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ABSTRACT

A seventh grade unit on tobacco, drugs, and alcohol is presented in this curriculum guide for teachers. The introductory section states general objectives and specific knowledge facts for each of the three study areas. Also, skills and attitudes to be developed, general motivating activities, and teaching hints for slow and rapid learners are included. Individual units enumerate basic concepts and suggest teacher and student materials, audio visual aids, motivating questions, and activities to develop the concepts. An appropriate glossary of terms and additional teacher information and ideas supplement each study area. Culminating activities and teacher-pupil evaluation of knowledge, skills, and attitudes for the entire unit conclude the guide. Sources of information and a bibliography are listed. This work was prepared under an ESEA Title III contract. (BL)

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Gray Falls Public Schools
Gray Falls, Montana

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Great Falls Public Schools
Great Falls, Montana

TOBACCO, DRUG, AND ALCOHOL UNIT
SEVENTH GRADE

Instructional Materials Center
ESEA Title III Project 68-05115-0
Robert C. Jewell, Director

Prep

Great Falls Public Schools
Great Falls, Montana

TOBACCO, DRUG, AND ALCOHOL UNIT
SEVENTH GRADE

Prepared by:

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Robert Roach - Tobacco
Stanley Tolliver - Alcohol
Kenneth Leland - Drugs

ter
05115-0

TABLE OF CONTENTS

Introduction

Objectives

Teaching Hints for Slow and Rapid Learners

TOBACCO

I. Tobacco and its many ramifications

 A. History

 B. Influencing factors

II. Chemical make-up

III. Clinical research

 A. Cancer

 B. Respiratory disease

 C. Heart disease - others

IV. Action taken to educate the public

V. Teacher information

VI. Glossary

DRUGS

I. Objectives for follow-up of sixth grade curriculum

 A. Furnish variety of understandable materials

 B. Biological understanding

TABLE OF CONTENTS

	<u>Page</u>
.....	1
.....	2
..... and Rapid Learners	9
..... many ramifications	10
.....	10
..... factors	10
.....	12
..... h	14
.....	14
..... disease	14
..... e - others	14
..... educate the public	14
..... ion	18
.....	19
.....	19
..... follow-up of sixth grade curriculum	21
..... ety of understandable materials	21
..... nderstanding	21

TABLE OF CONTENTS (continued)

	<u>Page</u>
C. Terms; proper use and misuse	21
D. Make decisions	21
E. Terms; drugs of use and misuse	21
II. Terms	21
A. Drugs	21
B. Drug dependency	21
1. physical	21
2. psychological	21
3. addiction	21
4. habituation	21
C. Illusion	21
D. Hallucination	21
E. Withdrawal sickness	21
F. Psychotic	23
G. Medical uses	23
H. Relationship of millogram-microgram	23
I. Depressant	23
J. Stimulant	23
K. Hallucinogen	23

TABLE OF CONTENTS (continued)

- III. Hallucinogens
- A. Marijuana
 - 1. Effects on the body
 - a. physical
 - b. psychological
 - 2. Legal use
 - 3. Illegal use or abuse
 - 4. Method taken and dosage
 - 5. Slang terms
 - 6. Most common type abused
 - 7. Identification
 - 8. Where obtained
 - a. drug itself
 - b. traffic to U.S. or city
 - 9. Value to individual
 - 10. Results from long-term use
- B. LSD
 - 1. Effects on the body
 - a. physical

TABLE OF CONTENTS (continued)

	<u>Page</u>
b. traffic to U.S. or city	25
2. Legal use	25
3. Illegal use or abuse	25
4. Method taken and dosage	25
5. Slang terms	25
6. Most common type abused	25
7. Identification	25
8. Where obtained	25
a. drug itself	25
b. traffic to U.S. or city	27
9. Value to individual	27
10. Results from long-term use	27
C. Mescaline (peyote cactus)	27
1. Effects on the body	27
a. physical	27
b. psychological	27
2. Legal use	27
3. Illegal use or abuse	27
4. Method taken	27

TABLE OF CONTENTS (continued)

5. Slang terms

6. Identification

7. Where obtained

D. STP - Dom

 1. Effects on the body

 a. physical

 b. psychological

 2. Illegal use

 3. Slang terms

 4. Where obtained

E. Psilocybin

 1. Effects on the body

 a. physical

 b. psychological

 2. Illegal use

 3. Slang terms

 4. Where obtained

 5. Use

IV. Depressants

TABLE OF CONTENTS (continued)

	<u>Page</u>
.....	27
.....	27
.....	27
.....	27
y y	27
.....	27
.....	27
.....	27
.....	27
.....	29
.....	29
.....	29
by y	29
.....	29
.....	29
.....	29
.....	29
.....	29
.....	29
.....	29
.....	29
.....	29

TABLE OF CONTENTS (continued)

	<u>Page</u>
A. Barbiturates	29
1. Effects on the body	29
a. physical	29
b. psychological	29
2. Legal and medical use	29
3. Illegal use and abuse	29
4. Method taken and dosage	29
5. Slang terms	31
6. Most common type abused	31
7. Identification	31
8. Where obtained	31
a. legally	31
b. illegally	31
9. Value to individual	31
B. Narcotics	31
1. Opiates	31
a. Opium	31
(1) Effects on the body	31
(a) physical	31

TABLE OF CONTENTS (continued)

	<u>Page</u>
(b) psychological	31
(2) Legal use	31
(3) Illegal use	31
(4) Method taken and dosage	31
(5) Slang terms	31
(6) Identification	33
(7) Where obtained	33
(8) Derivatives	33
b. Morphine	33
(1) Effects on the body	33
(a) physical	33
(b) psychological	33
(2) Legal use	33
(3) Illegal use or abuse	33
(4) Method taken	33
(5) Slang terms	33
(6) So commonly abused	33
(7) Identification	33
(8) Where obtained	33

TABLE OF CONTENTS (continued)

	<u>Page</u>
(9) Value to individual	33
c. Heroin	35
(1) Effects on the body	35
(a) physical	35
(b) psychological	35
(2) Legal use	35
(3) Illegal use or abuse	35
(4) Method taken	35
(5) Slang terms	35
(6) Identification	35
(7) Where obtained	35
(a) drug itself	35
(b) traffic to U.S..	35
(8) Value to individual	35
d. Codeine	35
(1) Effects on the body	35
(a) physical	37
(b) psychological	37
(2) Legal and medical use	37

TABLE OF CONTENTS (continued)

	<u>Page</u>
(3) Illegal use or abuse	37
(4) Method taken	37
(5) Slang terms	37
(6) Identification	37
(7) Where obtained	37
(a) drug itself	37
(b) traffic in U.S. or city	37
e. Percodan	37
f. Demerol	37
g. Methadone	37
h. Alcohol	37
V. Volatile Chemicals	37
A. Most common types abuse	37
B. Effects on the body	39
1. physical	39
2. psychological	39
C. Legal and medical use	39
D. Method taken and abuse	39
E. Slang terms	39

TABLE OF CONTENTS (continued)

	<u>Page</u>
F. Identification	39
G. Where obtained	39
VI: Stimulants	39
A. Amphetamines	39
1. Most common commercial names of abused	39
2. Effects on the body	39
a. physical	39
b. psychological	39
3. Legal use and dosage	39
4. Illegal use or abuse	39
5. Slang terms	39
6. Identification	39
7. Value to individual	39
B. Cocaine	41
1. Effects on the body	41
a. physical	41
b. psychological	41
2. Legal use	41
3. Method taken and abuse	41

TABLE OF CONTENTS (continued)

4. Slang terms

5. Identification

6. Where obtained

7. Value to individual

VII. Teacher information

VIII. Glossary

ALCOHOL

I. Introduction

 A. Importance of learning about alcohol

 1. To better understand its.

 a. social effects

 b. economic effects

 c. biological effects

 d. nature and uses

II. Meaning of the word "alcohol"

 A. In the 16th century

 B. Scientific meaning

 C. Beverage

 D. Other meanings

TABLE OF CONTENTS (continued)

	<u>Page</u>
.....	41
.....	41
.....	41
.....	41
.....	43
.....	91
.....	94
.....	94
.....	94
.....	94
.....	94
.....	94
.....	94
.....	94
.....	94
.....	94
.....	94
.....	94
.....	94
.....	94
.....	94
.....	94
.....	94

TABLE OF CONTENTS (continued)

- 1. Solvent
- 2. Personal meaning
- III. History of Alcohol.
 - A. Discovery
 - 1. Date
 - 2. Essentials needed for the discovery of alcohol
 - B. Early civilizations
 - 1. Egypt
 - 2. Greece
 - 3. Sparta
 - 4. Rome
 - C. Distillation
 - 1. Discovery
 - 2. Name
 - D. American history
 - 1. North American Indians
 - 2. Westward movement
 - 3. Slave trade
 - 4. Prohibition

TABLE OF CONTENTS (continued)

	<u>Page</u>
IV. Nature of Alcohol	102
A. Chemical	102
1. Composition	102
2. Kinds	102
3. Chemical formulas	102
4. Similarity to water	102
5. Toxic effect	102
B. Physical	102
C. Biological Aspects	104
V. Manufacture of Alcohol	104
A. Fermentation	104
1. Breakdown of sugar by yeast	104
2. Raw materials	106
3. Products	106
4. Malting	106
B. Destructive Distillation	106
1. Methyl	106
2. Ethyl	106

TABLE OF CONTENTS (continued)

C. Fractional Distillation

 1. Concentration of wines and beer

 2. Repeated distillation

D. Production of different whiskies

 1. Bourbon

 2. Rye

 3. Bonded whiskey

VI. Physiological Aspects of Alcohol

 A. Alcohol as a food

 B. Alcohol as a drug

 C. Alcohol as a food (body processes)

 D. Alcohol as a drug (body organs affected)

 E. Prolonged use of alcohol

VII. Teacher information

VIII. Teacher and student information

IX. Student information

X. Glossary

Culminating Activities

TABLE OF CONTENTS (continued)

	<u>Page</u>
ion	108
wines and beer	108
lation	108
rent whiskies	108
.	108
.	108
.	108
f Alcohol	108
.	108
.	110
body processes)	110
body organs affected)	112
cohol	114
.	116
ormation	130
.	135
.	148
.	151

I
I
I
I
I
I
I
I
I
I
I
I
I
I
I

TABLE OF CONTENTS (continued)

Evaluation

Sources of Information

Bibliography

TABLE OF CONTENTS (continued)

	<u>Page</u>
.....	152
.....	153
.....	156

INTRODUCTION

Americans have a tradition of popular concern for social welfare and reform, has extended over a period of almost 200 years. At the present time there are many areas of welfare which the American people are concerned with.

Some welfare problems have been corrected or improved by legislation, economic and social adjustment. The basis for all methods of control of social problems is education.

Three topics that are best approached by education are the uses of alcohol, drugs, and tobacco. Due to their general acceptance by the general public in the United States, other methods of control have been slow or ineffective.

Education of the public will not solve all of these problems. By introducing the public and letting them evaluate and derive their own conclusions, we at least have a start. Scientists in the fields of physiology, biochemistry, psychology, and sociology have gained a great amount of knowledge on the subjects of alcohol, drugs, and tobacco that truly inform the public of the problems involved.

Information on these topics is available in the form of books, pamphlets, television, magazines, and newspapers. Educators now have the means to approach the problems of drug use and drinking. Because of the variations in attitudes and backgrounds of the students and their needs and personal attitudes of the individuals. As teachers, we must attempt to deal with these topics: drugs, alcohol, and tobacco. Students need the opportunity to explore these issues not only their own feelings but, also, the facts and attitudes regarding the use of drugs and tobacco, that circulate in our culture.

"The federal funds in this project were provided by ESEA Title III. Title III of the Elementary and Secondary Education Act is designed to encourage the development of new ideas, to support innovations in education through exemplary programs and to supplement existing programs.

INTRODUCTION

of popular concern for social welfare and reform, a concern which has existed for many years. At the present time there are many areas of social concern which are not concerned with.

These problems have often been corrected or improved by legislation, economic correction, or other methods of control of social problems is education.

Problems which are approached by education are the uses of alcohol, drugs, and tobacco. In the general public in the United States, other methods of control have

not solved all of these problems. By introducing the facts to the public and allowing them to derive their own conclusions, we at least have a fighting chance. The fields of medicine, biochemistry, psychology, and sociology have gathered a significant amount of information about alcohol, drugs, and tobacco that truly inform the users of the risks

This information is available in the form of books, pamphlets, technical articles, and the like. We now have the means to approach the problems of drug use, smoking, and alcoholism in attitudes and backgrounds of the students and the public, and to help individuals. As teachers, we must attempt to deal objectively with these problems. Students need the opportunity to explore and analyze these problems, the facts and attitudes regarding the use of drugs, alcohol, and tobacco.

The materials for this project were provided by ESEA Title III. Title III of the Elementary and Secondary Education Act is intended to encourage the development of new ideas, to demonstrate worthwhile programs, to develop pilot programs and to supplement existing programs."

OBJECTIVES

GENERAL

To present the facts of tobacco, alcohol, and drugs to the students in such a manner that is beneficial in helping them to make personal decisions regarding its use.

KNOWLEDGE

TOBACCO

General

Smoking is recognized as a leading cause of cancer and is a prime factor in respiratory diseases.

Specific

Smoking is the nation's No. 1 habit.

Habits start oftentimes when a person is young and once started, are hard to break.

Tobacco smoke contains many poisons.

Smoking has a deteriorating effect on the normal body process.

Smoking is a major cause of poor blood circulation.

The public is being made aware of the dangers of smoking.

The reason adults smoke is normally different from those of teenagers.

The death rates of smokers is considerably higher than those of non-smokers.

Cigarette advertising is designed to influence people to smoke.

The increase in lung cancer is proportioned to the increase in cigarette smoking.

Correct decisions made early in life tend to minimize those of later life.

OBJECTIVES

GENERAL

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KNOWLEDGE

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fe tend to minimize those of later life.

OBJECTIVES (continued)

Smokers are subject to more common illnesses than non-smokers.

The smoking habit can be quite costly in \$ and ¢.

DRUGS

General

To show students proper and improper use of drugs.

To show how the different drugs effect the body.

To show how the use of drugs effects us socially and monetarily.

To show how drug abuse is becoming a major problem to society, which includes a

Specific

To show the students the dangers of drugs.

To show the type of life to be endured as a result of drug abuse.

The reason why people turn to drugs.

How easy it is to start using drugs.

No drug should be taken unless prescribed by a physician. Purchase of "over-the-counter" drugs should be supervised by parents.

Everyone has problems at one time or another, but the abuse of drugs and the drug problems.

Habits developed while using drugs are very difficult to break.

OBJECTIVES (continued)

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r another, but the abuse of drugs and the drug world will not solve

are very difficult to break.

OBJECTIVES (continued)

ALCOHOL

General

To inform students about the nature of alcohol and to give a realistic concept of it.

Specific

To understand that we study about drugs because they may affect the quality and quantity of life.

Alcohol means many things to many people.

There are many types of alcohol.

Alcohol has been used by man for many years.

Men in the past have had problems with alcohol.

Many early cultures controlled excessive drinking by social bans.

Cultural ideas about drinking change and can be changed.

The national prohibition law was not approved by most of the people.

Chemically, alcohol is related to organic compounds that make up the structure of a living cell.

All alcohols are compounds with a C atom attached to an OH group.

Alcohol has a constant vapor pressure.

All alcohols are toxic to some degree.

Alcoholic beverages are made by the fermentation of sugar by yeast.

Starches can be changed into sugar by malting.

Alcohol can be produced by destructive distillation.

OBJECTIVES (continued)

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into sugar by malting.

by destructive distillation.

OBJECTIVES (continued)

Alcohol is oxidized only in the liver.

No digestion of alcohol is necessary.

The greatest effect of alcohol on the body is the depressant action on the nervous system.

Alcohol affects the brain in a precise pattern.

The heart rate is increased by alcohol.

The effects of alcohol vary because of several factors.

Prolonged use of alcohol may encourage deterioration of health.

OBJECTIVES

SKILLS

- To develop the ability to discriminate between fact and fiction.
- To develop the ability to critique audiovisual and printed materials with o
- To differentiate between use, misuse, and abuse of alcohol, tobacco, and dr
- To promote understanding of the scope and nature of their use and abuse on
- To increase the knowledge of federal and state regulations regarding the us
- To develop a sense of personal worth and integrity.
- To exercise control as well as freedom of verbal and non-verbal expressions
- To increase the self-awareness of mental and physical conditions, feelings,
- To develop decision-making skills.
- To develop the appreciation of and respect for the decisions of others.
- To take notes.
- To promote discussion.
- To promote library usage.
- To promote organization of ideas and concepts into logical patterns.
- To increase facility in handling new vocabulary.

OBJECTIVES

SKILLS

Ability to discriminate between fact and fiction.

Ability to critique audiovisual and printed materials with objectivity.

Understanding of the difference between use, misuse, and abuse of alcohol, tobacco, and drugs.

Understanding of the scope and nature of their use and abuse on family and community life.

Knowledge of federal and state regulations regarding the use of alcohol, tobacco, and drugs.

Understanding of personal worth and integrity.

Understanding of freedom of verbal and non-verbal expressions of emotions and behavior.

Self-awareness of mental and physical conditions, feelings, and sensations.

Decision-making skills.

Appreciation of and respect for the decisions of others.

Conclusion.

Usage.

Organization of ideas and concepts into logical patterns.

Proficiency in handling new vocabulary.

OBJECTIVES (continued)

ATTITUDES

Student

To develop within the individual student a wholesome outlook on the use of substances; an attitude founded on thought and self-realization of the individuality of his own actions.

To develop in the student the understanding of his responsibilities to himself, his community, and the society which controls and influences him.

To develop an appreciation for maintaining good health habits.

To develop an appreciation for maintaining good health habits.

Habits are learned, not inborn, and now is the time to learn good ones.

To understand their personal needs and how they can be fulfilled without resorting to tobacco, and drugs.

To develop and understand the effects of alcohol, tobacco, and drugs on the body.

To develop in the student the realization that one's life can be more satisfying through active interest in others.

To develop an understanding of the scope of the problem and the cause of the disease.

To develop the understanding in the student that he does not need tobacco, alcohol, or drugs to achieve a sense of belonging, status, or to meet other emotional needs.

To promote discriminate use of alcohol, drugs, and tobacco.

To understand and appreciate the human body.

To understand the problems of the human body.

To develop a good understanding of what society accepts about alcohol, drugs, and tobacco.

To develop a realization of the hazards of social influences that lead to alcohol and tobacco abuse.

OBJECTIVES (continued)

ATTITUDES

Individual student a wholesome outlook on the use of subject without bias or
based on thought and self-realization of the individual assuming the responsi-

the understanding of his responsibilities to himself, his family, his
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nding of what society accepts about alcohol, drugs, and tobacco.

of the hazards of social influences that lead to alcohol, drugs, and

OBJECTIVES (continued)

To aid the child to make use of his senses in improving his power of discrimination.

To help the student make the correct decisions when under pressures and temptations.

Teacher

Respect the opinions of all of your students; do not let them turn you off.

Avoid scare technique.

Avoid the head-on approach of an attitude you want to change.

Don't fake answers, be prepared to say, "I don't know."

Keep lines of communication open.

Approach changing attitudes through the subtle and unconscious approach.

Do not moralize or preach about the evils of using drugs, alcohol, or tobacco; outline the facts and let the students make their own decisions.

TEACHING HINTS FOR SLOW AND RAPID LEARNERS

Slow

Set activities should be maintained while allowing for variation.

Start with a formal routine opening.

Mix: formal-informal, active and quiet, group and individual.

Cartoon materials are very good to keep pupil interest.
Tane Press material is cartoon oriented.

Arouse curiosity with small buzz groups, material that is on his level of reading.

Have students collect newspaper articles related to alcohol, drugs, and tobacco.

Fast

Assign more advanced material for reports such as: reading why alcohol, drug

Interview A.A., law enforcement, and American Cancer Society people and reports.

Set up panel discussions on alcohol, drugs, and tobacco.

Crime associated with these

Social problems.

Family problems

TEACHING HINTS FOR SLOW AND RAPID LEARNERS

be maintained while allowing for variation.

outine opening.

, active and quiet, group and individual.

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newspaper articles related to alcohol, drugs, and tobacco.

material for reports such as: reading why alcohol, drugs, and tobacco are abused.

enforcement, and American Cancer Society people and report on these interviews.

ons on alcohol, drugs, and tobacco.
with these

TOBACCO

Concepts

Teacher Materials

- I. Smoking is the nation's number one leading habit. It is started oftentimes early in life. All habits are started by making a decision. This unit will be concerned with tobacco and its many ramifications.

"Smoking - The Great Dilemma"
"What We Know About Children and Smoking"
Film: "Cigarettes and Health, Challenge to Educators"

- A. The past history of tobacco has led it to be a serious habit.

"Summaries and Conclusions - Smoking or Health - Report of the Advisory Committee to the Surgeon General"

Tobacco and Health, A Handbook for Teachers

- B. People are lead and motivated to smoke for many reasons. (influencing factors)

"Cigarettes and the Schools"

Teacher Materials

Student Materials

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ll be con-
its many

"Smoking - The Great Dilemma"
"What We Know About Children
and Smoking"
Film: "Cigarettes and Health,
Challenge to Educators"

"My Dear, This'll Kill
You"

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serious

"Summaries and Conclusions -
Smoking or Health - Report
of the Advisory Committee
to the Surgeon General"
Tobacco and Health, A Handbook
for Teachers

"Smoking - It's Up To You"

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"Cigarettes and the Schools"

"Here Is The Evidence, You
Be The Judge"

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Audio Visual

Motivating Questions

Posters:

Decision, Decision, Decision ...

Is It Worth It?

Filmstrip w/record:

"Smoking or Health"

Films:

"Smoking: Past and Present"

"The Huffleless, Puffless Dragon"

"A Time For Decision"

What habits do you have which affect the everyday behavior of your life?

How did you acquire these habits?
a. constant repetition
b. by repeating it once or twice

Are all habits bad?

Are habits related to decisions? How?

What factors do you feel had a great impact on tobacco as a major product for consumption?

Do you feel the information we have on tobacco today about its effects were known 100 years ago and that the tobacco industry would be one of the nation's leading businesses today?

Did tobacco people really know what they were doing when they set up factories?

Did the history of the South lead to the present use of tobacco on such a large scale?

Motivating Questions

Activities

Decision ... What habits do you have which affect the everyday behavior of your life?

How did you acquire these habits?

- a. constant repetition
- b. by repeating it once or twice

Are all habits bad?

Are habits related to decisions?
How?

Present" What factors do you feel had a great impact on tobacco as a major product for consumption?

Do you feel the information we have on tobacco today about its effects were known 100 years ago and that the tobacco industry would be one of the nation's leading businesses today?

Have students research tobacco to find reasons why it became the nation's leading habit.

Dragon" Did tobacco people really know what they were doing when they set up factories?

on" Did the history of the South lead to the present use of tobacco on such a large scale?

TOBACCO (continued)

Concepts

Teacher Materials

II. In the chemical make-up of cigarettes, there are numerous chemicals which are harmful to one's body.

"Summary and Conclusion, Smoking and Health - Report of the Advisory Committee to the Surgeon General"

Tobacco and Health, A Handbook for Teachers

Teacher Materials

Student Materials

ake-up of
are numerous
re harmful

"Summary and Conclusion, Smoking
and Health - Report of the Advisory
Committee to the Surgeon General"

"The Cigarette, A Dubious
Companion"

Tobacco and Health, A Handbook
for Teachers

Audio Visual	Motivating Questions	Activities
Posters:	From personal observation, why do you think people smoke?	Have the student people who smoke responses to the for discussion.
Anti-Smoking	What methods do television commercials use to sell their cigarettes? Is the propaganda one-sided?	Collect cigarette ments from news zines and discu
Pro-Smoking	Do you feel the ads for cigarettes tell the truth about cigarettes and its real effect on the human body?	Discuss the ant campaigns now s vision and in t and magazines.
	What are the most common substances found in tobacco smoke?	Make posters wh in the campaign and display the finished.
	Why do you feel that some brands have tar and nicotine content listed on the package?	Have students r chemical make-u and discuss the
	Do you feel that one of the reasons why some people smoke pipes is to cut down on the amount of tars and nicotines?	Use the mechani machine.
	What effect do filters have on the amount of tars and nicotine that is consumed in one's lungs?	

Motivating Questions

From personal observation, why do you think people smoke?

What methods do television commercials use to sell their cigarettes? Is the propaganda one-sided?

Do you feel the ads for cigarettes tell the truth about cigarettes and its real effect on the human body?

What are the most common substances found in tobacco smoke?

Why do you feel that some brands have tar and nicotine content listed on the package?

Do you feel that one of the reasons why some people smoke pipes is to cut down on the amount of tars and nicotines?

What effect do filters have on the amount of tars and nicotine that is consumed in one's lungs?

