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ABSTRACT

Developed by the North Carolina Curriculum Study Taskforce to meet every student's need to be technologically literate, this technology education course guide outlines a communications systems course for grades 9-10. After a brief explanation describing the use of the curriculum guide in an instructional system involving the teacher, students, textbook, laboratory sheets, apparatus, the curriculum guide, and a reference library, an introduction to the communication technology course is provided, which enumerates basic goals for the class. A course outline gives the title and content of each of the seven sections, and the number of days expected to complete each section, followed by a course content outline. Section topics include: (1) an introduction to communication technology; (2) model of the communication process; (3) introduction to communication channels; (4) designing and producing graphic messages; and (5) designing and producing electronic messages. Each section includes an overview of the content, a list of objectives, several activities with instructions for presentation, and a bibliography of recommended texts with appropriate chapters and pages for that particular section. (MM)

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ACKNOWLEDGEMENTS

The North Carolina Technology Education Curriculum is the product of a curriculum redirection process begun in the early seventies. As in any change process, many individuals have contributed their time and energies to provide North Carolina students with a curriculum designed to meet their needs to be technologically literate adult citizens. The following are recognized for their vision and leadership in setting the direction for Technology Education in North Carolina schools.

Members of the N.C. Curriculum Study Taskforce who charted the course for technology education in North Carolina schools. Their study report and recommendations provided the direction for a change in the identity of the discipline and a total redirection of the curriculum.

Members of the N.C. Curriculum Committee who validated the Technology Education Curriculum Guide as appropriate study for assisting students in understanding technological systems impacting on their lives. Further, industry representatives of the committee verified the appropriateness of suggested activities reflective of practices in construction, communications, manufacturing, and transportation.

N.C. Technology Education Association who provided a forum for redirection of the discipline. It was the association that led the profession in changing identity to technology education. The association also provided opportunities for professionals to develop competence in the classroom delivery of technology education through the sponsorship of in-service programs.

Individual technology education professionals who gave leadership to other professionals in the curriculum change process. These professional leaders piloted many technology education activities in their classrooms and served as role models for other professionals.

Members of the N.C. Council of Technology Teacher Educators who provided insite and support throughout the curriculum redirection process.

Indiana curriculum developers who provided curriculum materials adopted and adapted for North Carolina Technology Education programs.

INTRODUCTION

The North Carolina Technology Education Curriculum is a program to meet every citizen's need to be technologically literate. Some basic assumptions underlie the program, and these can be divided into content assumptions, and learner assumptions.

The curriculum was developed using the belief that the appropriate content for the field is technology, and its impact on individuals and society. It was further assumed that the content is best organized around human productive systems that have been used, are now being used, and will, most likely, continue to be used. These universal systems are communication, construction, manufacturing, and transportation. Finally, it was assumed that this content can best be addressed from a systems approach with its inputs, processes, outputs, feedback, and goals/restraints.

The curriculum was further based on the assumption that education should meet the needs of individuals and the human requirements of society. It was assumed that each person living in a technological society should have a basic understanding of and the ability to assimilate the knowledge about technology. People it was assumed, should be able to interact with the technological nature of society and help impact the type of future new technologies can provide. Additionally people should be able to be contributors to a society in their several roles, including citizen, voter, investor, consumer, worker, and leader.

These assumptions caused the curriculum to be developed in such a way as to:

1. Provide an overview of technology first, allow for more indepth study in specific technological areas, and culminate with synthesis activities.

2. Be more teacher-directed, content-centered in early courses, and highly, student-directed, process centered in advanced courses.

3. Involve problem-solving and group activities of all courses.

4. Stress the how and why of technology and its relationship to our quality of life.

5. Be activity-centered learning, with the content being used to determine the appropriateness of each activity selected.

6. Be equally important to young women and young men, both of which must function in a technological society.

Finally, the curriculum was developed to be descriptive rather than prescriptive. The materials describe what to teach and suggest ways of teaching the content. At no time are daily activities prescribed in such a way to preclude individualizing the presentations to meet local conditions.

THE CURRICULUM GUIDE IN AN INSTRUCTIONAL SYSTEM

Each course in the North Carolina Technology Education Curriculum is seen as a dynamic activity involving a complete instruction system. This system generally includes seven components: the teacher, the students, a texbook when available, the curriculum guide, laboratory sheets, apparatus, and a reference library.

THE TEACHER

The teacher plays the primary role in the system. This role entails being a curriculum developer. The teacher chooses the points to emphasize and to evaluate. Care should be taken to insure that the coverage of the subject is comprehensive. You should resist "picking and choosing" only modules and activities that are the most interesting, most familiar, or the easiest to implement. All modules and activities should be included. However, you are encouraged to redesign or replace activities with your own activities that contain equivalent content.

As a technical expert, the teacher gives presentations, demonstrations, and asks questions about the subject matter. Safety information, and the demonstration of teaching/learining activities, are the responsibility of the teacher.

The teacher is an instruction manager. Managers plan, schedule, direct, and control activities. The teacher, perhaps in cooperation with students, plan the instruction by identifying the instructional goals. The activities to reach these goals are scheduled. Through presentations and application activities students are directed through the construction activities. Finally, the student's work and the teacher's management is controlled through various forms of evaluation. Since evaluation instruments should be designed to measure success in reaching the goals, these instruments should be prepared by the teacher.

The teacher is the creator of the teaching/learning environment. It is highly recommended that you create a "role playing" environment. In addition to having students do tasks that simulate construction, have them play the role of workers, managers, and owners. For example, refer to a group of students as a "work crew" or "survey party" with job titles, rather than as students who carry out assigned tasks. Help them visualize themselves in their roles. The teacher can become a job superintendent, owner, or government officer, who approves the "work crew's" job.

THE STUDENT

The target population is made up of middle-junior high or high school students. The students will often work in groups of from three to five. Their responsibilities include reading the textbook assignments, doing the worksheets as homework, and completing the activities.

THE TEXBOOK

A textbook should be selected for the course and each student should have one. A textbook contains the body of knowledge about industrial technology. It should be selected to meet the appropriate reading level, and be written in an interesting way with numerous illustrations.

THE CURRICULUM GUIDE

The curriculum guide is to be used to help plan your instruction. The introduction consists of a structure for the content and a description of an instructional system with suggestions on how to use it.

The remainder of the curriculum guide briefly describes the modules. Each module consists of an introduction, objective(s), and a description of the activities. The description of the activities includes a schedule, presentation titles, application activities, and presentation titles, references, and safety guidelines. Suggestions for getting prepared and carrying out the activity are found in the teacher activity sections.

Suggestions for a variety of optional activities may also be found throughout the curriculum guide.

THE APPARATUS

Often the course guide contains plans for specialized apparatus useful in teaching the course. Drawings will be placed with the activity in which they are used. You can use the drawings to construct the apparatus.

THE REFERENCE LIBRARY

Some courses require student reference books. The titles of these are included in the reference library and copies should be purchased for laboratory use.

DAILY LESSON PLANS AND EVALUATION

The planning of daily activities and an on going evaluation system are th teacher's responsibility and rightfully so. Each student should adapt activities and presentations to insure they help students develop the identified concepts within local conditions. The curriculum guide was designed to help you, the local professional, present a relevant, exciting course. Good luck!

INTRODUCTION

Modern communication technologies help all the peoples of the world learn, grow, and enjoy life. The need and desire to exchange ideas and information is a basic activity. Much of our daily schedule involves communicating with friends, business partners, teachers, and other individuals. In fact communication and communication technology are so important in modern life that we often refer to this time in history as the "information age."

This course is designed to introduce the complex world of communication technology through a variety of classroom presentations, laboratory exercises, educational media, and related instructional activities. The study of communication should be an exciting and rewarding experience for every student. Certainly topics covered in this course will prove relevant and useful throughout one's life.

Among the basic goals for the class include the following:

1. to develop an awareness and understanding of communication and its related technology and systems.

2. to become familiar with the fundamental elements and interrelationships of the communication process.

3. to become acquainted with the channels, media, and languages used to communicate information.

4. to gain an understanding of the technical means used to exchange information.

5. to develop an appreciation for the impacts that communication technology has on our society and environment.

COURSE OUTLINE

Module Number	Title and Content	Time (Days)
1.	Introduction to communication technology Exchange of ideas/messages Individual vs mass communication Human vs machine communication Technical communication systems Analyzing communication systems	8
2.	Model of the communication process Transmission of messages Coding/decoding of messages Message storage Feedback systems	7
3.	Gathering information of various senses Technology extends human senses Visual literacy Graphic design Audio communication systems Visual communication systems Audiovisual communication systems	15
4.	Introduction to communication channels Signals Languages Waves Other	9
5.	Designing and producing graphic messages Designing the message Preparing to produce the message Producing the message Evaluating the message	18
6.	Designing and producting electronic messages Designing the message Preparing to produce the message Producing the message Evaluating the message	18
7.	Introduction, influences, & entertainment Via modern communication media Impacts of communication systems Communications and society Communications and the individual	5

INTRODUCTION TO COMMUNICATION TECHNOLOGY CONTENT OUTLINE

I. Introduction to Communication
   - A. Communication defined
     1. Exchanging ideas or messages
     2. Gathering information
     3. Other
   - B. Define communication technology
     1. Exchanging ideas with technical devices
     2. Extending our abilities
     3. Evolution of communication technology through the ages
     4. Recent developments
   - C. Communication in modern society
     1. Individual
     2. Mass
   - D. Systems of transferring information
     1. Human-to-human
     2. Human-to-machine
     3. Machine-to-human
     4. Machine-to-machine

II. Communication Model
   - A. Ideation/Visualization
   - B. Creation of messages
   - C. Coding
   - D. Transmitting
   - E. Receiving
   - F. Storing
   - G. Feedback
   - H. Interference

III. Communication & Human Perception
   - A. Human senses
     1. Sight
     2. Hearing
     3. Touch
     4. Taste
     5. Smell
   - B. Extending human senses
     1. Technical devices
     2. Purpose/use
   - C. Perceptions

IV. Gathering Ideas/Information by Various Communication Systems
   - A. Audio (Acoustic)
     1. Phonographs
     2. Tape recorders
     3. Telephone
     4. Short-wave radio
     5. Radar/Sonar
     6. Telegraph

B. Visual (Graphic)
   1. Signs
   2. Books
   3. Magazines
   4. Newspapers
   5. Flyers/Posters
   6. Paintings
   7. Photographs
   8. Drawings
   9. Slide presentations

C. AudioVisual
   1. Television
   2. Motion Pictures
   3. Picture telephones
   4. Stage shows
   5. Computer games

IV. Communication Channels
   A. Signals
   B Languages
   C. Waves
   D. Codes
   E. Visual

VI. Creation & Transmission of Messages
   A. Creating graphic messages
      1. Script writing
      2. Storyboards
      3. Layout techniques
      4. Composing photographs
      5. Design procedures
      6. Programming
   B. Creating electronic messages
      1. Designing messages
      2. Coding information
      3. Storyboarding
      4. Planning audio scripts
   C. Transmitting simple messages
      1. Hard-wired systems
      2. Light systems
      3. Acoustic (audio) systems
      4. Telecommunication systems
      5. Graphic systems

VII. Exploring the Impacts on Society
   A. Information
      1. Media
      2. Influences
         a. Positive
         b. Negative
      3. Treatment of Information
   B. Entertainment
      1. Media
      2. Influences

C. Education
    1. Ways we learn
    2. Media involved
        a. In school
        b. Out of school
    3. Influences
D. Persuasive Media
    1. Techniques used
    2. Influences
        a. Positive
        b. Negative

INTRODUCTION

MODULE: 1 : Introduction to Communication Technology

LENGTH: 8 DAYS Communication CLUSTER

Communication is an important process in our daily lives. We receive messages in many forms—TV, radio, magazines, personal conversations, signs, newspapers, and numerous other channels. Many messages are designed strictly for our individual attention or needs while we receive other information as members of a large group called a mass audience. This module helps introduce the practice of human communication and review the technical systems which allow us to exchange ideas and messages more efficiently.

Human communication involves attempts to transmit information to another individual or a small group of people. The nature of the message and the transmission medium are selected to maximize efficiency and minimize time and cost. Several common examples of individual exchanges include sending personal letters by mail, completing telephone conversations, and exchanging simple photographs of family vacations or popular events.

Communication has always been perceived as essentially a human activity. We often forget that animals and machines exchange signals in various forms, too. For example, bees and dolphins have a unique method of communicating. Machines, such as computers and telephone switching devices, exchange data along either land lines or by satellite. Computer instructions flow to other computers or industrial machinery in business settings. Since the emphasis of this course is on the technical means of communication, we should explore various human and machine systems of exchanging information.

Basically, all formal transfers of information can be identified as being of one of four categories (or systems). These include:

1. Human-to-human
2. Human-to-machine
3. Machine-to-human
4. Machine-to-machine

Students in communication courses should understand the different means of exchanging information. They must also be able to recognize what techniques or equipment are necessary to complete the transfer of ideas or information. But this unit does much more. The focus on machine and human communication is useful in introducing the coding/decoding process necessary of most transfer systems. While various devices are being discussed (i.e., computers, telephones, etc.), methods of converting information into transferable signals can be covered.

OBJECTIVES

Upon completing this learning module, each student should be able to:

1. Define "communication" & "communication technology".

2. Develop an understanding of the various means by which we receive information.

3. Learn how signals are transferred between different information processing machines and among individuals.

4. Learn the difference between individual and mass communication audiences and techniques to focus messages towards those audiences.

5. Realize the impact of various communication media in our daily lives.

CALENDAR

DAY	ACTIVITY
1	Introduce the course; have student complete a "daily" log/worksheet on all the communications systems/media they use over the next 24-hour period.
2	Review results of 24-hour log form; start display boards of various communication systems.
3	Complete display boards of communication systems.
4	Outline message design activity; start designing messages to send to another class, group, team, etc.
5	Plan/produce graphic messages (posters or flyers).
6-7	Plan/produce video tape messages.
8	Record, revise, or view video taped messages.

PRESENTING THE MODULE

DAY	ACTIVITY
1	Introduce the course; explain purpose of the course; distribute the textbooks; assign seating; etc. Survey the students to determine if they understand the concept of "communication" and "communication technology". Ask everyone in the class to provide examples of messages or information they receive in their daily affairs and classify their responses according to (a) involving technical means or not, (b) mass versus individual systems, (c) the type of message, and (d) the channel. Develop a worksheet (see the Appendix) for the students to keep track of their communication "experiences" over the next 24-hour period. Assign the worksheet activity as homework.
2	Ask students to provide one example from their worksheet and develop a master list on the board. Challenge students with questions such as (1) who had the most entries, (2) most variety of channels, (3) most unusual examples, etc. Create display boards (on posterboard or bulletin boards in the room) that show various types of communication technology. Different displays may include: 1. electronic communication devices 2. instructional media/devices 3. graphic communication products 4. local communication firms/industries 5. household communication devices 6. others. (Use old magazines and newspapers for students to cut out pictures and headings.)
3	Laboratory time to complete display boards. Provide time towards the end of the period to "show and tell."
4-5	Have groups of 3-5 students create a short message to some group in the school (sports team, teacher, another communications class, etc.). Use the worksheet (see the Appendix) or standard graph paper to design the message. Have students design a poster the first two days of this activity. Laboratory time to complete poster design.

6. Outline the way to video tape a short (2-3 minute) message to another group in school (i.e., a team, class, teachers, etc.); then demonstrate how to record the short message on a video tape for transmitting to the "receivers."

7 Group laboratory time to complete the video tape assignment.

8 Complete recording/revising the message and/or view the messages of other groups.

BIBLIOGRAPHY

TEXTBOOKS AND REFERENCES

The suggested textbooks for this course are listed below along with chapters/pages containing information related to this module:

Jones, R. E. and J. L. Robb, (1986), Discovering Technology: Communication, Orlando, FL, Harcourt Brace Jovanovich, Inc.

(Introductory Chapter: Pages 8-16; Chapter 2: Pages 24-32)

Seymour, R.D., J. M. Ritz, & F. A. Cloghessy, (1987), Exploring Communications, South Holland, IL, Goodheart-Willcox, Inc.

(Chapter 1: Pages 5-12; Chapter 2: Pages 13-21)

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Additional textbooks and reference materials include:

Bittner, J. R. (1980), Mass Communication (2nd Ed), Englewood Cliffs, NJ, Prentice-Hall.

Black, J. & F. C. Whitney (1983), Introduction to Mass Communication, Dubuque, IA, William C. Brown Publishing.

Cornish, E. (Ed.), (1982), Communications Tomorrow, Bethesda, MD, World Future Society.

DuVall, J. B. G. R. Maughan, E. G. Berger (1981), Getting the Message, Worchester, MA, Davis Publications.

Gross, L. S. (1983), Telecommunications: An Introduction to Radio, Television, and the Developing Media, Dubuque, IA, William C. Brown Publishing.

Hauenstein, A.D. & S. A. Bachmeyer (1975), The World of Communications, Bloomington, IL, McKnight Publishing Co.

Heiner, C. W. & W. R. Hendrix (1980), People Create Technology, Worcestor, MA, Davis Publications.

Stevenson, J. (1985), Telecommunications, Morristown, NJ: Silver Burdett Co.

Texas Instruments Learning Center. (1984), Understanding Communications Systems, Ft. Worth, Radio Shack.

Williams, F. (1982), The Communications Revolution (Rev. Ed.), New York, Mentor Books (New American Library).

APPENDIX

24-hour Log Assignment Form

Provide a form to each student that looks like this. Several examples have been listed to show students how to complete the form. More than one page might be necessary for each individual!

Individual vs Mass Communication Systems

You receive many types of messages and information daily; keep a 24 hour log of today's communication.

IND	MASS	Types of Message(s)	Channel(s)
	X	Morning announcements	P.A. System
X		Telephone call from Joe	Telephone

Examples

APPENDIX

Message Design Activity Worksheet

(Reproduce for students to use in developing their message).

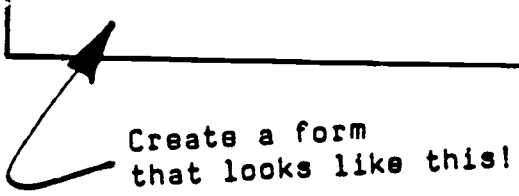
MESSAGE DESIGN FORM

Name:

Send to:

Message:

Notes:



MODULE: 2 : Model of Communication Process

LENGTH: 7 DAYS Communication CLUSTER

The process of communication is often described with the aid of a simple model. Perhaps the best graphic representation of information theory was first devised by Dr. Claude Shannon (of the Bell Laboratory) in the 1940s. Using a generalized diagram of simple communication acts, exchanges of ideas or messages involving technical systems can be easily analyzed. A source, transmission medium, receiver(s), and other elements may be clearly identified. Studying communications with a simple model allows us to view the field from a "systems approach" and not merely from a certain process or device.

The work of Dr. Shannon is described in many communication textbooks, the World Book Encyclopedia, and most other materials which cover the world of communication. Refer to these for background information of these theories on communication involving technical systems as well as impacts of specific technologies, social issues related to mass media, etc.

The communication model used in this course includes the following elements:

1. Ideation/visualization
2. Creation of the message(s)
3. Coding
4. Transmitting
5. Receiving
6. Storing
7. Feedback
8. Interference

This module will focus on individual communication technologies and the student's ability to analyze the various components of each system. All communication technology involve a source, channel (transmission medium), and receiver. The instructor may help students organize information concerning the means of creating/coding messages, selecting channels, using storage systems, reducing the possibilities of interference, etc. in designing communication media.

OBJECTIVES

Upon completing this learning module, each student should be able to:

1. become acquainted with the procedure known as human communication by using a graphic model to illustrate the process.

2. introduce concepts of sender, channel, receivers, storage, feedback, and interference in the exchange of messages.

3. develop the ability to analyze typical exchanges of information and identify the elements of the communication model in each example.

4. learn how messages are exchanged through different communication channels.

CALENDAR

DAY	ACTIVITY
1	Introduce the model of the communication process; describe the elements with an illustrated talk.
2	Start drawing of communication model; show how to use basic technical drawing instruments.
3-7	Complete drawing of the communication process.

PRESENTING THE MODULE

DAY	ACTIVITY
1	Class presentation over the process of communicating (as illustrated with the model developed by Shannon). Include a wide variety of examples of each element in the formal discussion. Have students "fill-in" missing parts of models on the board or show pictures of TV, radio, or other shows and determine the various elements.
2	Explain how to develop a technical illustration of the model covered during the class; have students select an example of any practical communication act and prepare a drawing of that exchange. Instructor will have to demonstrate use of simple drawing tools or instruments. (See Appendix for drawing). The drawings of the model are designed to be simple yet challenging for the students. If individuals possess a high level of artistic skill, the assignment can be altered to reflect that consideration. Provided the typical student has had very little drawing experience, the model may be drawn with a simple straight-edge on white typing paper. The activity is not to merely develop drafting skills, but to illustrate the communication process with a graphic model while allowing students to use drawing instruments.
3-7	Laboratory time to complete the drawing(s). Organize students so they may explain their drawing(s) to the class.

BIBLIOGRAPHY

TEXTBOOKS AND REFERENCES

The suggested textbooks for this course are listed below along with chapters/ pages containing information related to this module:

Jones, R. E. and J. L. Robb (1986), Discovering Technology: Communication, Orlando, FL, Harcourt Brace Jovanovich, Inc.

(Chapter 1: Pages 18-23; Chapter 4 & 5: Pages 42-59)

Seymour, R. D., J. M. Ritz & F. A. Cloghessy (1987), Exploring Communications, South Holland, IL, Goodheart-Willcox, Inc.

(Chapter 3: Pages 22-30; Chapter 8 & 9: Pages 68-69)

****

Additional textbooks and reference materials include:

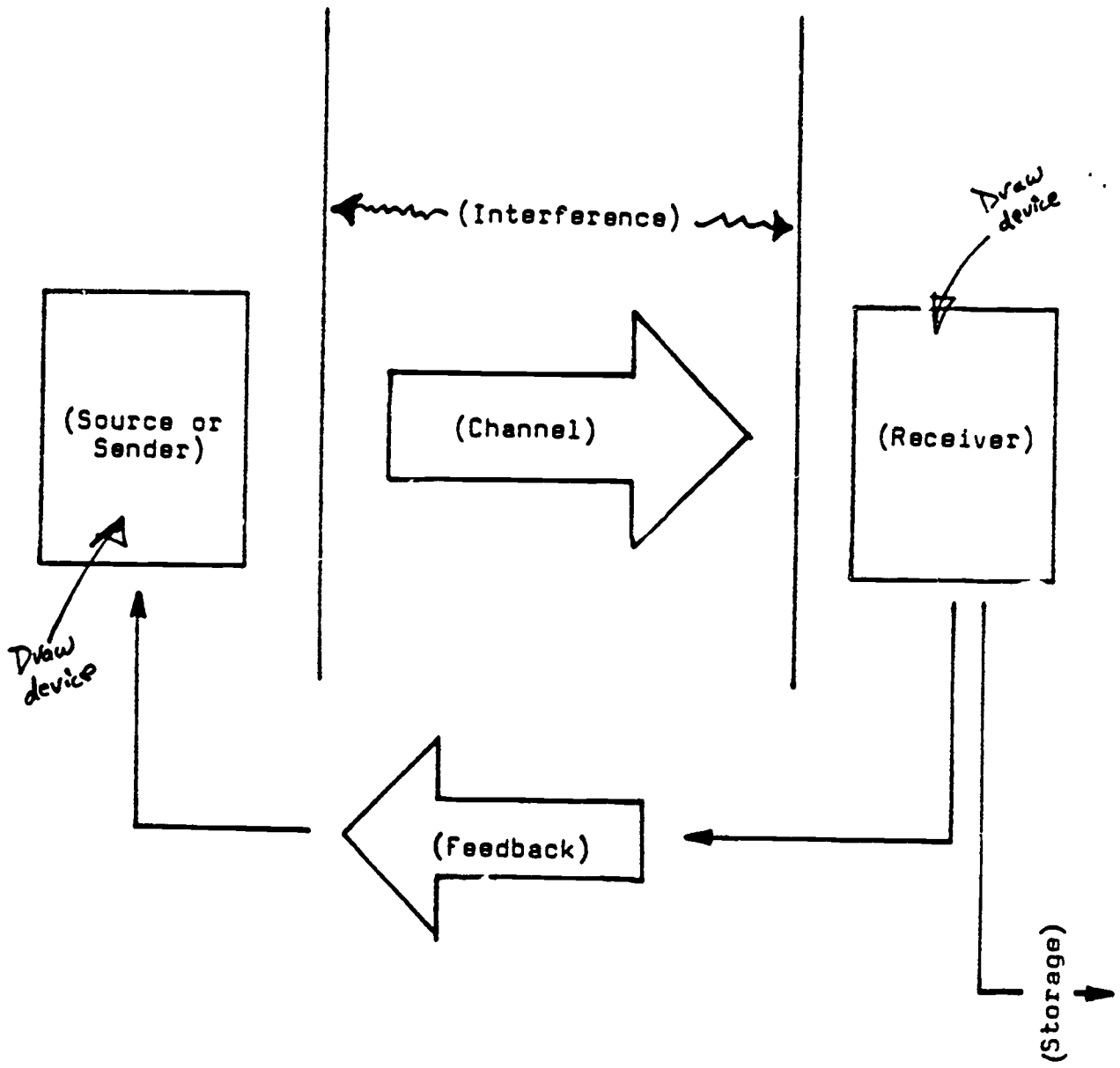
Duvall, J. B., G. R. Maughan, Jr., G. E. Berger (1981), Getting The Message. Worcester, MA, Davis Publications.

Cornish, E. (Ed.), (1982), Communications Tomorrow, Bethesda, MD, The World Future Society.

Gross, L. S. (1983), Telecommunications: An Introduction to Radio, Television, and the Developing Media, Dubuque, IA, William C. Brown Publishing.

Stevenson, J. (1985), Telecommunications, Morristown, NJ, Silver Burdett Company.

Texas Instruments Learning Center, (1984), Understanding Data Communications, Ft. Worth, TX, Radio Shack.


(Interference)
Draw device
(Source or Sender)
(Channel)
(Receiver)
Draw device
(Feedback)
(Storage)

MODULE: 3 : Gathering Information by Various Senses

LENGTH: 15 DAYS Communication) CLUSTER

Module 3 provides an introduction into the means by which humans receive signals and information. Many messages reach one of our five senses without the aid of technical devices. Other coded information travels to us via complex mechanical or electronic systems. The ability to recognize and describe communication signals is a major part of understanding communications. We often call this perception. For example, visual literacy involves those unique times when visual perception (or the process of "looking at something") is employed to pick up information. Students need to fully appreciate the importance of their sensory system as they learn about communication technology.

The five human senses include sight, hearing, touch, taste, and smell. Information or ideas may be received directly by one of these channels. In most acts of communication involving technology, the senses are aided by a device or piece of equipment. A common example is an electronic amplifier. Audible sounds are increased with a device that allows us to hear even the faintest signals from great distances. In this example, our senses have been "extended".

This module helps students learn more about the technical systems that aid the communication process. The topics in this unit have been separated into three areas: (1) audio systems, (2) visual systems, and (3) audiovisual systems. The details covered in this module focus on the concepts associated with modern communication or information technology.

Among the more common acoustical means of communication are the following:

1. phonographs
2. tape recordings
3. telephones
4. short-wave radio
5. radar/sonar

The most common means of communicating by visual means include the following:

1. signs
2. books/magazines
3. newspaper
4. flyers/posters
5. paintings
6. photographs
7. drawings
8. slide presentations.

Typical systems of audiovisual messages include those in the form of:

1. television programs
2. motion pictures
3. picture telephones
4. animated stage shows
5. computer games.

These and other means of communication have a tremendous impact in the daily lives of the students in your classes. This module introduces those technologies and allows each student to explore specific areas.

Human beings receive the majority of their messages by either sight or sound; these sensory systems account for well over 80 percent of the ideas or information we pick-up from around us. Our sense of hearing is particularly important because it doesn't share the disadvantages of visual means of signaling. Audible sound can travel around corners, through the darkness, and be easily transformed to create recognizable words and music. These illustrations show how audible (acoustical) communication is a valuable way of exchanging ideas.

Early telecommunication systems relied almost exclusively on the exchange of audible sound waves. Drums, yells (remember Tarzan?), bells, and other sounds were created to transmit messages. In fact, the Morse code is a form of acoustical communication (in that electrical current creates clicking dots and dashes that distant telegraph operators must hear and decode). Modern telephones are technical devices which help us transmit recognizable (telephonic) sound waves over long distances. Radio is among today's most common forms of audible communication device. Our favorite radio stations provide popular music, news, and sports programming. Through a variety of words and sound effects, we are excited, amused, and informed of important events.

Many instruments and technical devices have been produced to help individuals extend their visual abilities. The most obvious include telescopes, microscopes, and standard eyeglasses. With the aid of these items, anyone can increase their range of vision. This greatly improves their ability to communicate over various distances.

The ability to compose creative, yet useful pictures or displays is an important process in many fields of visual communication. Students stand to improve their perceptive abilities a great deal from the activities in this module.

OBJECTIVES

Upon completing the learning module, each student should be able to:

1. Learn how various technical means are used to aid human communication.
2. Become acquainted with devices or equipment that transmit signals and messages among individuals.
3. Explore the communication process by analysis of audio (acoustical), visual (graphic), and audiovisual systems.
4. Recognize the importance of visual design and composition in communication materials.
5. Develop skills in visual literacy through analysis of visual designs.
6. Provide an opportunity to create an audible recording which communicates a variety of emotions and information.
7. Use a variety of audiovisual systems to exchange ideas or information with other individuals.
8. Learn the impact of familiar communication technologies in our daily lives.

CALENDAR

DAY	ACTIVITY
1	Introduce the basic concepts of audio, visual, and audiovisual communication systems; have various devices available for students to use during the class.
2	Transmit messages with Morse Code (using flashlights).
3-6	Build and use a simple telegraph key set.
7-10	Create an audio recording (radio commercial or story) for transmission to others in the class.
11-12	Analyze various package designs for best color, graphics, shape, etc.
13-14	Organize/write a script to accompany a slide show.
15	Movie on creating special effects in motion pictures.

PRESENTING THE MODULE

DAY	ACTIVITY
1	Introductory presentation over the way humans use their sensory system to receive a wide variety of ideas or messages. List the five senses on the board and have each student identify technical devices which aid a particular human sense (i.e., telescope for vision, PA systems for hearing, etc.). Concentrate on the three major systems of audio, visual, and audiovisual technology. As time allows, let students experiment with simple devices as binoculars, telephoto lens, amplifiers, etc. (Films/videotapes/filmstrips may be available in your school's media center which will help with this illustrated presentation.)
2	Have students use flashlights to send messages like telephone numbers, birthdates, addresses, etc. to other members of the class. Be sure to remind students this is a purely visual means of communicating (not like Paul Revere sent his famous "one if by land, two if by sea" message). See the Appendix for a copy of the Morse Code.
3	Build and use a telegraph system to send messages over a short distance. A schematic for a sample telegraph system is illustrated in the Appendix along with the code. The international telegraph was the first major telecommunication system in this field; it utilizes an audio system of communication to transmit ideas over great distances. It is easy to simulate this concept in the laboratory.
4-6	Student laboratory time to complete their telegraph systems, and send the messages required by the instructor.
7	Have students develop/use a modern day audio telecommunication system (radio). Assign groups of 2-3 students to create a radio commercial or short story for recording on an audio cassette system. Perhaps the best way to introduce this technical process is to play several "older" radio programs from the early years of broadcasting. It is also possible to record popular commercials from local radio broadcasts which feature a variety of sound effects and narrators. Provide an illustrated talk on how radio programs are produced (along with scripts, clip-sheets, and sound effects). Perhaps let students perform a "test" broadcast recording like an announcer might do for a job at a radio station. See the Appendix for further notes about this activity.

8 Cover the topic of special effects in broadcasting and show how differenct sounds are created (i.e., traffic sounds, laugh tracks, natural sounds like wind or flowing rivers, etc.). Explain the activity of having groups of 2-3 students create a short recording of a radio commercial or program.

9-10 Provide laboratory time to allow students to work on their audio recording (of a short story or commercial).

11-12 Have students analyze several packaging graphics (cereal boxes, model car kits, sporting goods boxes, etc.) to determine which designs they like best. Organize a chart on the board which covers the (a) most popular colors, (b) shapes/sizes, and (c) styles of lettering. Relate this perception of packaging graphics to the concept of visual literacy.

Another way to cover the topic of visual literacy is to have student write a short description of "what they see" in a critique of various slides showing vacations scenes, technical devices, etc. See the Appendix for a sample form for conducting this activity.

13-14 Provide 6 slides and a story "title" to various teams of students (maximum of 2 individuals in each group). Allow time for the students to create the "script" for a simple audiovisual presentation. After creating the story, load the slides in a projector tray in order and let the students describe their show.

15 Introduce the idea of technical audiovisual systems by exploring means of creating special effects for motion pictures or videos. Show tapes like "The Making of Thriller", "Behind the Scenes of Raiders of the Lost Ark", or the NOVA program on "The Magic of Special Effects".

BIBLIOGRAPHY

TEXTBOOKS AND REFERENCES

The suggested textbooks for this course are listed below along with chapters/ pages containing information related to this module:

Jones, R. E. and J. L. Robb (1986), Discovering Technology: Communication, Orlando, FL, Harcourt Brace Jovanovich, Inc.

(Chapter 1: Pages 18-23)

Seymour, R. D., J. M. Ritz & F. A. Cloghessy (1987), Exploring Communications. South Holland, IL, Goodheart-Willcox, Inc.

(Chapter 6: Pages 51-56)

****

The instructor must know and understand how many technical systems operate in order to group different media into one of the three systems presented in this unit. Therefore, reading and studying of reference materials like those listed below is most helpful.

Berryman, G. (1979), Notes on Graphic Design and Visual Communication, Los Altos, CA, William Kaufmann, Inc.

Duvall, J. B., G. R. Maughan Jr., & F. G. Berger (1981), Getting The Message, Worcester, MA, Davis Publications.

Hanks, K., L. Belliston & D. Edwards (1977), Design Yourself! Los Altos, CA, William Kaufmann, Inc.

Hauenstein, A. D. & S. A. Bachmeyer (1975), The World of Communications, Bloomington, IL, McKnight Publishing Company.

Heiner, C. W. & W. R. Hendrix (1980), People Create Technology, Worcestor, MA, Davis Publications.

Nelson, R. P. (1981). The Design of Advertising (4th Ed), Dubuque, IA, William C. Brown Publishing.

Porter, T. & B. Greenstreet (1980), Manual of Graphic Techniques 1, New York, Charles Scribner's Sons.

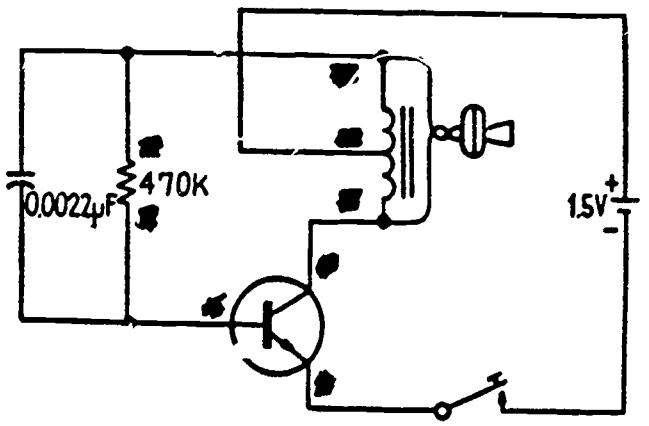
Silver, G. A. (1981), Graphic Layout and Design, Albany, NY, Delmar Publishing.

Texas Instruments Learning Center, (1984), Understanding Communications Systems, Ft. Worth, Radio Shack.

THE INTERNATIONAL MORSE CODE

A	•—	T	—
B	—•••	U	••—
C	—•—•	V	•••—
D	—••	W	•——
E	•	X	—••—
F	••—•	Y	—•——
G	——•	Z	——••
H	••••		
I	••		
J	•———	1	•————
K	—•—	2	••———
L	•—••	3	•••——
M	——	4	••••—
N	—•	5	•••••
O	———	6	—••••
P	•——•	7	——•••
Q	——•—	8	———••
R	•—•	9	————•
S	•••	0	—————

A SAMPLE SCHEMATIC OF TELEGRAPH SYSTEM



APPENDIX

Creating Audio Recordings--Notes

Techniques to create radio broadcasts are demonstrated in many texts on audio/audible communication. However, much of the fun of this assignment is to see how creative students can be in developing their own materials which simulate various sounds. For example, in adding a sound track to a narrative about the construction industry, one would attempt to re-create different heavy equipment and related noises. Small engines recorded at a very loud level might simulate large machinery while dropping sand on wax paper might produce a sound similar to dumping a load of dirt. Sounds like a door to a pick-up truck slamming shut are easily created by banging two blocks of wood. The list goes on...

Again, several excellent books describe various parts of radio production and they have been listed in the bibliography. Students will gain a great deal from learning much of the technical details the instructor selects from topics in these texts. But, when the laboratory activity starts, each group should do as much problem-solving on their own with their own imaginations running wild!

The equipment required for this activity includes standard recording devices: cassette tape recorders or a reel-to-reel machine (plus audio tape) and a large assortment of stuff to create different sounds. A box of various items might be supplied to each group and it may contain pieces of wood, steel, tubing, and related noisemakers. Obviously, students can re-create many sounds by themselves. Again, let the imagination of students run wild in this activity.

APPENDIX

VISUAL LITERACY/PERCEPTIONS ACTIVITY

Assemble a slide show with a variety of scenes and duplicate recording sheets like the one illustrated below. After showing the slides, compare how individual students view the shots differently.

Create a recording form that looks like this!!!

SCENE #	DESCRIPTION OF SCENE
1	Shows family loading the car for vacation to Florida; photographer too far away.
2	Sunset over mountains; light washed-out picture. Photo might have been better with different camera settings.
3	Beautiful shot of a lake in Florida; clouds really help highlight the scene.

MODULE: 4 : Introduction to Communication Channels

LENGTH: 9 DAYS Communication CLUSTER

The transmission of information involves sending messages along a communication medium called a channel. Among the more common types of channels are the following:

1. radio signals
2. computer codes/languages
3. visual symbols
4. light waves
5. electric current

The major purpose of Module 4 is to study the means of coding/decoding information while transmitting messages along various channels. There are many ways to code ideas and information; perhaps the best example includes converting standard voice or visual data into electromagnetic energy (as radio transmission waves). The complex world of electronic technology allows us to enjoy AM/FM programs, open garage doors easily, operate television sets with remote control devices, benefit from electronic banking networks, and watch events live on TV via satellite.

Since this unit is part of an introductory-level course, the instructor may wish to utilize several elementary examples of signaling in describing the concept of communication channels. Remind students that early Indians used smoke signals and that Paul Revere used visible light (two crude lanterns) as the "channel" in their famous communication exchanges. Then increase the sophistication of both the channel and system. Perhaps the easiest way to code information is to create the BASIC program for a computer to print a student's address label or to examine the coded symbols on a pilot's navigational maps.

OBJECTIVES

Upon completing this learning module, each student should be able to:

1. Understand the common channels of communication typical in today's world.
2. Provide an overview of technical means to code messages for transmission through various mediums.
3. Explore the frequent methods of converting signals into recognizable codes to communicate with other individuals or machines.
4. Observe technical communication systems in action as they transfer ideas or information over various distances.

CALENDAR

DAY	ACTIVITY
1-2	Create a location map of the broadcasting facilities of local/ regional TV and radio stations.
3-5	Use walkie-talkies or small radios to send and receive signals over various distances and under varying conditions.
6-8	Develop various computer programs that write the student's initials on a screen and printer.
9	Slides/movie/video tape on fiber optics.

