ads and television commercials. There is little if any text.

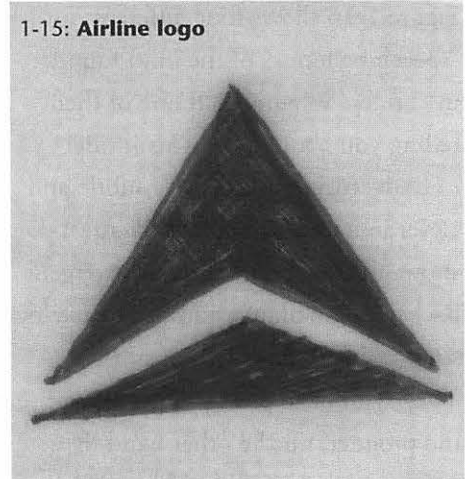
One way a corporation presents itself is through its logo. A corporate logo is like a nation's flag or a team's mascot: it is the symbol that represents the entire collective. Corporations spend huge sums of money to redesign their logos, which they regard as a way to "put their best foot forward." A good logo consists of simple, easily remembered shapes, but also conveys a distinctive message about the company. The symbolism should not be too explicit; it should suggest rather than tell the advantages of the company and whatever it sells.

Figure 1-15 shows the logo of a well-known airline. The two geometrical figures together make an equilateral triangle. The bottom shape is a short, squat isosceles triangle; the top one suggests the swept-back wings of a modern jet airplane.

Several different meanings are suggested by this logo, all of them part of the airline's overall message:

- The outside triangle is the Greek letter "Delta," which helps you remember whose logo it is.
- The upper shape looks like a futuristic airplane, suggesting that this airline is at the cutting edge of technology.
- The bottom shape suggests a mountain, meaning that this airline can take you to exciting places.
- The airplane is headed straight up, implying that company is always ready to fly, with no delays or hassles.

Look at other corporate logos. What messages are they trying to convey?



As in the case of the airline logo, shape can be a subtle and powerful graphic element. In the comics, shapes are used to convey all sorts of moods and feelings. Think about the graphic devices a comic book artist uses to suggest each of the following:

- Dizziness
- Anger
- Frenzy
- Meanness
- Fear

Figure 1-16 shows four different “speech balloons” of the kind found in comics. What is each one of them telling you about the words inside?

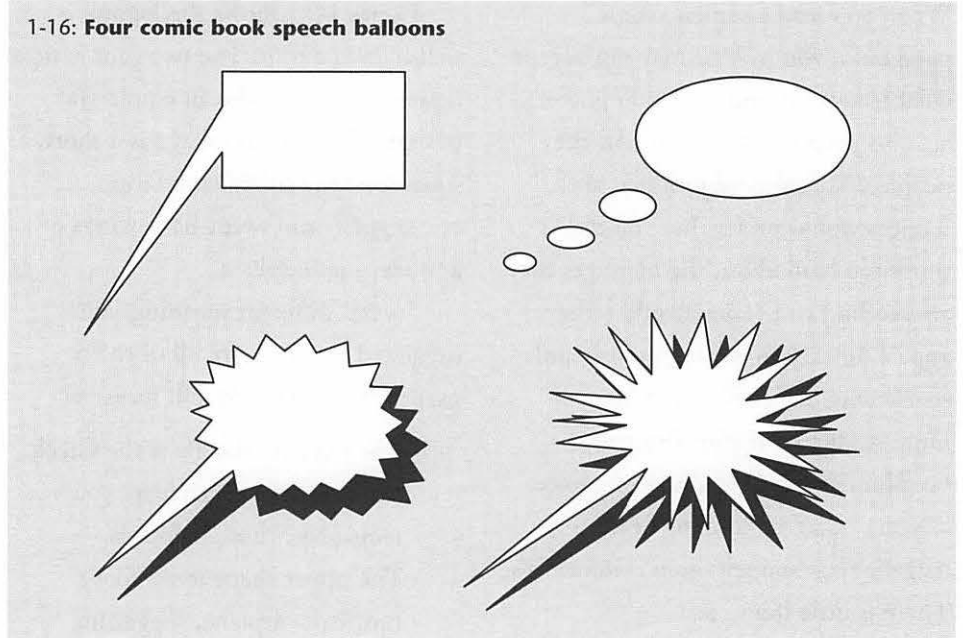
Advertising can be very subtle and clever in its use of symbols. Figure 1-17 shows the front of a familiar detergent package. The orange and yellow circles seem to be expanding outward.