Activities

Have the students question people who smoke and bring responses to the classroom for discussion.

Collect cigarette advertisements from newspapers and magazines and discuss their influence.

Discuss the anti-smoking campaigns now seen on television and in the newspapers and magazines.

Make posters which will help in the campaign against smoking and display them when they are finished.

Have students research the chemical make-up of cigarettes and discuss their findings.

Use the mechanical smoking machine.

TOBACCO (continued)

<u>Concepts</u>	<u>Teacher Materials</u>
III. Through clinical research it has been found that smoking is injurious to the health of the human body.	"Cancer Invades the Beleaguered Lungs"
A. Cancer	<u>Tobacco and Health, A Handbook for Teachers</u> <u>Cancer Statistics for 1970</u> <u>Cancer Word Book</u>
B. Respiratory Disease	"Emphysema" "Cigarette Smoking - Chronic Bronchitis and Emphysema"
C. Heart Disease - Others	"The Facts About Smoking and Health"
IV. It has been shown that smoking is hazardous to health and vast amounts of action is being taken to educate the public.	"Cigarettes - America's No. 1 Public Health Problem"

d)

ical research it
and that smoking
s to the health of
ody.

Teacher Materials

"Cancer Invades the Beleaguered Lungs"

Tobacco and Health, A Handbook for Teachers

Cancer Statistics for 1970

Cancer Word Book

"Emphysema"

"Cigarette Smoking - Chronic Bronchitis and Emphysema"

"The Facts About Smoking and Health"

"Cigarettes - America's No. 1 Public Health Problem"

tory Disease

isease - Others

shown that smoking
s to health and vast
action is being taken
the public.

Student Materials

"Cancer of the Larynx"

"Shortness of Breath, The Facts"

"Chronic Bronchitis, The Facts"

"Where There's Smoke, There's Danger From Heart Disease"

"What Everybody Should Know About Smoking and Heart Disease"

"U.S. Government Wants You To Know"

Audio Visual	Motivating Questions	Activities
Film: "Is Smoking Worth It?" (A report to youth)	Have you ever witnessed someone whose health was impaired as a result of smoking?	Use the manik discussion on of tars and n
Poster: Cancer Poster	Do you feel that smoking does cause cancer?	Discuss the p the materials lungs.
Filmstrip: "Nature's Filter"	Do you feel that all the talk about cancer is a scare tactic?	Demonstration "The Smoking Experiments"
Films:	What are some examples of life situations that may lead you to believe that smoking is bad for the respiratory system?	Use the smoki demonstrate t found in ciga
"Smoking and You"	In what way does smoking cause breathing problems?	
"Tobacco and the Human Body"	What effect does nicotine and tar have on the heart?	
"Getting Through"	When smoking a cigarette, is there an immediate effect on the heart?	Have students smoking ads.
"Getting Through"	What types of heart diseases are often associated with smoking?	Review televi commercials.
"Getting Through"	What new type of cigarette ads do you see on T.V.?	Research conc money spent o and compare t
Poster: I Don't Smoke	Why was the Advisory Committee to the Surgeon General formed? By whose request? When?	

Motivating Questions

Have you ever witnessed someone whose health was impaired as a result of smoking?

Do you feel that smoking does cause cancer?

Do you feel that all the talk about cancer is a scare tactic?

What are some examples of life situations that may lead you to believe that smoking is bad for the respiratory system?

In what way does smoking cause breathing problems?

What effect does nicotine and tar have on the heart?

When smoking a cigarette, is there an immediate effect on the heart?

What types of heart diseases are often associated with smoking?

What new type of cigarette ads do you see on T.V.?

What is the message that these new ads are trying to project?

Why was the Advisory Committee to the Surgeon General formed? By whose request? When?

Activities

Use the manikin to stimulate discussion on the collection of tars and nicotine in the lungs.

Discuss the possible dangers of the materials collecting in the lungs.

Demonstration: #1

"The Smoking and Health Experiments"

Use the smoking machine to demonstrate the residue found in cigarette smoke.

Have students discuss the anti-smoking ads.

Review television anti-smoking commercials.

Research concerning amount of money spent on tobacco in 1969 and compare this amount with that

TOBACCO (continued)

Concepts

Teacher Materials

Student

Teacher Materials

Student Materials

Audio Visual

Motivating Questions

Activities

Who was on this committee?

spent on
and church

What work is being done by the
American Cancer Society and the
American Heart Association to
inform people about smoking?

Organize
discuss
the American

Smoking is a costly habit. Is
it worth it?

Motivating Questions

Who was on this committee?

What work is being done by the American Cancer Society and the American Heart Association to inform people about smoking?

Smoking is a costly habit. Is it worth it?

Activities

spent on education, highways, and churches.

Organize a student panel discussion on "The Work of the American Heart Association."

V. TEACHER INFORMATION

DISEASES DIRECTLY RELATED TO SMOKING

- A. Cancer
 - 1. Lung
 - 2. Larynx (voice box)
 - 3. Lip
 - 4. Esophagus
 - 5. Mouth
 - 6. Pharynx (throat)
 - 7. Cheek
 - 8. Urinary bladder
- B. Respiratory Diseases
 - 1. Chronic bronchitis
 - 2. Emphysema
 - 3. Chronic bronchopulmonary
- C. Cardiovascular Diseases
 - 1. Coronary artery disease
 - 2. Coronary heart disease
 - 3. Buerger's disease
- D. Others
 - 1. Peptic ulcer
 - 2. Sinusitis

VI. GLOSSARY

ammonia	Colorless, pungent gas compound of nitrogen and hydrogen— NH_3 ; medicine, and as a strong cleaning fluid
arsenic	a silvery-white, brittle, very poisonous chemical; compounds of insecticides, glass, medicines; arsenic trioxide has no taste
cancer	a malignant growth of tissue, usually ulcerating, tending to spread; causes general ill health; a carcinoma or sarcoma
carbon monoxide	compound of carbon and oxygen; given off in car exhaust; produced by combustion of any carbonaceous material
carcinoma	any of several kinds of epithelial cancer
Cardiac	of or near the heart; relating to the upper part of the stomach
cardiovascular disease	disease of the vessels of the heart
cell	small microscopic mass of protoplasm; performs life functions
chronic bronchitis	inflammation of the bronchial tubes; continuing for a long time
cilia	hairlike process found on many cells; capable of vibratory or lashing movements
coronary	pertaining to either of two arteries—right or left—which arise from the base of the heart
coronary artery disease	disease of the above mentioned arteries
decision	the act of making up one's mind; a judgment or conclusion reached after deciding or settling a question
depressant	lowering the rate of muscular or nervous activity
emphysema	an abnormal swelling of the alveoli of the lungs or the tissue between them

VI. GLOSSARY

Colorless, pungent gas compound of nitrogen and hydrogen-- NH_3 ; used in fertilizers, medicine, and as a strong cleaning fluid

a silvery-white, brittle, very poisonous chemical; compounds of it are used in making insecticides, glass, medicines; arsenic trioxide has no taste

a malignant growth of tissue, usually ulcerating, tending to spread, and associated with general ill health; a carcinoma or sarcoma

compound of carbon and oxygen; given off in car exhaust; produced by the incomplete combustion of any carbonaceous material

any of several kinds of epithelial cancer

of or near the heart; relating to the upper part of the stomach

disease of the vessels of the heart

small microscopic mass of protoplasm; performs life functions

inflammation of the bronchial tubes; continuing for a long time

hairlike process found on many cells; capable of vibratory or lashing movement

pertaining to either of two arteries--right or left--which arise from the aorta to supply tissue of the heart

disease of the above mentioned arteries

the act of making up one's mind; a judgment or conclusion reached or given; the act of deciding or settling a question

lowering the rate of muscular or nervous activity

an abnormal swelling of the alveoli of the lungs or the tissue connecting the alveoli

GLOSSARY (continued)

	of the lungs
formaldehyde	poison frequently used as a disinfectant
habit - custom - practice	an inclination for an action acquired by repetition
hazard	risk; danger; peril
hydrogen cyanide	poisonous gas; used in execution of criminals
hydrogen sulfide	poisonous gas; smell of rotten eggs (Yellowstone Park)
insecticide	preparation for destroying insects
lung cancer	cancer of the lungs
maturity	state or quality of being developed
nicotine	$C_{10}H_{14}N_2$ --colorless, oily poison used as insecticide; leaves
sarcoma	form of cancer arising from nonepithelial tissue such tissue, cartilage or bone
stimulant	something which arouses or excites--spurs on
tar	material that stains the inside of a smoker's lungs a thick, sticky brown to black liquid with a pungent od distillation of wood, peat, shale; tars are produced derivatives; used in preserving surfaces and organic
tobacco	products such as cigars, cigarettes, and snuff prepar plant which belongs to the nightshade family

GLOSSARY (continued)

lungs
requently used as a disinfectant
nation for an action acquired by repetition
nger; peril
as gas; used in execution of criminals
as gas; smell of rotten eggs (Yellowstone Park)
tion for destroying insects
of the lungs
r quality of being developed
2--colorless, oily poison used as insecticide; stimulant drug; found in tobacco
cancer arising from nonepithelial tissue such as connecting tissue, lymphatic
cartilage or bone
ng which arouses or excites--spurs on
l that stains the inside of a smoker's lungs and acts as a slow tissue poison;
sticky brown to black liquid with a pungent odor; obtained by the destructive
ation of wood, peat, shale; tars are produced of hydrocarbons and their
ives; used in preserving surfaces and organic compounds
s such as cigars, cigarettes, and snuff prepared from the leaves of the tobacco
hich belongs to the nightshade family

DRUGS

Concepts	Teacher Materials	Students
I. A. To follow up sixth grade curriculum	A variety of materials to bring forth these concepts from different point of view	Materials can be gotten and a
B. To give students a good biological understanding of drugs and terms		
C. To saturate students with terms, proper use and misuse they will encounter		
D. So students can make an intelligent decision as to what they want to do		
E. To expose them to all terms and drugs of use and misuse		
II. Terms (define for students)	"The Up and Down Drugs"	<u>Drug</u>
A. Drugs	"Let's Talk About Drugs"	for T
B. Drug dependency	<u>Drug Abuse Education</u>	"Living
1. physical	"Fact Sheets"	"Fact
2. psychological	"Barbiturates"	"Stud
3. addiction		(P
4. habituation	"Young Scientists Look at Drugs"	"Drug
C. Illusion	"How Safe Are Our Drugs"	Cop-O
D. Hallucination	"Drugs and Your Body"	
E. Withdrawal sickness		

	Teacher Materials	Student Materials
sixth grade	A variety of materials to bring forth these concepts from different point of view	Materials that the students can understand the use to get the proper idea on use and abuse
nts a good understanding terms		
tudents with use and misuse counter		
can make an decision as to what to do		
em to all terms use and misuse		
or students)	"The Up and Down Drugs"	<u>Drug Abuse - A Source Guide for Teachers</u>
	"Let's Talk About Drugs"	"Living Death"
ncy	<u>Drug Abuse Education</u>	"Fact Sheets"
gical	"Fact Sheets"	"Students and Drug Abuse" (Reprint)
n	"Barbiturates"	"Drug Abuse: The Chemical Cop-Out" (Good for research)
ion	"Young Scientists Look at Drugs"	
n	"How Safe Are Our Drugs"	
ickness	"Drugs and Your Body"	

Audio Visual	Motivating Questions	Activities
Films to put forth these concepts	Why are drugs misused?	Do bulleti following
Filmstrips that will bring out the true facts	Does it do any harm to discuss drug misuse and abuse?	Diffe
Transparencies to help support all of these points	Do people start abusing drugs through ignorance?	Reaso
	What do we mean by the drug problem?	How d or us
	When a person abuses or uses drugs illegally, is it only his business or the concern of everyone?	
Film: "Drugs and the Nervous System"	How do drugs affect our lives?	Do bulleti
Transparencies:	What stimulants or depressants have you taken or come in contact with?	Drugs by st have
"Comparison of different units of measure"	Have you ever seen an illusion?	Diffe illus
D-7 - #1 - #5	Do you know anyone who is psycho- logically addicted to drugs or anything?	
	What is drug use?	
	What do abuse, misuse, habitua- tion, and dependency mean?	

Motivating Questions

Activities

Why are drugs misused?

Do bulletin boards on the following subjects:

Does it do any harm to discuss drug misuse and abuse?

Different drugs

Do people start abusing drugs through ignorance?

Reason against abuse

What do we mean by the drug problem?

How drugs are obtained or used illegally

When a person abuses or uses drugs illegally, is it only his business or the concern of everyone?

How do drugs affect our lives?

Do bulletin boards showing:

What stimulants or depressants have you taken or come in contact with?

Drugs that have been used by students or that students have been exposed to

Have you ever seen an illusion?

Different ideas between illusion and hallucination

Do you know anyone who is psychologically addicted to drugs or anything?

What is drug use?

What do abuse, misuse, habituation, and dependency mean?

DRUGS (continued)

Concepts	Teacher Materials	Student
F. Psychotic	"Living Death" (very good on withdrawal)	
G. Medical uses		
H. Relationship of millogram-microgram	"Students and Drug Abuse" (Reprint)	
I. Depressant	"Drug Abuse: The Chemical Cop-Out"	
J. Stimulant		
K. Hallucinogen		
III. Hallucinogens	<u>Drugs From A-Z, A Dictionary</u>	"Why
A. Marijuana	<u>Marijuana</u>	<u>Marij</u> on rep
1. Effects on the body	<u>Marijuana: Social Benefit or Social Detriment</u>	<u>Drugs</u>
a. physical		
b. psychological	"The Dangers of Marihuana: Facts You Should Know"	<u>Drug A</u> <u>For Te</u>
2. Legal use (if any)		
3. Illegal use or abuse (Is there much general abuse?)	"Have You Ever Been Convicted of a Felony? (Reprint)"	"What
4. Method taken and dosage	"Restricted Drugs: For Use by Law Enforcement Agencies"	
5. Slang terms	"What About Marijuana?"	
6. Most common type abused	"Narcotics and Dangerous Drugs"	
7. Identification	<u>Drug Abuse - A Source Guide For Teachers</u>	

Teacher Materials

Student Materials

"Living Death" (very good
on withdrawal)

"Students and Drug Abuse"
(Reprint)

"Drug Abuse: The Chemical
Cop-Out"

Drugs From A-Z, A Dictionary

Marijuana

Marijuana: Social Benefit or
Social Detriment

"The Dangers of Marihuana: Facts
You Should Know"

"Have You Ever Been Convicted
of a Felony? (Reprint)"

"Restricted Drugs: For Use by
Law Enforcement Agencies"

"What About Marijuana?"

"Narcotics and Dangerous Drugs"

Drug Abuse - A Source Guide For
Teachers

"Why Not Marijuana?"

Marijuana (a good research
on reports by students)

Drugs From A-Z, A Dictionary

Drug Abuse - A Source Guide
For Teachers

"What About Marijuana?"

Audio Visual	Motivating Questions	Activities
	Why do people abuse drugs? What is tolerance?	
Film: "Marihuana" Filmstrips: "Why Not Marijuana?" "Marijuana: What Can You Believe?" Winston Identification Kit Folder: "Drugs of Abuse" (Good for identification of all drugs)	How does marijuana affect you physically? Why do people use marijuana? What are the effects of constant, long-term use? How is it obtained? In U.S.? By pusher? By user? How is it used by abuser? Do certain types of people use it? If anyone uses it, do they become stereotyped, or is it an actuality? What area of the body does it affect the most?	Have student bulletin for marij Give extra work for Have "bus Marijuana Have rep (Probably presented
Transparencies: D-7 - #6, #7-#12		

Motivating Questions

Activities

Why do people abuse drugs?

What is tolerance?

How does marijuana affect you physically?

Why do people use marijuana?

What are the effects of constant, long-term use?

How is it obtained? In U.S.?
By pusher? By user?

How is it used by abuser?

Do certain types of people use it?

If anyone uses it, do they become stereotyped, or is it an actuality?

What area of the body does it affect the most?

Have students organize a bulletin board on slang terms for marijuana.

Give extra credit for extra work for posters on marijuana.

Have "buzz" groups on "Alcohol, Marijuana, Which Is Worse?"
Have reports on discussions. (Probably use after you have presented most of the material.)

DRUGS (continued)

Concepts	Teacher Materials	Stu
8. Where obtained	"Why Not Marijuana?"	
a. drug itself	"Marijuana - Some Questions and Answers"	
b. traffic to U.S. or city		
9. Value to individual		
10. Results from long-term use		
B. LSD - rye plant fungus (ergot)	"LSD: The False Illusion"	"LS
1. Effects on the body	<u>The LSD Story</u>	Dr
a. physical	"LSD: Trip or Trap?"	"Na
b. psychological		
2. Legal use (if any)	<u>Drugs: A-Z Dictionary</u>	
3. Illegal use or abuse (Is there much general abuse?)	<u>Drug Abuse - A Source Guide For Teachers</u>	
4. Method taken and dosage	"Narcotics and Dangerous Drugs"	
5. Slang terms		
6. Most common type abused		
7. Identification		
8. Where obtained		
a. drug itself		

	Teacher Materials	Student Materials
obtained	"Why Not Marijuana?"	
drug itself	"Marijuana - Some Questions and Answers"	
traffic to U.S. or city		
to individual		
ts from long-term		
plant fungus (ergot)	"LSD: The False Illusion"	"LSD: Trip or Trap?"
ts on the body	<u>The LSD Story</u>	<u>Drugs: A-Z Dictionary</u>
physical	"LSD: Trip or Trap?"	"Narcotics and Dangerous Drugs"
psychological	<u>Drugs: A-Z Dictionary</u>	
use (if any)	<u>Drug Abuse - A Source Guide For Teachers</u>	
al use or abuse (Is it much general?)	"Narcotics and Dangerous Drugs"	
od taken and dosage		
g terms		
common type abused		
tification		
e obtained		
drug itself		

Audio Visual	Motivating Questions	Activities
	Is there a case for legalization of marijuana?	
	Does it build up a tolerance?	
Film: "LSD"	Does it cause physical or psychological dependency?	Have students record the effects can
Filmstrips:		
"LSD: The Acid World"	Where do we get LSD?	Do a bulletin board about people who
"LSD: Trip or Trap?"	What is the true name of LSD?	
	What does it look and taste like?	
Transparencies:		
"Example of Comparison"	Does it come in different forms?	
D-7 - #13-#16, #17	What does an LSD trip amount to?	
Winston Identification Kit	Is it the strongest of the hallucinogens?	
	What effect of LSD causes it to be abused?	
	Can a person die from an overdose?	
	Is tolerance built up?	

Motivating Questions

Activities

Is there a case for legalization of marijuana?

Does it build up a tolerance?

Does it cause physical or psychological dependency?

Where do we get LSD?

What is the true name of LSD?

What does it look and taste like?

Does it come in different forms?

What does an LSD trip amount to?

Is it the strongest of the hallucinogens?

What effect of LSD causes it to be abused?

Can a person die from an overdose?

Is tolerance built up?

Have students report on how the effects can be harmful.

Do a bulletin board on articles about people who have taken LSD.

DRUGS (continued)

Concepts	Teacher Materials	Student
<ul style="list-style-type: none"> b. traffic to U.S. or city 9. Value to individual 10. Results from long-term use 		
<p>C. Mescaline (peyote cactus)</p> <ul style="list-style-type: none"> 1. Effects on the body <ul style="list-style-type: none"> a. physical b. psychological 2. Legal use (if any) 3. Illegal use 4. Method taken 5. Slang terms 6. Identification 7. Where obtained 	<p>"Narcotics and Dangerous Drugs"</p> <p><u>Drugs: A-Z Dictionary</u></p> <p>"Fact Sheets"</p>	<u>Drugs:</u>
<p>D. STP - Dom</p> <ul style="list-style-type: none"> 1. Effects on the body <ul style="list-style-type: none"> a. physical b. psychological 2. Illegal use (Is it commonly abused?) 	<p>"Narcotics and Dangerous Drugs"</p> <p><u>Drugs: A-Z Dictionary</u></p> <p><u>Drug Abuse Education</u></p> <p><u>Drug Abuse - A Source Guide For Teachers</u></p>	<u>Drugs:</u>

	Teacher Materials	Student Materials
ffic to U.S. or ty		
to individual		
s from long-term use		
(peyote cactus)	"Narcotics and Dangerous Drugs"	<u>Drugs: A-Z Dictionary</u>
s on the body	<u>Drugs: A-Z Dictionary</u>	
ysical ychological	"Fact Sheets"	
use (if any)		
l use		
l taken		
terms		
ification		
obtained		
	"Narcotics and Dangerous Drugs"	<u>Drugs: A-Z Dictionary</u>
ts on the body	<u>Drugs: A-Z Dictionary</u>	
ysical sychological	<u>Drug Abuse Education</u>	
al use (Is it nly abused?)	<u>Drug Abuse - A Source Guide For Teachers</u>	

Audio Visual

Motivating Questions

Activities

Winston Identification Kit

What are some of its uses?

Transparency: D-7 - #17

Does it have the same effects as LSD and is the trip of the same duration?

Is there long range problems from use?

Winston Identification Kit

How much use is there in the United States?

Transparency: .D-7 - #17

How does it compare to LSD?

DRUGS (continued)

Concepts	Teacher Materials	Student
3. Slang terms		
4. Where obtained		
E. Psilocybin	"Narcotics and Dangerous Drugs"	<u>Drugs:</u>
1. Effects on the body	<u>Drugs: A-Z Dictionary</u>	
a. physical	<u>Drug Abuse Education</u>	
b. psychological	<u>Drug Abuse - A Source Guide For Teachers</u>	
2. Illegal use		
3. Slang terms		
4. Where obtained		
5. Use (purpose)		
IV. Depressants	"Let's Talk About Pep Pills and Goof Balls"	"Let's T and Goof
A. Barbiturates (Barbituric acid)	<u>Drugs: A-Z Dictionary</u>	<u>Drugs:</u>
1. Effects on the body	"Narcotics and Dangerous Drugs"	"Barbitu
a. physical	"The Up and Down Drugs"	"The Up
b. psychological	<u>Drug Abuse Education</u>	<u>Drug Abu</u>
2. Legal and medical use		<u>For Teac</u>
3. Illegal use or and abuse (Is there much general abuse?)	"Fact Sheets"	
	"Barbiturates"	
4. Method taken and dosage		

Teacher Materials

Student Materials

"Narcotics and Dangerous Drugs"

Drugs: A-Z Dictionary

Drugs: A-Z Dictionary

Drug Abuse Education

Drug Abuse - A Source Guide For Teachers

"Let's Talk About Pep Pills and Goof Balls"

"Let's Talk About Pep Pills and Goof Balls"

Drugs: A-Z Dictionary

Drugs: A-Z Dictionary (reports)

"Narcotics and Dangerous Drugs"

"Barbiturates" (reports)

"The Up and Down Drugs"

"The Up and Down Drugs" (reports)

Drug Abuse Education

Drug Abuse - A Source Guide For Teachers (reports)

"Fact Sheets"

"Barbiturates"

Audio Visual	Motivating Questions	Activities
<p>Winston Identification Kit</p> <p>Transparency: D-7 - #17</p>	<p>How and why is it used by natives?</p> <p>Why do the native Indians of South America use it?</p>	
<p>Filmstrip: "Let's Talk About Pep Pills and Goof Balls"</p> <p>Drugs of Abuse Folder for Identification</p> <p>Winston Identification Kit</p> <p>Transparencies: D-7 - #18-#21</p>	<p>What effects of barbiturates cause them to be abused?</p> <p>Do barbiturates cause physical and psychological addiction?</p> <p>What are the medical uses of tranquilizers and barbiturates?</p> <p>What is withdrawal from barbiturates like?</p> <p>Can a person die from an overdose?</p> <p>What are some long range results from abuse of barbiturates?</p>	<p>Have students effects of barbiturates and overdose</p>

Motivating Questions

Activities

n Kit

How and why is it used by natives?

#17

Why do the native Indians of South America use it?

alk About Pep Pills
Balls"

What effects of barbiturates cause them to be abused?

Have students report on the effects of barbiturates, legal, and overdose illegal.

r for Identifica-

Do barbiturates cause physical and psychological addiction?

on Kit

What are the medical uses of tranquilizers and barbiturates?

- #18-#21

What is withdrawal from barbiturates like?

Can a person die from an overdose?

What are some long range results from abuse of barbiturates?

