

DOCUMENT RESUME

ED 099 211

88

SE 018 240

AUTHOR Abbott, Verlin M.
TITLE Communication: Within the School Site, Community, and Area into Space. Environmental Ecological Education Project. Revised, June 1972.

INSTITUTION Parkway School District, Chesterfield, Mo.
SPONS AGENCY Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.

PUB DATE Jun 72
NOTE 49p.

EDRS PRICE MF-\$0.75 HC-\$1.85 PLUS POSTAGE
DESCRIPTORS *Communication (Thought Transfer); Conservation Education; *Curriculum Guides; *Environmental Education; Instructional Materials; Interdisciplinary Approach; Learning Activities; *Mass Media; *Primary Grades; Teaching Guides; Units of Study (Subject Fields)

IDENTIFIERS Elementary Secondary Education Act Title III; ESEA Title III

ABSTRACT

This unit, intended for primary grades K-3, covers various aspects of communication through the use of environmental resources at the school site and in the surrounding community. Among the concepts discussed are the definition of communication, ways animals and humans communicate and receive communication, the development of communication, the impact of modern means of communication on our way of life, various skills needed to communicate successfully, and occupations involved in this area. The unit includes the behavioral objectives and the expected student criteria for evaluation, pretests and posttests, teacher background information, a suggested instructional sequence, a bibliography of student resources, lists of appropriate records and films to use with the unit and student data sheets. (MLB)

SE

ED 099211

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

RECEIVED

OCT 12 1973

TITLE III ESEA

ENVIRONMENTAL ECOLOGICAL EDUCATION PROJECT

**Parkway School District
Chesterfield, Missouri**

BEST COPY AVAILABLE

**DR. WAYNE FICK, Superintendent
VERLIN M. ABBOTT, Project Director**

Unit: Communication: Within the School
Site, Community, and Area
into Space

The work presented or reported herein was performed pursuant to a Title III ESEA Grant administered by the Missouri State Department of Education.

Revised June 1972

018 240

Table of Contents

Setting	1
Concepts	2
Behavioral Objectives	3
Pre-Post Test	5
Answers to Pre-Post Test	8
Background Information	10
Instructional Sequence	19
Pre-Post Test	33
Pre Post-Test Answers	36
Pre-Post Evaluation	38
Student Bibliography	39
Record Listening Activities	41
Audio-Visual Aids	43
Data Sheets	44

BEST COPY AVAILABLE

COMMUNICATION: WITHIN THE SCHOOL SITE,
COMMUNITY, AND AREA INTO SPACE

BEST COPY AVAILABLE

SETTING

This unit can be used in any school. Communication is a basic human activity, and forms of communication are ever-present and continuous in all societies.

This unit covers various aspects of communication, including a definition of communication and the reception of communication through the five senses. The unit also deals with the means of communication (man to man, man to men, organism to organism, mechanism to man) and the development of communication past and present. It encompasses the impact of modern means of communication on our way of life; the influence of communication on our attitudes, emotions, and actions; and the effect on our aesthetic values. The skills needed in using various means of communications, the occupations involved in this area, and the maintenance of the various systems of communication are discussed.

The unit is intended for the primary level; however, it could be used at higher levels with modifications by the teacher. The approach is interdisciplinary.

The performance of the student is measured by the use of behavioral objectives. These objectives may be revised to meet the needs of the class.

We hope this unit will provide a model for teaching communication, using a child-oriented approach, through the use of environmental resources at the school site and in the surrounding community.

BEST COPY AVAILABLE

CONCEPTS

- I. Communication is the receiving of information (both humanistic and naturalistic) or the sharing of ideas.
- II. Animals communicate in a variety of ways.
- III. All communication is received by way of the five senses.
- IV. Communication influences our actions, emotions, and attitudes.
- V. The history of communication has been a continuous process from early man to the present.
- VI. Man's creative genius in terms of communication technology, art, music, and literature has made an impact on our daily living.
- VII. The environment can communicate beauty, ugliness, or both. Within our environment are pollutants (such as signs, slums, litter, sewage, smog, etc.) that affect our aesthetic values.
- VIII. There is a relationship between communication and economics.
- IX. There are specific skills (such as manual, linguistic, and writing) involved in communication.
- X. Certain skilled workers make communications possible.

BEST COPY AVAILABLE

BEHAVIORAL OBJECTIVES

Upon completion of the Communications Unit:

Concept Number

- I 1. All children will be able to state the meaning of communication and to list three ways that can be used to communicate.
- II 2. All children will be able to give in writing at least three examples showing how animals communicate.
- III 3. All children will be able to give at least one example of each of the five senses which we use in receiving information.
- IV 4. Thirty percent of the children will be able to describe verbally or in writing one way that communication influences our actions, emotions, attitudes.
- V 5. Twenty percent of the children will be able to describe or draw at least four examples of communication which have been used throughout the history of mankind, from early man to the present.
- VI 6. Fifteen percent of the children will be able to give two examples of the way in which mass media affects their daily lives.
- VII 7. After viewing five pictures which depict the negative, positive, or both aspects of the effects of communication upon the aesthetics of our environment, all the children will be able to select at least one picture and tell or write their reasons why the picture communicated beauty, ugliness, or both.
- VIII 8. All children will be able to explain the relationship between communication and economics by listing two ways that communication provides job opportunities and two ways that communication encourages people to spend their money.
- IX 9. Fifteen percent of the children will be able to explain the difference between Indian symbols and Indian sign language.

BEST COPY AVAILABLE

- IX 10. Twenty percent of the children will be able to tell what Morse Code is and eighty percent of the children will be able to write the S.O.S. signal in Morse Code.
- IX 11. All children will be able to explain the use of the telephone in an emergency situation: dialing the operator, stating the nature of the emergency, and giving their names, addresses, and telephone numbers.
- IX 12. Fifty percent of the children will be able to write a friendly letter including the heading, greeting, body, and closing, and signature; to properly address an envelope.
- X 13. All the children will be able to draw pictures of and name three workers in any communication system.

BEST COPY AVAILABLE

Pre-Post Test

A copy of this test should be made for each student. For administering to a primary group, the teacher should read each question aloud and allow time for the responses to be made by the students.

The following materials will be needed to administer the test:

Pencil for each student.

At least three pieces of lined paper to record responses.

Art paper to complete questions 11 and 13.

Two sets of pictures to be used with questions 6 and 12. The pictures must be selected prior to administration.

One blank envelope for each student.

**Related Behavioral
Objective**

Question

- | | |
|----|---|
| 1. | 1. a. List three different ways that can be used to communicate.

1. _____
2. _____

b. Tell what is meant by the word communication?

_____ |
| 2. | 2. Give three examples of ways animals communicate fear or happiness.

1. _____
2. _____
3. _____ |
| 3. | 3. How do you use each of your five senses in receiving communication?

1. _____
2. _____ |

3. _____

4. _____

5. _____

- 5. 4. Describe or draw four examples of communication which have been used throughout the history of mankind, from early man to the present.

1. _____

2. _____

3. _____

4. _____

- 6. 5. Give two examples of the way in which mass media affect your daily living.

1. _____

2. _____

- 7. 6. Look at the five pictures which are displayed. Select at least one of the pictures and tell what number it is, and give your reasons why you think the picture communicates beauty, ugliness, or both.

- 8. 7. List two ways that communications helps people earn money in the community. List two ways that communication encourages people to spend money in the community.

EARN

1. _____

2. _____

SPEND

1. _____

2. _____

BEST COPY AVAILABLE

9. 8. What is the difference between Indian sign language and Indian picture symbols?

10. 9. What is Morse Code? What is the coding for S.O.S.?

11. 10. If you were going to make an emergency call and did not know the correct number to dial, how could you get the call through? What would you say when the call was placed?

13. 11. Draw pictures and tell the jobs of three people who earn their living in different areas of the field of communications.

4. 12. Look at the five pictures of advertising which are displayed. Select at least one of the pictures and tell why you would or would not buy the product shown; or select at least one of the pictures and tell how it makes you feel. Tell the number of the picture.

12. 13. Write a friendly letter to someone of your choice. Address an envelope in which to mail the letter.