They symbolize power. The name of the product, on the other hand, is written in a playful blue font, which suggests kindness. The message is: “This detergent is powerful against dirt, but gentle on your clothes.” While this translation may convey the same message as the image on the container, it is far less effective. Graphic messages can be powerful.

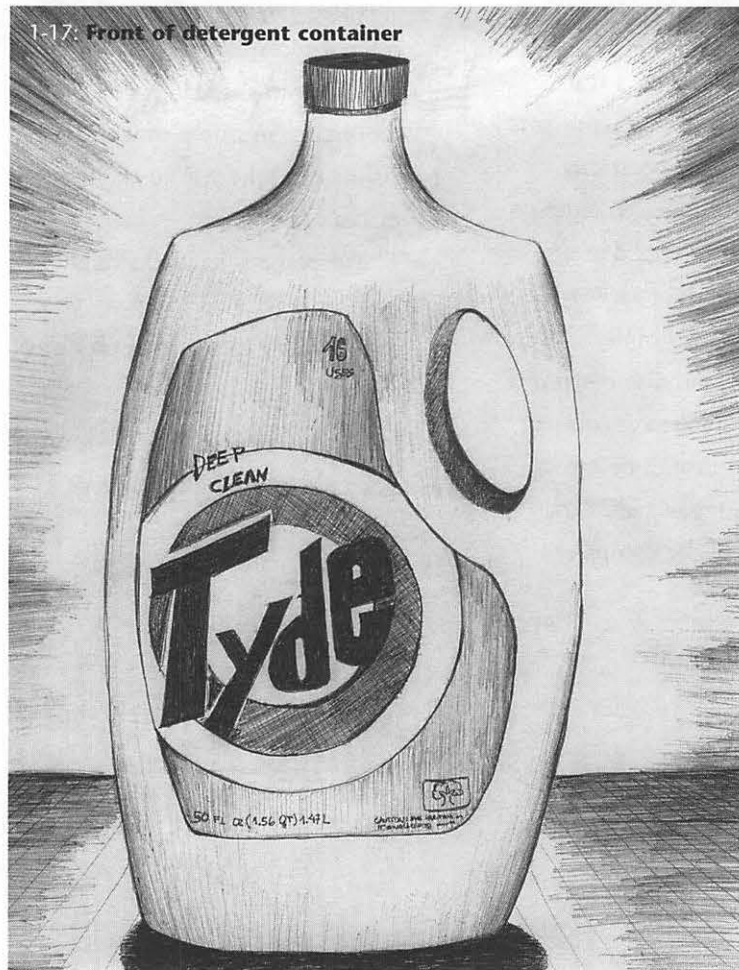
Look at some ads that appeal to you and ask yourself:

- What exactly are they saying?
- What makes them powerful?

1-16: Four comic book speech balloons



1-17: Front of detergent container



# Signals

Not all messages are sent via words or graphics. A catch-all term for any other kind of symbol is a signal. At the very beginning of this chapter, we saw several methods used by a teacher to signal her class for quiet. These signals included several forms of nonverbal communication:

- Gestures
- Facial expressions
- Gaze
- Posture
- Turning off lights

She could also have cleared her throat, said “Shhh!,” raised her voice, changed her intonation, slammed a book on the desk, or tapped someone on the shoulder. Each of those would have also been a signal.

Here are some other examples of how gestures are used as signals:

- Shrugging one’s shoulders;
- Communication between the pitcher and the catcher in baseball;
- A person on the street guiding a motorist into a tight parking space, or helping them to back up safely;
- Giving directions by pointing; and
- Culturally established gestures, such as the “thumbs down” sign or the thumb-and-forefinger “O.K.” sign.

Some other non-verbal signaling systems are discussed in Appendix A: American Sign Language and the Official Football Referee’s signals. How many other examples can you think of?

Machines send signals too. For example, vehicles are equipped with the means for sending a variety of signals. Some of them must be manually activated by the driver, such as the turn signals; while others function automatically, such as the brake lights. Other examples are hazard lights, flashing high beams on and off, horns, and back-up lights.

Although these electrical signals have largely replaced hand signals, there are some gestures that are still used by motorists:

- waving another car past when one’s car is stopped;
- waving a pedestrian past the front of the car.