DAY	ACTIVITY
1-2	On a large state or regional map, have students complete a chart which shows the location of popular radio and TV stations. Identify which stations (a) are only received in the daytime or nighttime hours, (b) the call letters of each outlet, (c) assigned frequency band for transmission purposes, and (d) other details related to the channel. See the sample map in the Appendix for a way to conduct this activity.
3-5	Use walkie-talkies and/or small radio sets to send messages over varying distances and through different mediums (concrete walls, steel-framed buildings, etc.). Sample experiments are shown in the Appendix.
6	Introduce the concept of human-to-machine communication. Using a computer, explain how people interact with complex machines or devices. Also, demonstrate how to enter simple messages (letters, memos, etc.) into the computer and then store or print out the information. With either commercially available software or with BASIC-program instructions, have student create his/her initials on a computer screen and then obtain a print-out of the letters. Stress the concept of coding the computer information/commands (as either a set of points or in language codes).
7-8	Allow students to complete the computer assignment.
9	Show a slide show/movie on fiber optics technology. Check with the school's media center, a national distribution network, or the local telephone company for this media. Perhaps invite a guest speaker from the local telephone company to describe the importance of fiber optic systems in the telephone/data information exchanges of the future.

BIBLIOGRAPHY

TEXTBOOKS AND REFERENCES

The suggested textbooks for this course are listed below along with chapters/ pages containing information related to this module:

Jones, R. E. and J. L. Robb. (1986), Discovering Technology: Communication, Orlando, FL, Harcourt Brace Jovanovich, Inc.

(Chapter 10: Pages 112-113; Chapter 21: Pages 234-237)

Seymour, R. D., J. M. Ritz & F. A. Clognessy (1987), Exploring Communications, South Holland, IL, Goodheart-Willcox, Inc.

(Chapter 3: Pages 22-29: Chapter 6: Pages 51-56)

****

To gain further insight into communication channels, refer to key chapters in these reference books:

Burke, T. J. M. & M. Lehman (Eds.), (1981), Communication Technologies and Information Flow, New York, Pergamon Press.

Cornish, E. (Ed.) (1982), Communications Tomorrow, The Coming Of The Information Age, Bethesda, MD, World Future Society.*

Duvall, J. B., G. R. Maughan, Jr., & E. G. Berger (1981), Getting The Message, Worcester, MA, Davis Publications.

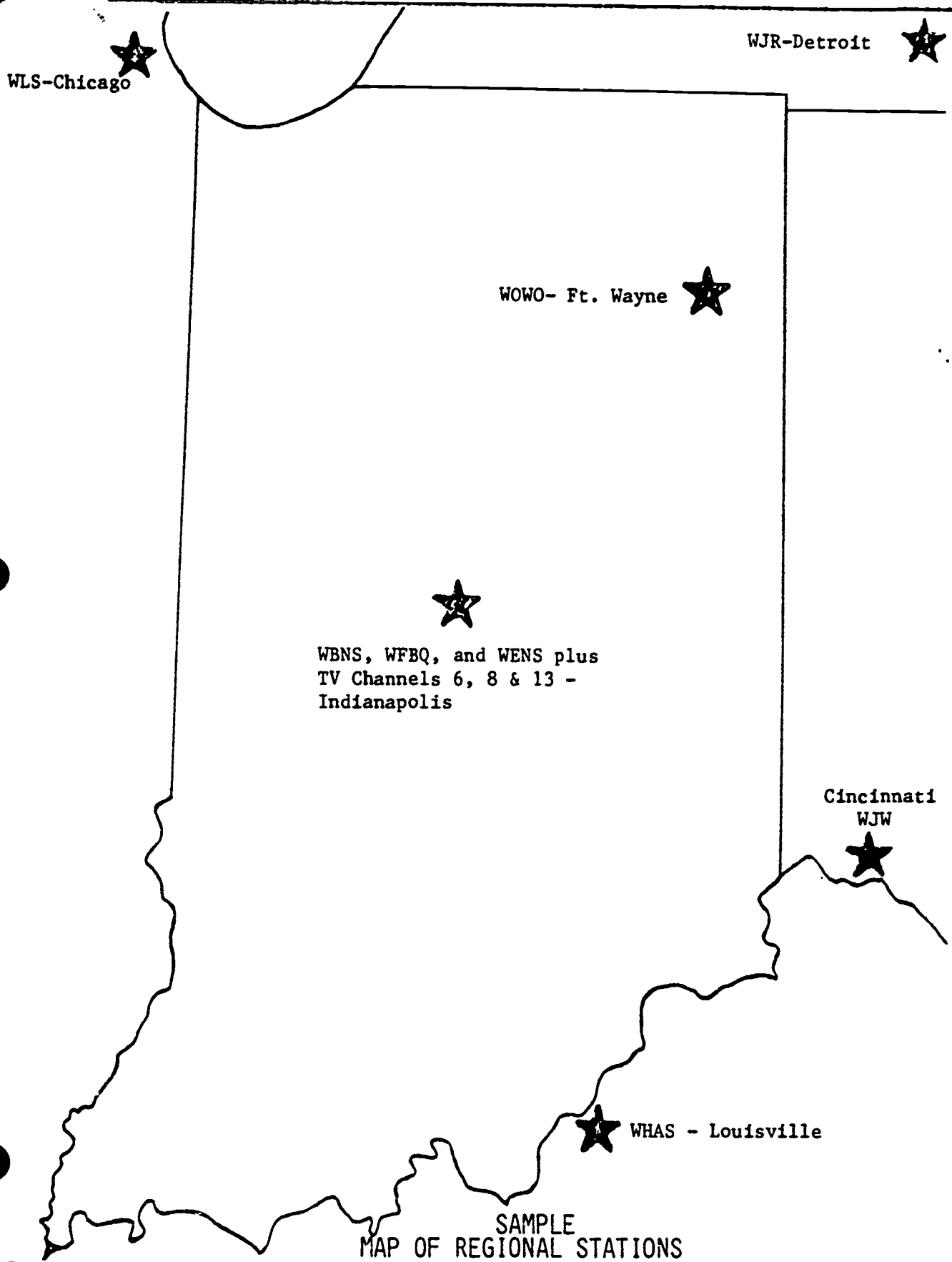
Ingram, D. (1983), Video Electronics Technology, Blue Summit Ridge, PA, Tab Books.

Stevenson, J. (1985), Telecommunications, Morristown, NJ, Silver Burdett Co.

Texas Instruments Learning Center, (1984), Understanding Communications Systems, Ft. Worth, TX, Radio Shack.

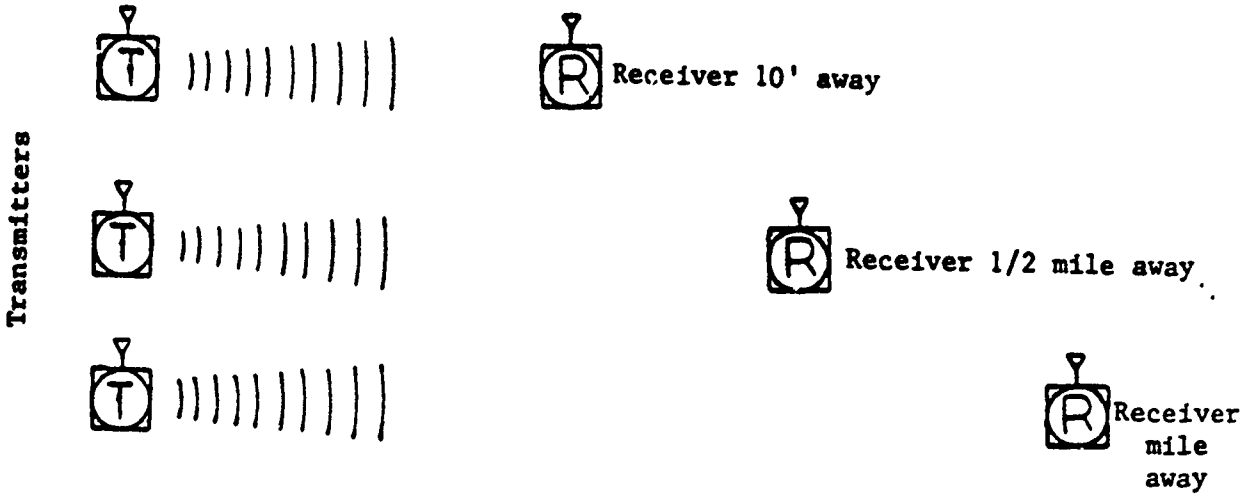
Texas Instruments Learning Center, (1984), Understanding Data Communications, Ft. Worth, TX, Radio Shack.

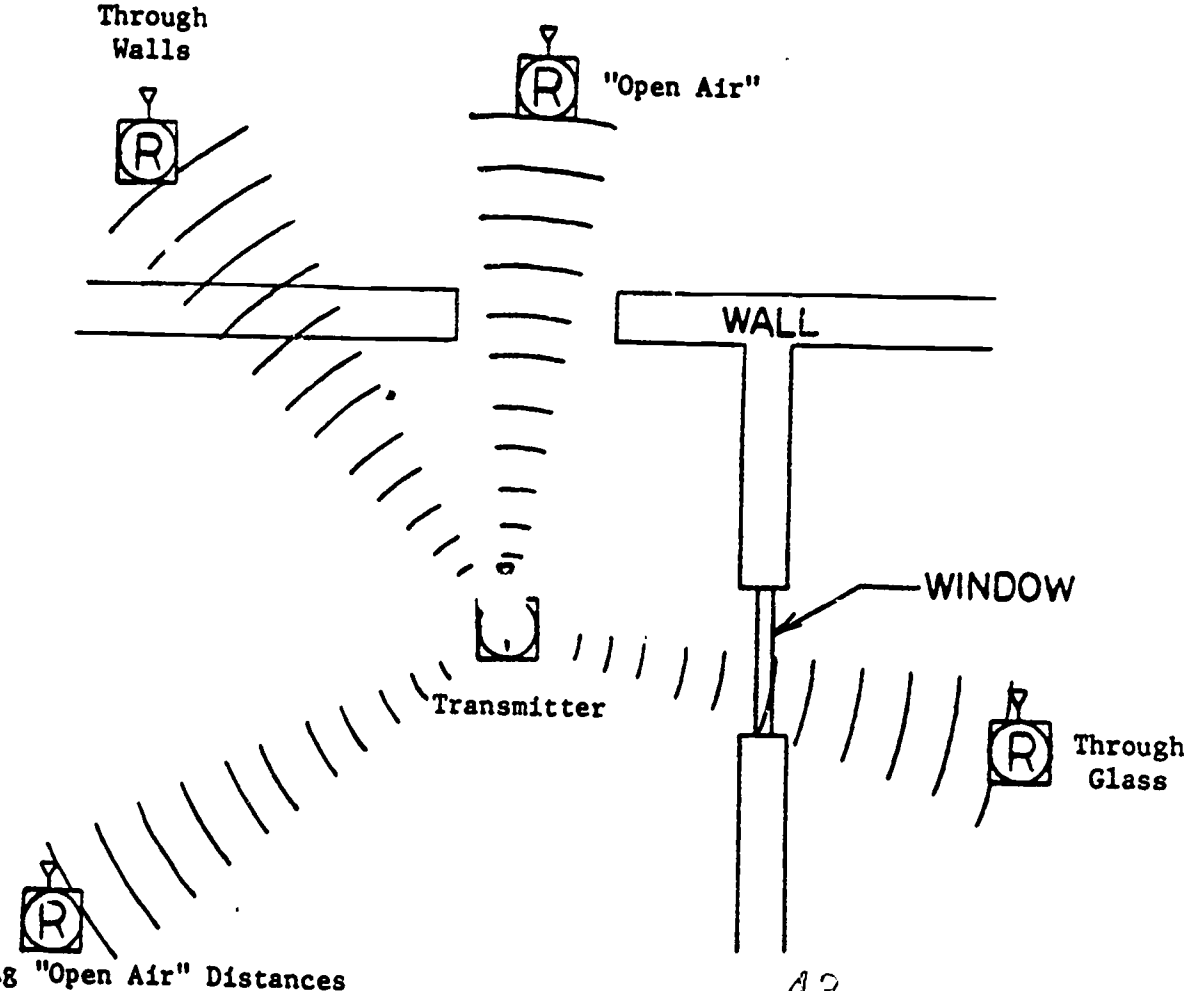
*Back cover provides an excellent resource for this module.



SAMPLE
MAP OF REGIONAL STATIONS

SAMPLE EXPERIMENTS WITH RADIO/WALKIE-TALKIE EQUIPMENT





MODULE: 5 : Designing & Producing Graphic Messages

LENGTH: 18 DAYS Communication CLUSTER

To this point, students have participated in a variety of presentations and laboratory activities designed to introduce the area of communication technology. The next two modules expand upon this background information. Module 5 involves the design and production of several types of graphic media.

Since the days when cave dwellers first drew pictures on the walls of their caves, the creation of graphic images has been among the most important of all human communication systems. Technical drawings, paintings, photographs, rough sketches, road signs, billboards, and technical illustrations are all forms of graphic communications. This media involves exchanges of information or ideas by only visual means.

There are numerous ways to produce graphic images and the module begins with a brief explanation/demonstration of various media. The focus of this presentation should include not only printing procedures, but the production of sketches and drawings and the visual design process. Design for graphic displays is vital to successful communication of technical information. Building upon the students creativity and design skills, the module then allows for the use of printing presses, photographic equipment, and related materials to develop several graphic products.

The activities in this module are fairly simple yet hopefully illustrate the basic techniques and processes in graphic communication. The instructor may wish to use alternative activities based on class size, facilities, equipment available, budget, or other considerations. Still, introductory lessons should cover the entire range of graphic concepts, then during laboratory activities the instructor should stress "why" we use certain techniques for specific situations. Related topics which may be covered during this module include:

1. Differences in impact vs. non-impact methods.
2. Types of print mediums (paper, cardstock, etc.).
3. Examples of commercially available graphic products and services.
4. Variety of local graphic/printing businesses.
5. Other.

The special equipment for this unit are listed in the Appendix and most supplies should be available at local outlets. However, the instructor may need to order several items from national distributors (well in advance of the scheduled work) and should be advised of this fact.

OBJECTIVES

Upon completing this learning module, each student should be able to:

1. Explore methods of graphic reproduction in our modern society.
2. Discover the types of businesses that produce graphic products and services.
3. Practice creating and converting graphic images by various techniques.
4. Use a variety of production equipment and supplies related to the graphic communication industry.

CALENDAR

DAY	ACTIVITY
1	Introduce concepts of graphic communication (design, media, reproduction practices, etc.).
2-3	Develop a technical sketch of the floor plan of the classroom/ department.
4-5	Create a map of the local community.
6	Design a greeting card.
7-8	Produce greeting card.
9	Production of cards; assemble cards in a booklet.
10-11	Design a T-shirt or poster (to be screen printed).
12-13	Produce T-shirt or poster.
14	Storyboard the "frames" of a slide show which describes your school.
15	Complete the storyboard of the school.
16-17	Photograph scenes to match the storyboard design; have film developed at a local commercial establishment.
18	Assemble slide show.

PRESENTING THE MODULE

DAY	ACTIVITY
1	Explain the concept of graphic communication and technical drawing and how we gain ideas from visual media (remember, "a picture is worth a thousand words"). Have various samples available for this illustrated presentation. Typical items may include: architectural plans for the school, an electrical diagram/schematic, illustrated instructions for a model (plastic) car kit, etc.
2-3	Have student develop a technical sketch of the floor plan of the communications classroom/department.
4-5	Have students create a detailed community of the local neighborhood; provide laboratory time to produce this visual media.
6	Cover the basics of designing greeting cards (layout, printing techniques, etc.) and have students plan several cards for upcoming events like birthdays, holidays, or other events.
7-8	Complete designs of cards and assist students in printing the items (probably best done by ditto, mimeograph, or photocopier).
9	Reproduce the greeting cards and have students assemble their cards into a booklet.
10-11	Complete a design for a T-shirt or poster to be screen printed. This may become a team activity where 2-3 students create the design and produce the graphics for the production of the print.
12-13	Laboratory time for students to complete the screen printing activity.
14	Explain the process of storyboarding visual/graphic presentations; have each student in the class create a storyboard of a slide series which would describe the school in 16 frames or less.
15	Laboratory time to complete the storyboard designs.
16-17	Select the 3-4 best storyboard designs and have small groups of students photograph the series. Develop the film at a local (commercial) establishment.
18	Assemble the slide series and show to the class.

BIBLIOGRAPHY

TEXTBOOKS AND REFERENCES

The suggested textbooks for this course are listed below along with chapters/ pages containing information related to this module:

Jones, R. E. and J. L. Robb (1986), Discovering Technology: Communication, Orlando, FL, Harcourt Brace Jovanovich, Inc.

(Chapters 3-20: Pages 34-232)

Seymour, R. D., J. M. Ritz & F. A. Cloghessy (1987), Exploring Communications, South Holland, IL, Goodheart-Willcox, Inc.

(Chapters 7-17: Pages 57-161)

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Reference texts for this module include the books listed below (broken down by topic):

For the area of layout and design:

Porter, T. & B. Greenstreet (1980), Manual of Graphic Techniques 1, New York, Charles Scribner's Sons.

Silver, G. A. (1981), Graphic Layout & Design, Albany, NY, Delmar Publishers.

For areas related to printing technology:

Adams, J. M. & D. D. Faux (1982), Printing Technology (2nd Ed.), North Scituate, MA, Breton Publishers.

Broekhuizen, R. J. (1973), Graphic Communication, Bloomington, IL, McKnight Publishing.

Dennis, E. A. & J. F. Herr (1979), Comprehensive Graphic Arts Student's Manual, Indianapolis, Bobbs-Merrill Educational Publishing.

Karsnitz, J. R. (1984), Graphic Arts Technology, Albany, NY, Delmar Publishers.

Walker, J. R. (1980), Graphic Arts Fundamentals, South Holland, IL, Goodheart-Willcox, Inc.

For the area of photographic technology:

Walker, R. J. & R. E. Walker (1985), Exploring Photography, South Holland, IL, Goodheart-Willcox, Inc.

APPENDIX

The production of graphic materials requires a large amount of devices and supplies. The following list of supplies and equipment is broken down by topic.

Equipment and supplies for the drawing/layout work:

1. drafting table with instruments
2. inking set
3. lettering guides or templates
4. kroy machine or press-type lettering
5. artist knives, tape, etc.
6. light table
7. layout paper and card stock
8. clip art
9. other

Equipment and supplies for screen process printing:

1. screen frames and screen
2. poly-blue film
3. developing chemicals
4. trays for developing work
5. developing room timer
6. platemaker
7. other

Equipment and supplies for offset operations (if necessary):

1. offset printing press
2. printing plates
3. developing chemicals
4. flats (stripping sheets)
5. ortho. films, etc.
6. cleaning supplies
7. inks
8. other

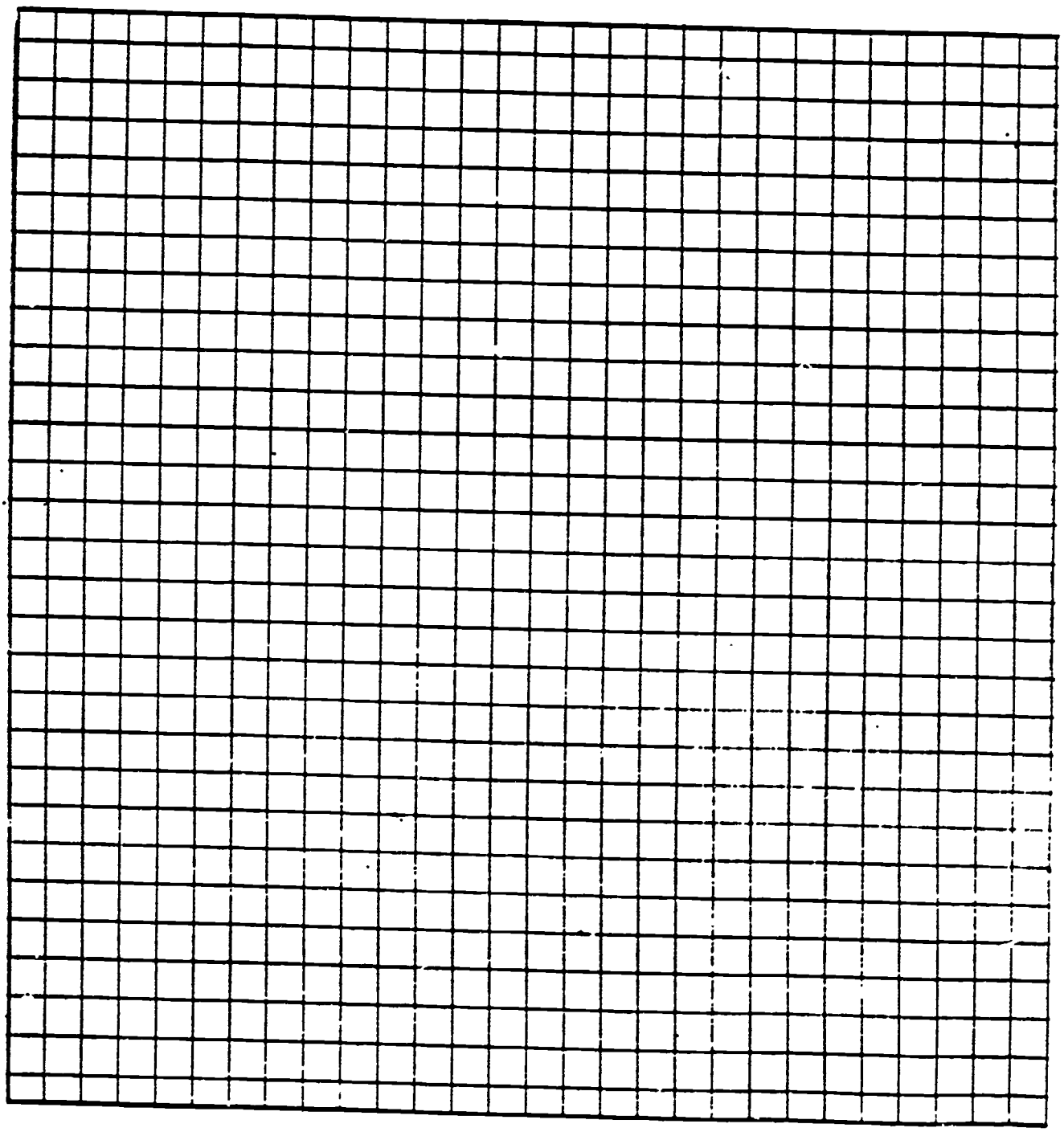
Equipment and supplies for photographic work:

1. 35mm or 110mm cameras w/ flash
2. film
3. projector and slide tray
4. other

APPENDIX

Create and reproduce planning forms which look like this; distribute to students for creating graphic media:

PLANNING FORM



INTRODUCTION TO COMMUNICATION TECHNOLOGY

MODULE: 6 : Designing & Producing Electronic Messages

LENGTH: 18 DAYS Communication CLUSTER

Today's complex telecommunication systems are possible because of electronic marvels like the transistor, computer chips, and integrated circuitry. Broadcasting, hard-wired, and data processing networks help us exchange information quickly and easily across the street or around the globe. All electronic communication systems have one thing in common; electrical energy is used to transmit messages over varying distances in the form of electromagnetic signals. The ability to send information over great distances has become expecially useful for business and recreational purposes.

Module six explores the interesting area of electronic communication systems. Students will have the opportunity to both design and send electronic messages or commands in various forms. Most electronic devices are very familiar to students; the average household in the U.S. contains many radios, telephones, at least one television set, probably a variety of remote control devices, VCRs, and electronic games. This unit describes how basic electronic equipment is used to aid the communication process.

Course activities are designed to (a) introduce the process of creating electronic messages and signals for transmission purposes, (b) describe how messages are designed/generated for electronic media, (c) cover how electronic information is transferred between remote points, and (d) the way standard hardware (like a computer or telephone switching system) manipulates data/information. Material in this course is only covered at the introductory level; more indepth coverage can be found in the specialization course on electronic communication systems.

Typically, we think all electronic communication systems involve the transmission of only radio signals (AM/FM waves, ham radio, microwaves, etc.). Using beams of visual light represents another form of electronic communication. From signal fires in early times to fiber optics and lasers today, light waves are now just as important in sending electronic messages as other more traditional channels. This course would not be complete without an exploration of light-based media (especially the emerging national fiber optic network).

It is vital that each topic in this module be covered sufficiently in the suggested time-frame. The availability of key equipment or facilities should not be a factor in presenting the specified content. At the very worst, various films or video tapes may be necessary for one or two topics during the term. A guest speaker (from the local telephone company, TV or radio station, etc.) may also help in covering certain areas or systems.

OBJECTIVES

Upon completing this learning module, each student should be able to:

1. Learn about the many and varied types of electronic devices and systems found in modern communication technology.

2. Understand the purpose and function of electronic communication devices which extend a person's ability to communicate with others.

3. Design messages that may be transmitted via electronic media.

4. Study the means of generating and receiving electronic signals.

5. Recognize the impacts of the electronic media in daily affairs.

CALENDAR

DAY	ACTIVITY
1	Introduce electronic communication technology.
2-3	Develop a bulletin/display board of various electronic communication systems.
4-7	Build a simple AM radio set.
8-9	Convert the radio to a PA system.
10-13	Using computer software; write a short report or letter using word processing software; create a chart with a graphics programs; etc.
14-16	Create an audio recording of the school's cheerleaders or marching band; reproduce several tapes for marketing the product.
17-18	Duplication of tapes; design and reproduce the packaging graphics.

PRESENTING THE MODULE

DAY	ACTIVITY
1	Introduce the complex field of electronic communication with a movie or video tape and illustrated talk; have a variety of technical devices available for this presentation (stereo, PA system, computer, TV, cassette recorder/"Walkman", etc.) Perhaps arrange to hold this class in the school's media center to have modern equipment available.
2	Have students develop a large display or bulletin board of various electronic systems or equipment. This visual aid may be built using color pictures from old magazines, pamphlets, etc.
3	Introduce types of electronic communication systems by pointing out different equipment and systems in the pictures on the display board. Ask if students can think of other examples that might have been left out.
4	Organize a laboratory activity in which students create a small radio either with a kit (available from local commercial electronics vendors) or from scratch. A sample radio set is shown in the Appendix.
5-7	Supervise the activity while students build the radio.
8-9	Explain the major components of the radio unit and then have students convert the set to a PA system (again, see the Appendix). Try to illustrate that the receiver must be taken away and a microphone added. Build and test the units. Provide laboratory time for the PA system.
10	Introduce the area of computers/data processing (with a demonstration, film, or other method). Hardware should be in place in the lab to help with this explanation.
11-13	Show students how to use several examples of computer software and allow sufficient computer time to operate the systems (and cover key details of the lesson).
14-16	Assign groups of students to create audio recordings of the school's (a) band, (b) cheerleaders, (c) favorite teacher, (d) graduation or related ceremonies, (e) etc. Provide time to produce the tape, design and reproduce the packaging graphics for the cassette, and duplicate the audio recording.
17-18	Laboratory time to complete the audio assignment.

BIBLIOGRAPHY

TEXTBOOKS AND REFERENCES

The suggested textbooks for this course are listed below along with chapters/ pages containing information related to this module:

Jones, R. E. & J. L. Robb (1986), Discovering Technology: Communication, Orlando, FL, Harcourt Brace Jovanovich, Inc.

(Chapters 21-26: Pages 233-307)

Seymour, R. D., J. M. Ritz & F. A. Cloghessy (1987), Exploring Communications, South Holland, IL, Goodheart-Willcox, Inc.

(Chapters 18-24: Pages 170-250)

****

Additional textbooks and reverence materials include:

Burke, T. J. M. & M. Lehman (1981), Communication Technologies and Information Flow, New York, Pergamon Press.

Chance, D. (1981), Computer Graphics: With 29 Ready-to-Run Programs, Blue Ridge Summit, PA, Tab Books.

Duvall, J. B., G. R. Maughan, Jr., & E. G. Berger (1981), Getting The Message, Worcester, MA, Davis Publications.

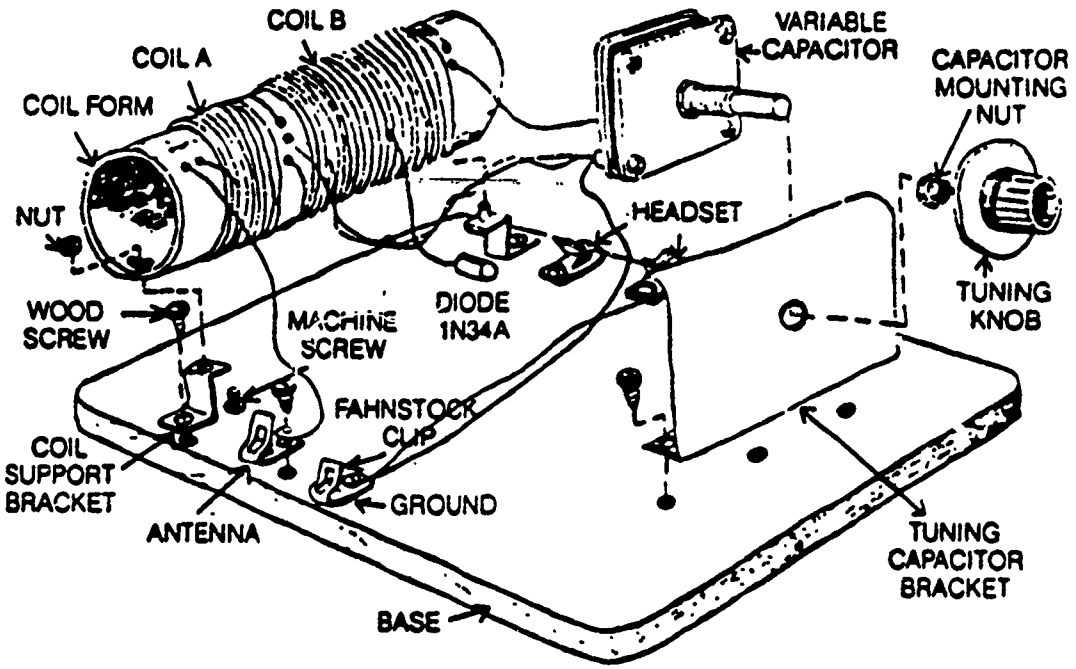
Glotzer, B. M. (1985), The Computer Concepts Coloring Book, New York, Barnes & Noble.

Gross, L. S. (1983), Telecommunications: An Introduction to Radio, Television, and the Developing Media, Dubuque, IA, William C. Brown.

Schrader, R. L. (1985), Electronic Communication (5th Ed.), New York, McGraw-Hill Books.

Stevenson, J. (1985), Telecommunications, Morristown, NJ: Silver, NJ: Silver Burdett Company.

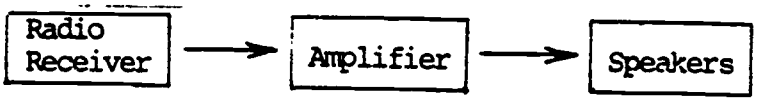
Texas Instruments Learning Center, (1984). Understanding Communications Systems, Ft. Worth, TX, Radio Shack.



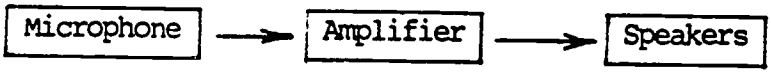
Crystal Radio: Communication with Spoken Words

Courtesy: Davis Publications

RADIO SET



PA SYSTEM



MODULE: 7 : Information, Influences, & Entertainment

LENGTH: 5 DAYS Communication CLUSTER

The impact of the mass media in today's society is almost beyond belief! For example, the average household TV set is on over seven hours a day. Popular television programming influences the way we learn, think, and grow. But, that is not the only impact of modern communication technology. Millions of newspapers and magazines are distributed daily around the U.S. Radio stations broadcast the news, weather, sports, and musical programs to nearly every household in the nation. Obviously, what we hear and read greatly affects our lives. In all, billions of dollars are spent annually sending and receiving ideas, information, and entertaining programs around the world. This module will allow students to examine the impact of various communication media in their lives.

Hopefully, students will not be surprised about the importance of communication technology in their daily schedules. From the time the alarm clock rings until they turn off the TV before bedtime, communication devices and media are critical to how they live and play. By following the activities in this module, a wide variety of media and their social impacts will be analyzed. This unit also permits the study of local, influential communication businesses and systems.

Perhaps the best example of using modern information technology to improve the communication process is in your classroom. Many types of instructional media are important to the success of your courses. The educational process is greatly enhanced due to various A-V equipment. Among the common instructional media often included in a communications program include:

1. Overhead projectors
2. Slide projectors
3. Filmstrip projectors
4. Television monitors
5. Video tape recording equipment
6. Audio cassette recorders
7. Video and still cameras
8. Microcomputers
9. Microfilm retrieval systems
10. Thermo-fax copier
11. Diazo machine
12. Duplication equipment
13. Photocopier

The use of these items in typical classrooms helps extend the abilities of the classroom teacher. In fact, many systems are designed to almost replace the

instructor (not unlike in modern factories where workers have been replaced with automated systems for performing certain production operations). Instructional technology has a tremendous impact in many of our school systems.

Communication technology is more than an educational medium; it is important for entertainment and informational purposes, too. This introductory unit is designed to show the impact of devices and media in modern society. It comes toward the end of the course after members of the class have studied the basics of communication technology. In a true technology education curriculum, students should have the opportunity to analyze how their lives are shaped by various media and what communication technology influences their daily activities.

OBJECTIVES

Upon completing this learning module, each student should be able to:

1. Study the impact of popular communication media in our daily lives.
2. Learn how various communication devices are used to improve the process of education.
3. Discover how businesses profit from the exchange of information.
4. Explore various methods of regulating mass communication products and/or systems.
5. Recognize local communication firms that control or influence our lives.

CALENDAR

DAY	ACTIVITY
1-2	Develop a program clock of a favorite TV or radio station.
3-4	Survey the movies being shown at local theaters; develop displays (from newspaper ads) of which are rated P, PG, PG-13, etc.
5	Movie/videotape of communication technology in the future.

DAY	ACTIVITY
1-2	Have students complete an hour-long tape of a favorite TV or radio station's program. With a stop watch, have students review the tape and break down the content of the program in (a) time, (b) content, (c) method of communicating different messages, (d) etc. Develop a program wheel for the station's broadcast (see the sample in the Appendix). Discuss the impact of the media based on "how" the information is presented on different stations. Which items are designed to educate others, persuade the audience, etc.?
3-4	From local newspapers, cut out the advertisements of movies showing at area theaters. Create a display board of motion pictures rated G, P, PG, PG-13, etc. Discuss why certain pictures receive different ratings. Develop a list of favorite actors/actresses or show a short film of how motion pictures are made.
5	Wrap up the course with a movie on a current or future communication technology.

BIBLIOGRAPHY

The suggested textbooks for this course are listed below along with chapters/ pages containing information related to this module:

Jones, R. E. and J. L. Robb (1986), Discovering Technology: Communication, Orlando, FL, Harcourt Brace Jovanovich, Inc.

(Chapter 1: Pages 18-23)

Seymour, R. D., J. M. Ritz & F. A. Cloghessy (1987), Exploring Communications, South Holland, IL, Goodheart-Willcox, Inc.

(Chapter 5 & 6: Pages 39-56; Chapter 25: Pages 251-262)

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Additional textbooks and reference materials include:

Bittner, J. R. (1980), Mass Communication: An Introduction (2nd Ed.), Englewood Cliffs, NJ, Prentice-Hall.

Black, J. & F. C. Whitney (1983), Introduction to Mass Communication, Dubuque, IA, William C. Brown Publishers.

DuVall, J. B., G. R. Maughan, Jr., & E. G. Berger (1981), Getting The Message, Worcester, MA, Davis Publications.

Gross, L. S. (1983), Telecommunications: An Introduction to Radio, Television, and the Developing Media, Dubuque, IA, William C. Brown.

Hauenstein, A. D., & S. A. Bachmeyer (1975), The World of Communications, Bloomington, IL, McKnight Publishing.

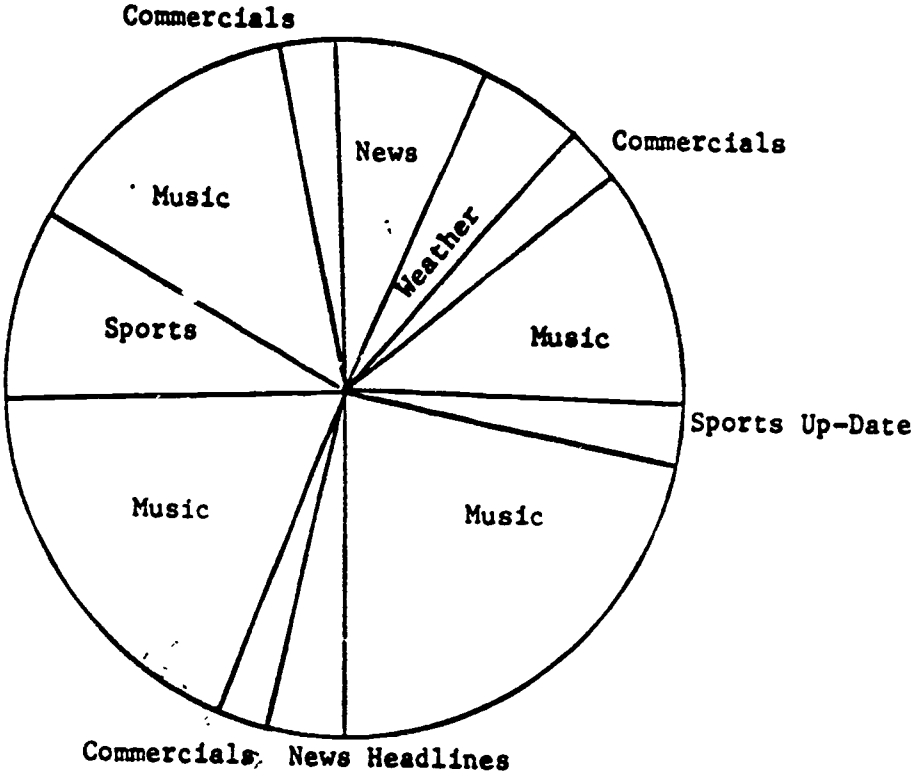
Kemp, J. E. (1980), Planning & Producing Audiovisual Materials (4th Ed.), New York: Harper & Row.

Masuda, Y. (1980), The Information Society as Post-Industrial Society, Bethesda, MD, World Future Society.

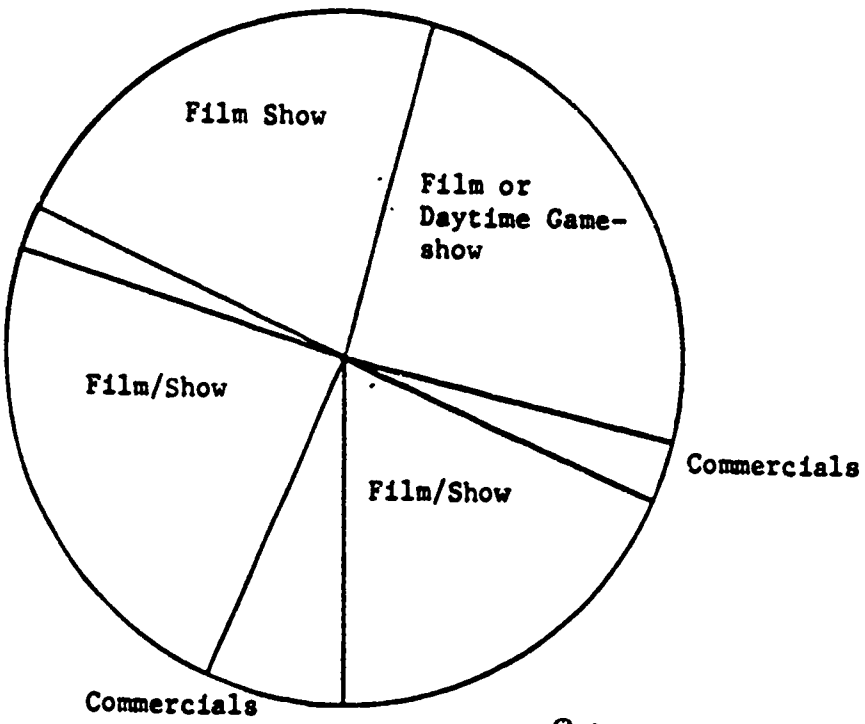
Williams, F. (1982), The Communications Revolution (Rev Ed.), New York, Mentor Books (New American Library).

TYPICAL "PROGRAM CLOCKS"

RADIO



TV STATION



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