Pre-Post Test Answers

The following answers are given as suggested responses by the authors of this unit. Other possible answers may be found in the background information. A response which meets the requirements of the concepts or behavioral objectives of this unit should be accepted.

The answers to question six and twelve will depend upon the pictures selected and shown by the teacher. The answer to question eleven may require additional clarification by the student as to the type worker he has drawn in his pictures.

The answer to question thirteen will be judged by the standard format for a friendly letter, which may be found in any fourth grade language series. Teacher judgement is appropriate as to what is included in the format.

1. a. Talking, facial expressions, signaling, T.V., radio, newspapers, books, magazines, telephones, signs, art, music, dance, etc.
b. Communication is the sharing of ideas or the receiving of information.
2. Animal sounds: beaver slapping tail on water
Body movements: dog wagging tail
Biological defenses: skunk emitting odor
3. We hear sounds. We receive visual stimuli. We can feel differences in texture and temperature. We can identify different things by smell. We distinguish between pleasant and unpleasant odors. We can detect danger from odors. We can taste the different taste sensations in foods.
4. Art, Picture symbols, sign language, smoke signals, spoken language, alphabet, printed matter, telegraph, telephone, radio, television, satellites.
5. Newspapers, radio, television, communication satellites provide ready availability of world happenings and communicates news as it happens. Mass media affects our dress and influence the way in which we live.
6. Answers will vary and depend on pictures selected and shown to students.
7. Advertising encourages people to spend their money for particular items. Many job opportunities are available to adults in all areas of the communication industry.
8. Indian sign language is communication by means of various body movements, particularly with the hands, while Indian picture symbols are a means of communicating by reproducing picture symbols in a meaningful pattern and sequence.

BEST COPY AVAILABLE

9. A method of sending messages by a series of dots and dashes which correlates with letters of the alphabet. This can be done with a telegraph key, with any item which can be used to tap, with the voice, and with lights.

The coding for S.O.S. is ... --- ...

10. The caller can dial "0" to get the operator, who will connect him directly with the emergency number. The numbers for emergency calls are also listed in the front of the telephone directory. Some home phones have stickers on them listing emergency numbers. Once you have reached the emergency number, tell the person who answers the phone the nature of the emergency, the location of the trouble, and give him your name, address, and telephone number.
11. Answer evaluated according to the pictures drawn and labeled.
12. Answers will vary and depend on pictures selected and shown to the children.
13. Standard format for a friendly letter and for an envelope should be adhered to.

BEST COPY AVAILABLE

BACKGROUND INFORMATION

Communication is the sharing of ideas or the receiving of information. Men, animals, and even machines communicate. For example, a baby cries to show pain, hunger, or discomfort. Animals such as dogs bark and wag their tails to show joy. A light on a car's dashboard may communicate trouble or aid in safety. Communication is important and ever-continuing in our environment.

Man is a social being. Through his social encounters man has communicated and will continue to communicate. Man seeks out other men to share and receive ideas. In other words, communication is a basic human activity. If communication disappeared, our whole way of life would crumble.

Communication technology, art, music, and literature have an impact on our daily living. For example, communication technology has provided telephones, telegraphs, television, telestar, etc., which affect our daily lives by offering convenience; art influences our lives through bulletin boards and posters, billboards and advertising; music influences our lives by affecting our dress, expressions, moods, and dance; and literature has an impact on our daily lives by making us aware of current issues, helping us to form opinions on controversial topics, and by providing enjoyment in a multitude of subject areas.

Early man probably used gestures, sounds, words, signs, symbols, signals, and simple pictures to communicate. These forms of communication are still in use today. In order to communicate an idea, signs and symbols must have a common, established meaning. An example of this is the traffic sign. Gestures are of short duration and do not extend knowledge; we smile, frown, or touch a hand. Signals communicate over distances. The doorbell tells us to answer the door; the firebell, that danger is at hand. Pictures communicate without talking, but the viewer must know something about the picture meaning intended by the artist.

Man has expanded these simpler forms of communication to include more complex means such as books, newspapers, telegrams, telephones, radios, television, and satellites. With the development of mass media man's life and society has changed. Therefore, a study of the history of communication reveals the history of man. (An example of the time line of development follows background information.)

We do not know when or how man first communicated, but we do know there were some means of communication. Probably early man used a combination of gestures and snarls accompanied by grunts. Perhaps he experimented with his voice much as babies babble; perhaps he imitated the sounds in nature. We do know that language began when a sound or sounds were associated with definite ideas.

Thousands of years passed before man actually used a written language. Both written and spoken languages were being developed simultaneously in different parts of the world. Today there are more than three thousand languages. In fact, the great diversity of present-day language tends to hamper and to slow communication and understanding.

The invention of writing was a great step in the history of civilization. Man now possessed a set of written symbols, a characteristic which distinguishes the civilized society from the primitive society. The earliest forms of writing were probably used to keep records or to send messages over a distance. For example, in the Late Stone Age, knots and beads were used to send simple messages. Man put notches on sticks to record what was owed him. Hunters drew pictures in sand or on cave walls to show victory, defeat or to instruct young men how to hunt. Pictures which told stories evolved.

When used to convey ideas, pictographs conventionalized into a few swiftly-drawn lines, which were adapted to represent particular symbols. The final stage was reached when the simplified signs each became endowed with an accepted sound value, like the letters in our alphabet. These signs were then combined to spell out words. Once an alphabet was perfected, it was a relatively easy problem to record new words introduced into the language and even to set down the approximate pronunciation of dialect.

The earliest known writing was that of the Egyptian and Sumerian civilizations. These appeared simultaneously approximately three thousand years B.C. The Sumerians made wedge-shaped impressions of various sizes and combinations with a stylus on cylinders of clay. The Egyptians developed a form of picture writing called hieroglyphics. Their writing retained its pictographic features to the end and never really evolved into having syllabic or semi-alphabetic features. These picture languages were the first written languages. However, as man's facility with spoken language grew, and many new words were added, his written language became too complicated. Therefore, the simplification of the written language became necessary.

It took man almost two thousand years to take the step from picture language to an alphabet. The Semitic people of Syria and Palestine probably developed the first alphabet about fifteen hundred B.C., using consonant sounds. The Phoenicians introduced this type of alphabet to the Greeks. The Greeks added signs for the vowel sounds. The Greeks gave their alphabet to the Romans, who introduced it to Western Europe.

The growth of communication was very rapid from the time of the development of the alphabet to the beginning of printing with movable type. From the earliest recorded history until a little over five hundred years ago every book in Europe was copied by hand. At the beginning of modern times the invention of printing provided a potent means of dissemination of information and opinion for the first time. Printing is complicated and has two essential elements--movable type and the paper on which the impression is made.

The development of paper took a long time. The Egyptians had developed a process for making a type of writing material from the papyrus plant. The Greeks and Romans used papyrus. The Europeans used parchment which came from the skins of certain animals, especially the sheep. While parchment was extremely durable, it was very costly. The Chinese developed from silk a much more useful writing material which resembled a high grade paper. The Moslems, who learned of the Chinese process, substituted cotton for silk. The process went to Greece and then to Italy, Spain, and Western Europe. Since linene was used for clothing, linen rags were readily available. Linen was substituted for cotton in the process of making paper.

Printing was an old art. People had been stamping letters and symbols for ages. Similar methods were used to produce maps and playing cards. Block printing (blocks of wood or metal engraved with words, symbols or images) began in China and Japan. The Western world did not utilize this type of printing until the middle of the fifteenth century.

Printing was developed at a time in Europe when much discovery was taking place. Printing with movable type was first done in the Netherlands. In 1450 Johann Gutenberg first used movable type in Mainz, Germany. Now the exact reproduction of books was possible. The lovely Gutenberg Bible was first printed in 1454. The invention of movable type was made possible by the fine metal work of the Middle Ages. Gutenberg himself was a skilled goldsmith. His ability with metal work made possible the casting of type which was exactly calibrated. Presses were soon found in most European countries and later in North America.

The invention of movable type brought an increased interest in the affairs of government and church. People now had a way to communicate dissatisfaction. Printing became a weapon during the English, French, and American Revolutions. The increased interest in government made it necessary for man to be able to read and think; thus, free public education developed. As education spread, more printed materials were needed. Political, intellectual, educational, and communication revolutions occurred simultaneously.