Should cars be redesigned to provide signals for these messages?

Vehicles are only one kind of machine that send people signals. Most machines do, because the user of a machine needs information about what it is doing. Some of the common forms of signaling are:

- Indicator lights
- Flashing warning lights
- Beeps
- Bells
- Alarms

What are the signals that a car, a microwave oven, a telephone, or a VCR sends to its user? What message is being sent in each case? How effective is the signal at conveying the information? Are there messages these machines should be sending, but aren’t?

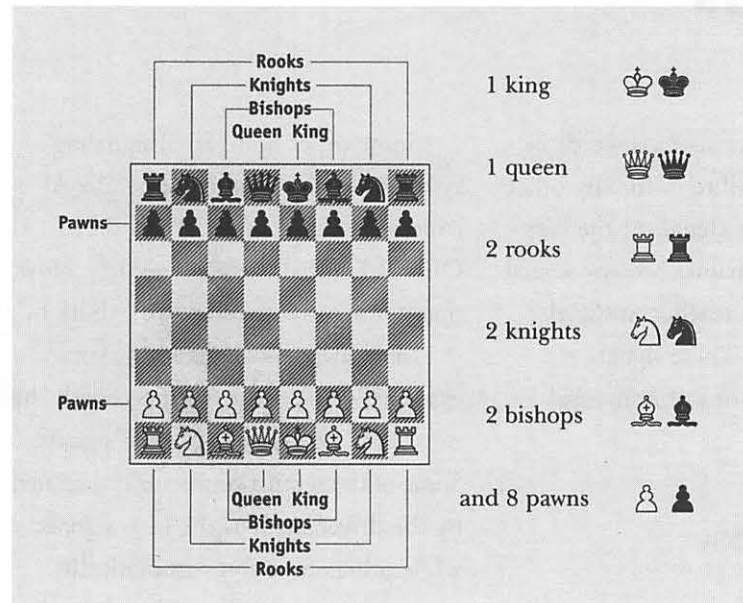
# Codes

A *code* is a set of signals or symbols that work together as a unit—in other words, a signal or symbol *system*. An example of a code is the system of signals used by the pitcher and catcher in baseball. To understand a code, you need a *key*, which is a table explaining the symbols in a language you already know.



Most professions, sports, and artistic endeavors use codes of one kind or another to convey information concisely. Most of these codes use graphic symbols. Another term for a graphic code is a *system of notation*. In describing a chess game, it is convenient to have a way to show the positions of the pieces after each move. Chess notation uses a different symbol to represent each type of piece. Figure 1-18 shows the key to chess notation and a map of the starting position.

Musical notation is another example of a code, as is the set of symbols used on a map. (See Figure 1-19.) Some other codes are described in Appendix A.

1-18: Key to chess notation



1-19: Portion of key to Green maps (©Green Map System, reprinted with permission)

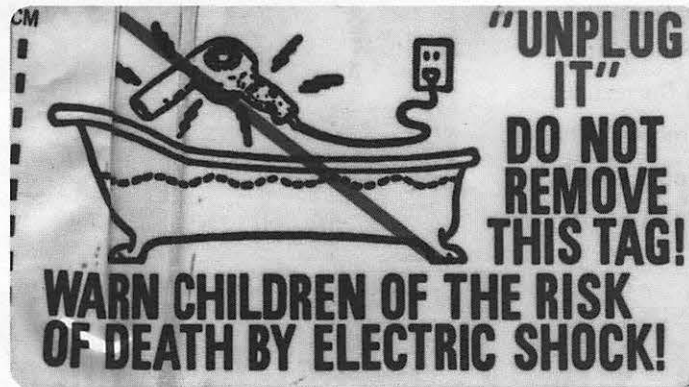
			
Green business/service Entreprises/Services verts Venta de servicios 'verdes' 環境ビジネス	Composting Compostages Compost バイオ利用再生施設	Eco design resource Ressources éco-designs Fuente de diseño ecológico エコデザイン情報源	Alternative health resource Ressources en médecines alternatives Medicina alternativa 伝統医療・健康法
			
Strictly green store Boutiques exclusivement vertes Solo productos 'verdes' 環境優良店	Reuse site Sites de réemploi Sitio de cosas usadas リサイクルショップ	Child friendly eco-site Sites éco-harmoniques pour enfants Sitio favorable para niños 子供にやさしい場所	Scientific/research site Sites d'études/recherches scientifiques Ciencia/investigación 環境科学研究機関
			