DRUGS (continued)

<u>Concepts</u>	<u>Teacher Materials</u>	<u>Student</u>	
5. Slang terms	<u>Drug Abuse - A Source Guide For Teachers</u>		
6. Most common type abused			
7. Identification			
8. Where obtained			
a. legally			
b. illegally			
9. Value to individual			
B. Narcotics		"The Life Cycle of a Narcotic Addict"	"Fact
1. Opiates		"Fact Sheets"	<u>Drugs:</u>
a. Opium	"Narcotic Drug Addiction"	"Narco	
(1) Effects on the body	"Narcotics and Dangerous Drugs"	and An	
(a) physical	<u>Drug Abuse - A Source Guide For Teachers</u>		
(b) psychological			
(2) Legal use (if any)	<u>Drugs: A-Z Dictionary</u>		
(3) Illegal use (is there common abuse?)	"Narcotics - Some Questions and Answers"		
(4) Method taken and dosage	"The Control and Treatment of Narcotics Use"		
(5) Slang terms			

	Teacher Materials	Student Materials
terms	<u>Drug Abuse - A Source Guide For Teachers</u>	
common type abused		
classification		
obtained		
legally		
illegally		
to individual		
	"The Life Cycle of a Narcotic Addict"	"Fact Sheets" (reports)
uses	"Fact Sheets"	<u>Drugs: A-Z Dictionary</u>
opium	"Narcotic Drug Addiction"	"Narcotics - Some Questions and Answers"
(1) Effects on the body	"Narcotics and Dangerous Drugs"	
(a) physical	<u>Drug Abuse - A Source Guide For Teachers</u>	
(b) psychological	<u>Drugs: A-Z Dictionary</u>	
(2) Legal use (if any)	"Narcotics - Some Questions and Answers"	
(3) Illegal use (is there common abuse?)	"The Control and Treatment of Narcotics Use"	
(4) Method taken and dosage		
(5) Slang terms		



Audio Visual	Motivating Questions	Activ
	What happens if I take barbiturates and amphetamines at the same time?	
Film: "Pit of Despair"	What effects of narcotics cause them to be abused?	Have on "T (each
Winston Identification Kit	What are the medical uses of opium?	
Transparencies: D-7 - #22-#28	What are the long range problems developed through use of opium?	
	How is opium taken?	
	Is there any use in the United States? (today or yesterday)	
	Does it cause physical and psychological addiction?	



Motivating Questions

Activities

What happens if I take barbiturates and amphetamines at the same time?

What effects of narcotics cause them to be abused?

Have students research and report on "The History of Narcotics." (each individual drug)

What are the medical uses of opium?

What are the long range problems developed through use of opium?

How is opium taken?

Is there any use in the United States? (today or yesterday)

Does it cause physical and psychological addiction?

DRUGS (continued)

Concepts	Teacher Materials	Student Materials
(6) Identification		
(7) Where obtained		
(8) Derivatives		
b. Morphine (derived from opium)	Same as for opium	Same as for opium
(1) Effect on the body		
(a) physical		
(b) psychological		
(2) Legal use		
(3) Illegal use or abuse		
(4) Method taken (abuse)		
(5) Slang terms		
(6) So commonly abused		
(7) Identification		
(8) Where obtained		
(a) drug itself		
(b) traffic in U.S. or city		
(9) Value to individual		

Audio Visual

Motivating Questions

Activities

Winston Identification Kit

Transparencies:

D-7 - #23

D-7 - #25, #26

Does morphine cause physical addiction?

Are there medical uses for morphine?

Is it a good pain killer?

How does it compare to the other opiates?

What are the physical effects after use of morphine?

What causes it to be abused?

Have stu
a bullet
is used

Motivating Questions

Activities

on Kit

Does morphine cause physical addiction?

Are there medical uses for morphine?

Is it a good pain killer?

How does it compare to the other opiates?

What are the physical effects after use of morphine?

What causes it to be abused?

Have students report or make a bulletin board on why morphine is used as a medical drug.

DRUGS (continued)

Concepts	Teacher Materials	Student Materials
c. Heroin (derived from opium)	Same as for opium	Same as for opium
(1) Effects on the body		
(a) physical		
(b) psychological		
(2) Legal use		
(3) Illegal use or abuse		
(4) Method taken (abuse)		
(5) Slang terms		
(6) Identification		
(7) Where obtained		
(a) drug itself		
(b) traffic in U.S. or city		
(8) Value to individual		
d. Codeine (derived from opium)	Same as for opium	Same as for opium
(1) Effects on the body		

Audio Visual	Motivating Questions	Activities
Winston Identification Kit	Are there any uses of heroin medically?	Have students discuss the effects of heroin.
Transparencies: D-7 - #27-#29	Is heroin stronger than morphine?	Have students discuss the board on addiction or to the
	Does it cause physical addiction?	
	How is heroin abused most often?	
	What is a fix?	
	What is a kit?	
	What are some of the implements necessary to use heroin?	
	Why would a person turn to heroin?	
	How much does the heroin habit cost? (Does it cost more than money?)	
	How was heroin used and abused during the Civil War?	
	Which is worse, heroin or LSD?	
	Have you ever taken codeine?	
	What is the most common medical use for codeine?	

Motivating Questions

Activities

tion Kit
-7 - #27-#29

Are there any uses of heroin medically?

Have students make posters on effects, sources

Is heroin stronger than morphine?

Have students make bulletin board on problem that heroin addiction brings to a community or to the individual.

Does it cause physical addiction?

How is heroin abused most often?

What is a fix?

What is a kit?

What are some of the implements necessary to use heroin?

Why would a person turn to heroin?

How much does the heroin habit cost? (Does it cost more than money?)

How was heroin used and abused during the Civil War?

Which is worse, heroin or LSD?

Have you ever taken codeine?

What is the most common medical use for codeine?

DRUGS (continued)

Concepts	Teacher Materials
(a) physical (b) psychological	
(2) Legal and medical use	
(3) Illegal use or abuse	
(4) Method taken (abuse)	
(5) Slang terms	
(6) Identification	
(7) Where obtained	
(a) drug itself (b) traffic in U.S. or city	
e. Percodan	<u>Drugs: A-Z Dictionary</u>
f. Demerol	<u>Drug Abuse - A Source Guide For Teachers</u>
g. Methadone	"Narcotics and Dangerous Drugs"
*h. Alcohol	*Will be expanded in a separate section
V. Volatile Chemicals	"Glue Sniffing: Big Trouble In A Tube"
A. Most common types abused	

ued)

Teacher Materials

Student Materials

- (a) physical
- (b) psychological

(2) Legal and medical use

(3) Illegal use or abuse

(4) Method taken (abuse)

(5) Slang terms

(6) Identification

(7) Where obtained

- (a) drug itself
- (b) traffic in U.S. or city

e. Percodan

Drugs: A-Z Dictionary

f. Demerol

Drug Abuse - A Source Guide For Teachers

g. Methadone

"Narcotics and Dangerous Drugs"

*h. Alcohol

*Will be expanded in a separate section

e Chemicals

"Glue Sniffing: Big Trouble In A Tube"

"Glue Sniffing: Big Trouble In A Tube"

t common types abused

Audio Visual

Motivating Questions

Activities

Is it as strong as morphine or heroin?

Are the effects the same as morphine and heroin?

Is withdrawal from codeine as severe as from morphine and heroin?

Filmstrip: "Glue Sniffing"

Transparencies: D-7 - #31, #32

What types of chemicals are abused the most?

Have students board, and dangerous drug abuse

Motivating Questions

Activities

Is it as strong as morphine or heroin?

Are the effects the same as morphine and heroin?

Is withdrawal from codeine as severe as from morphine and heroin?

What types of chemicals are abused the most?

Have students make lists, bulletin board, and reports on potential dangerous chemicals pertaining to drug abuse.

ffing"

- #31, #32

DRUGS (continued)

<u>Concepts</u>	<u>Teacher Materials</u>
B. Effects on the body	<u>Drugs: A-Z Dictionary</u>
1. physical	"Glue Sniffing"
2. psychological	"The Glue Sniffing Problem"
C. Legal and medical use	
D. Method taken and abuse	
E. Slang terms	
F. Identification	
G. Where obtained	
VI. Stimulants	"Drugs and Your Body"
A. Amphetamines	<u>Drugs: A-Z Dictionary</u>
1. Most common commercial names of abused amphetamines	"Let's Talk About Goof Balls and Pep Pills"
2. Effects on the body	"The Up and Down Drugs"
a. physical	"Fact Sheets"
b. psychological	<u>Drug Abuse Education</u>
3. Legal use and dosage	"A Guide to Some Drugs Which Are Subject to Abuse"
4. Illegal use or abuse	
5. Slang terms	
6. Identification	
7. Value to individual	

	<u>Teacher Materials</u>	<u>Student Materials</u>
on the body	<u>Drugs: A-Z Dictionary</u>	<u>Drugs: A-Z Dictionary</u>
physical	"Glue Sniffing"	"The Glue Sniffing Problem"
psychological	"The Glue Sniffing Problem"	
and medical use		
taken and abuse		
terms		
ification		
obtained		
	"Drugs and Your Body"	"Let's Talk About Goof Balls and Pep Pills"
amines	<u>Drugs: A-Z Dictionary</u>	"The Up and Down Drugs"
most common commercial	"Let's Talk About Goof Balls and Pep Pills"	<u>Drugs: A-Z Dictionary</u>
names of abused	"The Up and Down Drugs"	"A Guide To Some Drugs Which Are Subject to Abuse"
amphetamines	"Fact Sheets"	
Effects on the body	<u>Drug Abuse Education</u>	
physical	"A Guide to Some Drugs Which Are Subject to Abuse"	
psychological		
legal use and dosage		
illegal use or abuse		
lang terms		
identification		
value to individual		

Audio Visual	Motivating Questions	Activities
	<p>Why do teenagers turn to these drugs?</p> <p>Are they really as dangerous as printed materials state?</p> <p>Are aerosols dangerous?</p>	<p>Have stu danger o</p>
<p>Film: "Speed Scene: The Abuse of Amphetamines"</p>	<p>What are some proper uses of amphetamines?</p>	<p>Make a on the of amph</p>
<p>Filmstrips:</p> <p>"Let's Talk About Goof Balls and Pep Pills"</p>	<p>What are the dangers of overdosage and abuse of amphetamines?</p> <p>Are they really dangerous?</p>	<p>Make a on the ampheta</p>
<p>"Drug Misuse and Your Health"</p>	<p>What effects of amphetamines cause them to be abused?</p>	<p>Have stu dangers</p>
<p>Transparencies: D-7 - #33-#36</p>	<p>What are some reasons for turning to amphetamines?</p>	
<p>Folder: "Drugs of Abuse" (for identification)</p>	<p>Is mixing drugs dangerous?</p> <p>Can a person die from an overdose?</p> <p>How did some of the slangy terms for these come into existence?</p>	

Motivating Questions

Activities

Why do teenagers turn to these drugs?

Have students report on the danger of experimentation.

Are they really as dangerous as printed materials state?

Are aerosols dangerous?

Abuse of

What are some proper uses of amphetamines?

Make a bulletin board or posters on the common and medical use of amphetamines.

What are the dangers of overdosage and abuse of amphetamines?

Make a bulletin board or posters on the abuses and reactions to amphetamines.

Goof Balls

Are they really dangerous?

Your Health"

What effects of amphetamines cause them to be abused?

Have students report on the dangers of experimentation.

#33-#36

e" (for

What are some reasons for turning to amphetamines?

Is mixing drugs dangerous?

Can a person die from an overdose?

How did some of the slangy terms for these come into existence?

DRUGS (continued)

<u>Concepts</u>	<u>Teacher Materials</u>
B. Cocaine	<u>Drugs: A-Z Dictionary</u>
1. Effects on the body	<u>Drug Abuse - A Source Guide For Teachers</u>
a. physical	"A Guide To Some Drugs Which Are Subject to Abuse" (Good for review for evaluation of materials)
b. psychological	
2. Legal use	
3. Method taken and abuse	"Fact Sheets"
4. Slang terms	"First Facts About Drugs" (good questions)
5. Identification	
6. Where obtained	
7. Value to individual	

Teacher Materials

Student Materials

Drugs: A-Z Dictionary

Drugs: A-Z Dictionary

Drug Abuse - A Source Guide For Teachers

"Fact Sheets"

"A Guide To Some Drugs Which Are Subject to Abuse" (Good for review for evaluation of materials)

"A Guide To Some Drugs Which Are Subject to Abuse"

"Fact Sheets"

"First Facts About Drugs" (good questions)

Audio Visual

Motivating Questions

Activities

What are some medical uses of cocaine?

Is it still used extensively?

Does it cause physical dependency like heroin?

Who uses it the most?

How greatly is it abused?

Where is it obtained?

VII. TEACHER INFORMATION

- I. A. Drugs: substances used as medicine
- B. Drug dependency: a state of psychic or physical dependency
1. Physical: prolonged administration of a drug in sufficient dosages in the body

(Tolerance: resistance built up to the effects of a sin continued use it takes more of a drug to reach the desir
 2. Psychological: a craving for the pleasurable mental effect produce
 3. Addiction: the overwhelming involvement with a craving for a subst
 4. Habituation: drug abuse of lesser degree than addiction (obsolete
- C. Illusion: distortion of things that do exist
- D. Hallucination: visions of things that exist only to the person seeing
- E. Hallucinogen: drugs that produce hallucination - many times the user k
- F. Withdrawal sickness: characteristic reaction of the body brought on by also vary in intensity with the amount of drug ta
- Symptoms (usually set in within few hours after
1. anxiety
 2. restlessness
 3. body aches
 4. yawning
 5. tears
 6. running nose
 7. perspiration
 8. nausea
 9. diarrhea
 10. abdominal and muscle cramps

VII. TEACHER INFORMATION

s used as medicine

a state of psychic or physical dependency

olonged administration of a drug in sufficient dosages which induces alteration
the body

olerance: resistance built up to the effects of a single dose of drug - with
ntinued use it takes more of a drug to reach the desired effect)

: a craving for the pleasurable mental effect produced by a drug

he overwhelming involvement with a craving for a substance or drug

drug abuse of lesser degree than addiction (obsclete)

tion of things that do exist

visions of things that exist only to the person seeing them

ugs that produce hallucination - many times the user knows they are hallucinations

ess: characteristic reaction of the body brought on by absence of a drug - will
also vary in intensity with the amount of drug taken

Symptoms (usually set in within few hours after the last dose)

1. anxiety
2. restlessness
3. body aches
4. yawning
5. tears
6. running nose
7. perspiration
8. nausea
9. diarrhea
10. abdominal and muscle cramps

TEACHER INFORMATION (continued)

General terms ("Drugs: A-Z Dictionary" has a good explanation of types and length of time)

1. will vary with type of drug
2. lasts from 2-5 days - will vary slightly from drug to drug

G. Psychotic: cannot determine real from unreal or what is really happening - cannot

H. Medical uses: uses which are controlled by physicians to help relieve a person from

I. Depressant: slows down the function of body function and movement - person can die

J. Stimulant: speeds up central nervous system's functions - used to combat fatigue, stress, loss, and mood elevating

II. Hallucinogens

A. Marijuana (marihuana - cannabis sativa)

1. Effects on the body: stimulates appetite, acts as depressant, causes hallucinations

a. Physical: craving for sweet, and food in general - time and space distorted, lack of control - person is usually pleasant, similar to being intoxicated, physical dependence

b. Psychological: produces some illusion and hallucination - loss of time and concentration, long duration causes loss of ambition and outside goals - next "joint" - causes psychological dependence

2. Legal use: by scientists for study on effects immediate and long term

3. Illegal use: growing - teenagers are using it in place of alcohol - said to be used at pot parties are very common

4. Method taken: usually by smoking, in U.S., but may also be ingested in foods, sometimes chewed - dosage is usually one cigarette - usually made as tea, oragano, and parsley - one ounce (mixed) usually makes "joints," depending on how much additive

TEACHER INFORMATION (continued)

General terms ("Drugs: A-Z Dictionary" has a good explanation of different types and length of time)

1. will vary with type of drug
2. lasts from 2-5 days - will vary slightly from drug to drug

determine real from unreal or what is really happening - cannot stay in society

which are controlled by physicians to help relieve a person from many diseases

own the function of body function and movement - person can die from overdose

to central nervous system's functions - used to combat fatigue, control weight
and mood elevating

- cannabis sativa)

body: stimulates appetite, acts as depressant, causes hallucination and illusion

craving for sweet, and food in general - time and space distortion - loss of muscle
control - person is usually pleasant, similar to being intoxicated - no physical
dependence

1: produces some illusion and hallucination - loss of time and space - abuse of
long duration causes loss of ambition and outside goals - looks only for the
next "joint" - causes psychological dependence

scientists for study on effects immediate and long term

growing - teenagers are using it in place of alcohol - said to be 60% trial use -
at parties are very common

usually by smoking, in U.S., but may also be ingested in foods of all sorts -
sometimes chewed - dosage is usually one cigarette - usually mixed with spices such
as tea, oragano, and parsley - one ounce (mixed) usually makes anywhere from 5-20
joints," depending on how much additive

TEACHER INFORMATION (continued)

5. Slang term: grass, pot, tea, weed, mary jane, cannabis, Indian hay.
 6. Identification: may come in many forms but is usually deep green color and odor such as hay or alfalfa when burning - the cigarettes will usually burn slowly when burning
 7. Where obtained:
 - a. Drug itself: comes from female (Indian hemp, cannabis sativa) - where effects are obtained - manicured marihuana has stems and leaves and plant is used for hemp rope, paint, and cloth)
 - b. Traffic: most comes from Mexico, some grows in U.S. but these are mostly and oriental types - U.S. type is the weakest of all - as much as from Mexico - there are so many methods of smuggling that they are untraceable
 8. Value to individual: pushers usually buy in kilo (2.2 lbs.) - varies from police, distance from source, and amount available at the time (usually \$5.00 for 1/5 - 1/4 oz.) and will roll up to fifteen cigarettes usually sells for 50¢ to \$1.00 - hashish is \$40-\$100 per oz.
 9. Types abused: Mexican and U.S., most common - hashish, a resin extract used - is said to be 5-8 times as potent as marihuana, and reactions are more intense and long lasting - usually chewed and swallowed
 10. Results from long term abuse: not completely known as yet - believe in stupor, and lack of initiative - can also lead to, or open the door to, other drugs
- B. Lysergic Acid Diethylamide: (LSD 25) synthetic form - (rye plant fungus)
1. Effects on body: can result in deep depression, but hallucinations are common
 - a. Physical: no physical addiction determined yet - relation between physical and mental are closely knit - person has feeling that laws of nature do not apply, and results in person feeling he can do impossible human things, depression after trip - sensory changes are extreme

TEACHER INFORMATION (continued)

t, tea, weed, mary jane, cannabis, Indian hay, Alcopulco Gold, loco weed, hay

come in many forms but is usually deep green color - usually has a sweet
alfalfa when burning - the cigarettes will usually have an orange color when

is from female (Indian hemp, cannabis sativa) - leaves and flowers is part
obtained - manicured marihuana has stems and seeds (rest of plant and male
hemp rope, paint, and cloth)

comes from Mexico, some grows in U.S. but these are not as potent as middle East
type - U.S. type is the weakest of all - as much as five tons comes weekly from
so many methods of smuggling that they are unlimited

pushers usually buys in kilo (2.2 lbs.) - varies greatly in price on heat
from source, and amount available at the time - user usually buys in bag
(5 - 1/4 oz.) and will roll up to fifteen cigarettes - joints (1 cigarette)
to \$1.00 - hashish is \$40-\$100 per oz.

in U.S., most common - hashish, a resin extraction from plant, is also
5-8 times as potent as marihuana, and reactions are naturally more violent
usually chewed and swallowed

abuse: not completely known as yet - believed to cause loss of ambition,
initiative - can also lead to, or open the door to, other more potent drugs

effects: (LSD 25) synthetic form - (rye plant fungus, ergot) natural hallucinogen

result in deep depression, but hallucinations are the major effects

physical addiction determined yet - relation between physical and psychologi-
cal - person has feeling that laws of nature do not apply to them, which is
typical in person feeling he can do impossible human feats - almost always,
trip - sensory changes are extreme

TEACHER INFORMATION (continued)

- b. Psychological: person has hallucination and sensory changes - music can be color tasted, colors are very brilliant, always - sometimes visions are very bright and cause physical damage by user to himself or others - some sources say whether trip is good or bad - can end up in deep psychosis on trip or permanent psychological addiction (both effect usually last 24 hours)
 2. Legal use: no legal market - only for scientific study, psychiatric experiments
 3. Illegal use: seems to be wide spread use, however it varied with availability LSD are impure
 4. Method: usually taken orally - is a very potent drug, 50-150 micrograms can be taken and for this reason, doesn't need to be injected - may be taken in many forms like cookies, licked off stamps and now may be made into tablet form - now doesn't need to be injected
 5. Slang terms: LSD, acid, sunshine, royal blue, heavenly blue, pearly gates, see you later
 6. Identification: difficult at best because it is colorless, odorless, and tasteless
 7. Traffic: usually through underground pusher (small time) - made in home chemical presses - so strong that an ounce can produce several thousand doses - very easy to push
 8. Value: single dose (200-300 micrograms) of LSD was \$2.50 to \$10.00 in 1967 - depends on pressure and availability
 9. Long term results: hasn't been determined yet - may result in chromosomes breaking up - danger is that person will become psychotic if he uses LSD long enough, or may be psychotic from the first trip
- C. Mescaline: from peyote cactus buttons
1. Effects on body
 - a. Physical) almost exactly like LSD 25
 - b. Psychological)

TEACHER INFORMATION (continued)

son has hallucination and sensory changes - music can be seen or felt,
s are very brilliant, always - sometimes visions are very frightening
damage by user to himself or others - some sources say person can control
or bad - can end up in deep psychosis on trip or permanently - Probably
tion (both effect usually last 24 hours)

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orally - is a very potent drug, 50-150 micrograms can result in effects,
esn't need to be injected - may be taken in many forms as sugar cubes,
mps and now may be made into tablet form - now doesn't need to be refrigerated

, sunshine, royal blue, heavenly blue, pearly gates, serenity and tranquility

ult at best because it is colorless, odorless, and tasteless

gh underground pusher (small time) - made in home chemistry labs with pill
at an ounce can produce several thousand doses - very easy to smuggle and

00-300 micrograms) of LSD was \$2.50 to \$10.00 in 1967 - would vary on police
ity

sn't been determined yet - may result in chromosomes breakage - greatest
will become psychotic if he uses LSD long enough, or may be the same result

etus buttons

almost exactly like LSD 25

TEACHER INFORMATION (continued)

2. Method taken: ingested orally - usually chew the buttons with wine - n
swallowed, producing effects
 3. Slang terms: mescal buttons, mescal, seni, moon
 4. Legal use: no legal retail market - authorized only for members of Nat
- D. STP-DMT: synthetic drugs, not as potent as LSD but trip lasts up to three
1. Effects on body: similar to LSD in respects as hallucinogen, not legal
 2. Slang terms: dom, peace
- E. Psilocybin: mushroom from Mexico and South America
1. very similar to LSD 25 in effects on body, no legal market, taken oral
 2. Use: is used by natives of Mexico and South America as a religious dru
 3. is not very prominent in abuse scene at present - usually used only by

III. Depressants

A. Barbiturates (barbituratic acid)

1. Effects on body: causes intoxication, confusion, tremors, and in gene
body functions
 - a. Physical: can result in physical addiction, tolerance is built up
drawal sickness - can take overdose and death can result - 3000 su
 - b. Psychological: intoxication, confusion, can result in auditory an
cal addiction
2. Method taken and dosage: 100-200 milligrams daily - abuser may take u
daily - usually taken orally in capsule form, but long time user turns
directly into vein

TEACHER INFORMATION (continued)

orally - usually chew the buttons with wine - now separated and is just
effects

buttons, mescal, seni, moon

retail market - authorized only for members of Native American Church, Indians

not as potent as LSD but trip lasts up to three days

similar to LSD in respects as hallucinogen, not legal,

ce

Mexico and South America

in effects on body, no legal market, taken orally

uses of Mexico and South America as a religious drug

in abuse scene at present - usually used only by hard core users

acid)

causes intoxication, confusion, tremors, and in general, depression of all

result in physical addiction, tolerance is built up, and there is also with-
can take overdose and death can result - 3000 suicides yearly in U.S.

intoxication, confusion, can result in auditory and visual illusion - *psychologi-

age: 100-200 milligrams daily - abuser may take upwards of 400+ milligrams
orally in capsule form, but long time user turns into liquid and injects

TEACHER INFORMATION (continued)

3. Medical and legal use: sedation and sleep, nervousness - prescription drug
4. Illegal use: abuser takes in large doses mostly for intoxication feeling - too dosage - forces self to stay awake for feeling - often mixes downers with amphetamine general abuse and also availability
5. Slang terms: barbs, yellow jackets, goof balls, downers, candy, blue heavens,
6. Most common types of abuse: pentobarbital, secobarbital, nembutal
7. Identification: usually by capsule color
8. Where obtained: synthetic drug

Traffic: can be made in laboratories and capsuled by pusher - also can be made in legal factories - also pushers steal doctor's order blanks from factory