During the 1800's much concentrated effort was devoted to improving the printing process. Until 1884 each piece of type was set by hand. In this year the linotype was invented, and type could now be set mechanically. The typewriter appeared on the scene. Noah Webster produced the first American dictionary. These inventions, plus the impact of the Industrial Revolution, contributed to the mass production of books and other literature in the next century.

Not only was the 19th century the time for the mass production of printed materials but also for the invention of other forms of communication. These included the invention of the telegraph by Samuel Morse (1844); the telephone by Alexander Graham Bell (1876); the phonograph by Thomas A. Edison (1877); the development of a practical photographic film by George Eastman (1889); the perfection of the

motion picture projector (1894); and the wireless telegraph by Marconi (1895). The 20th century brought the world of television. The first experimental television was developed in the 1920's and commercial television began in the 1940's.

During the 1950's and 1960's more methods were developed for sending communications over long distances. The first satellite simply reflected radio and television waves from one ground station to another. Later satellites could pick up waves and rebroadcast them to the receiving stations. During this period computers came into related use. Computers are machines that can do complicated calculations at high speeds. Each machine has a memory unit in which information may be stored and released when it is needed. The information may be stored on paper or magnetic tape or on the surface of a cylinder. In 1956 there were 1000 computers in the United States. There will eventually be 85,000 computers. The impact of computers has been felt in nearly all fields: science, engineering, industry, banking, psychology, education, transportation, and communications. In communications computers have been used to increase the efficiency and convenience of communications. The electronic switching systems used by the telephone company are computers. They are programmed by the telephone number to make certain connections, keep track of the time, and bill your account accordingly. The computer is used for information storage and retrieval. For example, computers check your charge-a-plate number at department stores; computers check airline reservations instantly.

Mass media, which means the delivery of messages to all people, has its advantages and disadvantages. Mass media may be used as a weapon by dictators to control the masses. Campaign oratory can be amplified beyond the realm of credibility. The emphasis of mass media seems to be mostly on entertainment as opposed to a balance between education and entertainment. Often violence and disagreement make the news, at which time agreement and good news fade to the background. Mass media as used by advertisers have done much to increase air and water pollution by wasteful consumption. The landscape is dotted with billboards and neon signs. Then there is the effect of television on the viewer. Television can alienate him from his environment. There are assets as well. Television warns people about impending natural disasters (hurricanes, tornadoes, frosts, etc.) and thereby saves lives and money. Mass media definitely make life enjoyable for many handicapped individuals. The news of the world is instantly and widely disseminated. Television and other mass media have great educational advantages. An enormous audience is provided with good music. Most important, the way is laid for one world where every person alive can be reached through the communication networks almost instantly.

One means of sending messages to the masses which dates back to early times is the post office; however, the postal service is not a form of mass media. The human need for sending messages over long distances must have started with the earliest races of man. It is not known when a sort of "postal" service started. Clay tablets in the Babylonia language were found in Egypt in 1400 B.C. King

Solomon sent mail to the beautiful Queen of Sheba in 1000 B.C. using homing pigeons. The early Assyrians and Persians had a sort of Pony Express. The world-famous tribute to mail carriers, "Neither snow, nor rain, nor heat, nor gloom of night stays these couriers from the swift completion of their appointed rounds," was written by the great Greek historian, Herodotus, in 546 B.C. During the reign of Julius Caesar, a Roman conquerer, the postal service was highly developed to reach all parts of the far-flung Roman Empire. The Romans used foot runners and men on horseback. Roadside stations marked with posts were set up for the riders to eat, sleep, and care for their horses. This is the origin of English words such as post, post office, and postal system.

For a long time only royalty used the postal system. At the end of the third century A.D., private citizens could use first class mail service. In the 15th century France had a postal system, and Queen Elizabeth, in 1591, established a central postal service in England. The first post office in America was established in Boston in 1639, but the real beginning of postal service in America dated to 1691. Alexander Hamilton was appointed deputy postmaster for America. Inter-colonial mail service began in 1693. The Revolutionary War saw two mail services in America: the old Colonial System and one for military secrecy. Paul Revere was a mail rider and the most famous part of his job was to warn the Americans that the British were coming. In 1799 Congress made robbing the U.S. Mails punishable by death. Later the sentence was changed to imprisonment. In 1789 the Post Office Department was made a branch of the U.S. Treasury by act of Congress. In 1829 the Postmaster General became a member of the President's cabinet. From that time on the postal service has rapidly expanded and changed to fill the needs of the times. Today mail in the United States is in the charge of an independent agency, The United States Postal Service.

The communication industry has become very important throughout the world. The U.S. has the largest mass communication system, which has grown not only in size but in the number of persons reached. The U.S. spends over \$14 billion per year on mass communication including salaries, bookkeeping, maintenance, research, and development as well as advertising and public relations. The communications field provides innumerable job opportunities in a variety of areas such as radio, motion pictures, television, newspapers, publishing, mail service, and telephones. Descriptions of but a few follow:

Radio

- (a) Radio technician - He must be licensed by the Federal Communications Commission and have earned a certificate from a recognized radio technical school. His duties are to keep the equipment in repair and to work in a control booth and at the transmitter while a show is being broadcast.
- (b) Sports Announcer - He relates information on a variety of sporting events. He tells the location, the time, and the teams involved, and follows the course of the action for the public, and relates the outcome of the game.

Motion Pictures

- (a) **Actors** - Most young people who consider the motion picture industry as a career usually think mainly of acting. But few would-be actors and actresses actually succeed in Hollywood.

It takes more than good looks to achieve a screen career. A young person seeking a motion picture career should have dramatic ability, personality, poise, imagination, an expressive voice, and much practical training. Those responsible for selecting new faces for Hollywood, the talent scouts and producers, are turning more and more to Broadway plays, television, summer stock theaters, college drama schools, and actor's studios to select motion picture actors and actresses.

- (b) **Writers** - There are very few original movies. Most movies produced are adaptations taken from novels, biographies, literary classics, and stage plays. It is the writer's responsibility to prepare the screen play (to revise the story on which the motion picture is based to make it suitable for dramatization and filming). When a motion picture writer creates his own story it is called an original. The screen writer must prepare the story in detail as it will appear on film. It must include the dialogue for each actor and describe in detail the atmosphere and background of each scene. It must also include instructions about the shots that are to be taken.

Television

- (a) **Producer** - The Producer is probably the most important man in the television station. The responsibility of the producer is to plan the shows, choose the performers, supervise the writing of the scripts, attend the rehearsals, and be sure that the show is a good one to present.
- (b) **Director** - He is the producer's chief assistant. He prepares shows for actual airing, choosing which picture from three of four cameras should be telecast at a given moment. He tells the actors how to say their lines and how to move on stage.

Newspaper

- (a) **Reporter** - He or she rushes to the scene of an important event. He gets the facts quickly and reports them to the newsroom.
- (b) **News Desk Editors** - They determine the banner headline for the front page. They make a final check on the stories that go into the paper and arrange them in position on the pages in each edition.

Postal Service

- (a) Postal Clerks - They deal directly with the public by servicing stamp, parcel-post, money-order and postal-savings windows, and by making mail deliveries. Some workers sort and route mail, keep records of postal-savings accounts, and tabulate money-order receipts.
- (b) Postal Inspectors - They investigate violations of postal regulations and in general improve postal services.

Telephone

- (a) Telephone Operator - He or she assists people in making long distance calls, emergency calls, and sometimes local calls.
- (b) Installer - He installs telephones in homes and businesses.

Civilization and communication cannot be separated. Primitive oral cultures could not make measurable progress because their energies had to be spent preserving past knowledge rather than accumulating new knowledge. Computers, printing, radio, and television preserve and distribute knowledge over a wide area.

BEST COPY AVAILABLE

THE LANGUAGE OF ANIMALS

Human beings are unique in possessing a well-developed verbal language. Many animals possess, in rudimentary form, the basic characteristics of human language. Vocal communication occurs in insects, fishes, amphibians, reptiles, birds, and mammals.