Green/conserving products Produits verts Productos verdes/que protegen el ambiente エコショップ	Remediated (cleaned up) site Sites décontaminés Sitio restaurado 環境修復実施地区	Senior friendly site Sites éco-harmoniques pour aînés Sitio favorable para la 3ra edad 高齢者にやさしい場所	Pollution monitor Surveillances environnementales Monitor de contaminación 公害モニター
			
Fair trade/social shop Boutiques socialement responsables Empresa con conciencia social フェアトレード店	Re-development opportunity site Opportunités de re-développements Oportunidad para re-desarrollar 環境再開発地区	Eco-spiritual site Sites éco-spirituels Lugar de inspiración 安らぎの場	Protest point Lieux de protestation Lugar de protesta 抗議運動地点

# A Gallery of Bad Signs and Symbols

In thinking about the design of signs and symbols, a good place to start is with ones that don't work very well. Figure 1-20 shows a warning tag from a hair dryer. The symbol shows a hair dryer above a bathtub, with lightning strokes coming out from it. The situation it depicts would both violate gravity and not cause a shock. The risk comes from dropping the hair dryer into the bathtub and then trying to remove it before unplugging it. It is better not to use a hair dryer in the bathroom at all, because a sink poses a hazard as great as a bathtub. The symbol and text do not provide any of this crucial information.

Figure 1-21 is a sign commonly found in public buildings. The symbol clearly indicates the use of the stairs during a fire. However, it does not convey the more basic message, which is "DON'T USE THE ELEVATORS." Worse yet, this particular sign is badly misplaced. It is located in the basement of the building, and the person is shown walking down the stairs, which would not be possible for someone already in the basement!

1-20: Warning tag from a hair dryer



1-21: Poorly placed fire safety sign

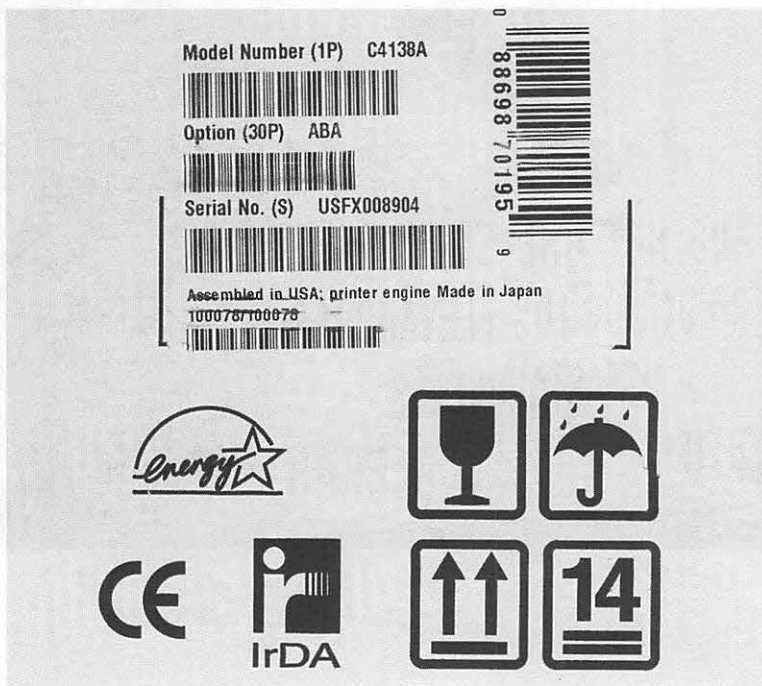


Often a symbol is in a position where it is difficult to focus on, because there are too many other signs nearby. This problem might be called “symbol clutter.” Figure 1-22 shows a small dumpster for collecting construction debris. Within about two square feet, it has no less than thirteen warning and prohibition symbols. What are the chances anybody would actually read all of them? Surely, some of them could be omitted!