9. Value: 10¢-20¢ through Rx, but won't supply enough for abuser - usually sell capsules in illicit market

B. Narcotics

1. Opium

a. Effects on body-euphoria

- (1) Physical: tolerance, physical addiction, withdrawal, depression, euphoria
- (2) Psychological: euphoria

b. Legal use: none

c. Illegal use: very little use in U.S., only 62.81 pounds seized by the Bureau in 1964 - oriental countries are more predominant

d. Method taken: is usually smoked

e. Slang terms: black

TEACHER INFORMATION (continued)

sedation and sleep, nervousness - prescription drug

kes in large doses mostly for intoxication feeling - tolerance means increased
stay awake for feeling - often mixes downers with amphetamines - is a great
availability

llow jackets, goof balls, downers, candy, blue heavens, red devils

use: pentobarbital, secobarbital, nembutal

ly by capsule color

tic drug

de in laboratories and capsuled by pusher - also can be hijacked from
also pushers steal doctor's order balnks from factory

Rx, but won't supply enough for abuser - usually sell for 15¢-50¢ per
et

phoria

erance, physical addiction, withdrawal, depression, euphoria
euphoria

little use in U.S., only 62.81 pounds seized by the Bureau of Narcotics
countries are more predominant

usually smoked

TEACHER INFORMATION (continued)

f. Where obtained: oriental poppy seeds

g. Derivatives: morphine, heroin, percodan, codeine

Morphine: derivative of opium - oriental poppy

a. Effects on the body: euphoria, drowsiness, confusion and depression of body functions

- (1) Physical: tolerance, physical dependency, withdrawal sickness, euphoria
- (2) Psychological: dependency, euphoria and confusion

b. Legal or medical uses: is still one of our best pain killers on the market today - affects the central nervous system - used legally by Rx - some people have physical reaction from use and cannot use the drug

c. Abuse: is not abused to a great extent because heroin is much stronger, but is used as a substitute if the addict cannot obtain his heroin - used by medical people because of availability to them

d. Method taken: most often it is injected or taken orally - takes 3-5 times as much orally to get the same effects as through injection

e. Identification: usually a white or brownish powder - can be compressed into a capsule - has a bitter taste and is odorless

f. Slang terms: morpho, M, Miss Emma, white stuff, hard stuff, junk, dope

g. Common abuse: not as much as heroin because it is less potent - Bureau of Narcotics seized 140 trams of morphine to 45 kilograms of heroin in 1964 - mainly used as a substitute when heroin is unavailable

h. Where obtained:

- (1) made from the natural alkaloid in opium and is more physically addicting than the mother drug
- (2) since it is legal by Rx, there is little illegal traffic into the U.S. - most is stolen or hijacked from drug companies or hospitals

TEACHER INFORMATION (continued)

- i. Value: about the same as heroin
- 3. Heroin: derivative of morphine, which is opium
 - a. Effects on body: same as morphine
 - (1) Physical: tolerance, physical dependency, withdrawal euphoria - morphine, 2-3 times
 - (2) Psychological: almost exactly the same as morphine
 - b. Legal or medical use: no legal retail market
 - c. Abuse (Illegal): many sources feel it is on the increase with younger times used to assist the person back down from amphetamines - opinion of addiction is going to get worse
 - d. Method taken: individual will usually take first dose orally, then qu injecting because of loss of effect through digestive system and cost method, the addict's veins will collapse in the arms and he will have such as legs and inside mouth
 - e. Slang terms: horse, H, smack, boy, white stuff, joy powder, stuff, su
 - f. Identification: usually a white or brownish powder - brownish, if it is usually a lower grade - has a bitter taste and a vinegar-like odor
 - g. Where obtained:
 - (1) drug, itself, is derived from morphine, which is from opium and i than morphine - was first developed in 1898
 - (2) Traffic: most comes from France or Mexico - that from France ori is brought to Turkey as raw opium, then converted to morphine, th made into heroin - The Federal Narcotics Bureau seized 277.8 kilo was estimated to be about 10% of the amount smuggled into the U.S

TEACHER INFORMATION (continued)

the same as heroin

ve of morphine, which is opium

dy: same as morphine

tolerance, physical dependency, withdrawal euphoria - is much stronger than
2-3 times

gical: almost exactly the same as morphine

cal use: no legal retail market

): many sources feel it is on the increase with younger individuals - is some-
assist the person back down from amphetamines - opinion of many that the problem
is going to get worse

individual will usually take first dose orally, then quickly advance to
cause of loss of effect through digestive system and cost - through injection
ddict's veins will collapse in the arms and he will have to find other areas
and inside mouth

horse, H, smack, boy, white stuff, joy powder, stuff, sugar

n: usually a white or brownish powder - brownish, if it comes from Mexico, and
lower grade - has a bitter taste and a vinegar-like odor when diluted with water

d:

self, is derived from morphine, which is from opium and is 3-5 times stronger
phine - was first developed in 1898

most comes from France or Mexico - that from France originates in the orient,
ht to Turkey as raw opium, then converted to morphine, then on to France to be
to heroin - The Federal Narcotics Bureau seized 277.8 kilograms in 1966, which
mated to be about 10% of the amount smuggled into the U.S.

TEACHER INFORMATION (continued)

- h. Value: Raw opium sold by the grower in the orient brings about \$50,000 but by the time it reaches the U.S., in the form of heroin, it will only bring \$50,000. It has been cut (diluted, mixed) with sugar and can range from \$5.00 to \$100.00 per bag. One single bag sells for about \$5.00 to the addict, however, the addict needs twenty bags. Habits can range up to \$100.00 per day.

4. Codeine: derivative of opium

a. Effects on the body:

- (1) Physical: almost exactly the same as morphine and heroin, but only 1/6 as potent as morphine - withdrawal is as intense as morphine
- (2) Psychological: same as morphine

b. Legal or medical use: legal by Rx, but since it is less potent, it is used for minor pain, or as a cough depressant

c. Illegal abuse: usually abuse is in the form of cough syrup - the addict gets high in intoxication

d. Method taken: usually orally in cough medicine

e. Identification: similar to that of morphine and heroin

f. Where obtained:

- (1) drug, itself, is obtained from opium
- (2) Traffic: is used by Rx - is not smuggled in any quantity - drug companies or drug stores in smaller quantities

5. Percodan: a derivative of morphine

a. sold by manufacturer in case of minor pain causing sleeplessness

b. Sold as yellow scored tablets or pink scored tablets - a class "A" drug (not heroin)

TEACHER INFORMATION (continued)

Opium sold by the grower in the orient brings about \$35.00 a kilogram (2.2 lbs.), when it reaches the U.S., in the form of heroin, it will bring about \$40,000 to \$50,000. It has been cut (diluted, mixed) with sugar and can range from 3% heroin to 10%. A gram sells for about \$5.00 to the addict, however, the addict may need as much as 1 gram. Habits can range up to \$100.00 per day.

Derivative of opium

On the body:

Effect: almost exactly the same as morphine and heroin, but less intense as it is less potent as morphine - withdrawal is as intense as heroin

Medical: same as morphine

Legal use: legal by Rx, but since it is less potent, it is used only in cases of cough, or as a cough depressant

Abuse: usually abuse is in the form of cough syrup - the alcohol content will assist in absorption

Route: usually orally in cough medicine

Comparison: similar to that of morphine and heroin

Notes:

Source: itself, is obtained from opium

Availability: is used by Rx - is not smuggled in any quantity - is usually stolen from pharmacies or drug stores in smaller quantities

Derivative of morphine

Manufacturer: in case of minor pain causing sleeplessness

Form: white scored tablets or pink scored tablets - a class "A" narcotic (same as morphine)

TEACHER INFORMATION (continued)

c. has been reported that it is popular among addicts in California

C. Demerol: synthetic opiate used as a sedative

1. usually used medically to assist in childbirth - effects are similar to morphine produce as much sedation
2. because of its accessibility in hospitals, and mistaken belief it is non-addict extensively - class "A" narcotic (same as morphine)

IV. Methadone: synthetic opiate

A. Effects on the body

1. Physical: almost exactly the same as morphine, but with less respiratory depression
chemical structure
2. Psychological: same as morphine

B. Legal or medical use: relief of pain similar to morphine

C. Illegal use, abuse: used by addicts in place of heroin or morphine to relieve withdrawal
"A" narcotic (same as morphine and heroin)

D. Method taken: is usually taken orally or injected

E. Methadone is usually used as a treatment of heroin or morphine withdrawal. Withdrawal is less severe and substituted for heroin. The addict has only methadone withdrawal. For this reason, it is used by hospitals to withdraw addicts.

V. Volatile chemicals

A. Most common types abused: Model airplane glue, shoe polish, lacquer, aerosols, paint, gasoline

TEACHER INFORMATION (continued)

that it is popular among addicts in California

used as a sedative

to assist in childbirth - effects are similar to morphine but it does not

availability in hospitals, and mistaken belief it is non-addicting, it is used
as a narcotic (same as morphine)

is exactly the same as morphine, but with less respiratory depression - different

as morphine

relief of pain similar to morphine

used by addicts in place of heroin or morphine to relieve withdrawal - class
(morphine and heroin)

can be taken orally or injected

used as a treatment of heroin or morphine withdrawal. Withdrawal is less intense
than with morphine. The addict has only methodone withdrawal. For this reason, it is used
by addicts.

found in Model airplane glue, shoe polish, lacquer, aerosols, paint thinner,

TEACHER INFORMATION (continued)

B. Effects on the body:

1. Physical: most of the effects are intoxication - all of the effects of intoxication are present - in some cases aerosol abuse causes freezing death - there is tolerance, but no physical addiction
2. Psychological: from time to time, the effects act differently in the behavior is a common occurrence - there is also a self destruction tendency individual usually withdraws in fantasy

C. Legal or medical use: most of the chemicals have a common use, but none

D. Methods of abuse: in almost all circumstances the chemicals are inhaled

E. Slang terms: sniffing and glue-sniffing

F. Identification: the chemical will be easily distinguished as the user or container to sniff from

G. Where obtained: all of these chemicals are readily available in most retail stores are not putting them on the display counters and clerks are to notice and report them to the local authorities - low cost has also contributed

VI. Stimulants

A. Amphetamines

1. Most common types abused: benzedrine, dexidrine, methedrine (speed)
2. Effects on the body:
 - a. Physical: there is a tolerance and no physical addiction or withdrawal on the user are excitability, rapid, unclear speech, sweating, etc.
 - b. Psychological: psychoses can be induced - hallucinations are produced - use - many times user will have feelings that everyone is against them - psychological dependency is developed

TEACHER INFORMATION (continued)

effects are intoxication - all of the effects that go along with alcohol
t - in some cases aerosol abuse causes freezing of the lungs resulting in
nce, but no physical addiction

me to time, the effects act differently in the same person - aggressive
urance - there is also a self destruction tendency, however, the
draws in fantasy

of the chemicals have a common use, but none have a medical use

t all circumstances the chemicals are inhaled into the respiratory system
glue-sniffing:

al will be easily distinguished as the user can be seen with a paper bag

ese chemicals are readily available in most retail stores, however, most
n on the display counters and clerks are to note large or repeated purchases
al authorities - low cost has also contributed to their abuse

ed: benzedrine, dexidrine, methedrine (speed), desbutal, desoxyn, dexamyl

s a tolerance and no physical addiction or withdrawal sickness - usual effects
citability, rapid, unclear speech, sweating, dry lips, dilated pupils, psychoses
ychoses can be induced - hallucinations are present with high dosage and long
ser will have feelings that everyone is against him or want to harm him -
endency is developed

TEACHER INFORMATION (continued)

3. Legal or medical uses: all are legal by Rx and are used to assist in weight depression, and narcolepsy - average medical dosage is 15-30 milligrams
4. Method taken: usually tablets or capsules are taken orally, but in some cases dissolved and injected - the abuser uses amphetamines for such purposes - stimulation of their mental processes, promote alertness, retention, and wake them for added mental energy to cope with a situation, and for purposes of large amounts of work - does not improve performance (increases errors) but with a task - dosage may reach 200-1000 milligrams
5. Slang terms: meth, pep pills, uppers, wake-ups, bennies, peaches, hearts, co-pilots
6. Value: relatively inexpensive because of its Rx use - may range from 15¢
7. Identification: by color of capsule or tablet, otherwise it would require to determine exactly

B. Cocaine

1. Effects on the body:
 - a. Physical: euphoria, excitability, anxiety, headache, hallucinations - dangerous - chronic use may result in loss of appetite, nausea, loss of convulsions, paranoid delusions - no tolerance or withdrawal
 - b. Psychological: used to create feelings brought on through the physical - no tolerance or withdrawal
2. Where obtained: from the coca bush (erythroxyton coca) of South America
3. Legal use: it is legal by Rx - occasionally used for local anesthesia
4. Illegal use or abuse: most frequently it is sniffed or injected - loses m ingested - the user seeks extreme mood elevation, elation, and mental prowess

TEACHER INFORMATION (continued)

all are legal by Rx and are used to assist in weight loss, relieve mild
eppsy - average medical dosage is 15-30 milligrams

tablets or capsules are taken orally, but in some circumstances they are
- the abuser uses amphetamines for such purposes - students use them for
mental processes, promote alertness, retention, and wakefulness - some take
energy to cope with a situation, and for purposes of staying awake to achieve
- does not improve performance (increases errors) but enables user to stay
may reach 200-1000 milligrams

ep pills, uppers, wake-ups, bennies, peaches, hearts, speed, cartwheels,

expensive because of its Rx use - may range from 15¢ to 75¢ per capsule

color of capsule or tablet, otherwise it would require laboratory testing

ria, excitability, anxiety, headache, hallucinations - may be violent and
nic use may result in loss of appetite, nausea, loss of weight, occasional
anoid delusions - no tolerance or withdrawal

used to create feelings brought on through the physical effects - there is
withdrawal

in the coca bush (erythroxyton coca) of South America

legal by Rx - occasionally used for local anesthesia

: most frequently it is sniffed or injected - loses most of its effect if
seeks extreme mood elevation, elation, and mental prowess induced by the drug

TEACHER INFORMATION (continued)

5. Slang terms: dust, flake, gold dust, girl, bernice, cecil, C
6. Identification: usually a white flaky powder, bitter to taste, odorless, but will numb lips and tongue
7. Value: is a relatively inexpensive in single dose, but could build up if user becomes psychologically dependent on the drug

TEACHER INFORMATION (continued)

SELECT QUESTIONS FOR PRE AND POST TESTS

True-False Questions

1. The term "drug" applies only to substances that are used as medicines.
2. The medical meaning of the term "narcotic" differs from the legal meaning of the term.
3. Drug dependence is said to exist only when a person is physically and psychologically dependent on a drug.
4. Psychological dependence on a drug is easier to overcome than physical dependence.
5. When a person has developed tolerance to a drug, he needs increasing amounts of the drug in order to react satisfactorily to its presence.
6. Amphetamine, when self-administered to prevent sleepiness while driving, may cause intoxication which affects the driver's ability to handle his car safely.
7. Barbiturates, taken in excessive amounts, cause a severe depression of the central nervous system which may result in unconsciousness or death.
8. When alcohol and barbiturates are taken together, the drugs tend to neutralize each other, causing a relatively mild reaction.
9. Barbiturates, if taken repeatedly, may cause total drug dependence which is comparable in severity to heroin dependence.
10. Amphetamine may be self-administered with relative safety because it does not cause drug dependence.
11. The dangerous drugs differ from the narcotics in that their excessive use leads to psychological dependence, whereas narcotic abuse leads to both psychological and physical dependence.
12. The young person who abuses dangerous drugs is likely already to have a history of delinquent behavior.
13. It has been shown through experimentation that the use of amphetamines can substantially improve athletic performance.

TEACHER INFORMATION (continued)

SELECT QUESTIONS FOR PRE AND POST TESTS

- applies only to substances that are used as medicines. False
- ing of the term "narcotic" differs from the legal meaning of the term. True
- is said to exist only when a person is physically and psychologically drug. False
- pendence on a drug is easier to overcome than physical dependence. False
- as developed tolerance to a drug, he needs increasing amounts of that to react satisfactorily to its presence. True
- en self-administered to prevent sleepiness while driving, may cause which affects the driver's ability to handle his car safely. True
- aken in excessive amounts, cause a severe depression of the central which may result in unconsciousness or death. True
- d barbiturates are taken together, the drugs tend to neutralize each a relatively mild reaction. False
- f taken repeatedly, may cause total drug dependence which is comparable heroin dependence. True
- be self-administered with relative safety because it does not lead to False
- ugs differ from the narcotics in that their excessive use leads only l dependence, whereas narcotic abuse leads to both psychological and ence. False
- n who abuses dangerous drugs is likely already to have a history of vior. False
- wn through experimentation that the use of amphetamines can sub- ove athletic performance. False

TEACHER INFORMATION (continued)

SELECT QUESTIONS FOR PRE AND POST TESTS

True-False Questions

14. The organic solvents present in glues and plastic cements are capable of damaging the brain, affecting liver and kidney functions, and interfering with the blood-forming function of the bone marrow.
15. There is no evidence that glue sniffing leads to the development of dependence.
16. It is believed that the abuse of volatile chemicals will soon be solved through the development of non-intoxicating solvents to replace those now present in glues and plastic cements.
17. Marihuana is an important medicinal drug because of its effectiveness as a pain reliever.
18. Marihuana is a contraband drug, and whoever produces or distributes it is guilty of a crime punishable as a felony.
19. Most marihuana entering the United States today comes by way of Mexico.
20. The plant Cannabis Sativa, from which marihuana is derived, grows only in warm climates.
21. The plant from which marihuana is derived has been known and used as a drug for over five thousand years.
22. A person who feels he must take marihuana (or any other drug) in order to enjoy life or to belong in a group has failed to make a normal wholesome adjustment to life and has not learned to function as an independent, responsible member of society.
23. If other people are using marihuana (or any other drug), it is best for you to use it too, so as not to appear different.
24. If you can't find success or enjoyment in life, it is wise to try to forget your troubles and avoid failure by drinking alcohol or taking drugs.
25. Since most marihuana users today do not progress to heroin, there is little reason to use marihuana.

TEACHER INFORMATION (continued)

SELECT QUESTIONS FOR PRE AND POST TESTS

- present in glues and plastic cements are capable of damaging liver and kidney functions, and interfering with the bleeding bone marrow. True
- That glue sniffing leads to the development of dependence. False
- The abuse of volatile chemicals will soon be solved through non-intoxicating solvents to replace those now present in glues False
- An important medicinal drug because of its effectiveness as a pain-killer. False
- A hard drug, and whoever produces or distributes it is guilty of a felony. True
- Heroin coming to the United States today comes by way of Mexico. True
- Cannabis sativa, from which marihuana is derived, grows only in warm, humid climates. False
- The use of marihuana is derived has been known and used as a drug for several centuries. True
- Anyone who must take marihuana (or any other drug) in order to enjoy life and has failed to make a normal wholesome adjustment to life and function as an independent, responsible member of society. True
- When using marihuana (or any other drug), it is best for you to use it, if you can bear different. False
- In order to have success or enjoyment in life, it is wise to try to forget your sense of responsibility by drinking alcohol or taking drugs. False
- Most users today do not progress to heroin, there is little reason not to. False

TEACHER INFORMATION (continued)

SELECT QUESTIONS FOR PRE AND POST TESTS

True-False Questions

26. Marihuana contains a powerful chemical that appears to incite its users to commit acts of violence.
27. There is now believed to be little or no relation between the use of marihuana and the commission of acts of violence.
28. A person who forms a habit of marihuana use may find it exceedingly difficult to break that habit.
29. The use of marihuana opens the way for many persons to the use of other drugs.
30. When a drug is said to be "non-addicting," it means that a person using the drug can stop any time he wants to.
31. A person should make decisions in terms of his own standards and convictions rather than in terms of the pressure and practices of other people.
32. Marihuana, while apparently acting as a stimulant, dulls the higher control of the brain so that one's conduct may become socially unacceptable, for his inhibitions no longer prevail.
33. A person under the influence of marihuana is able to think more clearly and more efficiently than he would under normal conditions.
34. When a person has taken marihuana, he is likely to experience a period of stimulation followed by a period of depression.
35. LSD may be used only for purposes approved by the federal Food and Drug Administration.
36. Any licensed physician can obtain LSD from the Food and Drug Administration for the purpose of conducting scientific investigations.
37. People with stable personalities seldom experience adverse effects after taking LSD.
38. Since the early 1940's, scientists have known that LSD causes hallucinations.

TEACHER INFORMATION (continued)

SELECT QUESTIONS FOR PRE AND POST TESTS

ns

contains a powerful chemical that appears to incite its users to commit violence. False

is believed to be little or no relation between the use of marihuana and the commission of acts of violence. False

Who forms a habit of marihuana use may find it exceedingly difficult to give up the habit. True

Use of marihuana opens the way for many persons to the use of other drugs. True

When a drug is said to be "non-addicting," it means that a person using the drug can stop at any time he wants to. False

Persons who should make decisions in terms of his own standards and convictions rather than in terms of the pressure and practices of other people. True

While apparently acting as a stimulant, marihuana dulls the higher control centers of the brain so that one's conduct may become socially unacceptable, for his normal inhibitions no longer prevail. True

Under the influence of marihuana a person is able to think more clearly and act more responsibly than he would under normal conditions. False

When a person has taken marihuana, he is likely to experience a period of stimulation followed by a period of depression. True

LSD is used only for purposes approved by the federal Food and Drug Administration. True

Only a physician can obtain LSD from the Food and Drug Administration for the purpose of conducting scientific investigations. False

Persons with stable personalities seldom experience adverse effects after taking LSD. False

As early as the 1940's, scientists have known that LSD causes hallucinations. True

TEACHER INFORMATION (continued)

SELECT QUESTIONS FOR PRE AND POST TESTS

True-False Questions

39. LSD is one of the most potent drugs known to man.
40. LSD has an accepted place in medical practice.
41. After a user takes LSD, his mind "expands" and he becomes more aware of his surroundings.
42. Psychological dependence may result from the use of LSD.
43. A user taking the same amount of LSD in the same surroundings a second time will have an experience similar to the one he had the first time.
44. An hallucination experience, after a person has taken LSD, can recur several times even though he has not taken any more of the drug.
45. An individual's value system often changes after he has taken LSD.
46. After taking LSD, the user becomes more social; that is, he relates more to those around him.
47. A number of persons have committed suicide after taking LSD.
48. Some people use LSD in order to withdraw from reality.
49. A person who has used LSD several times can predict the kind of side effects that a new user might expect.
50. Persons who use LSD seldom use any other drugs.
51. In Montana it is illegal to have LSD in one's possession.
52. LSD is derived from the sacred mushroom, which has long been used by the Indians.
53. LSD is a relatively mild drug which can be used safely in large amounts.
54. Once it is brought under medical control, LSD promises to be a "miracle" drug as it helps people to solve their problems and adjust better to life.

TEACHER INFORMATION (continued)

SELECT QUESTIONS FOR PRE AND POST TESTS

- the most potent drugs known to man. True
- accepted place in medical practice. False
- one who takes LSD, his mind "expands" and he becomes more aware of his surroundings. False
- dependence may result from the use of LSD. True
- the same amount of LSD in the same surroundings a second time will have similar to the one he had the first time. False
- on experience, after a person has taken LSD, can recur several months later if he has not taken any more of the drug. True
- one's value system often changes after he has taken LSD. True
- After taking LSD, the user becomes more social; that is, he relates more closely to his family and friends. False
- Persons who have committed suicide after taking LSD. True
- One takes LSD in order to withdraw from reality. True
- Someone who has used LSD several times can predict the kind of side effects, if any, that he might expect. False
- One who takes LSD seldom uses any other drugs. False
- It is illegal to have LSD in one's possession. True
- LSD is derived from the sacred mushroom, which has long been used by the Indians in Mexico. False
- LSD is a relatively mild drug which can be used safely in large amounts. False
- Even though it is not under medical control, LSD promises to be a "miracle" drug in that it can help people to solve their problems and adjust better to life. False

TEACHER INFORMATION (continued)

True-False Questions

SELECT QUESTIONS FOR PRE AND POST TEST

55. LSD and other hallucinogens are now subject to the same federal controls as dangerous drugs.
56. The use of LSD is frequently accompanied by severe and dangerous side effects.
57. Physicians prescribe LSD for persons who have symptoms of anxiety and depression.
58. LSD has a special attraction for adolescents who are searching for identity.
59. LSD can help adolescents resolve the conflicts of "growing up."
60. Involvement in narcotic use, if it occurs, is likely to take place only after experience with other drugs.
61. Heroin is legally used in the United States today as a medicinal drug.
62. The process of injecting heroin (or any other foreign substance) directly into the veins carries serious danger of infection.
63. Since heroin appears not to damage body tissue, its use is not serious from the standpoint of health.
64. The use of heroin leads rapidly and almost inevitably to total drug dependence.
65. The recent increase in sex crimes throughout the United States is attributed in part, to the increase in narcotic use.
66. Narcotic dependence may be said to be cured when a person has been relieved of the physical aspects of dependence.
67. The narcotic addict in Great Britain, once he has registered with designated authorities, is entitled automatically to receive a supply of drugs sufficient to maintain his level of dependence.
68. The "clinic plan" of administering sustaining doses of narcotics to addicts in the United States in the 1920's and deemed a success at that time.

TEACHER INFORMATION (continued)

SELECT QUESTIONS FOR PRE AND POST TESTS

cinogens are now subject to the same federal controls as the	True
requently accompanied by severe and dangerous side effects.	True
e LSD for persons who have symptoms of anxiety and depression.	False
ttraction for adolescents who are searching for identity.	True
cents resolve the conflicts of "growing up."	False
otic use, if it occurs, is likely to take place only after prior er drugs.	True
sed in the United States today as a medicinal drug.	False
cting heroin (or any other foreign substance) directly into the us danger of infection.	True
s not to damage body tissue, its use is not serious from the h.	False
eads rapidly and almost inevitably to total drug dependence.	True
e in sex crimes throughout the United States is attributable, in ase in narcotic use.	False
e may be said to be cured when a person has been relieved of the f dependence.	False
t in Great Britain, once he has registered with designated authorities, tically to receive a supply of drugs sufficient to maintain his desired e.	False
of administering sustaining doses of narcotics to addicts was tried es in the 1920's and deemed a success at that time.	False

SELECT QUESTIONS FOR PRE AND POST

True-False Questions

69. The American Medical Association has come out in favor of the adoption of the method of narcotics control in the United States
70. The United States has made significant progress in international narcotics control
71. In the United States the dispensing of drugs by a physician to an addict against the will of his desire or need for drugs is now considered by the courts to fall within legitimate medical practice
72. Whereas control of drug abuse in the United States rests largely in the hands of enforcement personnel, control in Great Britain is vested in the medical profession
73. Since the drug abuse pattern in the United States differs drastically from that in Great Britain, it is doubtful that this country will ever move toward the British method of narcotic control.
74. Under Montana law the mere possession of marihuana or of a narcotic (not prescribed by a physician) is illegal.

Multiple Choice Questions

1. "A substance that produces sleep, lethargy, and relief of pain" is the definition of (a) a drug; (b) a sedative; (c) a narcotic; (d) an opiate; or (e) an hypnotic.
2. A substance, other than food, that affects body structure and function and produces a state of depression is (a) a depressant; (b) a narcotic; (c) an analgesic; (d) a drug; or (e) an hypnotic.
3. The term "narcotic" is used medically in reference to (a) marihuana; (b) the opiates; (c) the hallucinogens; or (e) the hypnotics.
4. "A state arising from repeated administration of a drug on a periodic basis" is the definition of (a) drug abuse; (b) depression; (c) drug dependence; or (e) euphoria.

TEACHER INFORMATION (continued)

SELECT QUESTIONS FOR PRE AND POST TESTS

- Association has come out in favor of the adoption of the British
control in the United States False
- There has been significant progress in international narcotic control. True
- The dispensing of drugs by a physician to an addict for the gratification
of drugs is now considered by the courts to fall within the province of
police False
- Drug abuse in the United States rests largely in the hands of law
enforcement. Control in Great Britain is vested in the medical profession. True
- The attitude toward drug abuse in the United States differs drastically from that in Great
Britain. It is expected that this country will ever move toward the wholesale adoption of
narcotic control. True
- The possession of marihuana or of a narcotic (other than one
prescribed) is illegal. True
- "The production of sleep, lethargy, and relief of pain" is the definition of
analgesia; (a) a narcotic; (b) an opiate; (c) a narcotic; (d) an opiate; or (e) an analgesic. c
- A drug that affects body structure and function is called (a) a
drug; (b) a drug; (c) an analgesic; (d) a drug; or (e) an intoxicant. d
- Used medically in reference to (a) marihuana; (b) the barbiturates;
(c) the barbiturates; (d) the barbiturates; (e) the hypnotics. c
- Repeated administration of a drug on a periodic or continuous basis"
is called (a) drug abuse; (b) depression; (c) drug dependence; (d) analgesia; (e) analgesia. c

TEACHER INFORMATION (continued)

5. Substances which depress body functions are (a) barbiturates and amphetamines; (b) barbiturates and opiates; (c) amphetamines and opiates; (d) cocaine and marihuana; or (e) amphetamines and cocaine b
6. Substances which stimulate body functions are (a) barbiturates and amphetamines; (b) barbiturates and opiates; (c) amphetamines and opiates; (d) cocaine and marihuana; or (e) amphetamines and cocaine. e
7. "A generalized feeling of well-being in the absence of any objective justification for such a feeling" is a definition of (a) euphoria; (b) tolerance; (c) analgesia; (d) dependence; or (e) hallucination. a
8. One of the following statements about the dangerous drugs is correct: (a) they are outlawed both legally and medically; (b) they may be used legally without a doctor's prescription; (c) they may be used legally only with a doctor's prescription; (d) they fall under different regulations depending on the drug involved; or (e) they are mild drugs comparable to alcohol in their effects. c
9. The most hopeful approach to the solution of the glue sniffing problem at present appears to lie in (a) more stringent laws; (b) more stringent enforcement of existing laws; (c) voluntary control by distributors of glues and plastic cements; (d) replacement of volatile chemicals by non-intoxicating solvents; or (e) education of children concerning the hazards of introducing foreign substances into the body. e
10. In the United States marihuana is most frequently taken into the body by (a) chewing; (b) sniffing; (c) eating; (d) drinking; or (e) smoking. e
11. The odor associated with the use of marihuana is most like (a) dried alfalfa or hay; (b) alcohol; (c) garlic; (d) decaying fruit; or (e) burning wood. a
12. The body system most affected by the use of marihuana is (a) the nervous; (b) the circulatory; (c) the digestive; (d) the respiratory; (e) the muscular. a

TEACHER INFORMATION (continued)

13. In laboratory research LSD has proved to be (a) safe and effective for the treatment of epilepsy; (b) safe but not effective for the treatment of alcoholism; (c) neither safe nor effective for the treatment of any disease; or (d) safe but not effective for the treatment of psychosis.
14. From among the following side effects, the one which has not resulted from the use of LSD is (a) distortion of perception; (b) withdrawal illness; (c) delusions; or (d) severe depression.
15. A person who takes LSD often continues to take it because (a) it improves his ability to concentrate; (b) it causes sexual stimulation; (c) it creates a sensation which is pleasant; or (d) it brings on a physical craving.
16. The part of the opium poppy from which raw opium is derived is (a) dried flowers; (b) dried leaves; (c) unripe seed pods; (d) ripe seeds; or (e) unripe seeds.
17. The federal law which forms the basis of our government's control over narcotics requiring registration and payment of an occupational tax by those who deal in narcotics is (a) the Boggs Act; (b) the Narcotic Control Act; (c) The Harrison Narcotic Act; (d) the Opium Poppy Control Act; or (e) the Narcotic Drugs Import and Export Act.

TEACHER INFORMATION (continued)

LSD has proved to be (a) safe and effective for the treatment of
not effective for the treatment of alcoholism; (c) neither safe
treatment of any disease; or (d) safe but not effective for the

g side effects, the one which has not resulted from the use of
f perception; (b) withdrawal illness; (c) delusions; or

often continues to take it because (a) it improves his ability to
uses sexual stimulation; (c) it creates a sensation which he likes;
physical craving

poppy from which raw opium is derived is (a) dried flowers;
unripe seed pods; (d) ripe seeds; or (e) unripe seeds.

forms the basis of our government's control over narcotics by
and payment of an occupational tax by those who deal in narcotics
b) the Narcotic Control Act; (c) The Harrison Narcotic Act; (d) the
; or (e) the Narcotic Drugs Import and Export Act.

TEACHER INFORMATION (contin

PRE AND POST TEST

Bread	1. Money
Drop	2. A personal problem
Goof Balls	3. To take by mouth
Hang-up	4. A drug habit where physical dependence is present
Horse	5. To abandon a drug habit
Kick	6. The butt of a marijuana cigarette
Monkey	7. Stimulants
Roach	8. A highly potent hallucinogen
STP	9. Heroin
Ups	10. Barbiturates
Barbs	11. Intoxicated (drug or alcohol)
Blow a stick	12. Barbiturates
Hash	13. A marijuana cigarette
Joint	14. To inject drugs directly into a vein
Mainline	15. To sniff powdered narcotics into nostrils
Man	16. Hashish, marijuana
Meth	17. The police
Smashed	18. Being "high" on hallucinogens

TEACHER INFORMATION (continued)

PRE AND POST TEST

ney	(bread)
personal problem	(hang-up)
take by mouth	(grop)
drug habit where physical dependence is present	(monkey)
abandon a drug habit	(kick)
the butt of a marijuana cigarette	(roach)
stimulants	(ups)
highly potent hallucinogen	(STP)
heroin	(horse)
barbiturates	(goof balls)
intoxicated (drug or alcohol)	(smashed)
barbiturates	(barbs)
marijuana cigarette	(joint)
to inject drugs directly into a vein	(mainline)
to sniff powdered narcotics into nostrils	(snort)
hashish, marijuana	(hash)
the police	(man)
being "high" on hallucinogens	(trip)

TEACHER INFORMATION (co

- | | |
|-----------------|--|
| snort | 19. To smoke a marijuana cigarette |
| Trip | 20. Methedrine |
| Bum trip | 21. Anxious, disturbed |
| Burned out | 22. Off drugs |
| Clean | 23. A sclerotic condition of the veins resulting from ab
continued puncturing |
| Drop a cap | 24. A cache of narcotics |
| Grass | 25. Under the influencd of narcotics |
| Kilo | 26. A large amount of narcotics |
| Outfit | 27. The materials and equipment used by an addict to in
intravenously |
| Stash | 28. Take a dose of LSD |
| Stoned | 29. Marijuana |
| Up tight | 30. An unpleasant experience with LSD |
| Bennies | 31. Benzedrine |
| Blow one's mind | 32. Amphetamines |
| Cold turkey | 33. informer |
| Gun | 34. A hypodermic needle |
| On a trip | 35. Police in neighborhood, a shake-down or search |
| Pill freak | 36. Sudden drug withdrawal |

TEACHER INFORMATION (continued)

marijuana cigarette	(blow a stick)
	(meth)
disturbed	(up tight)
	(clean)
condition of the veins resulting from abscesses and puncturing	(burned out)
narcotics	(stash)
influenced of narcotics	(stoned)
amount of narcotics	(kilo)
tools and equipment used by an addict to inject a drug sly	(outfit)
use of LSD	(drop a cap)
	(grass)
pleasant experience with LSD	(bum trip)
	(bennies)
names	(truck drivers)
	(stoolie)
hypodermic needle	(gun)
neighborhood, a shake-down or search	(rumble)
drug withdrawal	(cold turkey)

TEACHER INFORMATION (continued)

Rumble	37. To break with present reality
Stoolie	38. Under the influence of drugs
Truck dirvers	39. Under the influence of LSD or other hallucinogens
Turned on	40. Dangerous drug user
Dime bag	41. Drug users home
High	42. Dexedrine
Hooked	43. A ten-dollar purchase of narcotics
Juice-head	44. User of liquor
Pad	45. Dark shades or glasses
Pep pills	46. Methedrine, usually injected
Oranges	47. A marijuana cigarette
Reefer	48. Addicted
Speed	49. Under the influence of drugs
Tea shades	50. Stimulants
Downs	51. Money
Flash back	52. To inject drugs
Hard stuff	53. Directly into the vein
Intravenous	54. A later repeat trip from the same dose
Junkie	55. Morphine, cocaine, or heroin

TEACHER INFORMATION (continued)

ak with present reality	(blow one's mind)
the influence of drugs	(turned on)
the influence of LSD or other hallucinogens	(on a trip)
ous drug user	(pill freak)
sers home	(pad)
ine	(oranges)
dollar purchase of narcotics	(dime bag)
f liquor	(juice-head)
shades or glasses	(tea shades)
irine, usually injected	(speed)
ijuana cigarette	(reefer)
ted	(hooked)
the influence of drugs	(high)
lants	(pep pills)
	(paper)
ject drugs	(shoot up)
tly into the vein	(intravenous)
er repeat trip from the same dose	(flashback)
ine, cocaine, or heroin	(hard stuff)

TEACHER INFORMATION (continued)

Mary jane	56. Depressants
Paper	57. Marijuana
Pot	58. A narcotic addict
Shoot up	59. In possession of narcotics
Straight	60. Marijuana

TEACHER INFORMATION (continued)

addict
on of narcotics

- (downs)
- (mary jane)
- (junkie)
- (straight)
- (pot)

TEACHER INFORMATION (continued)

SLANG TERMS

A	Benzedrine, dexedrine, and methedrine
A-Bomb	Mixture of marijuana and heroin
Abe	Five dollar bill (also Lincoln, nickel, fin)
Acapulco Gold	Marijuana smuggled across the border from Mexico into the U.S.
Ace	(1) One-year sentence; bullet; (2) one of anything; (3) an ace
Acid	LSD
Acid head	An abuser of LSD
Action	(1) Selling of narcotics; (2) anything pertaining to criminal a
Artillery	Equipment for injecting drugs
Backtrack	To withdraw the plunger of a syringe before injecting drugs to ma proper position
Bad seed	Mescaline - peyote
Bad trip	An unpleasant experience with LSD
Bag	A container of drugs
Bagman	A drug supplier
Bale	A pound of marijuana
Ball	A party
Balloon	A small packet of narcotics
Bang	To inject drugs
Bamboo	An opium pipe, gong-gonger, dream stick, hop stick, saxophone, st

TEACHER INFORMATION (continued)

SLANG TERMS

ine, dexedrine, and methedrine

of marijuana and heroin

ollar bill (also Lincoln, nickel, fin)

na smuggled across the border from Mexico into the U.S.

e-year sentence; bullet; (2) one of anything; (3) an ace note; one dollar bill

er of LSD

lling of narcotics; (2) anything pertaining to criminal action

nt for injecting drugs

draw the plunger of a syringe before injecting drugs to make sure the needle is in position

ne - peyote

pleasant experience with LSD

iner of drugs

supplier

of marijuana

packet of narcotics

ect drugs

m pipe, gong-gonger, dream stick, hop stick, saxophone, stem, crock, log

TEACHER INFORMATION (continued)

Barbs	Barbiturates
Bathtub	Refers to LSD made in home or improvised places
Battes	Injectable amphetamines
Bean	Capsule - Benzedrine tablet or capsule
Been had	Arrested
Belt	(1) Euphoria following an injection of narcotics; (2) a shot injected
Bennies	Benzedrine (brand of amphetamine sulfate, Smith, Kline, and
Bernice	Cocaine
Big C	Cocaine
Big John	The police
Bindle	A small quantity or packet of narcotics
Birdle	A small quantity or packet of narcotics
Bird's eye	Extremely small amount of narcotics
Biz	Equipment for injecting drugs
Black and Whites	Patrol car or policeman
Black Russian	Dark colored very potent hashish
Blanks	Poor quality narcotics
Blasted	Under the influence of drugs, to be intoxicated by a drug

TEACHER INFORMATION (continued)

es
LSD made in home or improvised places

amphetamines

Benzedrine tablet or capsule

ia following an injection of narcotics; (2) a shot or quantity of drugs to be
ed

(brand of amphetamine sulfate, Smith, Kline, and French Laboratories) tablets

quantity or packet of narcotics

quantity or packet of narcotics

small amount of narcotics

for injecting drugs

or policeman

red very potent hashish

ity narcotics

influence of drugs, to be intoxicated by a drug

TEACHER INFORMATION (continued)

Blast a stick or joint	To smoke a marijuana cigarette
Blow a stick	To smoke a marijuana cigarette
Blow one's mind	To break with present reality
Blue devils	Amytal (brand of amobarbital, Eli Lilly and Company) capsules
Blue heavens	Amytal (a barbiturate-amobarbital)
Blue velvet	Paregoric and an antihistamine (a combination of paregoric and use)
Bombido	(Bombita) injectable amphetamine
Boo	Marijuana
Boost	To shoplift
Booster stick	(1) cigarette of treated marijuana, reputedly potent; (2) an of which is dipped in a concentrated essence of marijuana preserve and inhaled
Boxed	In jail
Boy	Heroin
Bread	Money
Bull	A federal narcotic agent, a police officer
Bum rap	An arrest or conviction for crime one didn't commit
Bum trip	An unpleasant experience with LSD
Bum steer	False or unreliable information about drugs or peddlers - also
Bummer	An unpleasant experience with LSD

TEACHER INFORMATION (continued)

ke a marijuana cigarette

ke a marijuana cigarette

ak with present reality

(brand of amobarbital, Eli Lilly and Company) capsules

(a barbiturate-amobarbital)

ric and an antihistamine (a combination of paregoric and antihistamines for intravenous

ta) injectable amphetamine

ana

plift

garette of treated marijuana, reputedly potent; (2) an ordinary cigarette, the tip of
is dipped in a concentrated essence of marijuana preserved in alcohol - lit, blown out,
haled

l

ral narcotic agent, a police officer

rest or conviction for crime one didn't commit

pleasant experience with LSD

or unreliable information about drugs or peddlers - also bogus trip, bum wire, jive

pleasant experience with LSD

TEACHER INFORMATION

Burned	To receive phony or badly diluted drugs
Burned out	A sclerotic condition of the veins resulting from a
Business man's trip	Amphetamine - short trip
Bust a mainline	To inject drugs intravenously
Busted	To be arrested
Buttons	Sections of the peyote cactus
Cactus	Peyote
Caballo	Heroin
Can	Approximately an ounce of marijuana
Candy	Barbiturates
Cap	A container of drugs (usually a capsule, usually he
Cartwheels	Amphetamine sulfate (round, white, double-scored ta
Cecil	Cocaine
Champ	Drug user who won't reveal his supplier, even under
Charley	Cocaine
Charas	Form of marijuana in India; hashish
Charge	Marijuana
Charged up	Under the influence of drugs
Chipping	Taking small amounts of drugs on an irregular basis

TEACHER INFORMATION (continued)

phony or badly diluted drugs

condition of the veins resulting from abscesses and continued puncturing

- short trip

drugs intravenously

sted

f the peyote cactus

ely an ounce of marijuana

es

r of drugs (usually a capsule, usually heroin)

e sulfate (round, white, double-scored tablets)

who won't reveal his supplier, even under pressure

marijuana in India; hashish

influence of drugs

all amounts of drugs on an irregular basis

TEACHER INFORMATION (continued)

Chippy	An abuser taking small, irregular amounts - also, a prostitute
Clean	Off drugs
Clear up	To withdraw from drugs
Coasting	Under the influence of drugs
Coasts to coasts	Amphetamines
Cocktail	Marijuana butt attached to a regular cigarette
Coke	Cocaine
Cokie	A cocaine addict
Cold turkey	Sudden drug withdrawal
Come down	End of drug experience
Coming down	Emerging from an LSD experience
Connect	To purchase drugs
Connection	A drug supplier
Cooker	Receptacle for heating drugs before using intravenously
Cook up a pill	To prepare opium for smoking
Contact high	Vicarious experience that occurs by being with someone who is on a "trip"
Co-pilots	Amphetamine tablets
Cop	To purchase drugs, steal

TEACHER INFORMATION (continued)

Jorine	Cocaine
Cotics	Narcotics
Cottonhead	User who recooks the cotton fibers found in cookers when the are in need of an injection
Crater	Gaping hole in a vein caused by repeated injections at the
Crystals	Methedrine
Cube	Sugar cube impregnated with LSD; a non-user of drugs
Cubehead	Frequent user of LSD
Cut	To adulterate a narcotic by adding milksugar
Dabble	To take small amounts of drugs on an irregular basis
Dagga	Marijuana - India
D.D.	A fatal dose of narcotics or other drug
Dealer	A drug supplier
Deck	A small packet of narcotics (heroin)
Dexies	Dexedrine (brand of dextroamphetamine sulfate, Smith, Kline
Dig	Appreciate, enjoy, understand
Dime bag	A ten-dollar purchase of narcotics
Dirty	In possession of narcotics; liable to arrest if searched
Dollies	Delephine (brand of methadone hydrochloride, Eli Lilly and

TEACHER INFORMATION (continued)

recooks the cotton fibers found in cookers when their supply is up and they need of an injection

ole in a vein caused by repeated injections at the same spot

ne

be impregnated with LSD; a non-user of drugs

user of LSD

erate a narcotic by adding milksugar

small amounts of drugs on an irregular basis

na - India

dose of narcotics or other drug

supplier

packet of narcotics (heroin)

ne (brand of dextroamphetamine sulfate, Smith, Kline and French Laboratories) tablets

ate, enjoy, understand

ollar purchase of narcotics

ession of narcotics; liable to arrest if searched

ne (brand of methadone hydrochloride, Eli Lilly and Company) tablets

TEACHER INFORMATION (continued)

Domino	To purchase drugs
Doojee	Heroin
Dope	Any narcotic
Doper	Regular user of narcotics
Double Blind	Term used in research to indicate that neither the patient or s know which of several drugs or placebo is given on any occasion condition if results are attributed to the effects of the drug
Double trouble	Tuinal (brand of amobarbital sodium and secobarbital sodium, E
Do up	Supply of marijuana cigarettes
Down	Depressed feeling after drugs wear off
Downs	Depressants
Drivers	Amphetamines
Drop	To take by mouth
Drop a cap	Take a dose of LSD
Dropped	Arrested
Dummy	Purchase which did not contain narcotics
Dust	Cocaine
Dynamite	Narcotics of high potency
Ego games	A deprecative term applied by LSD users to social conformity a occupations and responsibilities of the majority of people

TEACHER INFORMATION (continued)

urchase drugs

arcotic

ar user of narcotics

used in research to indicate that neither the patient or subject nor the experimenter
which of several drugs or placebo is given on any occasion. Considered a necessary
tion if results are attributed to the effects of the drug as pharmacologic agent.

l (brand of amobarbital sodium and secobarbital sodium, Eli Lilly and Company) capsules

y of marijuana cigarettes

essed feeling after drugs wear off

essants

etamines

ake by mouth

a dose of LSD

sted

hase which did not contain narcotics

ine

otics of high potency

reprecativ term applied by LSD users to social conformity and to the normal activities,
pations and responsibilities of the majority of people

TEACHER INFORMATION

Ends	Money
Experience	An LSD "trip"
Eye-openers	Amphetamines
Factory	Equipment for injecting drugs
Fence	One who acts as a source of stolen goods from another person or stolen goods and thus can afford his drugs
Fix	An injection of narcotics
Flake	Cocaine
Flashback	A later repeat "trip" from the same dose
Flea powder	Poor quality narcotics
Flip	To become psychotic
Flip out	To lose mental control after using drugs
Floating	Under the influence of drugs (to be intoxicated)
Fly	Take narcotics
Flying	Under the influence of marijuana
Footballs	Oval-shaped amphetamine sulfate tablets (a combination of amphetamine and sulfate)
Freak out	To have unpleasant reactions while on a hallucinogen
Fresh and sweet	Out of jail
Fruit salad	Taking a mixture of pills

TEACHER INFORMATION (continued)

ey

LSD "trip"

metamines

ipment for injecting drugs

who acts as a source of stolen goods from addict. Addict is in turn paid for the
stolen goods and thus can afford his drugs

injection of narcotics

aine

ater repeat "trip" from the same dose

r quality narcotics

become psychotic

lose mental control after using drugs

er the influence of drugs (to be intoxicated by drugs)

ke narcotics

er the influence of marijuana

l-shaped amphetamine sulfate tablets (a combination of dextroamphetamine and amphetamine)

have unpleasant reactions while on a hallucinogenic "trip"

t of jail

king a mixture of pills

TEACHER INFORMATION (continued)

Gage	Marijuana
Ganga	Marijuana (superior grade)
Gassed out	Overcome emotionally by an experience
Gassing	Sniffing gasoline fumes
Gee-head	Paregoric abuser
Geetis	Money
Geezer	A narcotic injection
Get high	Smoke marijuana
Gimmicks	The equipment for injecting drugs
Give wings	Inject somebody with heroin by vein
Girl	Cocaine
Glad rag	Cloth material or handkerchief saturated with the chemical
Gluey	Glue-sniffer
Gold dust	Cocaine
Goods	Narcotics
Good trip	Happy experience with psychedelics
Goofballs	Barbiturates
Goofed up	Under the influence of barbiturates
Gow-head	An opium addict

TEACHER INFORMATION (continued)

Grasshopper	Marijuana
Greenies	Green, heart-shaped tablets of dextroamphetamine sulfate and
Griego	Marijuana
Groovy	Enjoyable
Gun	A hypodermic needle
H	Heroin
Hand-to-hand	Person-to-person delivery
Hang-up	A personal problem
Happening	A pseudo experience obtained through the use of lights and of experience that one has with a drug
Happy cigarette	Marijuana cigarette
Happy dust	Cocaine
Hard stuff	Morphine, cocaine or heroin
Harness bulls	Uniformed officers
Harry	Heroin
Hash	Hashish; marijuana
Hawk	LSD
Hay	Marijuana
Hayhead	Marijuana user

TEACHER INFORMATION (continued)

marijuana
green, heart-shaped tablets of dextroamphetamine sulfate and amobarbital
marijuana
enjoyable
hypodermic needle
heroin
person-to-person delivery
personal problem
pseudo experience obtained through the use of lights and sound; to have the same type
of experience that one has with a drug
marijuana cigarette
cocaine
morphine, cocaine or heroin
uniformed officers
heroin
hashish; marijuana
SD
marijuana
marijuana user

TEACHER INFORMATION (continued)

Hearts	Benzedrine or dexedrine (brands of amphetamine sulfate and dextroamphetamine Smith, Kline and French Laboratories) heart-shaped tablets
Heat	The police
Heavenly blues	A type of morning glory seed, or LSD
Heeled	Having narcotics; having money
Hemp	Marijuana
High	Under the influence of drugs
Hikori	Mescaline - peyote
Hip (Hep)	To understand
Hit	To purchase drugs, an arrest
Hocus	A narcotic solution ready for injection
Hog	An addict who uses all he can get his hands on
Holding	Possessing narcotics
Hooked	Addicted
Hophead	Narcotic addict
Hopped up	Under the influence of drugs
Hot shot	A fatal dosage
Horse	Heroin

TEACHER INFORMATION (continued)

Benzedrine or dexedrine (brands of amphetamine sulfate and dextroamphetamine sulfate, Smith, Kline and French Laboratories) heart-shaped tablets

The police

A type of morning glory seed, or LSD

Having narcotics; having money

Marijuana

Under the influence of drugs

Mescaline - peyote

To understand

To purchase drugs, an arrest

A narcotic solution ready for injection

An addict who uses all he can get his hands on

Possessing narcotics

Addicted

Narcotic addict

Under the influence of drugs

A fatal dosage

Heroin

TEACHER INFORMATION (continued)

Hype	Narcotic addict
Ice cream habit	A small, irregular drug habit
In	Belonging or accepted by group
Intravenous	Directly into the vein
Jab	To inject drugs
Jag	Intoxication after using benzedrine
Jive or jive stick	Marijuana
Job	To inject drugs
Joint	A marijuana cigarette
Jolly beans	Pep pills, amphetamines
Jolt	An injection of narcotics; effects of the drug
Jones	The habit, an addict
Joy-pop	To inject small amounts of drugs irregularly
Joy powder	Heroin
Juice-head	User of liquor
Junk	Narcotics
Junkie	A narcotic Addict
Juvies	Juvenile officers

TEACHER INFORMATION (continued)

Kick or kick habit	To abandon a drug habit
Kick parties	Parties or sessions where LSD is used
Kif	Marijuana in North Africa
Kilo	Large amount of narcotics
Lace	Money
L.A. turnabouts	Amphetamines
Layout	The equipment for injecting drugs
Lemonade	Poor heroin
Lid	Approximately one ounce of marijuana
Lid poppers	Amphetamines
Lipton tea	Poor quality narcotics
Lit up	Under the influence of drugs
Locoweed	Marijuana
Long green	Money
M	Morphine
Machinery	Equipment for injecting drugs
Mainline	To inject drugs directly into a vein
Mainliner	One who injects narcotics into a vein

TEACHER INFORMATION (continued)

Make a buy	To purchase drugs
Make a meet	To purchase drugs
Man	The police
Manicure	High-grade marijuana (i.e., to seeds or stems)
Mary jane	Marijuana
Match box	Marijuana container; quantity of marijuana
Member	Negro or some other than a white person
Mellow yellow	Banana peel
Mesc	Mescaline, the alkaloid in peyote
Mescal - Mescal bean	Mescaline or peyote
Meth	Methedrine (also known as desexyn) an amphetamine
Methhead	Chronic user of methedrine
Meth monster	User of speed (Methedrine)
Mezz	Marijuana
Mickey Finn	Chloral Hydrate
Mikes	Micrograms (millionths of a gram)
Miss emma	Morphine
Mojs	Narcotics

TEACHER INFORMATION (continued)

Moon	Peyote
Mor a grifa	Marijuana
Mugglehead	Marijuana user
Muggles	Marijuana
Mutah	Marijuana
Naree	Police officer (the law)
Narks	Slang term for the law enforcement officials concerned with narcotic abuse
Needle	Hypodermic syringe
Nickel bag	A five-dollar purchase of narcotics
Nimby	Nembutal (brand of pentobarbital, Abbott Laboratories) capsules
Nod	To behave in a sleepy or lethargic manner
OD	Overdose
Off	Withdrawn from drugs
On a rip	Under the influence of LSD
On a trip	Under the influence of LSD or other hallucinogens
On the beam	Under the influence of marijuana
On the nod	Under the influence of drugs
On the street	Out of jail
On the stuff	Regular user or addict

TEACHER INFORMATION (continued)

Oranges	Dexedrine (brand of dextroamphetamine sulfate, Smith, Kline and French tablets)
Outfit	The materials and equipment used by an addict to inject a drug into
Out of the body	The feeling a person experiences while he is under the influence of
Out of this world	Under the influence of marijuana
Outside myself	The feeling a person experiences while under the influence of LSD
Pack	A packet of heroin
Panic	Sudden shutting off of drug supply
Pad	Drug user's home, apartment
Paper	A prescription or packet of narcotics
Peaches	Benzedrine (brand of amphetamine sulfate, Smith, Kline and French)
Peanuts	Barbiturates
P.G. or P.O.	Paregoric
Peddler	Dealer in drugs
Pep Pills	stimulants
Piece	A container of drugs
Pinks	Seconal (brand of secobarbital, Eli Lilly and Company) capsules
Pill Freak	Dangerous drug user
Pill Head	Dangerous drug user

TEACHER INFORMATION (continued)

edrine (brand of dextroamphetamine sulfate, Smith, Kline and French Laboratories) tablets

materials and equipment used by an addict to inject a drug intravenously

feeling a person experiences while he is under the influence of LSD

er the influence of marijuana

feeling a person experiences while under the influence of LSD

packet of heroin

den shutting off of drug supply

g user's home, apartment

prescription or packet of narcotics

zedrine (brand of amphetamine sulfate, Smith, Kline and French Laboratories) tablets

biturates

egoric

aler in drugs

stimulants

container of drugs

conal (brand of secobarbital, Eli Lilly and Company) capsules

dangerous drug user

dangerous drug user

TEACHER INFORMATION (continued)

Plant	Cache of narcotics
Point	Paraphernalia for injecting narcotics
Pop	To inject drugs
Pot	Marijuana
Pothead	Marijuana user
Pot party	Marijuana party
Pure	Pure narcotics of very good grade
Purple hearts	Luminal
Pusher	Drug seller or supplier
Quill	A folded matchbox cover from which narcotics are sniffed through the nose
Rainbows	Tuinal (brand of amobarbital sodium and secobarbital sodium, Eli Lilly and Company) capsules
Rap	Rapport
Reader	A prescription
Red birds	Seconal
Red devils	Seconal (brand of secobarbital, Eli Lilly and Company) capsules
Reefer	A marijuana cigarette
Re-entry	A return from a "trip"
Roach	The butt of a marijuana cigarette

TEACHER INFORMATION (continued)

Rope	Marijuana
Roses	Benzedrine (brand of amphetamine sulfate, Smith, Kline and F
Royal blue	LSD
Rumble	Police in the neighborhood; a shake-down or search
Runner	Smuggler of illegal drugs
Sam	Federal narcotic agents
Satch cotton	Cotton used to strain narcotics before injection
Seat	Heroin
Schmeck	Heroin
Score	To purchase drugs
Script	A doctor's prescription
Seccies	Barbiturates
Seggy	Seconal (brand of secobarbital, Eli Lilly and Company) caps
Sex juice	Aphrodisiac, supposedly a sex stimulant drug
Shake the habit	Completely conquer the habit
Shooting gallery	A place where narcotic addicts inject drugs
Shoot up or shoot	To inject drugs
Shrink	Psychiatrist (head shrinker)

TEACHER INFORMATION (continued)

Marijuana

Benzedrine (brand of amphetamine sulfate, Smith, Kline and French Laboratories) tablets

LSD

Police in the neighborhood; a shake-down or search

Smuggler of illegal drugs

Federal narcotic agents

Cotton used to strain narcotics before injection

Heroin

Heroin

To purchase drugs

A doctor's prescription

Barbiturates

Seconal (brand of secobarbital, Eli Lilly and Company) capsules

Aphrodisiac, supposedly a sex stimulant drug

Completely conquer the habit

A place where narcotic addicts inject drugs

To inject drugs

Psychiatrist (head shrinker)

TEACHER INFORMATION (continued)

Sitter	An experienced LSD user who helps or guides a new user
Skin popper	Occasional user of narcotics
Slammed	In jail
Smack	Heroin
Smashed	Intoxicated (drug or alcohol)
Smoke	Wood alcohol
Sneeze it out	Attempt to break the habit
Sniff	To sniff narcotics (usually heroin or cocaine) through the nose
Snort(ing)	To sniff powdered narcotics into nostrils
Snow	Cocaine
Speed	Methamphetamine, usually injected for rapid result
Speedball	An injection which combines a stimulant and depressant - often cocaine mixed with morphine or heroin
Speedfreak	Compulsive high-dose user of methamphetamine
Spike	The needle used for injecting drugs
Square	A non-addict
Stack	A quantity of marijuana cigarettes
Stardust	Cocaine
Stash	A cache of narcotics

TEACHER INFORMATION (continued)

Stoned	Under the influence of narcotics
Stonehead	Drug bum, inveterate user
Stool	Informer
Stoolie	Informer
STP	A highly potent hallucinogen
Straight	In possession of narcotics
Strong out	Regular user of narcotics or addict
Strung out	Addicted
Stuff	Narcotics
Sugar	Powdered narcotics
Sugar cube	LSD
Sugar daddy	Drug supplier
Sunshine	LSD
Supplier	Drug source
Sweet lucy	Marijuana
Swingman	A drug supplier
T	Marijuana
Take a band	Take drugs
Take-off	Marijuana

TEACHER INFORMATION (continued)

Taste	Small quantity of narcotics usually given as sample or as reward
Tea shades	Dark shades or glasses used when taking pot and LSD due to dilated pupils
Texas tea or tea	Marijuana
The man	Dealer in drugs
Things	Various amounts of narcotics
Thoroughbred	A high-type hustler who sells pure narcotics
To be dirty	To have drugs
To connect	To buy drugs
To be flush	To understand
To be hep	To understand
To be hip	To understand
To hit on	To buy drugs
To make a meet	To buy drugs
To make it	To try to buy drugs
To have savvy	To understand
Toke up	To light a marijuana cigarette
Tooies	Tuinal (brand of amobarbital sodium and secobarbital sodium, Eli Lilly and Company) capsules
Torch up	Light a marijuana cigarette

TEACHER INFORMATION (continued)

Toss	Search
Tour guide	An experienced LSD user who helps or guides a new user
Toxy	The smallest container of prepared opium
Tracks	Scars along veins from many injections
Travel agent	An experienced LSD user who helps or guides a new user
Trip, tripping	Being "high" on hallucinogens, particularly LSD
Trip out	To take drug and have the drug experience, good or bad (bum trip)
Truck drivers	Amphetamines
Turkey	A capsule purported to be narcotic but filled with a non-narcotic substance
Turned off	Withdrawn from drugs
Turned on	Under the influence of drugs
Turps	Elixirs of terpin hydrate with codeine, a cough syrup
Twist	Marijuana cigarette
Uncle	Federal narcotic agent
Ups	Stimulants
Up tight	Anxious, disturbed
Uppers	Stimulants, cocaine, and psychedelics
Vic	One who has been given a hot shot, a victim
Wake-ups	Amphetamine

TEACHER INFORMATION (continued)

Wakowi	Mescaline
Washed up	Withdrawn from drugs
Wasted	Under the influence of drugs
Weed	Marijuana
Weehead	Marijuana user
Weekend habit	A small, irregular drug habit
Wedding bells	LSD
Whiskers	Federal narcotic agents
Whites	Amphetamine sulfate tablets
White stuff	Morphine
Wired	Under the influence of drugs (usually stimulants)
Works	Equipment for injection of drugs
Yellow-jackets	Nembutal (brand of pentobarbital, Abbot Laboratories) capsules (solid yellow)
Yen	Desire for
Yen hok	(Hook) instrument used in opium smoking; needle used to cook opium pellets
Yen Shee	Opium ash
Zunked	Intoxicated (drug or alcohol) usually addicted to hard drugs

VIII. GLOSSARY

addict	refers to any person who habitually uses any habit-forming drug by the Harrison Act of 1914; that is alkaloids of the opium family, hemp, and peyote in all its forms.
addiction	the classic term used to describe dependency on a drug; this term is used by law enforcement officers rather than medical personnel; the following have been identified: compulsion for a drug, tolerance, psychological dependence, and a danger to the individual and the people around him.
amphetamine	any of a group of compounds which exert a stimulating action on the brain and the central nervous system.
antihistamine	a group of drugs developed in the last thirty years to treat allergic conditions such as asthma, hay fever, etc.
barbiturates	a highly addicting group of depressant drugs, varying in use as sedatives, anesthetics; although highly useful in medicine, they can be abused.
counterfeit drugs	a product manufactured illegally in an attempt to defraud the public; a danger to the public in two ways: (1) there is no guarantee of purity or quality of the ingredients used; and (2) for those who use them for prescribed medicinal use, it is depriving them of proper treatment.
dependence	this is a general term, in recent years preferred by physicians; it is a state of psychic or physical need, or both, resulting from the use of a drug on a periodic or continual basis; it is usually associated with a specific drug, that is, drug specific.
depressant	a synonym for sedative or hypnotic; it is any of a group of drugs which act on the central nervous system.
drug	any chemical compound which produces an effect on the body; the effect may be positive or negative.

VIII. GLOSSARY

any person who habitually uses any habit-forming drug which is controlled by the Harrison Act of 1914; that is alkaloids of the opium or coca leaves, Indian hemp, and peyote in all its forms.

A basic term used to describe dependency on a drug; this term has been favored by law enforcement officers rather than medical personnel; characteristics of addiction have been identified: compulsion for a drug, tolerance, psychological and physical dependence, and a danger to the individual and the people around him.

A group of compounds which exert a stimulating action on the cerebral cortex of the brain and the central nervous system.

A class of drugs developed in the last thirty years to treat allergic conditions such as asthma, hay fever, etc.

A highly addicting group of depressant drugs, varying in use from sleep producers to narcotics; although highly useful in medicine, they can be intoxicating and dangerous.

A drug manufactured illegally in an attempt to defraud the public; such a drug is a hazard to the public in two ways: (1) there is no guarantee as to the amount, kind, or quality of the ingredients used; and (2) for those who need the drug for some legitimate medical use, it is depriving them of proper treatment.

A general term, in recent years preferred by physicians over "addiction,"

A state of psychic or physical need, or both, resulting from administration of a drug on a periodic or continual basis; it is usually associated with a particular drug, that is, drug specific.

A synonym for sedative or hypnotic; it is any of a group of drugs which depress the central nervous system.

A chemical compound which produces an effect on the body; this effect may be either positive or negative.

GLOSSARY (continued)

drug abuse	the self administration of excessive quantities of drugs leading to tolerance and psychological dependence, mental confusion, and other forms of abuse; it is also considered to be the taking of drugs for the side effects of the drug
drug misuse	the inappropriate use of a drug either through improper administration by a physician, a pharmacist or the individual; this term includes the use of a drug for medical reasons, but different from those intended when the drug was prescribed
euphoria	a feeling of well-being produced by various drugs, which results at least in a general depression of cortical regions in the brain along with a reduction of tension and inhibitory control
exempt narcotics	that group of narcotic drugs which can be purchased without prescription; state law requires the purchaser's signature
habituation	a less binding condition than addiction, but still occurring from repeated use; its characteristics include desire for the drug, some psychic dependence, and harm primarily for the user of the drug
hallucination	distortions of the perception processes; perceptions of people and objects which are experiences of which there is no cause or explanation
hallucinogens	the term given to a group of drugs which alter the processes of the mind, particularly those involving perception and orientation
methadone	a drug now being used in the treatment of opiate addicts; it is said to reduce hunger, and develop a tolerance which blocks the euphoric effect of heroin
narcotic drugs	means coca leaves, opium, cannabis, and every other substance, neither physically distinguishable from them; any other drugs to which the federal laws may now apply; and any drug found (by the State Commissioner of Health or other competent state officer after reasonable notice and opportunity for hearing) to have an addiction-forming or addiction-sustaining liability similar to morphine from the effective date of determination of such finding (by said State Commissioner of Health or other competent state officer)

GLOSSARY (continued)

the self administration of excessive quantities of drugs leading to tolerance, physical and psychological dependence, mental confusion, and other forms of abnormal behavior; it is also considered to be the taking of drugs for the side effects that they produce

the inappropriate use of a drug either through improper administration on the part of a physician, a pharmacist or the individual; this term includes the use of a drug for medical reasons, but different from those intended when the drug was originally prescribed

a feeling of well-being produced by various drugs, which results at least in part, from a general depression of cortical regions in the brain along with a reduction of anxiety, tension and inhibitory control

that group of narcotic drugs which can be purchased without prescription, however, the law requires the purchaser's signature

a less binding condition than addiction, but still occurring from repeated use of a drug; its characteristics include desire for the drug, some psychic dependence, and potential harm primarily for the user of the drug

distortions of the perception processes; perceptions of people and objects; and sensory experiences of which there is no cause or explanation

the term given to a group of drugs which alter the processes of the mind, particularly those involving perception and orientation

a drug now being used in the treatment of opiate addicts; it is said to relieve narcotic hunger, and develop a tolerance which blocks the euphoric effect of heroin

means coca leaves, opium, cannabis, and every other substance, neither chemically nor physically distinguishable from them; any other drugs to which the federal narcotic laws may now apply; and any drug found (by the State Commissioner of Health or other competent state officer after reasonable notice and opportunity for hearing) to have an addiction-forming or addiction-sustaining liability similar to morphine or cocaine, from the effective date of determination of such finding (by said State Commissioner of Health or other competent state officer)

GLOSSARY (continued)

physical dependence	a state of the body brought about by repeated or continuous use of a drug; characterized by the development of severe acute physical withdrawal symptoms when the drug is removed
psychedelic	a term meaning mind-expanding; associated with the hallucinogenic drug LSD; most authorities believe that the person feels that his mind is more productive, but in fact he does not
psychological dependence	a strong mental attachment to a drug which arouses from a person some emotional or psychic need of an individual; characterized by the fact that dependence is more difficult to break than physical dependence
sedatives	chief class of drugs, of which the most commonly abused are also of this group
side effects	abnormal reactions from the use of drugs; sometimes in drug abuse, the side effects are the foremost factor
stimulants	chief class of drugs, of which the most commonly abused are also of this group; these drugs stimulate the central nervous system by producing alertness, a temporary rise in blood pressure and respiratory rate
tolerance	the gradual conditioning of the body toward a drug; it is the need for increasing amounts of the drug in order to recreate the feeling of well-being which is experienced when first taking the drug; it is this characteristic which helps to create a snowballing life of no return
tranquilizers	are a type of sedative in that they depress portions of the central nervous system; is, those areas responsible for anxiety and tension; normally produce a hangover and sedative effects

GLOSSARY (continued)

a state of the body brought about by repeated or continuous use of a drug that is characterized by the development of severe acute physical symptoms when the drug is removed

a term meaning mind-expanding; associated with the hallucinogenic drugs, particularly LSD; most authorities believe that the person feels that he has a more creative or productive mind, but in fact he does not

a strong mental attachment to a drug which arises from a drug's ability to satisfy some emotional or psychic need of an individual; characteristically, this type of dependence is more difficult to break than physical dependence

chief class of drugs, of which the most commonly abused are barbiturates; tranquilizers are also of this group

abnormal reactions from the use of drugs; sometimes in drug abuse the side effects become the foremost factor

chief class of drugs, of which the most commonly abused are the amphetamines; this group of drugs stimulate the central nervous system by producing excitation, alertness, wakefulness, a temporary rise in blood pressure and respiration

the gradual conditioning of the body toward a drug; it is the ever-increasing dosage of the drug in order to recreate the feeling of well-being that once was the main reason for taking the drug; it is this characteristic which hopelessly chains the individual to a snowballing life of no return

are a type of sedative in that they depress portions of the central nervous system, that is, those areas responsible for anxiety and tension; normally they do not produce general hangover and sedative effects

ALCOHOL

Concepts	Teacher Materials
I. Introduction	Introductory statement to teachers
A. Importance of learning about alcohol	Overview
1. To better understand its	
a. social effects	
b. economic effects	
c. biological effects	
d. nature and uses	
II. Meaning of the word "alcohol"	<u>Alcohol Education for Classroom and Community</u> , p. 69
A. In the 10th century	<u>Alcohol</u> , by Berton Roueche, p. 21
1. Called "al-kohl" by Arabic physician	
2. Finely ground powder used to color eyes	
B. Scientific meaning	
Compound with OH group attached to carbon atom	
C. Beverage	<u>Basic Information on Alcohol</u> , p. 21
Ethyl alcohol - C_2H_5OH	<u>The Problem, Alcohol and Narcotics</u>
D. Other meanings	<u>The Story of Industrial Alcohol</u> , p.
1. Solvent	<u>Basic Information on Alcohol</u> , pp.
a. medical solutions	
b. cleaning solutions	

Teacher Materials

Student Materials

Introductory statement to teachers

Overview

Alcohol Education for Classroom and Community, p. 69

Alcohol Education For Classroom and Community, p. 69

Alcohol, by Berton Roueche, p. 21

Basic Information on Alcohol, p. 23

The Problem, Alcohol and Narcotics, p. 7

The Story of Industrial Alcohol, p. 16

Basic Information on Alcohol, pp. 91, 93

Audio Visual	Motivating Questions	Ac
Material for introduction	Why learn about alcohol?	Ob
<ol style="list-style-type: none"> 1. Yeast cell projected on screen 2. 35mm slides on history 3. Lift on advertisement - #1 	Why do doctors advise patients with ulcers to avoid drinking?	ma di
	Is drinking alcoholic beverages inexpensive?	
	What things do adults like about drinking alcohol?	
	What are some laws concerning the drinking of alcohol? Why do we have these laws?	

Transparency:

Structure of ethyl alcohol - #2

Transparency:

Amounts and uses of industrial alcohol, #3 (a, b, w/overlays, c)

What things do you have at home that have alcohol in them?

How is alcohol useful?

Ha
in
Wh
ma
a.

Motivating Questions

Activities

Why learn about alcohol?

Observation of introductory materials, note taking, and discussion.

Why do doctors advise patients with ulcers to avoid drinking?

Is drinking alcoholic beverages inexpensive?

What things do adults like about drinking alcohol?

What are some laws concerning the drinking of alcohol? Why do we have these laws?

What things do you have at home that have alcohol in them?

Have students make list of things in home that have alcohol in them. Write library paper on common materials that are made from alcohol.

How is alcohol useful?

ALCOHOL (continued)

Concepts	Teacher Materials	Student
2. Personal meanings <ul style="list-style-type: none"> a. Pain caused by disinfecting cut b. Drunkenness c. Party d. Fun e. Bootlegging f. Hangover g. Myths about alcohol 	<u>Drinking Among Teen-agers</u> , pp. 83 - 85	
III. History of Alcohol <ul style="list-style-type: none"> A. Discovery <ul style="list-style-type: none"> 1. Date not known <ul style="list-style-type: none"> Occurred somewhere in the pre-history of man 2. Essentials needed for the discovery of alcohol <ul style="list-style-type: none"> a. Water tight containers b. Goat skins, clay jars c. Storage practices (To save food for lean periods) d. Accidental fermentation of stored food e. Recognition and reproduction of process 	<u>Alcohol</u> , Berton Roueche, pp. 8-13 Script for slide series <u>Drinking and Intoxication</u> , p. 42 (Suggested answer for evaluation sheet) <u>The Problem: Alcohol - Narcotics</u> , p. 24	Script <u>Drinking</u> p. 42 <u>Drinking</u> p. 42

Teacher Materials

Student Materials

Drinking Among Teen-agers,
pp. 83 - 85

Alcohol, Berton Roueche, pp. 8-13

Script for slide series

Drinking and Intoxication,
p. 42 (Suggested answer for
evaluation sheet)

The Problem: Alcohol - Narcotics,
p. 24

Script for slides series

Drinking and Intoxication,
p. 42

Drinking and Intoxication,
p. 42

Audio Visual	Motivating Questions	Activities
Transparency:		Write or meaning of students
Myths About Alcohol, #4 (a, b, c, d, e)		
Slide series on history of alcohol		
Posters:		
Carrie Nation Romans drinking Spartan soldier	Was fermentation invented by man? What did man discover in relation to discovery of alcohol?	Research points of
	How do scientists find out about events that occurred so long ago?	Make cards historical

Motivating Questions

Activities

Write or discuss personal meaning of alcohol. Let students supply information.

#4 (a, b,
alcohol

Was fermentation invented by man?
What did man discover in relation to discovery of alcohol?

How do scientists find out about events that occurred so long ago?

Research on other interesting points of history of alcohol.

Make cartoons depicting the historical use of alcohol.

ALCOHOL (continued)

Concepts	Teacher Materials	Student
B. Early civilizations		
1. Egypt	<u>Drinking and Intoxication</u> , pp. 39, 65 66	<u>Drinking</u> pp. 38
a. Most Egyptians drank, both men and women		
b. Drank in religious ceremonies, but mostly for inebriety		
2. Greece	<u>Drinking and Intoxication</u> , p. 39	
a. Drinking occurred in most Greek states		
b. Drank in religious ceremonies and for inebriety		
3. Sparta	<u>Drinking and Intoxication</u> , p. 36	
a. Believed over-indulgence showed a weakness		
b. Soldiers on duty were not allowed to drink alcohol		
4. Rome	<u>Drinking and Intoxication</u> , pp. 53, 54, pp. 58-61	<u>Drinking</u> pp. 3
a. Early Romans drank moderately; death was the penalty for women who drank		
b. Late Romans over-indulged and women were allowed to drink		
c. Waited until northern invaders were inebriated, then killed them		

	Teacher Materials	Student Materials
lizations		
st Egyptians drank, th men and women ank in religious remonies, but stly for inebriety	<u>Drinking and Intoxication</u> , pp. 39, 65 66	<u>Drinking and Intoxication</u> , pp. 39, 65, 66
inking occurred in st Greek states ank in religious remonies and for ebriety	<u>Drinking and Intoxication</u> , p. 39	
elieved over-indul- ence showed a weakness oldiers on duty were ot allowed to drink cohol	<u>Drinking and Intoxication</u> , p. 36	
arly Romans drank oderately; death was he penalty for women ho drank ate Romans over- ndulged and women were llowed to drink aited until northern nvaders were inebriated, hen killed them	<u>Drinking and Intoxication</u> , pp. 53, 54, pp. 58-61	<u>Drinking and Intoxication</u> , pp. 36, 53, 54, 58-61

Audio Visual

Motivating Questions

Activities

Did civilizations in the past also have problems because of the drinking of alcoholic beverages?

Discuss lesson learned from history of alcohol.

Read to the class page 162 of Book Ten: Alcohol. Have students express their views on the material presented.

Did they solve their drinking problems?

What were some of their methods of controlling the abuse of alcohol?

Motivating Questions

Did civilizations in the past also have problems because of the drinking of alcoholic beverages?

Did they solve their drinking problems?

What were some of their methods of controlling the abuse of alcohol?

Activities

Discuss lessons that can be learned from the study of the history of alcohol.

Read to the class pp. 161, 162 of Book Teaching About Alcohol. Have students give their views of the situations presented.

ALCOHOL (continued)

Concepts	Teacher Materials	Student
C. Distillation	<u>Drinking and Intoxication</u> , p. 43	Ditto has of Alcoh
1. Discovered about 1200 A.D.		
2. Called aqua vitae	<u>Alcohol</u> , by Berton Roueche, p. 25	Ditto:
a. Used as medicine at first		
b. Soon it became a condensed inebriant		
D. American history	<u>Alcohol Education for Classroom and Community</u> , p. 13	<u>Alcohol and Comm</u>
1. Introduced alcohol to North American Indians	<u>Facts About Alcohol</u> , p. 17	
2. Became important beverage in westward movement because of these beliefs		
a. A man could work harder if he had a drink		
b. He could better face hardships		
3. Rum became important factor in the slave trade.	<u>Alcohol</u> , by Berton Roueche, pp. 38, 39	
4. Prohibition began in 1600 and reached a climax in 1919.	<u>Teaching About Alcohol</u> , p. 84, McGraw-Hill	
a. Alcohol blamed for nation's ills	<u>Alcohol Education for Classroom and Community</u> , p. 18.	<u>Alcohol and Comm</u>
b. National movement in U.S. began after World War I		
c. Prohibition was a period of civil unrest and civil crime		

Teacher Materials

Student Materials

Drinking and Intoxication, p. 43

Ditto hand-out: On the History of Alcohol

Alcohol, by Berton Roueche, p. 25

Ditto: Script Slide Series

Alcohol Education for Classroom and Community, p. 13

Alcohol Education for Classroom and Community, p. 13

Facts About Alcohol, p. 17

Alcohol, by Berton Roueche, pp. 38, 39

Teaching About Alcohol, p. 84, McGraw-Hill

Alcohol Education for Classroom and Community, p. 18.

Alcohol Education for Classroom and Community, p. 18

Audio Visual	Motivating Questions	Activities
	How is distillation of alcohol controlled in the U.S.?	
	Why do we restrict persons from distilling alcohol?	
	Are there any dangers in drinking "home brew" or "moon shine?"	Class study of prohibition Era.
	Does alcohol help you to do difficult tasks?	Creative d
	Do you think prohibition is fair? Why is it unfair?	Quiz on th
	Would some people be better off if there was no alcohol to drink?	Make a list of alcohol
	Why do chemists use letters rather than words?	
	What is an atom?	
	What are molecules?	
	What is an organic compound?	

Motivating Questions

Activities

How is distillation of alcohol controlled in the U.S.?

Why do we restrict persons from distilling alcohol?

Are there any dangers in drinking "home brew" or "moon shine?"

Does alcohol help you to do difficult tasks?

Do you think prohibition is fair?

Why is it unfair?

Would some people be better off if there was no alcohol to drink?

Why do chemists use letters rather than words?

What is an atom?

What are molecules?

What is an organic compound?

Class study of events and personalities in the Prohibition Era.

Creative dramatics

Quiz on the history of alcohol

Make a list of different kinds of alcohol found at home.

ALCOHOL (continued)

Concepts	Teacher Materials	Student
IV. Nature of Alcohol		
A. Chemical	<u>Alcohol Education for Classroom and Community</u> , p. 39	
1. Composed of C, H, O atoms		
2. Many different kinds of alcohol	<u>Teaching About Alcohol</u> , p. 46	
a. ethyl	<u>The Story of Industrial Alcohol</u> , p. 19	
b. methyl		
c. isopropyl		
d. butyl		
3. Characterized by OH group attached to C atom	<u>The Story of Industrial Alcohol</u> , p. 3	
a. ethyl		
	$ \begin{array}{c} \text{H} \quad \text{H} \\ \quad \\ \text{H}-\text{C}-\text{C}-\text{OH} \\ \quad \\ \text{H} \quad \text{H} \end{array} $	
b. methyl		
	$ \begin{array}{c} \text{H} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{H} \end{array} $	
4. Chemically similar to water	Laboratory Experiment No. 1	Ditto La
a. Neither base nor acid		Cha
b. Soluble in water		che
5. Have toxic effect on living cells (body can tolerate ethyl ethyl or grain alcohol)	Laboratory Experiment No. 1	
6. Oxidizes easily		
B. Physical	<u>Alcohol Education for Classroom and Community</u> , p. 70	<u>Alcohol and Comm</u>
1. Clear water-like liquid		

Teacher Materials

Student Materials

Alcohol Education for Classroom
and Community, p. 39

Teaching About Alcohol, p. 46

The Story of Industrial Alcohol,
p. 19

The Story of Industrial Alcohol,
p. 3

Laboratory Experiment No. 1

Ditto Lab. Exercise No. 1

Characteristics of alcohol,
chemical and physical

Laboratory Experiment No. 1

Alcohol Education for Classroom
and Community, p. 70

Alcohol Education for Classroom
and Community, p. 70

Audio Visual	Motivating Questions	Activities
Transparencies:	What are inorganic compounds?	
Series explaining the organic compounds and their position in the nature of things, #5 (a, b, w/overlays)	Our bodies are made up mostly of what group of compounds?	
Series of the classes or types of alcohol and their uses, #6 (a, b, c, d, e, f)	Is alcohol an important compound in industry?	
Ethyl alcohol as a beverage, #7 (lift and 127 transparency)		
Chemical structures of alcohol illustrating the OH group, #8 (a, b, c)	What kind of alcohol is used in alcoholic beverages?	Laboratory
	What are some of the effects of drinking other types of alcohol (methyl, isopropyl, denatured)?	S
	Can alcohol be distinguished from water by its color?	Have samples of alcohol
	How can you distinguish it from water?	Make bottles of alcohol
Collect alcohol samples.	What happens when you put alcohol on a cut? Why? What is happening to the cells?	

Motivating Questions

Activities

What are inorganic compounds?

Our bodies are made up mostly of what group of compounds?

Is alcohol an important compound in industry?

What kind of alcohol is used in alcoholic beverages?

What are some of the effects of drinking other types of alcohol (methyl, isopropyl, denatured)?

Can alcohol be distinguished from water by it's color?

How can you distinguish it from water?

What happens when you put alcohol on a cut? Why? What is happening to the cells?

Laboratory Exercise:

Show effect on living cells

Have students determine between alcohol and other liquids.

Make bulletin board on different alcoholic beverages.

g the organic
eir position
things, #5

asses or types
heir uses, #6
f)

s a beverage,
y transparency)

ures of alcohol
e OH group, #8

samples.



ALCOHOL (continued)

Concepts	Teacher Materials	Student
<ul style="list-style-type: none"> 2. Boils at 173° F (water, 212° F) 3. Pure alcohol always has 5% water or some water-removing chemical. 4. Mild pleasant odor (ethyl) 5. Constant vapor pressure (relation between temperature and percent in solution and vapor given off) 	<p><u>Teaching About Alcohol</u>, p. 47</p> <p>Laboratory Exercise No. 2</p>	Laborat
<p>C. Biological Aspects</p>		
<ul style="list-style-type: none"> 1. Dehydrates tissue 2. Toxic to tissue 3. Feels cool to the skin 4. Highly permeable 5. Depresses nerve impulses 6. Effects of alcohol depends on: <ul style="list-style-type: none"> a. Type of alcohol b. Concentration c. Length of time in contact 	<p><u>A Syllabus in Alcohol Education</u>, pp. 16-21</p>	Laborat
<p>V. Manufacture of Alcohol</p>		
<p>A. Fermentation</p>		
<ul style="list-style-type: none"> 1. Breakdown of sugar by yeast 	<p><u>Alcohol Education for the Classroom and Community</u>, pp. 70-73</p> <p>Laboratory Exercise No. 5</p>	Laborat (fermen yeast)
$C_6H_{12}O_6 \xrightarrow{\text{yeast}} 2C_2H_5OH + 2CO_2$		

CO₂

Teacher Materials

Student Materials

er, Teaching About Alcohol, p. 47

has
er-
ethyl) Laboratory Exercise No. 2
ure

Laboratory Exercise No. 2

ercent
apor

in
A Syllabus in Alcohol Education,
pp. 16-21

Laboratory Exercise No. 3

lises
depends

in

by
2-H-OH₅+
Alcohol Education for the
Classroom and Community, pp. 70-73

Laboratory Exercise No. 5
(fermentation and observing
yeast)

Laboratory Exercise No. 5

Audio Visual	Motivating Questions	Activities
	<p>What would happen to a frog if strong alcohol was put on its skin?</p> <p>Would alcohol be good to disinfect a sunburn?</p> <p>Is alcohol very good to put on any kind of wound?</p> <p>What does alcohol do to the bacteria?</p> <p>Why do they denature rubbing alcohol?</p>	<p>Lab. Exercises</p> <p>Show:</p> <ol style="list-style-type: none"> 1. Oxidation 2. Dehydration 3. Combustion 4. Fermentation
<p>Transparencies:</p> <p>Overlay on denatured and methyl alcohol, illustrating the dangers of consuming these alcohols and the compounds used to denature alcohol, #9 w/overlays</p> <p>Effect of methyl and isopropyl, #10 (a, b)</p>	<p>What do the chemicals that are used to denature alcohol do to the alcohol?</p> <p>Can alcohol kill? Under what conditions?</p> <p>Where can we find yeast?</p> <p>Is fermentation of sugar to alcohol legal?</p>	<p>Discuss "carcinogenic" alcohol, and its effects</p> <p>Ferment molasses for sugar source</p> <p>Assign student to report on progress of fermentation</p>

Motivating Questions

Activities

What would happen to a frog if strong alcohol was put on its skin?

Would alcohol be good to disinfect a sunburn?

Is alcohol very good to put on any kind of wound?

What does alcohol do to the bacteria?

Why do they denature rubbing alcohol?

What do the chemicals that are used to denature alcohol do to the alcohol?

Can alcohol kill? Under what conditions?

Where can we find yeast?

Is fermentation of sugar to alcohol legal?

Lab. Exercise:

Show:

1. Oxidation
2. Dehydration
3. Coolness - evaporation
4. Permeability

Discuss "canned heat," denatured alcohol, and why it is denatured.

Ferment molasses or other sugar source.

Assign students to record progress of fermentation.

ALCOHOL (continued)

Concepts	Teacher Materials	Student Materials
2. Raw Materials		<u>Alcohol Education and Community</u>
a. sugars from fruits such as beets, grapes, cane		
b. starch from grains, etc.		
3. Products		
a. wine)		
b. beer) at 12-24%		
c. vinegar) alcohol/vol.		
4. Malting:	<u>Alcohol Education for Classroom and Community</u> , p. 72	
Changing of starch to sugar by sprouting barley, then drying and heating.		
B. Destructive Distillation		
1. Methyl	<u>The Story of Industrial Alcohol</u> , pp.8-16	
a. Heating wood in the absence of air		
b. Reduction of carbon monoxide $CO + 2H_2 \xrightarrow[\text{Zinc chromite}]{\text{Pressure}}$ CH_3OH		
c. Variation in procedure produces other alcohols.		
2. Ethyl		
a. Cracking of ethylene		
$C_2H_4 + H_2O \xrightarrow{H_3PO_4} C_2H_5OH$		

Teacher Materials

Student Materials

Alcohol Education for Classroom and Community, pp. 70-73

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grapes,
ins, etc.

2-24%
hol/vol.

Alcohol Education for Classroom and Community, p. 72

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The Story of Industrial Alcohol, pp.8-16

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ethylene

C_2H_5OH

Audio Visual	Motivating Questions	Activities
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What is the name of the beverage produced from fruits? Molasses? Grain?

What must be done to starches before they can be fermented?

What is wood alcohol?

Transparencies:

Malting and Fermentation
#11 (a, b)

Extra cre

Shor
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pres

Where is the plant in Breat Falls that does destructive distillation?

Have stud
distillat
process a

What are some of the products they produce?

importanc

The alcohol produced by destructive distillation is used for what purpose?

Motivating Questions

Activities

What is the name of the beverage produced from fruits? Molasses? Grain?

What must be done to starches before they can be fermented?

What is wood alcohol?

Extra credit:

Short reports on fermentation and malting could be presented to the class orally.

Where is the plant in Breat Falls that does destructive distillation?

Have students research destructive distillation, then discuss the process and its economic importance.

What are some of the products they produce?

The alcohol produced by destructive distillation is used for what purpose?

ALCOHOL (continued)

Concepts	Teacher Materials	Student Mat
C. Distillation (Fractional)	Lab. Experiment No. 6	
1. Concentration of wines and beer	Demonstration	
a. to brandies		
b. to other distilled spirits		
2. Repeated distillation increases the amount of alcohol	<u>Alcohol Education for Classroom and Community</u> , pp. 73-75.	
D. Production of different whiskies	<u>The Story of the Distilled Spirits Industry</u> , p. 8	
1. Bourbon		
a. mash at least 51% corn		
b. distilled to 160 proof		
2. Rye	<u>Teaching About Alcohol</u> , p. 50	
mash at least 51% rye		
3. Bonded whisky		
a. mash of grain		
b. distilled to 100 proof		
c. aged 4 years		
d. federal inspection		
VI. Physiological Aspects of Alcohol		
A. Alcohol as a food		Ditto on ph
1. poorest kind		
2. provides many calories		

Teacher Materials

Student Materials

onal) Lab. Experiment No. 6

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illed spirits

tion
unt of Alcohol Education for Classroom
and Community, pp. 73-75.

nt
The Story of the Distilled Spirits
Industry, p. 8

51% corn
160 proof
Teaching About Alcohol, p. 50

51% rye

100 proof

ection

Alcohol

Ditto on physiology

ories

Motivating Questions

Activities

How does fractional distillation differ from destructive distillation?

Work problems for determining percent from the proof of the alcohol.

Why are distilleries inspected by the federal government?

Make a chart showing essentials for starting to make hard liquor.

How much alcohol, by volume, is there in a quart of 100 proof alcohol?

Prepare bulletin board on kinds of package liquor.

How many different kinds of alcohol would you find in these beverages: beer, ale, rye whiskey, rum?

Extra credit:

Prepare reports on production of different whiskies.

Have students do research on chemicals found in alcoholic beverages. Discuss their effects on the body and where they come from.

ALCOHOL (continued)

Concepts	Teacher Materials	Student
3. provides no vitamins 4. needs no digestion 5. oxidized only by liver	<u>Basic Information on Alcohol, p, 64</u>	
B. Alcohol as a drug	<u>Teaching About Alcohol, pp. 51-54.</u>	
1. Affects function of organs a. depresses function of the brain b. depresses function of vital functions, except heart	<u>Alcohol Education for Classroom and Community, p. 92</u>	
C. Alcohol as a food	<u>Teaching About Alcohol, p. 51</u>	
1. Processes of foods in the body: a. digestion b. absorption c. distribution d. oxidation e. elimination		
2. Processes of alcohol in the body:	<u>Alcohol Education For Classroom and Community, p. 69</u>	Ditto
a. digestion (1) none required (2) molecules already simple enough to be absorbed	<u>Teaching About Alcohol, p. 55</u>	
b. absorption in stomach and intestine	<u>Alcohol Education for Classroom and Community, pp. 79, 80</u>	

Teacher Materials

Student Materials

Basic Information on Alcohol, p, 64

Teaching About Alcohol, pp. 51-54.

Alcohol Education for Classroom
and Community, p. 92

Teaching About Alcohol, p. 51

Alcohol Education For Classroom
and Community, p. 69

Ditto on Physiology

Teaching About Alcohol, p. 55

Alcohol Education for Classroom
and Community, pp. 79, 80

Audio Visual	Motivating Questions	Activ
Transparencies:	Is there any kind of food value in alcohol? How about beer? How about whiskey?	
The Brain (showing depression and illustrating memory loss because of excessive consumption of alcohol) #13 w/overlays	What other food is like alcohol? (sugar)	
	Which would be worst for your body: 5 oz. of alcohol per day for one year, or 5 oz. of sugar per day for one year?	
	What is a drug?	
	What is food?	Resea
Processes of food through the body, #14	How are the intestines constructed to increase their ability to absorb?	
	What is digestion?	
	What other food requires little or no digestion?	
General processes, #15	Is the length of time very great for the distribution of alcohol throughout the body?	
Absorption of food, #16		

Motivating Questions

Activities

Is there any kind of food value in alcohol? How about beer? How about whiskey?

What other food is like alcohol? (sugar)

Which would be worst for your body: 5 oz. of alcohol per day for one year, or 5 oz. of sugar per day for one year?

What is a drug?

What is food?

How are the intestines constructed to increase their ability to absorb?

What is digestion?

What other food requires little or no digestion?

Is the length of time very great for the distribution of alcohol throughout the body?

Research the definitions for:

- a. digestion
- b. absorption
- c. distribution
- d. oxidation
- e. elimination

wing depression
g memory loss
ssive consumption
w/overlays

od through the

sses, #15

food, #16

ALCOHOL (continued)

Concepts	Teacher Materials	Student
c. distribution by circulatory system to all parts of the body	<u>Alcohol Education for Classroom and Community</u> , pp. 80, 81 - 87, 88 <u>Teaching About Alcohol</u> , p. 58	
d. oxidation (1) only in the liver (2) other food can be oxidized in all cells		
e. elimination (1) oxidation (2) breath (3) urine	<u>Alcohol Education for Classroom and Community</u> , p. 86	
D. Alcohol as a drug		
1. effect on the brain		
a. almost immediately it begins to deter- iorate functions of the brain	<u>A Syllabus In Alcohol Education</u> , pp. 25, 26	
b. parts affected (in order) (1) cerebrum (2) cerebellum (3) mid-brain (4) medulla oblongata	<u>Basic Information on Alcohol</u> , pp. 95-106	
2. effects on other organs	<u>Alcohol Education for Classroom and Community</u> , pp. 90-92	Evaluat
a. depression of most organs except the heart		
b. depression of organs caused by reaction on nervous system		

Teacher Materials

Student Materials

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 m to all parts
 e body

Alcohol Education for Classroom and Community, pp. 80, 81 - 87, 88
Teaching About Alcohol, p. 58

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Alcohol Education for Classroom and Community, p. 86

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A Syllabus In Alcohol Education, pp. 25, 26

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Basic Information on Alcohol, pp. 95-106

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Alcohol Education for Classroom and Community, pp. 90-92 Evaluation Sheet

Audio Visual	Motivating Questions	Act
Transparencies:		
Oxidation of alcohol by the liver, #17		Dis the and the Co ex ox
Effect of alcohol on the brain (related to certain areas and how amounts of alcohol affect the brain) #18 (a, b, w/overlays)	<p>Is alcohol a stimulant or a depressant?</p> <p>Why do so many people think it is a stimulant?</p> <p>Why is it hard to quit drinking after the first drink?</p> <p>Is alcohol a poison to the brain? (no - depressant)</p> <p>Will enough alcohol put the brain to sleep permanently?</p> <p>Is there any proof that alcohol, as it is consumed in alcoholic beverages, does any harm to any of the body's organs?</p>	Ma qu Re in Ha a of al Ha fo ha De

Motivating Questions

Activities

Is alcohol a stimulant or a depressant?

Why do so many people think it is a stimulant?

Why is it hard to quit drinking after the first drink?

Is alcohol a poison to the brain? (no - depressant)

Will enough alcohol put the brain to sleep permanently?

Is there any proof that alcohol, as it is consumed in alcoholic beverages, does any harm to any of the body's organs?

Discuss difference between the use of food by the body and the use of alcohol by the body.

Construct a bulletin board explaining the process of oxidation.

Make a list of ten or more questions on alcohol.

Research and answer questions in class.

Have the students construct a graphic explanation of functions of the brain and effects of alcohol on those functions.

Have a discussion of the reasons for not using alcohol when you have been bitten by a snake.

Define the word "depression."

ALCOHOL (continued)

Concepts	Teacher Materials	Student Materials
<p>3. Factors that create variation in effects of alcohol</p> <ul style="list-style-type: none">a. length of time exposedb. amount of alcoholc. amount of alcohol per unit of timed. physical and mental health of individual	<p><u>Teaching About Alcohol</u>, p. 51</p>	
<p>E.. Prolonged Use of Alcohol</p>		



Audio Visual	Motivating Questions	Activi
Transparencies:		
Effects of alcohol on the brain, #18 (a, b, w/overlays)	Does eating butter or other greasy foods keep a person from becoming inebriated?	Discus progre increa alchoh
Cirrhosis of the liver, #19 w/overlay	Does alcohol cause cirrhosis of the liver?	Dramat physic to the of alc

Motivating Questions

Activities

alcohol on the brain,
(overlays)

Does eating butter or other greasy
foods keep a person from becoming
inebriated?

Discuss the step by step
progress in relation to
increasing amount of
alcohol in the body.

the liver, #19

Does alcohol cause cirrhosis of
the liver?

Dramatize effects, social,
physical, economic, related
to the variation in factors
of alcoholic consumption.

VII. TEACHER INFORMATION

Introductory Statement to Teachers

It is important that on the subject of alcohol, we present the facts with a realism that is important, but they must have meaning to the students. Let the students think for themselves and make their own decisions.

The scope of the study of alcohol is vast. In this unit we will cover only certain aspects of alcohol. The major areas of factual material that will be covered are the history of alcohol and the physiological effects of alcohol on the body.

Teaching materials and information are available in the kit so you, the teacher, can select the information on certain topics. Study the unit and materials available in the kit and select the materials that best suit your student's needs. Each article of audiovisual material has a story to tell or a question to ask. Anticipate the reaction of the students when presenting the materials, and help them visualize all aspects of the topic presented.

VII. TEACHER INFORMATION

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On the subject of alcohol, we present the facts with a realistic outlook. Facts must have meaning to the students. Let the students think and make their own

The scope of alcohol is vast. In this unit we will cover only certain areas that pertain to areas of factual material that will be covered are the history, the manufacture, and the effects of alcohol on the body.

Information are available in the kit so you, the teacher, can condense or expand on the various topics. Study the unit and materials available in the kit and pick the material to meet your student's needs. Each article of audiovisual material and other instructional material is provided with a story to tell or a question to ask. Anticipate the reactions of the students, when they use the materials, and help them visualize all aspects of the topic presented by these materials.

TEACHER INFORMATION (continued)

OVERVIEW INTRODUCTION

ALCOHOL AND ITS NATURE

When the word "alcohol" is spoken, it means many things to many people, deep and environmental associations with alcohol. As educators, we can inform about alcohol, its social and economic effects, and just keep in mind that the word means, alcoholism, a burning sensation when placed on a cut. Just remember, there are students.

The word "alcohol" is said to come from an ancient Arabic term, "al-kohl," ground powder used to color the eyes. Later, the term included other fine substances. In the sixteenth century, it also meant a volatile liquid. During this time Paracelsus, used the term "alcohol vini" in his writings to designate the fluid we now call brandy.

The word "alcohol" is currently used in two senses. The first is a general term for organic compounds having a hydroxy, OH group, attached to a carbon atom which are attached to hydrogen or other carbon atoms. In the second usage, the compound, hydroxy and C_2H_5OH , which is also called ethyl alcohol, grain alcohol, ethyl alcohol is essentially the sole alcohol in an alcoholic beverage, though as used in this unit, means ethyl alcohol.

Sometime in the past, long before man began to keep written records of his life, he learned to ferment certain food into alcohol. Just when man began to write, we can draw some conclusions from these facts: Fermentation of alcohol in laboratories is found in nature; before Homo sapiens, early man did not have the same mental capabilities as modern man. As man's culture developed, even though it was still very primitive, he used tight containers, such as clay jars and goat skin bottles, for storing food. During this phase of man's cultural development, his storage practices failed. Fruit or honey, fermented, thus introducing man to large quantities of alcohol.

Alcoholic beverages were regarded with some awe by early man and are regarded with respect by present-day primitive tribes. Drinking was closely associated with sacred rituals, worship, and religious rituals. Supernatural qualities were sometimes attributed to them.

Wine and beer played an important part in primitive life, especially on great occasions and ceremonies for homage to the dead, the rites of initiating the young into adulthood.

TEACHER INFORMATION (continued)

OVERVIEW INTRODUCTION

"alcohol" is spoken, it means many things to many people, depending upon their experiences and associations with alcohol. As educators, we can inform persons of the properties of physical and economic effects, and just keep in mind that the word "alcohol" entails drunkenness, a burning sensation when placed on a cut. Just remember, there are as many meanings as there are uses.

"alcohol" is said to come from an ancient Arabic term, "al-kohl," which meant, originally, a finely ground substance used to color the eyes. Later, the term included other fine powders and in the first half of the 17th century, it also meant a volatile liquid. During this time the alchemist-physician, Paracelsus, used the term "alcohol vini" in his writings to designate the fluid distilled from wine which is now known as brandy.

"alcohol" is currently used in two senses. The first is a generic term forming a large group of compounds having a hydroxy, OH group, attached to a carbon atom, the other three bonds of the carbon being attached to hydrogen or other carbon atoms. In the second usage, "alcohol" means a specific compound, C_2H_5OH , which is also called ethyl alcohol, grain alcohol, or ethanol. Since ethanol is essentially the sole alcohol in an alcoholic beverage, the unmodified word, "alcohol," when used in this unit, means ethyl alcohol.

In the past, long before man began to keep written records of his beliefs and accomplishments, man learned to ferment certain food into alcohol. Just when man began to make alcohol is not known. We can draw conclusions from these facts: Fermentation of alcohol in large quantities does not occur until after Homo sapiens, early man did not have the same mental capacity for association as does modern man. As man's culture developed, even though it was still very primitive, he developed water-tight storage vessels, such as clay jars and goat skin bottles, farming practices, and a need to store food. As a result of man's cultural development, his storage practices failed and his stored fruit, grain, and other foodstuffs, thus introducing man to large quantities of alcohol.

Alcoholic beverages were regarded with some awe by early man and are regarded in much the same way by primitive tribes. Drinking was closely associated with sacred feelings, magic, ancestor worship, and religious rituals. Supernatural qualities were sometimes attributed to alcoholic beverages.

Alcoholic beverages played an important part in primitive life, especially on great occasions. Marriages, funerals, and homage to the dead, the rites of initiating the young into adulthood, and important

TEACHER INFORMATION (continued)

decisions were generally accompanied by sessions of brewing and ceremonial drinking. In the village drank together, they had a sense of belonging and of good fellowship. If he got out of hand, however, he would be tied up and kept under control until he was sober. The primitives felt that alcohol was important, but they also saw to it that drunkenness did not endanger the welfare of the group.

By the time man began to record his activities and form ancient civilizations, the use of alcohol and the use of it, was very well established in their cultural patterns. Records of ancient civilizations refer to the use of alcoholic beverages. The origin of these "necessities" is ascribed to the gods. The Egyptians attributed to Osires the cultivation of the vine and the use of wine, as well as the manufacture of a type of beer from grain. To the Greeks and Romans, the use of it was one of the beneficent acts of Bacchus.

Alcoholic beverages were produced from grains such as barley and wheat. The northern peoples where the grape was not available, produced mead from the honey of wild bees. In other parts of the world, plants such as the toddy palm were used. The Tartars used the sugar of milk and fermented it into koumiss.

Distilled spirits are a relatively late development. The Arabian physician, Rhazes, is credited with the discovery of distillation in the tenth century. Inebriety existed long before the discovery, but distillation gave to wide circles a convenient and concentrated source of inebriants. Before distilled liquors were used, not as beverages, but as medicine; only later when they became more available and cheaper did they begin to be used widely as beverages.

AMERICAN HISTORY

All through the history of mankind alcohol played an important part. In many cases it played an important part in the very existence of cultures. Certainly, it was important in minor ways, such as in influencing the condition of the fighting men. Records of the social effects on early man are vague and, at best, can just be speculated upon. In the Americas, especially North America, on account of the influences of alcohol, the controls on alcohol, and the attitudes of the people.

When explorers and settlers left their homes in Europe for the New World, they brought with them their foods and beverages, including alcoholic beverages. The famed French explorer, Jacques Cartier, was undoubtedly the first to make an exchange of alcoholic beverages between the white man and the Indians in America, served wine to Chief Donnacona and his braves during a banquet on the Islets of St. Lawrence River. (North American Indians did not know about alcohol.)

TEACHER INFORMATION (continued)

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merican Indians did not know about alcohol.)

TEACHER INFORMATION (continued)

In this early period, drinking was looked upon as the thing to do at any social good "belt" to give a man strength. Even the Puritans were not "puritanical" in the word. They enjoyed a glass of wine or other beverage as much as anyone else. Drinking (drunkenness) that they considered immoral and punished. It meant to be a bad example for young people, and was debasing to human dignity.

Moral suasion against intemperance was a frequent means of informal social control. In Massachusetts Bay Colony, the Puritan clergy spoke out vehemently against excess. There was an urging moderation in drinking by the Puritans; those guilty of excess were punished by whipping, fining, or by having to sit in the stocks.

During this period, the mid-1600's, many moral questions were beginning to be asked. Problems developed during this period that have not been solved today. One of the problems was the trade in slaves, which by some persons is directly related to the brewing industry. In England rum was traded for slaves and in turn, the slaves were traded for sugar used to produce more rum.

With the country in civil war and the opening of the west, the use of alcohol increased. People used it to release the pressures that were on them and many believed that drinking gave them strength to do what they had to do. Because of unhealthy effects of alcohol, Dr. Benjamin Rush, a signer of the Declaration of Independence, began to attack drinking on moral grounds. And the women, who were kept in a position of social, economic, and political inferiority in early America, began a long crusade for temperance and women's rights.

PROHIBITION AND TEMPERANCE

As the problem of a growing nation fell upon the people, for a variety of reasons many turned their attention to alcohol. Some of the people used it to dilute their sorrows. Others began to blame the use of alcohol as the root of all of their problems and the cause of the turmoil began; the first controls were imposed by the government in the form of taxes on those persons in the business of brewing alcohol. During this period, the early 1800's, a pattern was set up that reached its peak during the prohibition era. This pattern was in the form of the "wets" and the "drys." The "wets" were the producers and sellers of alcohol. The "drys" were groups of persons looking for a solution for problems incurred because of excess drinking. They were looking for political and social recognition. The stronger of these groups, which were the Women's Christian Temperance Union and the Anti-Saloon League.

National prohibition was led by prohibition in several states from 1850 to 1919. Many states had their prohibition laws repealed before national prohibition was introduced.

TEACHER INFORMATION (continued)

drinking was looked upon as the thing to do at any social function or as just a man strength. Even the Puritans were not "puritanical" in the way we often use. They enjoyed a glass of wine or other beverage as much as anyone else. It was excessive drinking (excess) that they considered immoral and punished. It meant loss of working time, set back young people, and was debasing to human dignity.

Excessive drinking was a frequent means of informal social control in colonial America. In the New England Colony, the Puritan clergy spoke out vehemently against excessive drinking. There was a strong opposition to drinking by the Puritans; those guilty of excessive drinking were punished by being put in the stocks, or by having to sit in the stocks.

In the mid-1600's, many moral questions were beginning to be asked. Moral and civil questions during this period that have not been solved today. One of these is the introduction of rum by some persons is directly related to the brewing industry of this period. New England needed slaves and in turn, the slaves were traded for sugar and molasses which was used to make rum.

After the civil war and the opening of the west, the use of alcohol increased. People used alcohol to relieve pressures that were on them and many believed that drinking was healthy and gave them the strength they had to do. Because of unhealthy effects of alcohol on the society, men like Benjamin Franklin, a signer of the Declaration of Independence, began to attack drinking on medical and moral grounds. The women, who were kept in a position of social, economic, and political inferiority, began a long crusade for temperance and women's rights.

CE

A growing nation fell upon the people, for a variety of reasons, real and imaginary, drawing attention to alcohol. Some of the people used it to dilute their problems, others used alcohol as the root of all of their problems and the nation's problems. So the first controls were imposed by the government in the form of taxes on farmers and the business of brewing alcohol. During this period, the early 1800's, a pattern was set and it reached its peak during the prohibition era. This pattern was influenced by two factions, the "drys." The "wets" were the producers and sellers of alcohol and the "drys" were the people looking for a solution for problems incurred because of excessive drinking, and groups seeking moral and social recognition. The stronger of these groups, and led the prohibitionists, were the Christian Temperance Union and the Anti-Saloon League.

Prohibition was led by prohibition in several states from 1850 to 1900. Some of these states repealed their prohibition laws before national prohibition was introduced. Maine, Massachusetts,

TEACHER INFORMATION (continued)

Rhode Island, Kansas, Iowa, and the Dakotas were some of these early prohibition states. In fact, at the time of the 18th Amendment, there were twenty-four states with some kind of laws that were included in this list.

The National Prohibition Act was passed in 1919 and included in the national Prohibition Amendment. It included definitions of intoxicating beverages, enforcement, and the distribution of liquor.

Even with the passing of the Jones Act in 1929, which provided that persons who imported, exported, sold or transported liquor, could be sent to prison for violation of the federal laws, prohibition was followed at once by widespread violation of the federal laws to great proportions. The phrase, "home brew," became very common. Many drank denatured alcohol. Flavoring extract, bay rum, and medicinal preparations for beverage purposes, regardless of the after effects. Liquor raids and seizures were daily occurrences. Liquor was fraudulently withdrawn from bond and sold. Smuggling across the international borders and along the coast lines went on.

Due to the vast violation of the Prohibition Act and the loss of revenues, a Prohibition Amendment was passed in 1933, which repealed the 18th Amendment. Controls on alcohol then, have been educational such as promotion of self-restraint, medical and social problems are involved, and laws restricting alcohol consumption during certain hours, age requirements, etc.

NATURE OF ALCOHOL - CHEMICAL, PHYSICAL

All of the alcohols are composed of carbon, hydrogen, and oxygen atoms. Because of the presence of the hydroxyl group, alcohol is considered to be closely related to water and compounds such as water. It has the same chemical formula as ether, C_2H_5O . The difference is in the way the oxygen is bonded. This relationship makes these compounds isomers. There are a large number of alcohols, many of these having different chemical names depending on the system used. There are also several common names, or trade names, given to the more common alcohols. The following are a few examples of the many alcohols.

Three structural features are of importance when considering the chemistry of alcohols. The hydroxyl group has two bonds, the carbon-oxygen and the oxygen-hydrogen bonds. The oxygen atom has two pairs of unshared electrons which may be employed to form further bonds. The same structure features, except for the carbon-oxygen bond, the resemblance to water will be considerable. Like water, alcohol is neutral. That is, it is neither acidic nor basic.

TEACHER INFORMATION (continued)

and the Dakotas were some of these early prohibition states. Before national prohibition laws were passed, only four states with some kind of laws that were prohibition orientated, Montana

was passed in 1919 and included in the national law as the Eighteenth Amendment. It provided for the prohibition of intoxicating beverages, enforcement, and strict regulations of

the Jones Act in 1929, which provided that persons convicted of manufacture, transportation, or sale of liquor, could be sent to prison for five years and fined \$10,000, or both, in case of a first offense by widespread violation of the federal laws. Illicit distilling increased and "home brew," became very common. Many deaths were reported from the use of "moonshine." Flavoring extract, bay rum, and medicinal preparations were widely used to mask the taste and lessen of the after effects. Liquor raids and seizures by enforcement agents were common. Some liquor was fraudently withdrawn from bond and sold at ever mounting prices. Prohibition on the national borders and along the coast lines went on for a time almost unmolested.

Due to the Prohibition Act and the loss of revenues, and a popular unrest, the 21st Amendment was passed in 1933 which repealed the 18th Amendment. Controls for legal consumption, since then, have been such as promotion of self-restraint, medical and social assistance where needed, and laws restricting alcohol consumption during certain activities as driving,

CHEMICAL

Alcohols are composed of carbon, hydrogen, and oxygen atoms. Because of the arrangement of these atoms, they are to be closely related to water and compounds such as ether. Ethyl alcohol is chemically similar to ether, C_2H_5O . The difference is in the way the atoms are bonded together. Alcohols and ethers are compounds isomers. There are a large number of compounds that are called alcohols. They have different chemical names depending on the system of naming used. There are also common names, or trade names, given to the more common alcohols. Ethyl, methyl, isopropyl, and benzyl are some of the common alcohols.

The structure of the alcohol is of importance when considering the chemistry of the alcohols. In the functional group, the carbon-oxygen and the oxygen-hydrogen bonds. Besides these bonds, the oxygen atom has two lone pairs of electrons which may be employed to form further bonds. Since water has the same structure as the alcohol, except for the carbon-oxygen bond, the resemblance between water and the alcohols is evident. Water, alcohol is neutral. That is, it is neither an acid nor a base. It

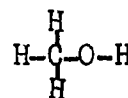
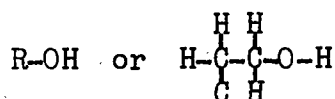
TEACHER INFORMATION (continued)

should be kept in mind that under certain conditions both alcohols and water will be either acids or bases.

Since we are concerned only with grain alcohol or ethyl alcohol, we will look at this alcohol and methyl alcohol.

ETHYL

METHYL



Some of the other characteristics that are probably of more significance to us are grouped under the heading as being physical characteristics. Since there are many, we will restrict our topic to ethyl alcohol.

Water free alcohol boils at 173° F. It is a clear, thin liquid that vaporizes readily, is soluble in water. Biologically it has, due to its nature, some important characteristics: it has a narcotic effect, dehydrates tissue, is toxic to tissue, and passes readily through semi-

MANUFACTURE OF ALCOHOL

Although much industrial alcohol is now manufactured synthetically from certain hydrocarbons, the alcohol in all alcoholic beverages is made by fermentation of sugar, or with the yeast reaction proceeds through a series of steps, but the overall reaction may be represented by the very simple chemical equation:



Glucose ethyl alcohol carbon dioxide

Theoretically, 180 g. of glucose should yield 92 g. of ethyl alcohol and 88 g. of carbon dioxide. In practice, the yield of alcohol is slightly below this figure because the yeast consumes some of the glucose and forms traces of other products besides alcohol.

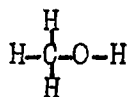
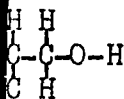
TEACHER INFORMATION (continued)

Under certain conditions both alcohols and water will show slight tendencies.

When we study with grain alcohol or ethyl alcohol, we will look only at the structure of methyl alcohol.

METHYL

WATER



Characteristics that are probably of more significance to us at this time will be those that are physical characteristics. Since there are many alcohols, we will study methyl alcohol.

Methyl alcohol boils at 173° F. It is a clear, thin liquid that vaporizes very readily and is very flammable. Physically it has, due to its nature, some important characteristics; has a cooling effect, is toxic to tissue, and passes readily through semi-permeable membranes.

Ethyl alcohol is now manufactured synthetically from certain petroleum products, and alcoholic beverages is made by fermentation of sugar, or with yeast. This fermentation takes place through a series of steps, but the overall reaction may be expressed by a chemical equation:



Glucose ethyl alcohol carbon dioxide

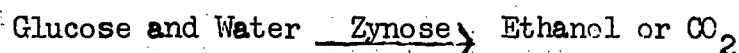
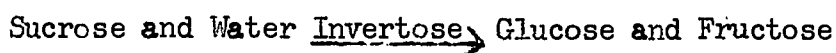
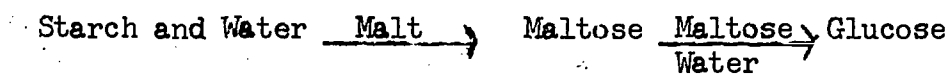
One mole of glucose should yield 92 g. of ethyl alcohol and 88 g. of carbon dioxide. In practice, the yield of ethyl alcohol is slightly below this figure because the yeast cells consume a little of the glucose for other products besides alcohol.



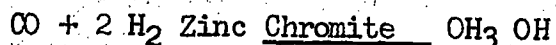
TEACHER INFORMATION (continued)

One of the earliest chemical reactions known to man was the fermentation of sugar. That process is today the most important method for the industrial preparation of alcohol. The material for the fermentation may be a sugar (sucrose or cane sugar), or it may be obtained from a cereal grain such as oats, wheat, rye, or corn, or from potatoes and roots. As a primary raw material, it is initially treated so as to break it down to form a fermentable sugar. The fermentation is carried out with yeast, an enzyme, zymase, being the active fermenter. If the material is treated with barley sprouts, which contain malt to break it down to glucose, the material to be acted on by zymase, must first be hydrolyzed. The enzyme which accomplishes this is secreted by yeast.

The action of the yeast ceases when the ethanol content reaches about 14% because the yeast cannot live in the medium. Consequently, to prepare alcohol of reasonable purity, it is necessary to separate it from the excess of water present. Fractional distillation is used for this purpose, yielding a mixture containing as little as 4.4% water. This roughly 95% ethanol is termed grain alcohol. The remaining 5% of water cannot be removed by fractional distillation because ethanol and water form an azeotropic mixture that has a lower boiling point than pure ethanol. Industrially, 100% ethanol is obtained from 95% alcohol by adding benzene and distilling fractionally. In the laboratory, calcium oxide, is added to react with the water and remove it chemically.



The simplest of the alcohols is commonly called wood alcohol because for many years it was obtained by the destructive distillation of wood. When heated in the absence of air, it yields an evil-smelling liquor known as pyroligneous acid. More recently, methanol is obtained by reduction of carbon monoxide. A special catalyst containing zinc chromite must be carried out at elevated temperatures and high pressure. By modifying the conditions, many of the other alcohols of more complex structure can be obtained.



TEACHER INFORMATION (continued)

reactions known to man was the fermentation of sugars to form ethyl alcohol. The most important method for the industrial preparation of ethanol. The raw material may be a sugar (sucrose or cane sugar), or it may be starch obtained from oats, wheat, rye, or corn, or from potatoes and rice. If starch is the raw material, it is initially treated so as to break it down to form a sugar mixture. The starch is treated with yeast, an enzyme, zymase, being the active ferment for glucose. Starch is broken down into dextrins, which contain malt to break it down to glucose, and sucrose, which is not easily hydrolyzed. The enzyme which accomplishes this step is invertase, also

stops when the ethanol content reaches about 14% because the micro-organism dies. Consequently, to prepare alcohol of reasonable purity, it is necessary to have a certain amount of water present. Fractional distillation is used to obtain ethyl alcohol of 95% water. This roughly 95% ethanol is termed grain alcohol. The last traces of water are removed by fractional distillation because ethanol and water form a constant-boiling mixture with a boiling point lower than pure ethanol. Industrially, 100% ethanol is prepared from grain alcohol and distilling fractionally. In the laboratory a drying agent, such as calcium chloride, reacts with the water and removes it chemically.

Malt \rightarrow Maltose $\xrightarrow{\text{Water}}$ Maltose, Glucose

Invertase \rightarrow Glucose and Fructose

Zymase \rightarrow Ethanol or CO_2

Methanol is commonly called wood alcohol because for many years the source of methanol was the distillation of wood. When heated in the absence of air, wood forms charcoal and a gas known as pyroligneous acid. More recently, methanol has been prepared commercially from carbon monoxide. A special catalyst containing zinc chromite is used and the reaction is carried out at elevated temperatures and high pressure. By modifying conditions in the process, products of more complex structure can be obtained.

Chromite $\text{OH}_3 \text{OH}$

TEACHER INFORMATION (contin

A process of making certain alcoholic beverages that we should ponder is a procedure for the separation of substances that have different boiling points. Alcohol boils at 173° F, while water does not boil until it reaches 212° F. When the fermentation point above 173° F, the alcohol and some of the water rises off in a vapor and is conducted through a cooling condenser called a "still."

Because we are mostly concerned with alcoholic beverages, let's take a look at some of certain beverages. Wine material is fresh juice of grapes, which is obtained by crushing or treading by human feet. In red wines, the skin is used. The conditions that are necessary for the fermentation. Fermentation is allowed to proceed at a temperature of around 80° F. The change from sugar to alcohol eventually requires distillation, sometimes necessary. At the end of the fermentation period, the fluid is placed in bottles or tanks for periods ranging from a few months to several years. During this time, the wine settles out and there is an improvement in the flavor. The concentration of alcohol is 10% to 14%, by volume. If sugar is added to sweeten the wine, the alcohol is added to prevent further fermentation.

Beer: Malt is formed by sprouting barley grains and then cooking the grains. The process leaves amylase which changes the starches into sugars so the yeast can ferment. Whiskey: Like beer, whiskey is made from vegetable starches which must be converted to sugars after fermentation, is called "distiller's beer" and this is distilled. The raw whiskey is then diluted with water and is then aged by being stored for from two to eight years in a white oak barrel that has been charred with a flame. During the aging process, the whiskey dissolves some of the charred wood, part of which imparts an amber color to the whiskey. Some of the lower and higher alcohols from the raw whiskey combine to form esters. This is why brandy has a different flavor. Brandy: Brandy is made by distilling wine in a still similar to that used for whiskey. The starting material for rum is molasses. Gin: This is made by mixing neutral spirits with juniper berries, orange peel, etc., are added to the mixture for flavoring and then the mixture is merely strained. Vodka: Vodka is only water plus neutral spirits.

PHYSIOLOGICAL ASPECTS OF ALCOHOL ON THE BODY

Before we begin, we might ask the following questions: What is alcohol? Is it a food? Actually it is both. It is a drug in the sense that it is a substance that is supplying vitamins or nourishment to them. It is the poorest of foods because it contains no vitamins, proteins, or fats.

TEACHER INFORMATION (continued)

in alcoholic beverages that we should ponder on is distillation. Distilling is the separation of substances that have different boiling points. Alcohol boils at 173° F. It does not boil until it reaches 212° F. When the fermented liquid is heated to a boil, the alcohol and some of the water rises off in a vapor above the heated vat and are condensed in a condenser called a "still."

Concerned with alcoholic beverages, let's take a closer look at the production of wine. The raw material is fresh juice of grapes, which is removed from the skin by treading with human feet. In red wines, the skin is used. The skin has on it the yeasts which cause the fermentation. Fermentation is allowed to proceed for from four to ten days at 60° to 80° F. The change from sugar to alcohol evolves heat so that cooling is necessary. At the end of the fermentation period, the fluid is separated and stored in casks for from a few months to several years. During storage, some solid material settles out, and there is an improvement in the flavor. The concentration of alcohol in wine ranges from 12% to 15%. If sugar is added to sweeten the wine, the alcohol content has to be over 15% to be classified as wine.

Whiskey is produced by sprouting barley grains and then cooking the sprouts to kill them. This process is called malting, which changes the starches into sugars so the yeasts can change them into alcohol. Whiskey is made from vegetable starches which must first be malted. The fluid, after fermentation, is called "distiller's beer" and this is distilled to a concentration of about 52% alcohol. The raw whiskey is then diluted with water to about 52% alcohol, by volume, and aged for from two to eight years in a white oak barrel, the interior of which has been charred. During the aging process, the whiskey dissolves certain substances from the wood which imparts an amber color to the whiskey. Some of the traces of organic acids in the raw whiskey combine to form esters. This improves the flavor of the whiskey. Brandy is produced by distilling wine in a still similar to that used for whiskey. Rum: The raw material is molasses. