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Title of Report: THE USE OF CIVIL DEFENSE IN CREATING INTEREST IN THE GENERAL SCIENCE PROGRAM

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Scope of Report: This report deals with the use of civil defense as a source of scientific information and as means of creating interest in the general science program. The writer has used materials available through state and national civil defense and related agencies in developing a teaching unit. The use of civil defense was found to be very rewarding in stimulating pupil interest.

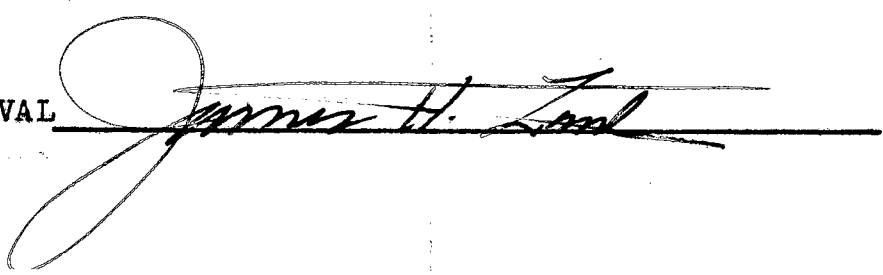
The report is formulated to give the teacher a concept of how to stimulate interest, present and evaluate a unit built around civil defense. There are contained in this report the development of the learning situation by pupil participation; information requested by mail, pupil planning, oral reporting, student notebooks and evaluation.

The benefits to the curriculum are discussed in the areas of: science and health, and social aspects. It is found that many present phases of public school curriculum are also found in civil defense publications. These publications serve to energize the general science program.

Materials and sources of information are discussed under the following headings: civil defense publications, National Education Association, books, magazines, newspapers, television and radio.

Conclusion: Science is a dynamic field, requiring the use of all sources of information if we are to keep abreast of our times. Civil defense should be included in the curriculum to the extent that it contributes to a true realization of the problems facing this age and to the extent that it develops valuable knowledge and skills.

ADVISOR'S APPROVAL



THE USE OF CIVIL DEFENSE IN CREATING INTEREST
IN THE GENERAL SCIENCE PROGRAM

By

HOWARD W. SIZEMORE

Bachelor of Science

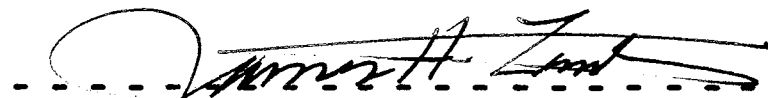
Oklahoma State University

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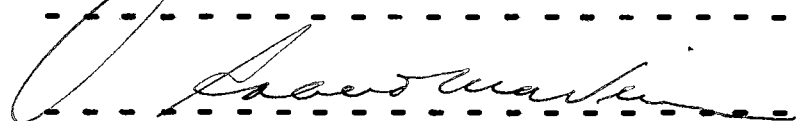
Submitted to the faculty of the Graduate School of
Oklahoma State University in partial
fulfillment of the requirements
for the degree of
MASTER OF SCIENCE
August, 1958

THE USE OF CIVIL DEFENSE IN CREATING INTEREST
IN THE GENERAL SCIENCE PROGRAM

Thesis Approved:



Thesis Advisor



Dean of the Graduate School

PREFACE

The formulation of this report was made to give the teacher or prospective teacher a conception of civil defense, its usefulness in creating interest in scientific fields and as materials for pupil learning. Specifically this report relates to the actual teaching of a unit on civil defense in the general science program.

The introduction of civil defense to a group of students is given as an aid to teacher planning. The planning procedure is based upon pupil needs and interest with emphasis on pupil participation. The need for a unit on civil defense is not the same in all communities, however, regardless of location the information and inspiration to the student is the same.

The advancement of modern ways of living has been in considerable measure the result of greater understanding of natural phenomena and growth in the power to control them. Developments have been aimed chiefly toward making life richer and more satisfying and with providing safeguards for human well being. Whatever the concern, progress has been irregular and uneven, some advances have carried in them the seeds of new problems, of new dangers. This has never been more evident than in man's latest conquest, the control of nuclear power. To meet some of these problems, the Federal Civil Defense Administration was established by an act of

Congress in 1950. A knowledge of civil defense serves to strengthen us as a nation and it contributes to the attainment of fundamental educational purposes.

I wish to express my gratitude to Dr. James H. Zant, Professor of Mathematics and Director of the National Science Foundation at Oklahoma State University, who has devoted much of his time counseling and advising me in the formulation of this report. My gratitude is also expressed to the National Science Foundation which provided the opportunity to become a better teacher.

I appreciate the cooperation of Thomas M. Brett, State Director of Civil Defense, in obtaining Federal and State Civil Defense publications used in this report. The typing and duplicating of my seminar report by Mrs. Ned Gallaway, Dr. Zant's secretary is appreciated.

Indebtedness is acknowledged to Imy V. Holt for his valuable advice and encouragement.

The patience and work of typing the first copy from my notes by my wife, Catherine J. Sizemore is deeply appreciated.

