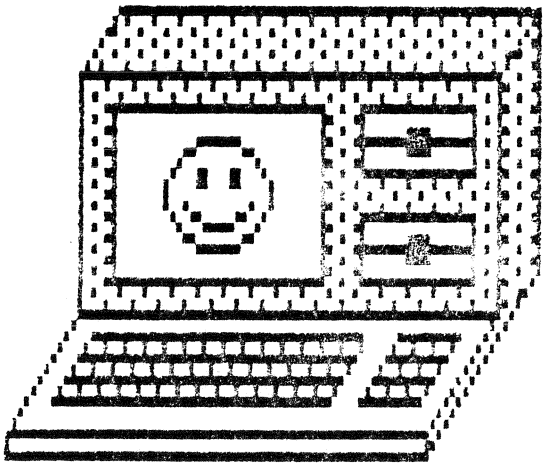
TECHNOLOGY EDUCATION SHAPING TOMORROW TODAY



COMMUNICATIONS APPLETON AREA SCHOOL DISTRICT TECH ED DEPT.

Communications Technology Curriculum Guide

Designed For 9th and 10th Grade Levels

by John Jacob

Brian Kramer

Technology Education Department

Wilson Jr. High School

Appleton Area School District

Appleton, Wisconsin 54913

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Communications #721

Communications Technology Course Outline (one semester)

1 I. Orientation (one day)
- A. General rules (hand out)
- B. Grading (using simplified evaluation guide)
- C. Safety
- D. Tour of shop
- E. Seating chart

6 II. The World of Communications.

A. Communications: What is it?

B. Communication Model
1. Sender
2. Channel
3. Reciever
4. Feed Back
5. Interference

C. Sensory Perception

D. Career Awareness ~~(magazine) Title: Career World~~ ~~Career Exploration~~

Activities:

* Unit #2, Lesson #1 - ~~Pictogram~~ Bulletin Board Display
* Unit #2, Lesson #2 - ~~Descriptive Interpretation~~ Career Exploration
* Unit #2, Lesson #3 - ~~Tactical Senses~~
* Unit #2, Lesson #4 - ~~Taste Test~~
* Unit #2, Lesson #5 - ~~Chain Game~~

4 III. Computers in Communications

A. Applications for industry

B. How a computer works

C. Know your computer

D. Data and word processing

Activities:

*Unit #3, Lesson #1 - Apple ~~teaches~~ Presents Apple programs
*Unit #3, Lesson #2 - Apple teaches Apple ~~writer~~ words
*Unit #3, Lesson #3 - resume' and correlation
*Unit #3, Lesson #4 - robot simulator
- ~~flight simulator~~
*Unit #3, Lesson #5 - ~~graphics (mouse)~~
*Unit #3, Lesson #6 - CADDRAW
*Unit #3, Lesson #7 - CNC - Robcat

IV. Graphic Arts Process

A. Flexography
B. Gravure
C. Relief
D. Offset
E. Laser
F. Screen

Activities:

* Unit #4, Lesson 1 - speed screen printing
* Unit #4, Lesson 2 - Offset lithography
* Unit #4, Lesson 3 - ~~Engraving~~ Paper work
* Unit #4, Lesson 4 - Rubber stamp making
* Unit #4, Lesson ~~5 - Binding coloring book~~

V. Photography

A. How a camera works
B. Taking a good picture
C. Developing film
D. Making prints and enlargements

Activities:

* Unit #5, Lesson #1 - ~~Taking pictures~~ Photograph Introduction
* Unit #5, Lesson #2 - ~~Film development~~ Test strip
* Unit #5, Lesson #3 - ~~Print making~~ Developing the film
* Unit #5, Lesson #4 - ~~Photo essay~~ Print the negatives

VI. Design/Drafting

A. Principles of design
B. Visualization and sketching
C. Basics in drafting (utilization of instruments)
D. Creative problem solving (product design and innovation)
E. C.A.D.