1-22: Symbol clutter on a small dumpster



1-23: Symbol clutter on a shipping box



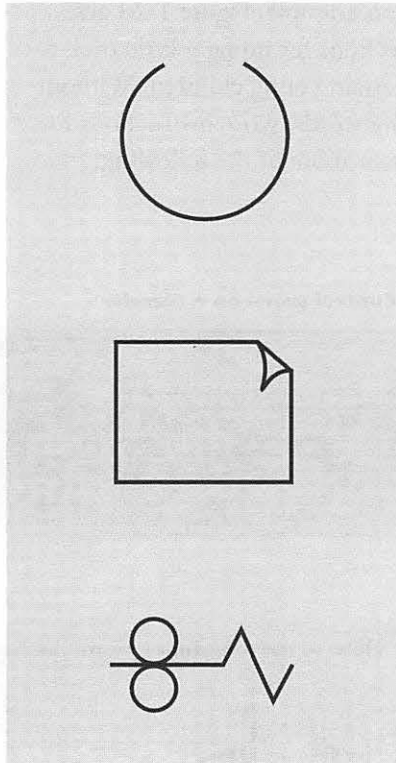
Here is another case of symbol clutter. Figure 1-23 shows a portion of a shipping box for a computer printer. Not counting the five bar codes, it has seven different symbols within a four-by-two-inch rectangle. These symbols are intended for different audiences, but there is no effort to organize them. The “FRAGILE,” “KEEP DRY,” and “THIS END UP” symbols are fairly obvious, but what does the “14” mean? What are “CE” and “irDA” and who are they for? The important symbols get lost in the clutter.

# Mystery Symbols

Some symbols are not so easy to understand. We have already seen examples of symbols that are *designed* to be obscure in order to make them more persuasive. Other symbols may be mysterious for other reasons. These might include: bad design, the message is intended for a machine, or the objective is to create a sense of mystery. In this section we present four symbol puzzles. Solutions appear at the end of this chapter.

1. Find at least four symbols for “ON/OFF SWITCH” and explain the parts of each one.
2. Figure 1-24 shows the symbols next to the three indicator lights on a computer printer. What do they mean?
3. On the back of every dollar bill there is a picture of a pyramid with an eye on top. (See Figure 1-25.) Note how the eye fills in the missing apex of the pyramid. What do these symbols mean?
4. Every manufacturer’s refund coupon, like the one in Figure 1-26, has one or more bar codes on it. The bar code at the left is scanned at the checkout counter. The bar pattern represents the number written right below it. What do you think this number represents? What information should it have in it?

1-24: Icons on a computer printer



1-25: Pyramid and eye from the back of a dollar bill



1-26: Refund coupon



# Symbol Design Challenges

In this section, we ask you to design some new symbols of your own. The purpose of a design is always to solve a problem, and we have already seen some problematic symbols. The first two design challenges are related to the bad symbols just considered. The other two present you with specific messages, and ask you to design graphic symbols for conveying them.

1. Come up with better designs, to replace the bad symbols shown in Figures 1-20, 1-21, and 1-22.
2. Make up new graphic symbols for shipping cartons. Some of the symbols on the box in Figure 1-23 represent the following messages:

- “THIS END UP”
- “FRAGILE”
- “KEEP DRY”

Other messages you can try are:

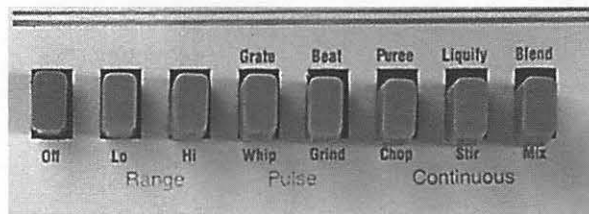
- “RUSH DELIVERY”
- “DO NOT FREEZE”
- “OPEN THIS END ONLY”
- “OPEN OTHER END ONLY”
- “DO NOT BEND”