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION	1
II. PRESENTING CIVIL DEFENSE TO THE CLASS	5
III. BENEFITS OF CIVIL DEFENSE IN THE CURRICULUM . . .	13
IV. REVIEW OF MATERIALS	20
V. SUMMARY AND CONCLUSIONS	31
BIBLIOGRAPHY	33

CHAPTER I

INTRODUCTION

STATEMENT OF THE PROBLEM

The purpose of this report is to present the use of Civil Defense in creating interest in the General Science Program.

There is now an acute need in our nation for more of our capable students to choose fields of scientific endeavor. If we are to set the pace for nations of the world in the technological fields, we must use every means to interest, and guide the youth toward this goal.

Science is a dynamic field, teachers must use every means to keep himself and the learner abreast of our times. The materials and information that are obtainable through a study of Civil Defense will serve as an implementing media to a greater interest and knowledge in scientific fields.

WHAT IS CIVIL DEFENSE?

Civil defense is a way of saving lives and property. It is a way of protecting you and your family in case of war on the United States. It is a way of keeping you going, and to keep production going in spite of natural disasters, atomic, biological, or chemical attacks.¹

¹This is Civil Defense, Federal Civil Defense Administration, Publication Pa. -3, (Washington, 1951), p. 4.

THE PURPOSE OF THE REPORT

The benefits of developing a unit on Civil Defense in the General Science course are fourfold.

(a) Information of a scientific nature can be used from news articles, magazine articles, and the U. S. Government printing office that might otherwise be overlooked.

(b) Interest will be gained through the use of current materials. These materials are graphically illustrated and related to the students needs.

(c) A unit of this type gives the teacher an opportunity to teach pupils to find answers to their problems through reading current materials and reference materials. The learner should always be guided toward self-reliance in finding answers to their problems.

(d) Need for Civil Defense

As President Eisenhower has stated civil defense is a "sheer necessity" in this day of H-bombs and the other weapons of modern war.²

The Air Force concedes that a deadly proportion of the enemy bombers will break through our best system of detection and interception, our bombers likewise will break through their lines.

We now know that Russia has atomic bombs and super bombs, and is making more all the time. If the cold war becomes a hot war, civilian populations will be attacked immediately.

²Federal Civil Defense Administration, Survival, (re-published Marceline, Missouri, 1956), p. 5.

The weapons are available. So far the superbomb has had more attention than other weapons because it can now destroy life in an entire city in a few seconds. We are approaching the time when those bombs will be mutually deliverable in quantity by the enemy and by the United States.

We know that Russia is able to wage biological warfare. She has scientists who can prepare diseases to use against people, plants and animals. She has trained secret agents who could spread them. We know that Russia has the major war gases. We know that such gases could be used against us.³

Val Peterson, Federal Civil Defense Administrator, has said, "I didn't invent the atomic bomb, neither did Civil Defense invent the H-bomb, but it is our job to try and live in this Atomic Age, if man is crazy enough to permit a third world war to start."⁴

LIMITATIONS OF THE UNIT

The materials that are readily available from the Federal Civil Defense Administration and related agencies are usually of a general nature. General because the information is formulated with the adult population in mind. The writer has found that this information is sufficiently technical for the Junior High level, however more advanced materials would be desirable for more advanced students.

³Ibid., p. 2

⁴Ibid., p. 2

There are adults that do not want their children taught the facts of today's existence. They are afraid of the psychological effects. In this age of "atomic power," youth must become acquainted with the realities that will face him in the future. Today the student attending public school knows more about atomic power radiation, rocket ships and the many other advances that modern science has developed, than do their parents.

The school age child is entitled to the benefits of pre-disaster information, knowledge and training. Natural disasters and the atomic age are with us and we cannot avoid them by closing our eyes and saying, "it's not true."⁵

The following chapters of this report will be devoted to the following areas:

(a) The methods used in presenting a unit on civil defense to a class.

(b) The benefits derived from using materials from civil defense and related agencies.

(c) The review of specific sources of information and a summary of the various materials, which are available through state and federal civil defense and related agencies.

(d) Summary and conclusion.

⁵Thomas M. Brett, Prospectus for Civil Defense, Oklahoma Office of Civil Defense, (Oklahoma City, 1957), p. 1.

CHAPTER II

PRESENTING CIVIL DEFENSE TO THE CLASS

The introduction of any unit to a group of students is one of the primary requirements for a meaningful experience. Four things are needed to present a unit on civil defense:

(a) The unit must be centered in the needs and interests of the pupil.

(b) A preview of subject matter areas to be covered is given as a guide to the pupil in collecting and studying materials on civil defense.

(c) The methods of study and approach are pupil centered.

(d) Indicate the basis for evaluation of pupil achievement in their study of civil defense.

The Needs and Interests of the Pupil

Civil defense is a subject so vital to our lives and happiness little difficulty will be found in creating interest. However often the teacher assumes that there is interest; this assumption can only lead to an unreceptive group. The teacher must be enthusiastic in his approach to civil defense.

The pupil can be lead to give many examples of how civil defense is necessary. Whenever possible, points of interest

should be taken from your own community. Sometimes the pupil has experienced them first hand. The following incident occurred in the community in which the author was teaching; it was made use of in presenting civil defense: In April of 1957 a Boeing B-52 exploded at 9,000 feet altitude directly over the center of Skiatook, a community of 3,500 people. It was heading east and the momentum of the plane carried it just to the east edge of Skiatook. The heat blast reached us first, then the sound of the explosion drew our attention to the mushrooming debris and the parachutes of two crewmen. The two other crewmen rode the plane to their death. One of the pilots was cut loose from his parachute by a ninth grade boy, after the pilot had been dragged several hundred yards. The blast sprayed fuel over acres of land and the plate glass in the business district was crushed to bits. Most homes suffered minor damages.