Activities:

* Unit #6, Lesson #1 - Pictorial sketching
* Unit #6, Lesson #2 - Lines and angles
* Unit #6, Lesson #3 - Isometric
* Unit #6, Lesson #4 - Design a product
* Unit #6, Lesson #5 - Making a Styrofoam mock-up
* Unit #6, Lesson #6 - Using CAD

VII. Telecommunications

A. Electronics
B. Telephones
C. Satellites
D. Computers (interactive video)
E. Fiber optics
F. Lasers
G. Holography

Activities:

* Unit #7, Lesson #1 - Disect the internal assembly of a radio or T.V.
* Unit #7, Lesson #2 - Electronics- build a telephone amplifier
* Unit #7, Lesson #3 - Fiber Optics
* Unit #7, Lesson #4 - Plan a teleconference
* Unit #7, Lesson #5 - Beam divergence
* Unit #7, Lesson #6 - Transmit sound with laser
* Unit #7, Lesson #7 - Holography creation

VIII. Audio Video Broadcasting

A. How a VCR and camera work
B. Planning and writing an A.V. production
C. Props

Activities:

* Unit #8, Lesson #1 - Using the A.V. equipment
* Unit #8, Lesson #2 - Show film "Best advertizements from 1984"
* Unit #8, Lesson #3 - Invite a guest speaker in from the broadcasting field.
* Unit #8, Lesson #4 - Tell a story or joke
* Unit #8, Lesson #5 - Work in small groups to produce a commercial or T.V. program.
* Unit #8, Lesson #6 - Interview

COMMUNICATIONS: WHAT IS IT?

An Introduction

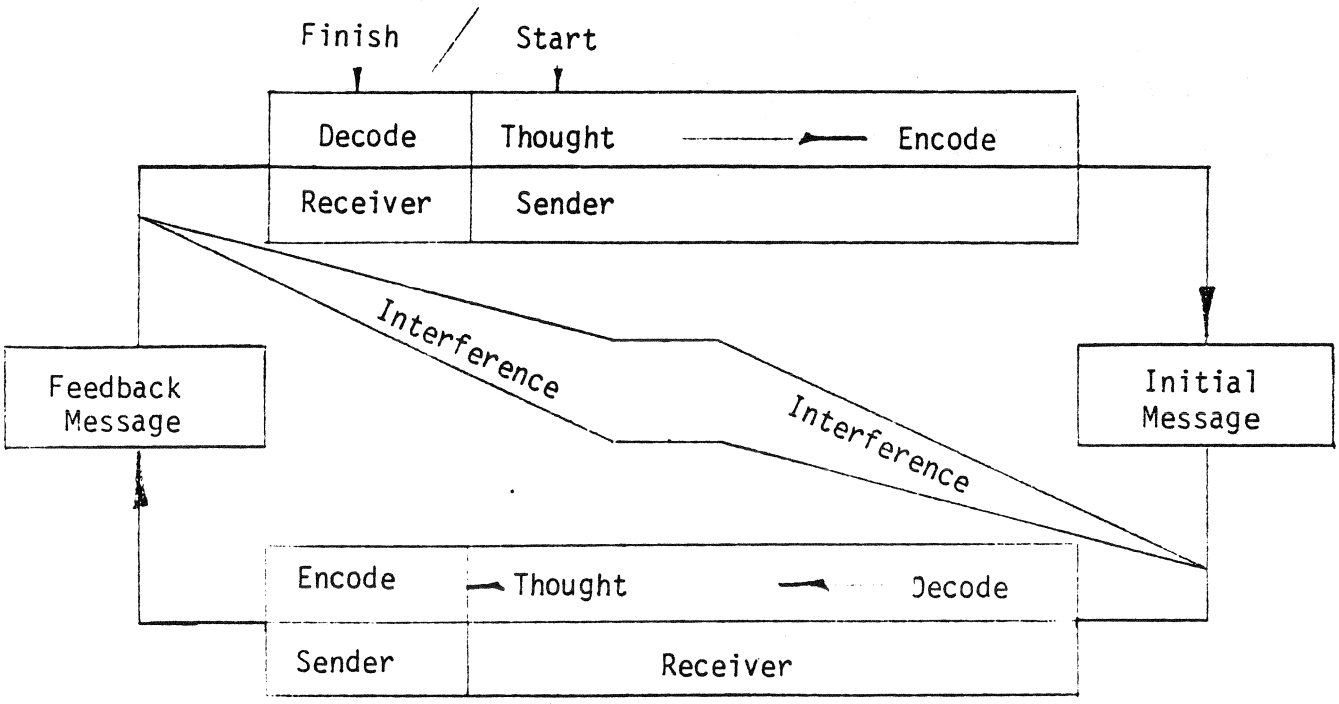
Communication, in its most basic form, is the exchange of ideas and information between humans and/or machines, (human to human, human and machine, or machine to machine) and also between animals. Animals? Yes, animals.