3. Figure 1-27 shows the control panel of a blender. Design a graphic symbol for each of the words.

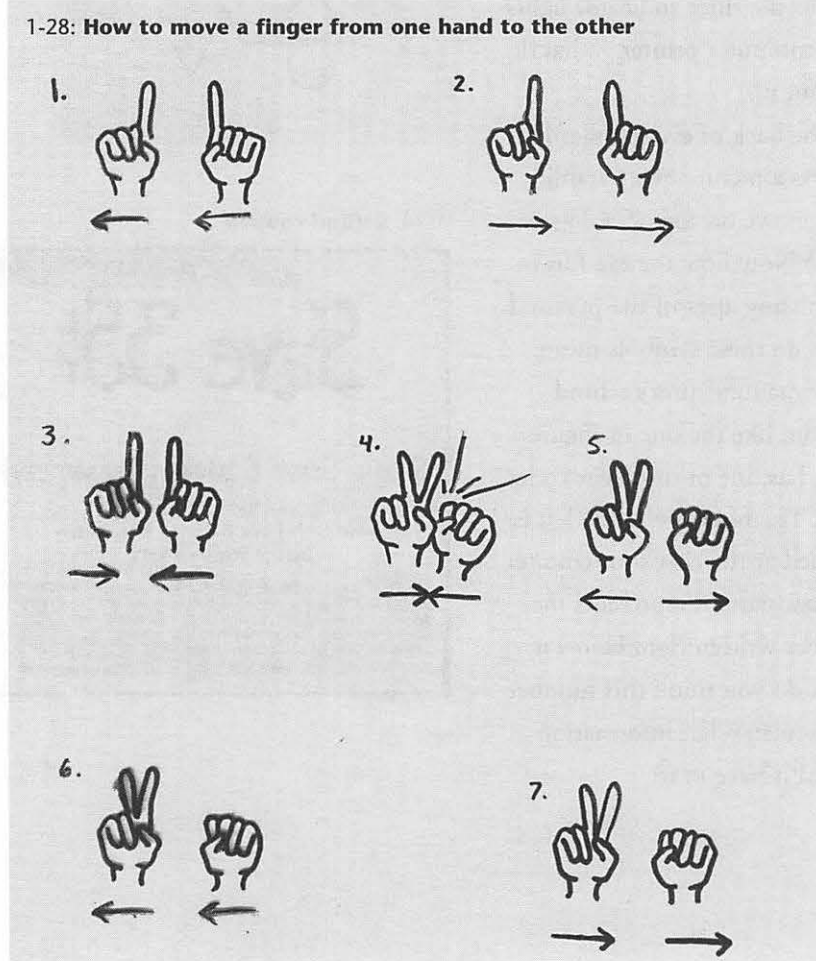
4. Create a graphic instruction manual. As an example, Figure 1-28 gives directions for doing a little trick to entertain young children. Without using words, write instructions for one or more of the following:

- tying shoelaces
- making a peanut-butter-and-jelly sandwich
- making a pop-up
- fastening a seat belt and shoulder strap
- gift-wrapping a package
- doing a magic trick

1-27: Control panel on a blender



1-28: How to move a finger from one hand to the other





# Solutions to Mystery Symbols

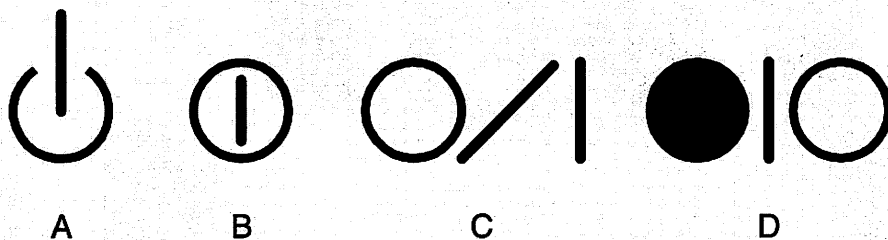
Here are the solutions to the mystery symbols presented on page 21.

- Four common symbols for “ON/OFF SWITCH” are shown in Figure 1-29. In A, B, and C, the vertical line means “OFF” and the circle means “ON.” In D, the dark circle stands for “OFF” and the open circle stands for “ON.”
- Figure 1-30 shows the key to the printer symbols.
- The eye and pyramid are part of the Great Seal, an official symbol of the United States Government. Note that the date on the pyramid is 1776. According to the

U.S. State Department, which is officially responsible for the Seal, the pyramid symbolizes the strength and durability of the new country. The unfinished top of the pyramid represents the work left to be done in building the country. The eye suggests divine guidance in this work. There are two Latin inscriptions on the seal: “ANNUIT COEPTIS” means “He [God] has favored our undertakings”; and “NOVUS ORDO SECLORUM” translates as “A new order of ages.”

- The bar code on the left of Figure 1-26 represents the number printed below it—i.e., 5 14800 22035 8. The “5” indicates that this is a refund coupon. “14800” is a code signifying the manufacturer. “220” represents the item the refund is for, single-serve six packs. “35” stands for the amount of the refund, 35¢. And “8” is a digit used to check for errors in scanning. The last section of Appendix A discusses bar codes in greater detail.

1-29: Common “ON/OFF” symbols



1-30: Key to symbols next to indicator lights on a printer