Boeing and U. S. Airforce officials tracked down wreckage in helicopters for miles around.

There are many interesting side issues of this story but you can imagine from this summation there was plenty of excitement. Of course you will not always have a B-52 to explode just when you need to create interest in civil defense. The next day after the explosion interest and excitement were ripe. Questions about airplanes, bombs, invasions, fallout, were flying thick and fast. It is unforgiveable for a teacher to pass up an opportunity like this to teach. So the answers to many questions were obtained through a study of civil defense.

Current happenings may not be the same in all localities but they offer a fund of materials which should not be passed up by the teacher. Science is a dynamic subject, it requires the inclusion of current events to keep our teaching materials up to date.

Pupil interest in an idea or a subject can be obtained through graphic and colorful illustrations. For interest in civil defense the booklet, "Natural Disaster", is good and can be obtained in quantities from Graphic Information Service, Inc., New York, New York. It is presented by Al Capp's "Lil Abner". The booklet is an explanation of civil defense by a colorful character, Mr. Civil Defense. After the pupil reads this there is a keen interest in where to find more civil defense material.

Films. Operation Doorstep, School for Survival, and U. S. Civil Defense in Action are all available for loan from F. C. D. A. Regional Offices. Pictures in film or otherwise can say things a teacher can never say without them.

These films and other materials are free and easily obtainable for your use as a teacher.

Areas to be Presented

A preview of areas that may be covered in a study of civil defense, should be presented to the pupil. Some of the most vital phases of civil defense that should be pointed up are: facts about radiation, fall out, atomic weapons, fire hazards, home and emergency sanitation, natural disasters,

biological warfare, communication, medico-biological effects of atomic radiation, missiles, space travel, and survival methods.

Without a definite preview of what is expected in the way of materials some of the pupils will not know what to look for.

A preview serves to tell the student of the great variety of topics that will be found in seeking out areas implicated in civil defense. If presented properly, new interest can be derived because of this variety of areas to be investigated. It should be pointed out that a student may choose a particular area to pursue. The oral discussions given by the student will enlighten the class as a whole on the separate areas of civil defense. This should be made clear that sharing information in the group is essential in order to cover the main phases of the subject. Few topics will lend themselves better than civil defense in offering something of interest to each individual in the group.

Methods of Study and Approach

In a study of civil defense the student will be using materials of a relatively different nature as compared to the textbook approach.

The sources of information are important consideration in any unit. The pupil will play a large part in the collection of information used. It is of the utmost importance to the success of the unit to have a list of references in the

hands of the learners. The following list should be given to the student five days before commencing the unit in order to allow time to receive materials requested by mail.

Specific sources of information in which each student will write letters requesting information on civil defense.

1. Supt. of Documents
U. S. Government Printing Office
Washington 25, D. C.
2. Office of Civil Defense
State Capitol P. O. Station
Oklahoma City 5, Oklahoma
3. The address of your local
Civil Defense authority
4. General Sources

Check these sources daily for topics discussed in the preview of civil defense.

- a. Newspaper articles
- b. Magazines
- c. Television
- d. Radio programs

5. Teach the proper form of letter writing. This will speed the getting of information as well as teaching communication by letter. The form may be hectographed or written on the blackboard. The teacher should obtain information from the above sources as well as the following additional information.

1. Survival, Walsworth, Printers and Lithographers,
Marceline, Missouri
2. PL 84 Atomic Energy and Civil Defense
Supt. of Documents
Washington 25, D. C.

The teacher should accumulate this information prior to the time students begin collecting theirs. With the information at the teachers disposal he can show the students more graphic pamphlets, the colorful way that civil defense is presented will give them the interest necessary to get their requests for information in the mail.

When the information is collected the student will place their name on the specific materials they have collected, in order that they may later claim them. The pamphlets and news articles are arranged on a display table available to the students. The bulletin board can be used to good advantage by placing pictures and information there. By this arrangement all information collected is shared by the group.

Indicate Basis for Evaluation of Pupil Achievement

The writer has in mind evaluation in terms of how well did he teach what he planned to teach; were the objectives reached? Did all students participate? Was the unit broad enough to allow for individual differences? Did the students gain proper intelligent attitudes toward todays existence? Were basic survival facts learned about civil defense? Were they inspired to seek further scientific information?

In order to reach desired goals and know when you have reached them evaluation is necessary. Teachers strive to

lead the student toward self-evaluation, whereby the student takes stock of himself as to progress made. However there are evaluations imposed upon us as teachers in the form of grades. The student often has this in mind when evaluation is mentioned. There is a certain amount of pressure brought to bear on the student by parents, his peers and himself to succeed grade wise. How will he be evaluated on his achievements in this unit?

The Criterion for Evaluation of Pupil Achievement
in a Study of Civil Defense are Fourfold

1. Sharing information which the students collect should be considered. The students will bring more of this information to the classroom if some credit is given for his effort put forth.
2. Oral reports should be emphasized. These may be either by an individual or a group. A student may choose to summarize a favorite article he has found or discuss a topic of particular interest to him.
3. Student notebooks containing news articles, basic concepts, or reports are a valuable measure of student participation and achievement.

The teacher should make suggestions as to materials contained in this notebook, however it should be a product of his own interest and initiative.

4. Testing a unit of this kind needs serious consideration. A formal test cannot cover everything touched upon during the

course of the study. The questions should cover only basic concepts taken up in class by the teacher or covered by a special report from a student. The test's purpose is to point out the important concepts as well as to find out if they have been learned.

Tests should be checked for errors and immediately returned to the student. The test should be discussed while there is still an interest in the subject. If this testing plan is followed it becomes a learning activity.

CHAPTER III

BENEFITS OF CIVIL DEFENSE IN THE CURRICULUM

The benefits of including civil defense in the curriculum are:

- (a) Added interest in certain technological fields
- (b) New materials on areas related principally to science and health
- (c) Furnish materials on areas concerned principally with social relationships
- (d) Pupils learn to evaluate information as to its validity

A pleasant feeling tone will accelerate the rate at which learning will proceed is a familiar axiom to all teachers. With this thought in mind as teachers we strive to present materials contained in the curriculum in the most palatable form. Much of the content of subject matter in textbooks is found to be uninspiring to the student. One of the principal causes for this is the lack of founding curriculum materials in the needs and interests of the student. Much of the present curriculum can be made more interesting and meaningful by the use of civil defense.

Just as the protection program should become a part of the curriculum without dominating it, so should civil defense education be integrated into the present school curriculum,

included as it contributes to the fundamental educational purposes. From daily experiences in safe living may be developed desirable habits and attitudes which are basic resources needed in meeting emergency regardless of the cause.¹

An examination of the present school curriculum will find many topics also needed in the proper awareness of the changing world situation and scientific development.

Areas of Civil Defense Related to Science and Health

Types of Disasters and Emergencies

Natural Disasters

storm (cyclone, tornado, hurricane)

flood

earthquake

forest fire

extremes of heat and cold

Man-caused disasters

fires

explosions

epidemics

wrecks

Military aspects

weapons effect (blast, heat, fire, radiation, fallout)

chemical

¹Clara G. Stratemeyer. Civil Defense Education, National Education Association. (Washington, 1956), pp. 19-30.

biological

Natural features and weather conditions favoring each type of natural disaster

Meteorology and weather warning systems

Man's part in causing disaster and methods of prevention

Protective measures appropriate to each type of natural disaster

Protective measures appropriate to each type of man-caused disaster

Nature and structure of the atom

Significance of nuclear energy as a source of power

Peacetime uses of nuclear energy in industry

Uses of radioactive materials in medicine

Effects of weapons damage on property

Effects of weapons damage on the human body

Effect of fallout

Limitations of nuclear weapons

Electronic and other warning systems

First aid practices

Home nursing

Protection of community water supply

Fire prevention and chemistry of fire extinguishing

Food and water supplies for emergency uses

Living without modern conveniences - food preparation, shelter, sanitation

Shelters as protection measures

Chemical attack, its use and effects, methods of protection

Biological warfare and its use

Safeguarding people, food and water supplies from biological attack

Areas Concerned Principally with Social Relationships

Role of the individual as a member of cooperating groups -- family and community

Community organizations for protection and its development to meet changing needs -- fire and police protection, control of communicable disease, public utilities

Social agencies concerned with disaster prevention

Relief of disaster victims

Rehabilitation of disaster areas

Interdependence of communities and the concept of mutual assistance between disaster and disaster-free areas

Evacuation from target areas as a protection plan, and care of the homeless

Identification of probable enemy target areas

Combating attack using social weapons -- rumor, propaganda, panic

Use of communication media -- newspaper, radio, television

Transportation systems within and between communities, air lanes and aviation

Role of the civilian in modern warfare

Civil defense organizations and functions at national, state, and local levels

Social, economic, and political conditions making for tension

in world relationships

Psychological attitudes and critical thinking²

It is evident to one with experience in the public schools that most of the areas listed above are already included in the present curriculum. There is need only to point up their contribution to the concept of civil defense as mutual self-protection and to relate them to existing circumstances. The new areas not presently included in our curriculum are so vital to our lives we could not fail to make them a part of the pupils education. The areas of science, health, and social relations are now distinguished as part of the present school curriculum. The inquiry that some may have at this point is: why use civil defense in teaching them? It has been pointed out earlier that as teachers we strive to make learning situations more meaningful, interesting, and centered in pupil needs. The writer has found the materials available through the Federal Civil Defense Administration and related agencies are rewarding beyond expectations in creating a good learning situation.

In this report it is not feasible to attempt to cover every topic listed. A few examples should suffice to point out the relation of civil defense areas to existing curriculum areas.

In a twenty-seven page, well illustrated booklet, What to Do About Home Sanitation, the same concepts are

²Ibid., p. 14

brought out that would be found in health and general science courses. The booklet is graphic and develops the subject under three chapters:

1. You must have safe drinking water.
2. You must have safe food.
3. Sewage disposal.³

The study of atomic structure is certainly a part of our present physics and chemistry courses. There is material available to you through the U. S. Government printing office that can be used in this area.

The instructional materials used must be made to fit the comprehension levels of the learners.

Pupils Learn to Evaluate Information as to its Validity

An example to illustrate the above topic is taken from Better Homes and Gardens. The article "Bomb-dust Radiation"⁴ relates this discrepancy. A New York newspaper recently concluded that an atomic scientist's speech had made claim that there were 24 million ton of radioactive material now floating in the stratosphere. One magazine's interpretation of the same speech produced the figure 24 billion ton! Actually the scientist said that it would take the equivalent of 24 million ton of TNT to throw into the stratosphere the radio-

³What to do Now About Emergency Sanitation at Home, Federal Civil Defense Administration. Pub. No. H-11-1 (Washington, 1953), pp. 1 - 27.

⁴James Poling, "Bomb-dust Radiation", Better Homes and Gardens, May, 1957, p. 179.

active material now in the stratosphere.

Collecting, recording, and reporting on scientific data is developed in the study of civil defense. The pupil recognizes the vast store of information found through reading on his own.

Inspiration may come to a student due to the discovery of a field of interest. Since many occupations and professions are touched upon the pupil may be inspired to enter a certain profession.

The value of civil defense itself should not be overlooked. The students learn many new concepts and skills which will help them if disaster should ever come. They also help to inform the parents by talking to them and by bringing the civil defense literature which they have collected into the home.

Resolution Adopted by NEA Representative Assembly, 1956

The National Education Association believes that in this time of international uncertainty it is imperative that our country be alerted against the complacency which may invite enemy attack. The Association calls upon civil defense authorities of federal and state governments to work closely with local educational and municipal authorities in the cooperative development of definite plans for the protection of children and adults.

The Association recommends that teaching staffs, administrators, and school boards offer their services to duly constituted authorities in planning safety precautions and instructional programs. It is important that the instructional side of the programs for civil defense should be continuously emphasized and should employ all the technical resources afforded by local, state, and federal civil defense agencies.⁵

⁵Ibid., p. 14

CHAPTER IV

REVIEW OF MATERIALS

The following section of this report is written to provide the teacher with references to materials. It will be a brief survey of literature related to civil defense, to give some idea of the information that is available. It will not be discussed in detail due to the vast amount of it.

It should also be emphasized here that information referred to is easily obtainable and in most cases free of any cost.

The names and addresses of agencies which have furnished information are given and a brief idea of the nature of the material which they will supply.

Civil Defense Publications

Price List 84, Atomic Energy and Civil Defense

Superintendent of Documents

Washington 25, D. C.

This price list of government publications are issued upon request. The instructions for orders of materials are included in the price list. This catalogue of publications lists the name of the particular publication and describes the type of information embraced in it. The price of the books and pamphlets range from five cents up.

The Price List 84 also gives a list of other government publications price lists. There are forty-nine of these lists in addition to Atomic Energy and Civil Defense. They are on diseases, geology, insects, astronomy, and other scientific fields. These price lists aid you in securing materials that are current and that are not likely to be obtainable elsewhere.

Oklahoma Office of Civil Defense
State Capitol Post Office Station
Oklahoma City 5, Oklahoma

The booklets and pamphlets on various subject matter areas available from the above address are free upon request. For this reason it is beneficial to request this information before buying any publications from other agencies.

National Education Association

Publications have been arranged in various areas useful to the school situation are produced in a publication, Civil Defense Education thru Elementary and Secondary Schools.

Commission on Safety Education
National Education Association
1201 Sixteenth Street, N. W.
Washington 6, D. C.

NOTE: Publications of the Federal Civil Defense Administration (indicated by initials "FCDA") may be obtained from The Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Many of these publications are available free thru local or state civil defense offices.

Information sheets prepared by the Civil Defense Education Project, Office of Education, U. S. Department of Health, Education, and Welfare, Washington 25, D. C. are listed as in this example: "Info. Sheet No. 17."

A. Accounts of Evacuation Plans as Worked Out for Specific School Situations.

A Proposed Emergency Plan for the Bethesda-Chevy Chase High School. (John Ballock, Operations Research Office, Johns Hopkins University) Developed under sponsorship of Bethesda-Chevy Chase Parent-Teacher Association and Bethesda-Chevy Chase Senior High School. 1954. 136 p. Limited number of copies available from Bethesda-Chevy Chase High School, Bethesda 14, Maryland. 10 cents postage.

Civil Defense in the Schools. (Revised edition.) Detroit Public Schools, Detroit, Michigan. 1956. 45 cents.

Civil Defense Plans for Mobile Public Schools. (Contains account of Operation "Kids".) Mobile County Civil Defense. Mobile, Alabama. 1955. 53 p. 50 cents.

School Planning for Safe Living. Texas Division of Defense and Disaster Relief, Austin. 1955. 15 p. Free.

B. Guidance on Shelter Needs and Specifications.

Civil Defense in Industry and Institutions (AG-16-1) FCDA. 1951. 60 p. 25 cents.

Protection Against Radioactive Fallout. Info. Sheet No. 35, Feb. 7, 1956. 12 p. (mimeo).

Requirements of School Shelter Facilities. Info. Sheet No. 26, June 30, 1955. 25 p. (mimeo).

Shelter From Atomic Attack in Existing Buildings. Part I -- Method for Determining Shelter Needs and Shelter Areas. (TM-5-1) FCDA. 1952. 53 p. 20 cents.

Shelter from Atomic Attack in Existing Buildings. Part II -- Improvement of Shelter Areas. (TM-5-2) 1952. 28 p. 15 cents.

Shelter from Radioactive Fallout. (TB-5-2 revised.) FCDA. 1956. 8 p. 5 cents.

C. Materials Dealing with Psychological Reaction under Stress.

Human Behavior Under Stress Conditions. (a Bibliography.) Info. Sheet No. 7, March 11, 1955. 10 p. (mimeo).

"Panic, the Ultimate Weapon?" Val Peterson, Collier's, August 21, 1953.

The Problem of Panic. (TB-19-2) FCDA. 1955. 8 p. 5 cents.

The Problem of Panic. Info. Sheet No. 28, July 11, 1955. 4 p. (mimeo).

Psychological First Aid in Community Disasters. American Psychiatric Association, 1785 Massachusetts Avenue, N. W., Washington 6, D. C. 1954. 32 p. 35 cents.

Selected Bibliography on Children's Reactions to Stress and to Crisis Info. Sheet No. 12, April 12, 1955. 9 p. (mimeo).

Selected Bibliography on Children's Reactions to Stress and Crisis. Info. Sheet No. 12, 1955. 9 p. (mimeo).

D. Information About Some of the Areas of Instruction.

Atomic and Nuclear Weapons:

Atomic Facts. Edited by Helen M. Davis, Science Service, 1719 N. Street, N. W., Washington 6, D. C. 1959. 112 p. \$ 2.00.

Blast Damage from Nuclear Weapons of Larger Sizes. (TB-8-1) FCDA. 1955. 3 p. 5 cents.

The Effects of High-Yield Nuclear Explosions. U. S. Atomic Energy Commission. 1955. 19 p. 10 cents. (Available from U. S. Government Printing Office, Washington 25, D. C.)

Facts about the H-Bomb. (leaflet) FCDA. 1955. 5 cents.

Fire Effects of Bombing Attacks. (TM-9-2) FCDA. 1952. 42 p. 20 cents.

Operation Doorstep. FCDA. 1953. 32 p. 30 cents.

San Francisco Schools and Civil Defense. San Francisco Unified School District, San Francisco, California. 1951. 31 p. (File copies available on two-week loan.)

Radioactive Fallout:

Fallout and the Winds. (TB-11-21) FCDA. 1955. 7 p. 5 cents.

FCDA Pamphlet Answers Questions About Fallout. Info. Sheet No. 23. June 1, 1955. 3 p. (mimeo).

Introduction to Radioactive Fallout. (IG-19-1) FCDA. 1955. 10 p. 15 cents.

Protection Against Fallout Radiation. (TB-11-19) FCDA.
1955. 2 p. 5 cents.

Questions and Answers on Fallout. Info. Sheet No. 25, June
22, 1955. 6 p. (mimeo).

The Radioactive Fallout Problem. (TB-19-1) FCDA. 1955. 3 p.
5 cents.

Radiological Decontamination in Civil Defense. (TM-11-6)
FCDA. 1952. 31 p. 15 cents.

Biological and Chemical Attack:

Biological Warfare Against Public Water Supplies. (TB-11-18)
FCDA. 1955. 5 p. 10 cents.

Biological Warfare Defense. Info. Sheet No. 19, May 7, 1955.
3 p. (mimeo).

Chemical Warfare Defense. Info. Sheet No. 13, April 15,
1955. (mimeo).

Survival Living:

Civil Defense for Personal and Family Survival. (A hand book
for teachers, students, and parents.) California State Dept.
of Education, Sacramento. 1956. 58 p. Free.

Civil Defense Household First Aid Kit. (TB-11-12) FCDA.
1954. (revised). 1 p. 5 cents.

Education for Safer Living thru Training for Civil Defense.
Connecticut State Office of Civil Defense, Hartford. Undated.
24 p. Free.

Emergency Medical Treatment. (TM-11-8) FCDA. 1953. 70 p.
25 cents.

Ways to Provide Pure Water After Disaster. Info. Sheet No.
17, May 5, 1955. 2 p. (mimeo).

Community Civil Defense:

Basic Civil Defense Course. Info Sheet No. 24, June 21,
1955. 15 p. (mimeo).

Basic Course for Civil Defense. (IG-3-2) FCDA. 1955. 44 p.
30 cents.

Civil Defense Urban Analysis. (TM-8-1) FCDA. 1953. 85 p.
55 cents.

The Cleveland Story. U. S. Government Printing Office, Washington 25, D. C. 1955. 13 p. 15 cents.

Evacuation of Civil Populations in Civil Defense Emergencies Info. Sheet No. 16, May 2, 1955. 7 p. (mimeo).

Health Services and Special Weapons Defense. (AG-11-1) FCDA. 1950. 264 p. 60 cents.

Principles of Civil Defense Operations -- Web Defense -- Mutual Aid -- Mobile Support. (AG-8-1) FCDA. 1951. 45 p. 20 cents.

Scope of and Necessity for Evacuation Planning. Info. Sheet No. 14, April 28, 1955. 11 p. (mimeo).

Some Aspects of Civil Defense in 1957. Info Sheet No. 3, January 20, 1955. 4 p. (mimeo).

Target Areas for Civil Defense Purposes. FCDA. 1953. 11 p. 15 cents.

United States Civil Defense. (National Security Resources Board Document 128.) Available from U. S. Government Printing Office, Washington 25, D. C. 1950. 162 p. 25 cents.

E. Curriculum and Teaching Materials.

A Unit in Atomic Energy. Chicago Public Schools, Board of Education, U. S. Department of Health, Education and Welfare, Washington 25, D. C. September, 1953. 18 p. 15 cents.

Civil Defense for Schools. State Council of Civil Defense, Harrisburg, Pennsylvania. 1952. 33 p. Free.

Civil Defense in the Classroom. (A handbook for teachers.) Michigan Department of Public Instruction. Lansing. 1955. 50 p. Free.

Defense for Survival. Roseland District #92 Schools, Johnson County, Kansas. April, 1955. 38 p. Free.

It Can Happen Here. Dade County School Defense Bulletin No. 2, Dade County Public Schools, Miami, Florida. 1952. 45 p. (mimeo) \$ 1.00.

Preparing Elementary Pupils for the Era of Atomic Energy. (A source book for elementary school teachers.) Iowa Department of Public Instruction, Des Moines. 1950. 85 p. 65 cents.

The Program for Civil Defense. Baltimore County Public Schools, Towson, Maryland. 1951. 46 p. 50 cents.

Safety, First Aid, and Emergency Procedure. Portland Public Schools, Portland, Oregon. 1954. 24 p. (mimeo). 50 cents.

The Schools and Civil Defense. State Superintendent of Public Instruction, Raleigh, North Carolina. 1953. 31 p. Single copy free to schools.

F. Suggestions Concerning the Functions of Civil Defense Preparations:

Emergency Welfare Services. (AG-12-1) FCDA. 1952. 62 p. 25 cents.

Registration and Information Services. (TM-12-1) FCDA. 1954. 52 p. 25 cents.

G. Materials for Use in Working with Parents in Civil Defense Preparations:

Civil Defense for Your Child and You. Roslyn Public Schools, Roslyn, New York. Undated. 19 p. (mimeo). Free.

Conelrad. (leaflet) FCDA. 1955. 5 cents. (See also, "Conelrad and the School", NEA Journal. December, 1953)

Education for National Survival. (A handbook on civil defense for schools) Civil Defense Education Project, U. S. Department of Health, Education, and Welfare, Washington 25, D. C. 1956. 88 p. 65 cents.

"The Educational Requirement of Civil Defense." Robert A. Luke, Adult Education. February, 1951.

Emergency Action to Save Lives. (PA-5) FCDA. 1951. 38 p. 5 cents.

Facts About Fallout. (leaflet) FCDA. 1955. 10 p. 10 cents.

Fire Fighting for Householdors. (PA-4) FCDA. 1951. 31 p. 5 cents.

Six Steps to Survival. (leaflet) FCDA. 1956. 5 cents.

States, Counties, Cities, and Civil Defense. FCDA. 1955. 28 p. 20 cents.

What to do Now About Emergency Sanitation of Home. (H-11-1) FCDA. 1955. (revised) 27 p. 15 cents.

What You Should Know About Radioactive Fallout. (PA-2) FCDA. 1955. 31 p. 10 cents.

H. Manuals Illustrative of Civil Defense Programs as Worked Out for State and Local School Systems:

A Civil Defense Manual for Hawaii Public Schools. Department of Public Instruction, Territory of Hawaii. Undated. 58 p. Free.

Civil Defense -- A Curriculum Resource Unit for New York City Schools. (Curriculum Bulletin 1953-54 Series Number 4.) Board of Education, New York, New York, 1954. 69 p. Free.

Civil Defense and Safety Manual -- A program for Michigan Schools. Michigan Office of Civil Defense and Department of Public Instruction, Lansing. 1955. 82 p.

Civil Defense Manual. Department of Public Schools, Providence, Rhode Island. 1954. 52 p. (mimeo). Free.

Design for Defense -- The Role of Utah's Schools. Utah State Department of Public Instruction, Salt Lake City. 1952. 47 p.

Education for Natural and Wartime Emergencies. Connecticut State Department of Education, Hartford. 1956. 62 p. 35 cents. (Make checks payable to Connecticut State Department of Education.)

Little River School Defense Plans. (Dade County School Defense Bulletin No. 4) Dade County Public Schools, Miami, Florida. 1954. 24 p. (mimeo).

Organizing Colorado Schools for Civil Defense. Colorado State Department of Education, Denver. 1953. 30 p. 25 cents.

Safety Education Handbook -- Grades 1-12 (tentative). Virginia State Department of Education, Richmond. 1954. 27 p. (mimeo). Free.

Safety for Survival: A Civil Defense Guide for Schools in Washington State. Washington State Department of Public Instruction, Olympia. 1953. 37 p. (mimeo).

Schools in Civil Defense -- A Plan for Wisconsin. State Civil Defense Education Advisory Council, Madison, Wisconsin. 1954. 40 p. (Limited number available on request.)

I. Checklists for Planning and Evaluating your Civil Defense Education Program:

Checklist of Safety and Safety Education in Your School. National Education Association, Washington 6, D. C. 1953. 47 p. 50 cents.

Checklists: Civil Defense in Schools. Info. Sheet No. 29, July 21, 1955. 14 p. (mimeo).

J. For Additional Information, Consult these Bibliographies:

Annotated Civil Defense Bibliography for Teachers. (H-3-1) Civil Defense Education Manuals and Handbooks Prepared or Distributed by State Departments of Education Info. Sheet No. 2, January 14, 1955. 3 p. (mimeo).

Civil Defense in Elementary and Secondary Schools. (A bibliography of articles in education journals.) Info. Sheet No. 6, March 7, 1955. 5 p. (mimeo).

Selected List of Publications on Civil Defense of Interest to Educators. Info. Sheet No. 38, September 5, 1956. 5 p. (mimeo).

75 Civil Defense Films for School Use. Info. Sheet No. 37, August 31, 1956. 7 p. (mimeo).¹

Books. The American Association for the Advancement of Science Library Program, a school may receive 200 books of science by application to: The Director, High School Traveling Science Library Program, American Association for the Advancement of Science, 1515 Massachusetts Avenue, N. W., Washington 5, D. C. Many of them pertain to atomic energy and therefore to civil defense.

Sourcebook on Atomic Energy by Samuel Glasstone, D. Van Nostrand Co., Inc., 1950, 546 p., \$ 3.50, LC 5011014,² begins with the earliest theories of the atom and its structure. It describes the growth of thought and knowledge in the field, the development of electricity and energy, radioactivity, isotopes, cyclotrons and betatrons, man-made new elements and

¹Ibid., p. 14

²Hilary J. Deason, Books of the Traveling High School Science Library, American Association for the Advancement of Science. (Washington, 1957), p. 40.

release of atomic energy. The book is written for the high-school age student.

It should be re-emphasized at this point that one of the major benefits of a study of civil defense is to encourage reading of books of this kind. The student should be given a list of references of these books which the school may have in their library.

Survival by Walsworth, Printer and Lithographers, Marcelline, Missouri, 159 p. In it you will find many of the civil defense pamphlets and information sheets, all of the addresses of state civil defenses authorities and target areas are listed. Included is the scope of civil defense with emphasis on occupations and skills involved.

Magazines. Magazines of a non-scientific nature which students will have in their homes are good for certain purposes. They usually have articles with pictures of relatively recent developments in areas such as: bomb tests, fall out, space travel, satellite and etc.

Newspapers. Articles covered in the daily paper attempts to cover scientific events on the scene when possible. The writer feels that such day to day news serves not only for information but as an inspiration to youngsters. It is hoped that through the use of civil defense the student will be inspired to read current materials of a scientific nature.

Television. It is quite possible to arrange a television

program on civil defense by contacting your state director. At the present there are periodically programs which should be made use of. This is easily done by checking television listings and instructing students accordingly.

Radio. Periodically there are programs designed to inform the public of methods of communication.

The F.C.D.A. has cooperated with a private producer in preparation of a 10 minute film entitled "CONELRAD". The local civil defense will arrange a showing. The CONELRAD system of stations operate on a frequency of 640 or 1240 kilocycles. The broadcasting is switched from one station to another preventing aircraft from using stations as direction finders. The study of CONELRAD is the best way to learn how radio is implicated in civil defense information.

CHAPTER V

SUMMARY AND CONCLUSION

Summary

The use of civil defense in creating interest in the general science program was used by the writer during the school year of 1956-1957. The added pupil interest and enthusiasm in scientific developments was rewarding beyond all expectations.

A plan of presenting civil defense as a teaching unit is given with emphasis on pupil participation. This approach was taken because the writer feels that pupil interest begins in active participation.

There are many benefits derived from using civil defense in a unit of study:

- a. Added interest in certain technological fields.
- b. Knowledge gained through using materials related principally to science and health.
- c. Knowledge gained through using materials on areas concerned principally with social relationships
- d. Attitudes are developed which foster scientific thinking. This will enable students to evaluate information as to its validity.

The information used was collected to a large extent by the pupils under the guidance of the writer. A review of

materials is given with their sources and cost.

Conclusion

Science is a dynamic field, requiring the use of all sources of information if we are to keep abreast of our times. Civil defense should be included in the curriculum to the extent that it contributes to a true realization of the problem facing this age and to the extent that it develops valuable knowledge and skills.

SELECTED BIBLIOGRAPHY

Brett, Thomas M. Prospectus for Civil Defense. Oklahoma City: Oklahoma Civil Defense, 1957.

Deason, Hilary J. Books of the Traveling High School Science Library. Washington: American Association for the Advancement of Science, 1957.

Federal Civil Defense Administration. Atomic Energy and Civil Defense PL. 84, Washington: U. S. Government Printing Office, 1955.

_____. Conelrad, Washington: U. S. Government Printing Office, 1956.

_____. Survival, Republished, Marceline, Missouri: Walsworth Brothers, 1956.

_____. Survival Under Atomic Attack, Washington: U. S. Government Printing Office, 1950.

_____. This is Civil Defense PA-3, Washington: U. S. Government Printing Office, 1957.

_____. What to do About Emergency Sanitation at Home, Washington: U. S. Government Printing Office, 1953.

Poling, James. "Bomb-dust Radiation". Des Moines: Better Homes and Gardens, (May, 1957).

Stratmeyer, Clara G. Civil Defense Education, Washington: National Education Association, 1956.

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