Language of animals does not need to be learned by them. It consists of innate signals. It is the method by which animals convey their social status, conduct courtship, and express intentions towards another member of the species. It is used to co-ordinate the activities of an animal family, group, or species, to give warning of danger, notification of established territory, and so on. The language of animals consists of signs to which other animals respond. These signs may be optic, acoustic, tactile, olfactory, or a combination of these. Animals of different species are never really able to make friends with one another because their different languages are instinctive and cannot be learned. Animals stare at one another when they intend to attack or are afraid. Domesticated animals often become adept at interpreting their owners thoughts. This understanding is based not on an understanding of human language but on observation of the innumerable signs, both voluntary and involuntary, which indicate intention or mood.

Any communication system involves the transmitting party, or sender; and the receiving party, or responder. When animals communicate with each other through behavior, they are talking. This language has been studied with many species. Compared with human language based on sound, animal language is very simple. However, animal communication is more varied and richer in that many other sensory channels can be involved.

Animals respond to scent. Scent is a sexual attractor. Barnacles, which begin their lives as free floating larva, eventually locate in established barnacle beds by responding to "barnacle scent" as given off by adult members of the species. Other examples of scent communicators are certain moths, as the silkworm and gypsy moth. The sense of touch is also used by many animals for the reception of signals. Locusts, frogs, a few reptiles, and almost all birds use sounds as signals.

TIME LINE

A time line is a list of events in order of their occurrence. This time line shows the history and development of important events in communication.

Picture stories by early man	20,000B.C.
Picture language--Egyptians (hieroglyphics) Sumerians--(cuneiform)	3,000B.C.
Alphabet devised by Semites	1,500B.C.
Movable type invented by Gutenberg	1440A.D.
Morse sent first public telegraph	1844A.D.
Bell invented the telephone	1876A.D.
Marconi invented wireless telegraph	1895A.D.
Pictures were televised on a limited basis	1923A.D.
Commercial television began in United States	1941A.D.
Television programs were relayed via Telstar I	1962A.D.

BEST COPY AVAILABLE

INSTRUCTIONAL SEQUENCE

Administer Pre-Post Test prior to introducing the unit on Communications. Evaluate and record (see model evaluation sheet). In this sample it is considered a prerequisite for the students to have knowledge of the five senses. It will be assumed that the students have little or no knowledge of communication and its characteristics. If preassessment indicates otherwise, behavioral objectives will have to be modified. After the pre-test the teacher should discuss with the whole class the behavioral objectives for which the students are accountable. There are many suggested activities included under each topic from which the teacher can choose which are most appropriate for her group.

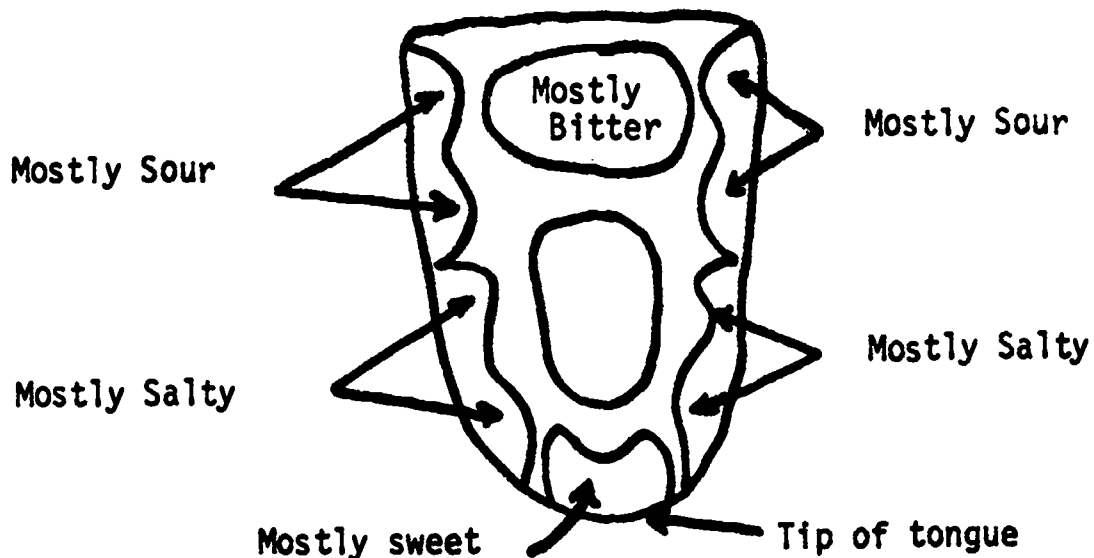
Room Preparation

In order to stimulate interest in the unit, there should be a bulletin board displaying various forms of communication. There should be an interest corner, including books, and various communication objects. The teacher should check with the librarian to have other materials available (books, film strips, film loops). The children may use these in the library or check them out for independent study or home use. Appropriate films will have to be ordered to be shown during the course of the unit and arrangements for planned field trips will have to be made.

- Topic I. Ask, "What is communication?" Have the children give examples of the ways in which we communicate, and how our five senses are used in the transmitting and receiving of information.
- A. Review in discussion or reteach the five senses as determined by the results of the Pre-Post Test.
 - B. Take the class on a walk outdoors to play a game using the senses of seeing and listening. For example, have the children shut their eyes. Ask, "What do you hear?" Then have them reopen their eyes and ask, "what do you see?"
 - C. Take the class outside and play a game using the senses of smelling and touching. Ask, "What do you smell?" Have the children feel leaves, surfaces, tree bark, etc. Ask, "How do they feel alike? Different?"
 - D. Introduce an activity to teach the taste zones on the tongue. Actual student participation should be followed by a discussion of personal likes and dislikes. Children may bring pictures from magazines to make a group collage or separate collages showing sweet, sour, bitter, and salty foods.

Students should understand that the senses of taste and smell work very closely together. However, there are four main tastes which function independently of the sense of smell.

TASTE ZONES ON THE TONGUE



To illustrate, take applicators and dip them in citric acid solution. Touch to the center of the students' tongues. Can they distinguish a taste? (No!) Repeat by touching the applicators to the other taste zones to see if and where on their tongues the students can distinguish a sour taste sensation.

This activity can be repeated with each of the remaining three taste categories: salty, sweet, and bitter.

- E. 1. Discuss with the class how colors make a person feel. Follow by showing the film, Hailstones and Halibut Bones. Several copies of the book, Hailstones and Halibut Bones, may be placed on the reading table. A creative writing lesson on colors may follow the discussion and film. Titles for the stories or poems can be "What is Red?", "The Green Feeling" etc.
 2. Ask, "How do colors in the outdoors make you feel?" (Use this activity in all seasons.)
 3. Show the film, Art Series: Color
- F. The teacher can play different kinds of music. The children can interpret the music through dance, pictures, pantomime, etc. The film, Dance Squared, is appropriate in connection with this activity.

BEST COPY AVAILABLE

- G. Assign students to find magazine pictures of various means of communication to be used for a class scrapbook on communication or for a bulletin board for other classes to enjoy.
- H. Ask, "Can you find music in nature?" Go outside and have the children interpret, through dance or by drawing pictures, how music in nature makes them feel. (E.g., birds singing, wind blowing, rain falling, etc.)

Topic II Communication in the Classroom

Discuss the various means of communication using the following activities and discussions:

- A. Ask the class, "How do we communicate in the classroom? If you were given a choice, which means of communication would you prefer to use here? Why? What part of our bodies do we use to communicate? If we wanted to list the ways of communication under 'written' or 'spoken', which means would go under 'written' and which under 'spoken'?"
- B. Students can go outside and pick up litter. Trace the history of what is communicated by each piece of litter to origin.
- C. The students can communicate out-of-doors for one half hour without using speech. The teacher should have various materials such as paper, paint, pencils, chalk, polaroid camera, etc. available. Discussion of the significance of the activity should follow.
- D. To emphasize listening and speaking skills ask, "When we speak words are we always communicating? Are there any rules which we must observe as we communicate orally in the room? What machines do we use in our classroom that communicate to us?"