Animals communicate through sounds and actions. Whether it be the mating call and dance of a loon on a Wisconsin lake or the high-frequency whine of a whale in the ocean, animals do communicate in a very, very basic form. But just what is meant by communicating?

As earlier stated, communication is the process used to exchange information. Exchange is the key word here. In order for communication to fully work, an idea must first be formulated by the person wishing to send the message (or idea). This person is called the sender.

In order for the sender to send his/her message, he/she must decide how the message is to be sent. Three very basic ways of sending messages are to either speak, write, or gesture. No matter how the message is finally sent, it must be encoded, that is, translated into verbal language or written words or gestures. This encoding allows the message to be conveyed in a form that hopefully will be understood by the receiver (the person/persons for whom the message was sent).

Once the message to be sent has been delivered to the receiver, the receiver must decode, that is, translate the message into his/her own thoughts. After decoding, the receiver provides the sender with feedback on the message. Feedback is, basically, a return message that states the initial message was understood or needs further clarification. Confused? Well, let's try to show it on a diagram and give a few examples.



Remember the key word from before? It was exchange. Exchange is best represented here by the feedback message. Take for instance the following:

Bob and Joe want to go to a ballgame. Bob calls Joe up on the phone to say that he will pick up Joe at 7:30. Joe is in a hurry to go somewhere when Bob calls and just says "OK" without thinking about what Bob said. Bob shows up at 7:30 and Joe says he's a half an hour late. What was the problem?

Basically, Joe was distracted by something else and did not provide the proper feedback. Bob thought Joe was agreeing to the 7:30 time and left it at that. Was the exchange of information complete? Did communication actually take place?

The Answers: Poor exchange and no communication. The Reason: Interference during the attempted communication. Remember, Joe was in a hurry and didn't process the information correctly.

Remember the loons earlier? Well, here's their story:

The male loon is ready to take a mate. Using the thoughts and instincts provided by nature, he calls to the female loons in the area. When one is in sight and returns the call, the dance of the loons begins and nature further takes its course. The loon, while being a simple creature when compared to man, issues a message and waits for the response. The response, or feedback, is received and decoded by the loon to mean things are progressing as should be. While very simple in form, communication has taken place here.

Machines, with their messages encoded in either binary or hexidecimal forms, send data back and forth at unbelieveable speeds. However, a wrong number in a program sends a wrong message and communications break down because of the lack of an exchange in correct information.

To sum it up in simple terms, communication is the exchange of information. Whether the message is spoken, gestured, printed, or machine transmitted, the receiver must have the same basic perceptual knowledge as the sender. That is, they either have to be able to hear, or see, or read in the same code as the sender.

Still confused? Go to the first activity, the Pictogram, and see if things get any clearer.

Key Terms:

Sender: Person or object initiating communication
Encode: Process of transmitting a thought or message. This is done by a sender
Decode: Process of receiving an encoded message and translating it into thoughts or ideas
Receiver: Person or object that a message or thought is intended for. Also decodes the message or thought
Feedback: Response from initial receiver to initial sender confirming or asking for clarification of message
Interference: Anything that blocks an exchange of communication

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Unit #2 Lesson #1 Time Required- 3 Class Periods

Course: Communications

Lesson Title: Pictogram

SUPPLIES

Magazines to cut up (students supply)
Scissors
Chipboard (8½" x 11" to 11" x 17")
Rubber cement

OBJECTIVES

The student will

1. develop a message using only pictures to convey it.
2. experience the difficulties encountered when trying to deliver a message without the use of words.
3. decode the pictogram of other students.

TEACHER ACTIVITIES

1. Have students decode "canned" pictograms (see examples)
2. Lead a discussion for creating the pictograms
3. Assist students as the needs arise

STUDENT ACTIVITIES

1. Create a pictogram from a message, saying, slogan, etc. using pictures from magazines
2. Display the pictogram to other students for decoding
3. Decode someone elses pictogram

REFERENCES

See examples included with this unit

INTRODUCTION TO OPERATION

Students will bring a magazine(or several, if they wish) to class from which they will cut out pictures to develop a pictogram. A pictogram is one of various methods that sender may use to transmit a message to a receiver for decoding. These pictures will be glued (rubber cemented) to a 10" x 15" sheet of poster board (chipboard works, too). After the message has been created and mounted to the board, the message should be written on the back. After completion, each student will hold up their poster in front of class for the others in the class to decode. This is an example of how man formulates ideas and messages and expresses them in symbol forms that can be understood by the receiver.

This time, at the beginning of the course, is also a great time for students to communicate with each other, new students to meet others and for all to get comfortable with the environment of your class.

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Unit #2 Lesson #1 Time Required- 3 Class Periods

Course: Communications

Lesson Title: Pictogram

PROCEDURE

OPERATION	TOOLS & EQUIPMENT	NOTES
1. Develop a pictogram (a message without words) for decoding by other students	1. Scissors	1. Have students page through available magazines for ideas from the pictures
2. Arrange pictures (message) on the chipboard		
3. Mount the pictures to the chipboard	3. Rubber Cement	3. Use as much area as possible - larger pictures or longer messages should be encouraged
4. Write the message on the back of the chipboard		4. Encourage students not to share their messages with other students
5. Call the students to the front of the classroom individually to display their completed pictograms for decoding by other students		

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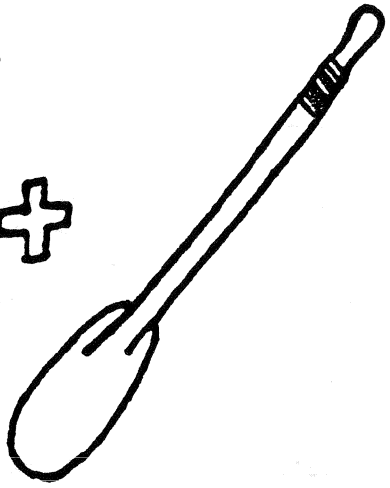
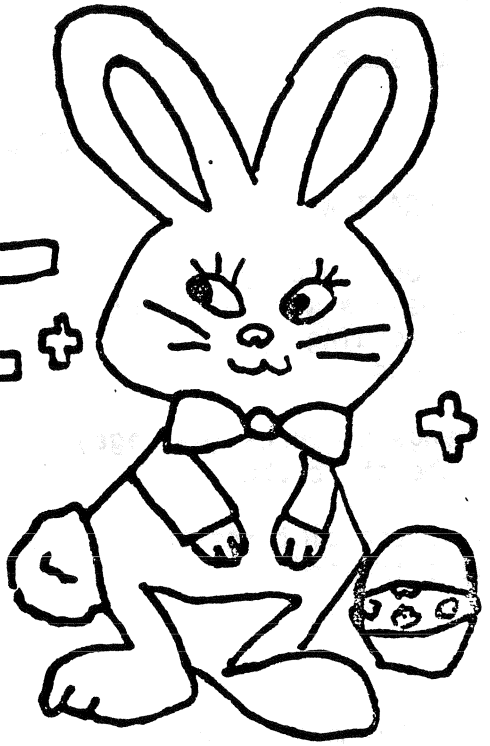


F +  + er

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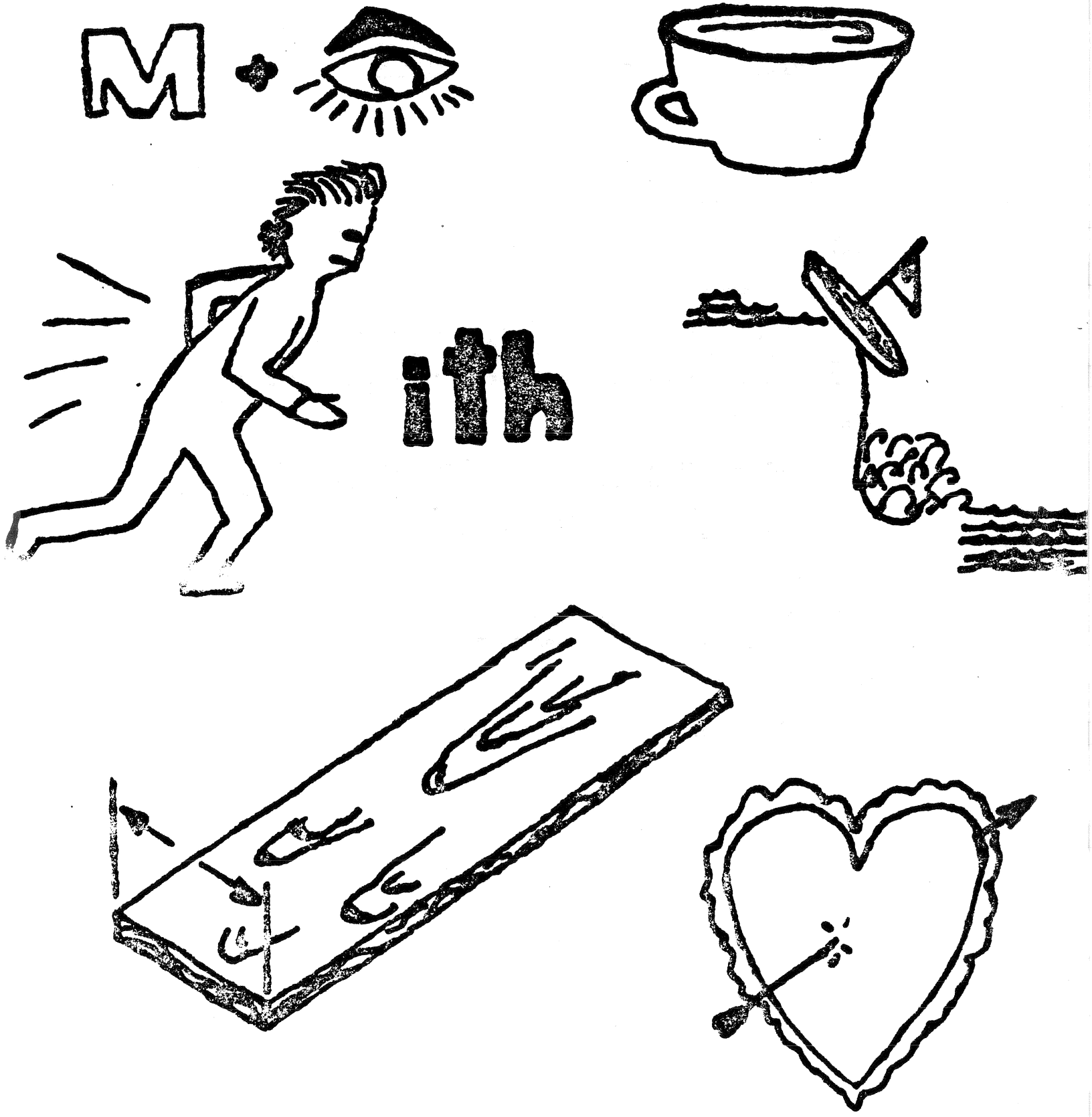
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Unit #2 Lesson #2 Time Required- 1 Class Period

Course: Communications

Lesson Title: Process Game- Descriptive Interpretation

SUPPLIES

1 - 8½ x 11 sheet of paper per student
1 - pencil or pen per student

OBJECTIVES

The student will:

1. draw an object upon receiving audio directions only.
2. test their ability to take directions.
3. become aware of the problems of one-way communication

TEACHER ACTIVITIES

1. Choose a student to give the directions
2. Create as much interference in the communications as possible (i.e. turn off lights, tap students on the shoulder, etc.)
3. Lead discussion on the activity when completed

STUDENT ACTIVITIES

1. Draw a diagram upon receiving audio directions from a classmate who is sending them

REFERENCE

Example within this packet or one of your own

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Unit #2 Lesson #2 Time Required- 1 Class Period

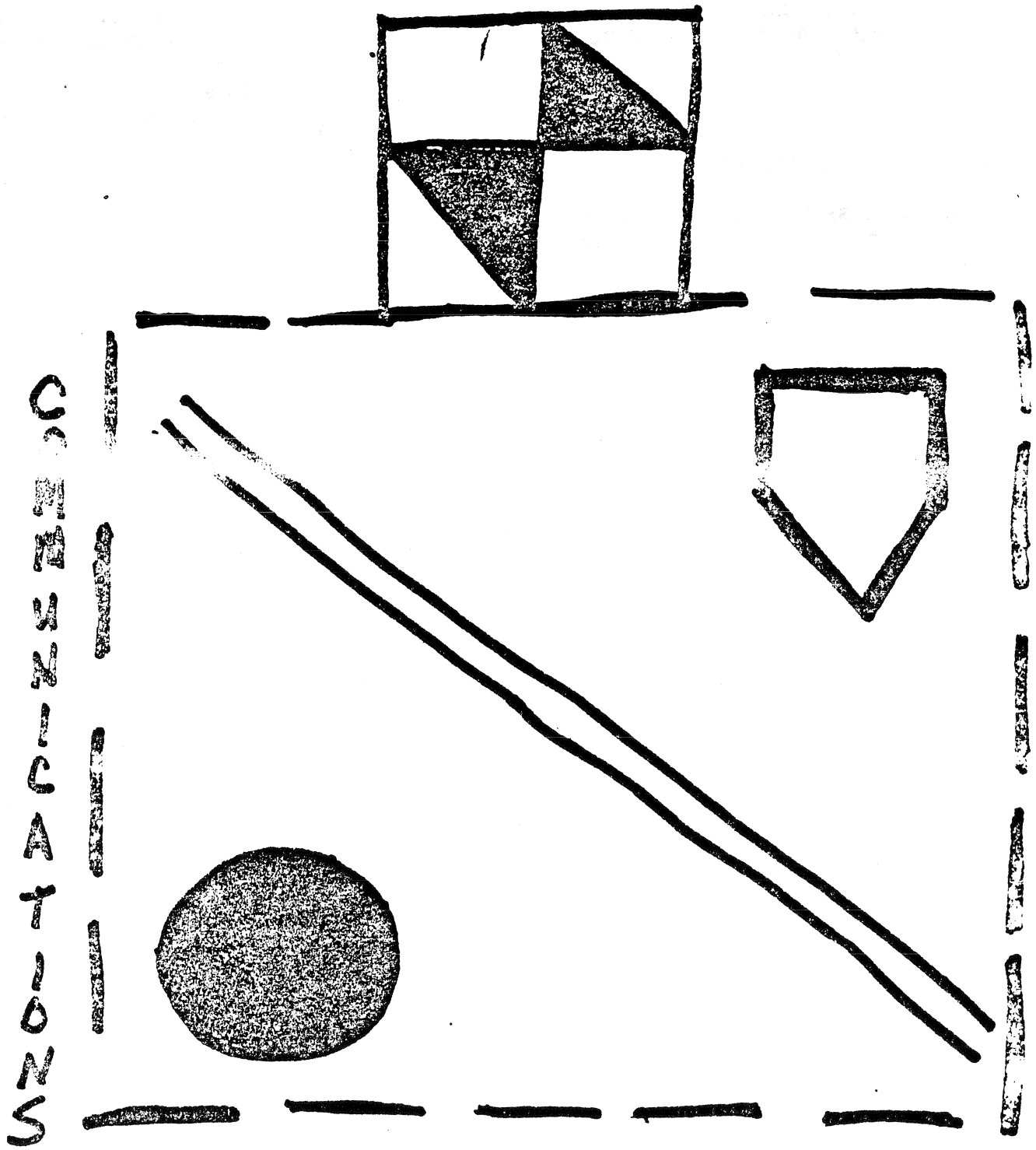
Course: Communications

Lesson Title: Descriptive Interpretation

PROCEDURE

OPERATION	TOOLS & EQUIPMENT	NOTES
1. Students draw a diagram based on the audio directions of one student (sender)		1. Limitations for sender a. Oral directions only b. No repeats of the directions c. Three minute time limit d. Speak loud and clear
2. Compare results		
3. Discuss problems resulting from the one-way communication		

DESCRIPTIVE INTERPRETATION



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Unit #2 Lesson #3 Time Required- 1 Class Period

Course: Communications

Lesson Title: Tactial Senses

Various objects small enough to fit in the palm of your hand (provided by each student)

OBJECTIVES

The student will:

1. use tactial senses to aid in verbally describing an unknown object.
2. Use tactial senses to aid in drawing an unknown object.
3. use tactial senses to aid in guessing what an unknown object is.

TEACHER ACTIVITIES

1. Lead discussion on how tactial senses aid in communicating with the brain
2. Demonstrate each of the activities involving the tactial senses

STUDENT ACTIVITIES

1. Describe an unknown object verbally based on how it feels
2. Draw an unknown object based on how it feels
3. Guess what an object is based on a verbal description

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Unit #2 Lesson #3 Time Required- 1 Class Period

Course: Communications

Lesson Title: Tactial Senses

PROCEDURE

OPERATION	TOOLS & EQUIPMENT	NOTES
1. Verbally describe an object based on how it feels	1. Unknown small object	Do not allow the student to see the object until after it has been described
2. Draw an unknown object on the chalk board based on how the object feels		
3. Guess what an object is based upon the description from another student that is only feeling the object		

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Unit #2 Lesson #4 Time Required- 1 Class Period

Course: Communications

Lesson Title: Taste Test

SUPPLIES

10 different liquids (soda, juice, etc.) supplied by students
1 plastic drinking straw per student
1 5 oz cup per liquid

OBJECTIVE

The student will:

1. demonstrate ability to identify various substances through/by blind tasting and note the communication between the object and the brain in proving its identity.

TEACHER ACTIVITY

1. Lead discussion on how sight can influence our sense of taste
2. Explain how the taste test will be conducted

STUDENT ACTIVITY

1. Taste each of the liquids and guess what it is
2. Compare their answers to the actual order of liquids

SUPPLY SOURCE

Students pay for and the instructor provides

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Unit #2 Lesson #4 Time Required- 1 Class Period

Course: Communications

Lesson Title: Taste Test

PROCEDURE

OPERATION	TOOLS & EQUIPMENT	NOTES
1. Taste each of the liquids and make a guess as to what each one is	1. 5 oz. cups and plastic drinking straws	1. Students are blind-folded at time of taste test
2. After the test is completed by the class, list the order that the liquids were served and compare to the student's list		