Show film, Understanding and Communications

- E. Arrange for a message to come over the intercom at a pre-established time to illustrate how the intercom is a means of communication.
- F. Discuss with the class how each child knows what kind of progress he is making in school. (Examples: progress reports to student and home; praise and constructive criticism; gestures and facial expressions.)
- G. Have the students draw pictures or dramatize a story from their reading.

- H. Use paperbag, shadow, or stick puppets to act out a story. Set the stage in an outdoor area if weather permits.
- I. Create an imaginary situation in which the students must communicate to a deaf person or to a person who speaks another language.

Topic III Communication within the School

- A. Ask the class, "How do we communicate within our school?" (Bulletin boards, intercom, school newspaper, memos, student council, person to person, notes, etc.)
 - 1. Study the school lunch menu for the day. Have several students survey what is disposed in the lunch-room trash barrel. This activity should demonstrate how students communicate likes and dislikes of foods served. (This activity may encompass one day or even a week.)
 - 2. Send a small group of students to look at bulletin board displays in the halls or in another classroom, and then report to their classmates what and how the display communicated to them.
 - 3. The students may construct a bulletin board for their room displaying how communication takes place within the school.
- B. The teacher may help several students to compile a list of questions for an interview with the principal on how he communicates with the staff and the students in the school.
- C. Show the class the fire alarm system. How does this communicate with us?
- D. To illustrate how the student council serves as a means of communication:
 - 1. Have a student council representative give a short talk about the organization of the student council and what the council does.
 - 2. Organize a mini-council within the room.
 - 3. Help the student council make posters communicating ideas, issues, events, etc.
- E. Discuss such question as: "How does the school communicate with your parents? How do your parents communicate with the school? How do we get messages to your parents?"

BEST COPY AVAILABLE

Topic IV Communication Surrounding the School Sites

- A. Take the class outdoors and tape record sounds. This activity should be done several times, in different seasons and at different times of the day. Play the tape and have children draw pictures depicting the sounds.
- B. Conduct an art project using textures found outside the school to make a design or collage. The children can make rubbings of various textures on the school site.
 1. A set of sculpture is available through Jerry Swingle, Parkway Art Consultant. Certain items in this set are good for use in textures.
 2. Show the film, Art Series: Textures
- C. How has the architect who designed our school communicated beauty to us by the materials he chose both inside and outside the building? If possible, let the children take photographs of the school and surrounding area for discussion of aesthetic values.
- D. "How many different things (grass, trees, asphalt, concrete, bricks, etc.) do you see? What do our eyes and ears tell us about the school? the neighborhood?"
- E. "Where are the communication lines that go into our building? From where does the power come for these lines? Why do they put lines below the ground?"
 1. The class can work in groups to construct models or drawing to show how a particular means of communication comes from a point of origin to the school building.
 2. Paint a mural of the school or neighborhood. Superimpose items such as power lines, litter, untidy houses, trees, flowers, billboards, advertising signs, etc., to display positive and negative aspects of communication aesthetics in the environment.
- F. Telephone activities:
 1. Use the Telezonia Kit. It is available through Southwestern Bell Telephone Company, and is complete with a teacher's guide, containing listening skills to be taught and suggested activities for bringing about learnings. For kit, contact Sally Hutcheson, Southwestern Bell School Consultant, 994-9239. (Arrangements for use of kit should be made several weeks in advance. Mrs. Hutcheson will come to the school to give talks at all grade levels with suitable slides and posters. Each child is also given a booklet on communication depending on grade level and activities emphasized: e.g., "Mr. Bell Invents the Telephone," "Your Voice is You".

2. Field trip: Southwestern Bell Company
200 Manchester Road
Manchester, Missouri 63011

Contact Bill Wilson, Public Relations, 227-5495

3. Resource person: Lineman or repairman from Southwestern Bell to visit classroom.

- G. Look over the following books on animal communication:

The Language of Animals (Selsam), How to Understand Animal Talk (Brown), and Animal Sounds (Mason). The idea that animals communicate through body movements, scents, and sounds should be developed.

1. With the children, observe an anthill, watch birds courting or building nests, watch the migration of birds and butterflies, etc.
2. The class can demonstrate through role play (verbally or pantomiming) how animals communicate. This activity should be done outdoors.
3. Suggested films: Ant: Backyard Science, Language of the Bees, Honey Bees, Secrets of the Bee World, Prowlers of the Everglades, Beaver Dam, Beaver Valley.
4. Record: Wolves - narrated by Robert Redford. Available through the National Wildlife Federation.

BEST COPY AVAILABLE

Topic V History of Communication

Using the background information in this unit and other resources, tell the class about the development of communication from early man to early times.

The teacher should use the appropriate activity pertaining to the development of each communication technique at the time it is being developed.

Learning center activities should be set up around the room.

Suggested film: Development of Communication

- A. Students can tell a story using picture language as early man did.
- B. Students can develop an original alphabet and write their names, words, stories using the new alphabet.
 1. Show film: Language and Communication Through the Ages
 2. Using clay, make tablets as ancient peoples did. Mark the tablets with cuneiform or other symbols.

C. Students may make prints.

1. Potatoes, carrots, leaves, and many other things make effective prints.
2. Students can do cardboard relief printing. (If the process is unfamiliar, consult your art teacher).
3. Films: Printing Through the Ages, Prints, Exploring Relief Printing.
4. Field Trip: John Stark Printing Company
Manchester Road
Des Peres, Missouri 63131

Contact Roy Stark or John Stark

5. Make stamp prints from clay. Gather clay from a streambed. Fire the stamps and use them to make imprints on the soft clay. Soft clay pieces may then be fired and glazed.
6. Use blueprint paper to make prints. Place leaves, weeds, photograph negatives, or other objects to be printed on the blueprint paper. Place a piece of glass over the objects to be printed. Expose to sunlight for 30 to 45 seconds.

D. Develop a class newspaper.

1. The teacher or students may bring clippings from comic strips, or editorial cartoons concerning communication. Using these as samples, the children can make their own comic strips, or cartoons, and discuss their meanings.
2. Film: Newspaper Story

E. Students can learn to use a typewriter. They can type original stories or poems which they have written.

F. The teacher may teach the Morse Code and S.O.S. coding. The students can tap out messages using Morse Code and send the S.O.S. message. The code may be tapped out with the eraser end of the pencil or students may build their own model telegraph set. (Instructions follow)

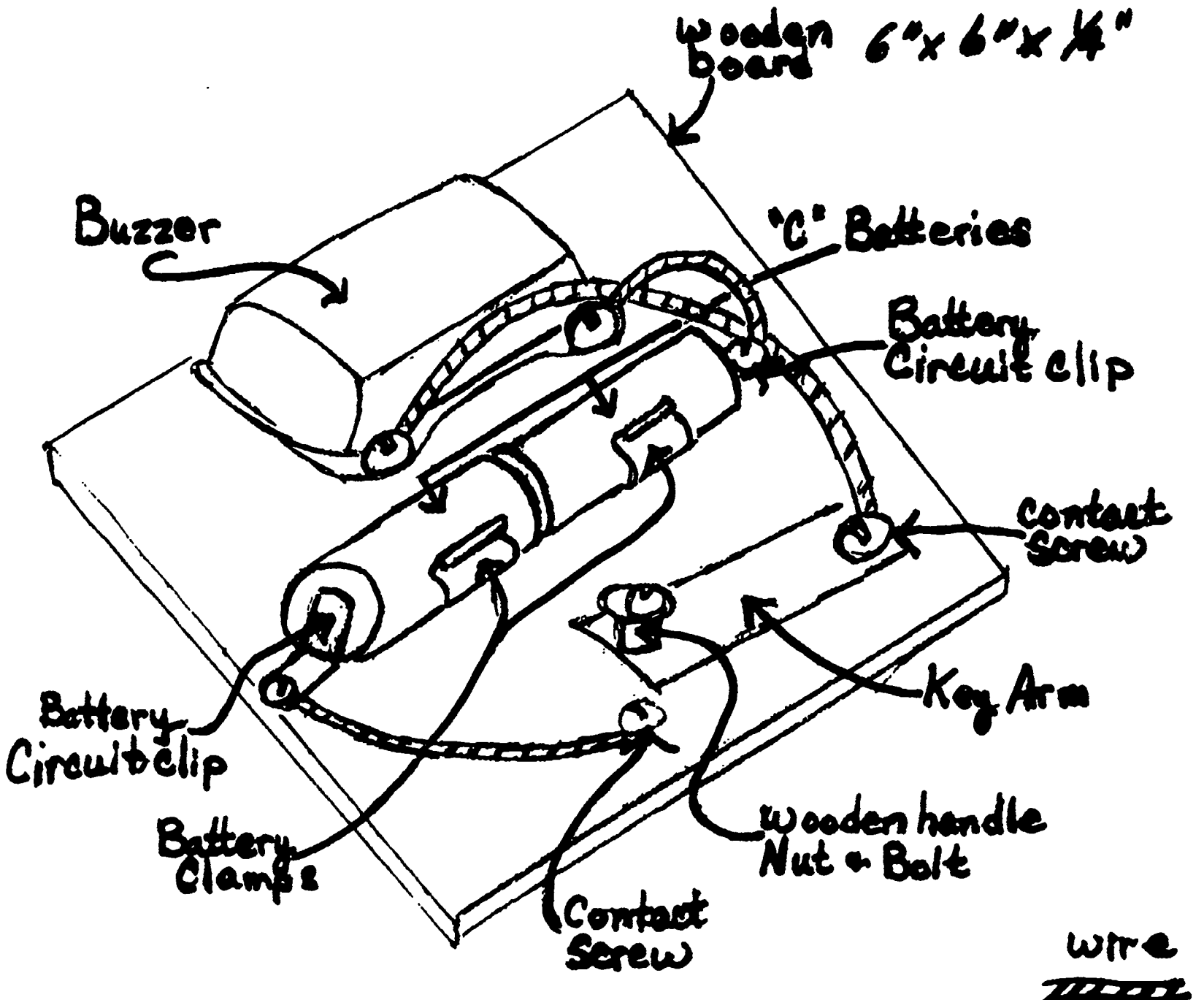
BEST COPY AVAILABLE

A model training kit for learning Morse Code

Materials needed:

- 2 battery clamps
- 2 "c" batteries
- 1 buzzer (from door bell assembly)
- 2 battery circuit clips
- 1 key arm
- 8 round head screws (steel)
- 1 nut and bolt
- 1 wooden handle
- 1 square piece of wood, 6" x 6"
- 18" bell wire

Assemble as per diagram.



MORSE CODE

<u>LETTERS</u>	<u>CODE</u>
a	· _
b	_ · · ·
c	_ · _ ·
d	_ · ·
e	·
f	· · _ ·
g	_ _ ·
h	· · · ·
i	· ·
j	· _ _ _
k	_ · _
l	· _ · ·
m	_ _
n	_ ·
o	_ _ _
p	· _ _ ·
q	_ _ _ ·
r	· _ ·
s	· · ·
t	_
u	· · _
v	· · · _
w	· _ _
x	_ · · _
y	_ · _ _
z	_ _ · ·

- G. Students may develop codes of their own and send messages.
- H. Students may construct roller movies on subjects of their own choice.
- I. Children, with the help of the teacher, can make time lines showing the history of communication.
 - 1. Films: Time, Lines, and Events
 - 2. Hands of Marie
- J. Activities to reinforce learnings about Indians sign language and picture language.
 - 1. Children can make pictograms on clay.
 - 2. Children can make tepees from paper and decorate them with Indian picture language.
 - 3. Using brown craft paper, cut out the shapes of animal pelts and decorate them with Indian picture language.
 - 4. Take a field trip to Washington State Park located on Highway 21 between Desoto and Potossi. There the class can see Indian picture writing etched in rocks.

Topic IV Communication in the Community and the World--Mass Communication and Creative Arts

The teacher will ask the class, "How do we communicate in the community and the world?" The discussion will be directed into a learning situation for mass communication.

"What are some ways that we can get a message to thousands of people at the same time?" (Be sure newspapers, magazines, television, radio, books, movies, tapes, records, and posters are mentioned)

"What kind of messages might we wish to pass on to thousands of people at the same time?" (News, advertising, information, entertainment.)

"How can we communicate with people in other parts of the world?" (Radio, telephone, mail, Telstar, telegram)

Film: Community Television

- A. View several programs on Channel 9. Discuss the fact that the programs are locally produced.
- B. Using video tape equipment, the children may perform a play, newscast, commercials, or other types of programs.

The out-of-doors provides a good setting for an environmentally centered program.

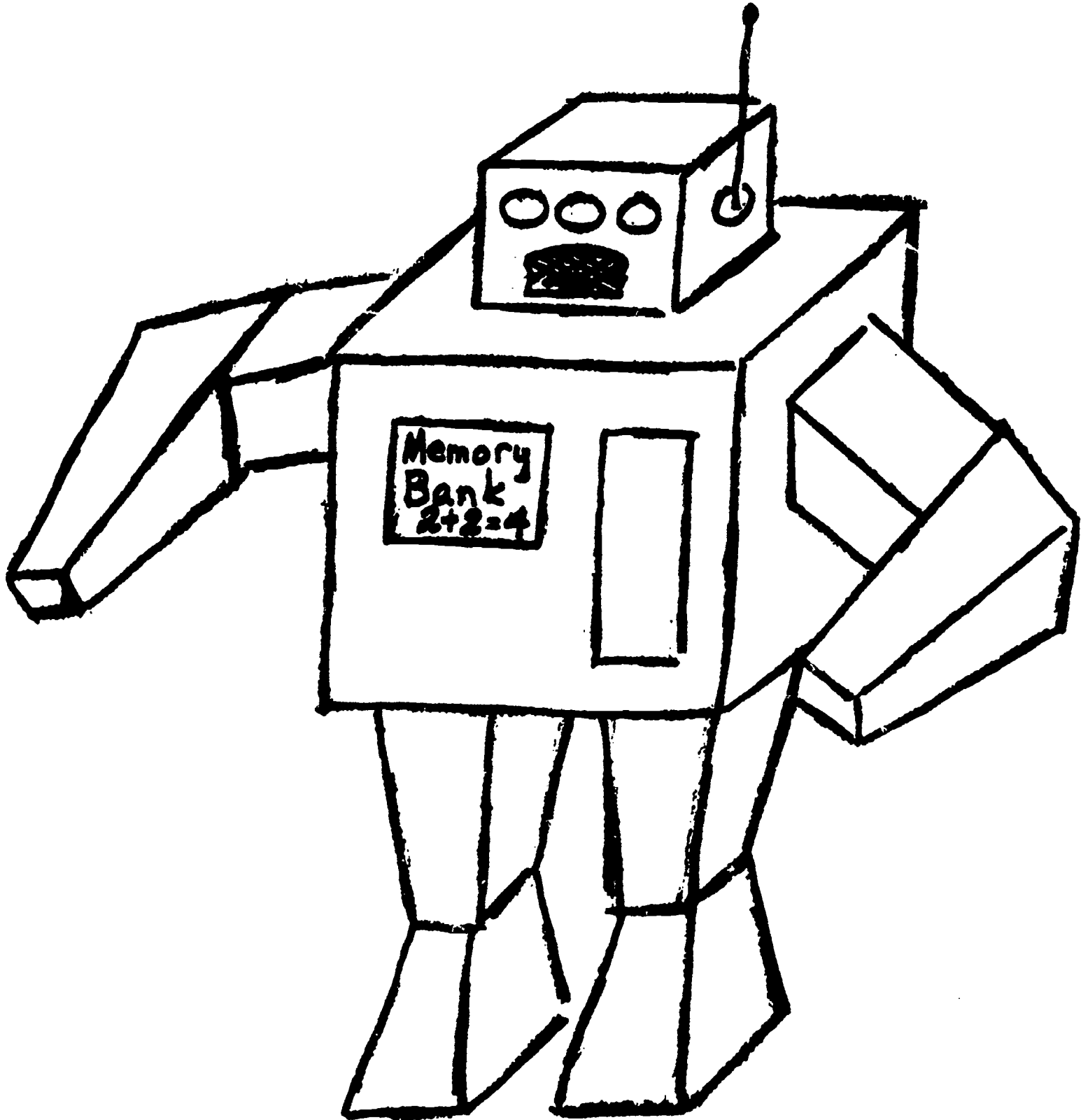
Contact Lloyd Kistner, Parkway Audio-Visual Consultant, for Videotape equipment.

- C. What are computers? How do we use them? (Telephone company provides an excellent example.) The teacher should get across the idea that computers only store information in memory banks and are only as accurate as the information fed into them. (Computers can process with great speed information which would take man days or even years to process on his own.
1. Build a model robot out of boxes. Put memory banks inside. Have students stand behind the robot and answer questions. A question can only be answered from information stored in memory banks. (See diagram on page)
- D. What is a billboard? Why do we have billboards? What do you think of billboards? Do you think they affect the beauty of our environment? Could they be called pollutants?
1. Take an outdoor field trip to look at various billboards.
 2. Using a bulletin board, the class may construct a billboard in the room.
- E. Are signs pollutants? Which signs might be pollutants?
1. Take a walk. Have the children count the number of valuable or necessary vs. the number of pollutant signs.
 2. Each child may draw a sign that is a pollutant and a sign that is valuable. (examples: road signs, traffic signs, historical markers, informational signs)
- F. Letter writing, Teach the class the correct form for writing a friendly letter, including heading, greeting, body, closing and signature. Proper form for addressing the envelope should also be taught.
1. Film: Writing Social Letters
- G. Show the film, Duke Thomas, Mailman. Take a field trip to the Post Office. (Contact the St. Louis Post Office)
1. Set up post offices in classroom. This activity works well for Valentine's Day.

BEST COPY AVAILABLE

ROBOT

Make from cardboard boxes. Paint and decorate as desired.
Shine flashlight in head while answering questions.



- H. How does art affect our daily lives?
1. How does advertising affect us? Have you ever found that advertising has been misleading? (Examples: commercials on television or other advertisements for toys, games, cereals, or other products.)
 2. Children may make up their own advertising for products with which they are familiar; or they may create new products and make up advertisements for them.
 3. Go to a shopping center and look for art as well as advertising which either add to or detracts from the aesthetic values of the center.
- I. How does music affect us? Does some music make you feel a certain way, such as sad, happy, or lonely? Can the same piece of music have different effects on different people?
1. Does some music make you want to move a certain way, e.g., skipping, marching, jumping, swaying?
 2. The teacher selects records which express certain moods (examples: rhythmic, happy, lively, flowing, peaceful).
 3. The teacher selects certain records for creative movement (examples: leaping, swaying, fast and slow walking, marching, etc.). Go out of doors and have the children put the movements of nature to music (animal and plant movements).
 4. Has music affected our way of dress, our hair styles, our ways of dance? Could we say music has affected our society?
 5. Go to a shopping center. Observe the different styles of dress you see. What type of music would you associate with the various styles of clothing observed?
- J. What is literature? How does literature affect us in our daily lives? Do certain books, poems, or magazine articles help us to form opinions about certain subjects? What poems, books, or magazines do you enjoy? Do other people you know enjoy different kinds of reading materials?
1. The children may write Haiku poetry. This is a form of Japanese poetry consisting of three lines with 5, 7, and 5 syllables respectively. Haiku poetry finds its subjects in nature.
 2. Following a walk outside, have each child choose one subject or idea, and design a cover for a book he would like to write.

Films: Making Books, Books and Their Care. Have a discussion following each film. Make book covers and bookmarks.

Topic V Careers in the Communication Industry.

Ask, "What jobs are available in the various areas of communication? If you were going to look for a job in communication, what kind of job would you want to do? What duties would you perform? What skills are needed? Would you need a college education, special training, or experience?"

1. Using video tape equipment, the class may create and produce a television show depicting scenes from both indoors and outdoors. Each student should have a career assignment from the television industry.
2. With the use of a movie camera, the students may create a motion picture using both indoor and settings. Every child should have a specific job which functions in the motion picture industry.
3. Using a tape recorder, students may create a radio program.
4. Designate a "Career Day" in the classroom. Divide the class into several groups, each of which will represent a certain field in communication. Have the students develop a booth containing information about the various jobs in the particular area of their assignment.
5. Let the students research a particular person who is working or has worked in the communication industry (examples: Walt Disney, a television personality, a radio disc jockey, a sports newscaster). Students may write a report or tell about the life and work of the particular person.

BEST COPY AVAILABLE

Pre-Post Test

A copy of this test should be made for each student. For administering to a primary group, the teacher should read each question aloud and allow time for the responses to be made by the students.

The following materials will be needed to administer the test:

Pencil for each student.

At least three pieces of lined paper to record responses.

Art paper to complete questions 11 and 13.

Two sets of pictures to be used with questions 6 and 12. The pictures must be selected prior to administration.

One blank envelope for each student.

**Related Behavioral
Objective**

Question

- | | |
|----|---|
| 1. | 1. a. List three different ways that can be used to communicate.

1. _____
2. _____

b. Tell what is meant by the word communication?

_____ |
| 2. | 2. Give three examples of ways animals communicate fear or happiness.

1. _____
2. _____
3. _____ |
| 3. | 3. How do you use each of your five senses in receiving communication?

1. _____
2. _____ |

3. _____

4. _____

5. _____

5. 4. Describe or draw four examples of communication which have been used throughout the history of mankind, from early man to the present.

1. _____

2. _____

3. _____

4. _____

6. 5. Give two examples of the way in which mass media affect your daily living.

1. _____

2. _____

7. 6. Look at the five pictures which are displayed. Select at least one of the pictures and tell what number it is, and give your reasons why you think the picture communicates beauty, ugliness, or both.

8. 7. List two ways that communications helps people earn money in the community. List two ways that communication encourages people to spend money in the community.

EARN

1. _____

2. _____

SPEND

1. _____

2. _____

9. 8. What is the difference between Indian sign language and Indian picture symbols?

10. 9. What is Morse Code? What is the coding for S.O.S.?

11. 10. If you were going to make an emergency call and did not know the correct number to dial, how could you get the call through? What would you say when the call was placed?

13. 11. Draw pictures and tell the jobs of three people who earn their living in different areas of the field of communications.

4. 12. Look at the five pictures of advertising which are displayed. Select at least one of the pictures and tell why you would or would not buy the product shown; or select at least one of the pictures and tell how it makes you feel. Tell the number of the picture.

12. 13. Write a friendly letter to someone of your choice. Address an envelope in which to mail the letter.

Pre-Post Test Answers

The following answers are given as suggested responses by the authors of this unit. Other possible answers may be found in the background information. A response which meets the requirements of the concepts or behavioral objectives of this unit should be accepted.

The answers to question six and twelve will depend upon the pictures selected and shown by the teacher. The answer to question eleven may require additional clarification by the student as to the type worker he has drawn in his pictures.

The answer to question thirteen will be judged by the standard format for a friendly letter, which may be found in any fourth grade language series. Teacher judgement is appropriate as to what is included in the format.

1. a. Talking, facial expressions, signaling, T.V., radio, newspapers, books, magazines, telephones, signs, art, music, dance, etc.
b. Communication is the sharing of ideas or the receiving of information.
2. Animal sounds: beaver slapping tail on water
Body movements: dog wagging tail
Biological defenses: skunk emitting odor
3. We hear sounds. We receive visual stimuli. We can feel differences in texture and temperature. We can identify different things by smell. We distinguish between pleasant and unpleasant odors. We can detect danger from odors. We can taste the different taste sensations in foods.
4. Art, Picture symbols, sign language, smoke signals, spoken language, alphabet, printed matter, telegraph, telephone, radio, television, satellites.
5. Newspapers, radio, television, communication satellites provide ready availability of world happenings and communicates news as it happens. Mass media affects our dress and influence the way in which we live.
6. Answers will vary and depend on pictures selected and shown to students.
7. Advertising encourages people to spend their money for particular items. Many job opportunities are available to adults in all areas of the communication industry.
8. Indian sign language is communication by means of various body movements, particularly with the hands, while Indian picture symbols are a means of communicating by reproducing picture symbols in a meaningful pattern and sequence.

9. A method of sending messages by a series of dots and dashes which correlates with letters of the alphabet. This can be done with a telegraph key, with any item which can be used to tap, with the voice, and with lights.

The coding for S.O.S. is ... --- ...

10. The caller can dial "0" to get the operator, who will connect him directly with the emergency number. The numbers for emergency calls are also listed in the front of the telephone directory. Some home phones have stickers on them listing emergency numbers. Once you have reached the emergency number, tell the person who answers the phone the nature of the emergency, the location of the trouble, and give him your name, address, and telephone number.
11. Answer evaluated according to the pictures drawn and labeled.
12. Answers will vary and depend on pictures selected and shown to the children.
13. Standard format for a friendly letter and for an envelope should be adhered to.

School _____

Teacher _____

Unit _____

Student post-test results will be grouped in the following manner:

Example:

Number of post-test questions given 13.

Number of students	Number of questions answered correctly.
6	12
5	10
8	9

Number of post-test questions given. _____		Number of post-test questions given. _____	
Number of Students	Number of Questions Answered Correctly	Number of Students	Number of Questions Answered Correctly

BEST COPY AVAILABLE

BIBLIOGRAPHY

(For the Student)

Batchelor, Julie F. Communication: From Cave Writing to Television. New York: Harcourt, Brace and World, Inc., 1953

Darwin, Len, What Makes a Telephone Work?. Boston: Little, Brown, and Co., 1970

Fisher, Leonard Everett. The Printers. Franklin Watts, Inc., 1965

Goudey, Alice, Here Come the Bees. New York: Charles Scribner's Sons, 1960

Guthenridge, Henry, George Eastman. New York: Bobbs-Merrill Co., 1960

Guthenridge, Henry, Tom Edison. New York: Bobbs-Merrill Co., 1960

Lewellen, John, The True Book of Honey Bees. Chicago: Children's Press, 1953

Mitchell, Ray, The Study Book of Telegraphs. Chester Springs, Pa.: Dufour Editions, 1962

Posin, Daniel Q., What is Electronic Communication?. Chicago: Benefic Press, 1961

Schloat, Warren, Jr., Adventures of a Letter. New York: Charles Scribner's Sons, 1949

Selsam, Millicent E., The Language of Animals. New York: William Morrow and Co., 1962

Slobodkin, Louis, Read About the Postman. New York: Franklin Watts, Inc., 1966

Snow, Dorothea J., Samuel Morse: Inquisitive Boy. New York: Bobbs-Merrill Co., Inc., 1960

BIBLIOGRAPHY

(For the Teacher)

Arnold, Oren, Marvels of the U.S. Mail. New York: Abelard-Schuman, 1966

Brown, Vinson, How to Understand Animal Talk. Boston: Little, Brown, and Co., 1958

Chase, Stuart, Danger--Men Talking. New York: Parent's Magazine Press, 1969

Coggins, Jack, Flashes and Flaggs: The Story of Signaling. New York: Dodd, Mead, and Co., 1963

Colby, C.B., Communications: How Man Talks to Man Across Land, Sea and Space. New York: Coward-McCann, Inc., 1964

Cooke, David C., How Books are Made. New York: Dodd, Mead and Co., 1963

Epstein, Sam and Beryl, The First Book of Codes and Ciphers. Franklin Watts, Inc., 1956

Fabre, Maurice, A History of Communications. (The New Illustrated Library of Science and Invention, Vol 9). New York: Hawthorn Books, Inc., 1963

Helfman, Elizabeth S., Signs and Symbols Around the World. New York: Lothrop, Lee, and Shepard Co., 1967

Hogben, Lancelot, The Wonderful World of Communication. Garden City: Doubleday and Co., 1959

Simon, Irving B. The Story of Printing from Wood: Blocks to Electronics. New York: Harvey House, Inc., 1965

"Communication". World Book Encyclopedia, Vol.4, pp. 711-723. Chicago: Field Enterprises, 1971

Miscellaneous

Telezonia Kit. Available from Southwestern Bell Telephone Company. Contains student booklets, self-explanatory teacher's manual, film, filmstrips, posters, and two telephones with a remote control operation device. Coordinate this with another class in your building when ordering.

Peabody Language Kit, Level P. Availble from Clayton Woods Elementary School. Contains sound identification including farm animal sounds, household sounds, outdoor sounds.

Sounds I Can Hear Kit (Scott Foresman). Available in many building libraries. Includes records, cards, and posters on "Sounds at Home," "Sounds on the Farm", "Sounds at School", and "Sounds in the Neighborhood".

RECORD LISTENING ACTIVITIES

The following list of records are suggested for use with this unit:

<u>*A Christmas Carol</u>	Charles Dickens	R D 548C
**A Gathering of Great Poetry for Children	Caedmon Children's Classic	TC1238
**Babar, the Elephant The Little Taylor Peter	Angel	36357
<u>*Carnival of the Animals, The</u> Leonard Bernstein-New York Philharmonic	Saint-Saens	C S242C
**Dance a Story Series	RCA Records	
**Discovering Rhythm and Rhyme in Poetry	Caedmon Children's Classic	TC1156
**Festival Folk Dances	RCA Records	LPM 1621
**First Folk Dances Michael Hermans	RCA Records	LPM 1625
**<u>Marches</u>	Peter Tchaikovsky	C T249E4
<u>*Poems and Tales</u>	Edgar Allen Poe	R P743P3
*Poetry	Robert Burns	R B967P
**Rhythm Band and Orchestra Music for Children	FO	67M
*Robert Frost Reads his Poetry	R	F939R

BEST COPY AVAILABLE

*Romeo and Juliet: Nutcracker Suite

Peter Tchaikovsky T249R^C

Wolves

Robert Redford, Available through
National Wildlife Federation

* St. Louis County

** Pierremont

Audio-Visual Aids

BEST COPY AVAILABLE

The following films are available through the St. Louis County Audio-Visual Department.

Ants: Backyard Science

Art of Seeing, The

Art Series: Color

Art Series: Texture

Beaver Dam

Beaver Valley

Books and Their Care

Community Television

Dance Squared

Development of Communications

Exploring Relief Printmaking

Hailstones and Halibut Bones

Hands of Maria

Honey Bee

Language and Communication

Making Books

Newspaper Story

Printing Through the Ages

Prints

Prowlers of the Everglades

Telephone for Help

Times, Lines and Events

Understanding and Communications

Writing Social Letters

Writing Through the Ages

Jazzoo

The following films may be obtained by contacting the

Southwestern Bell Film Library
5 1 South Jefferson
St. Louis, Missouri 63166

Phone: 534-6300

Face to Face. 9 min., color

Incredible Machine. 14 min., color

Operator. 14 min., color

Telstar. 27 min., color

The Thinking ??? Machine.
16 min., color

We Learn about the Telephone.
26 min., color

BEST COPY AVAILABLE

DATA SHEETS

DATA SHEET FOR FIELD TRIP TO BELL TELEPHONE COMPANY

Check everything you see at the Telephone Company.

1. Receptionist	
2. A Tour guide (public relations)	
3. Combination locks on the doors	
4. Switchboard	
5. Television Typewriter	
6. Computer	
7. Customer Service Worker (handles complaints)	
8. Computer room	
9. Installation calendar	
10. Cables	
11. Bed of wires	
12. Computer room specialist	
13. Flashing lights	
14. Office equipment	
15. Cables leading out of building	
16. Recorder for log books (record work to be done and work completed)	

DATA SHEET FOR FIELD TRIP TO BELL TELEPHONE COMPANY

Check everything you see at the Telephone Company.

17. Receiver of about needed repairs complaints	
18. Operator that talks to repairmen	
19. Lineman	
20. Installer	
21. Generators	
22. Service trucks	
23. Symbol of the Telephone Company	
24. Different types of telephones	

DATA SHEET FOR FIELD TRIP TO JOHN F. STARK PRINTING COMPANY

12969 Manchester Road
966-6800

BEST COPY AVAILABLE

Check everything you see at the printing company.

1. Receptionist	
2. President of the firm	
3. Color press	
4. Large color press	
5. Letter press	
6. Type setting department	
7. Binding room	
8. Material for binding	
9. Camera	
10. Plate making machine	
11. Shipping department	
12. Warehouse	
13. Workers for various jobs Describe 2 jobs	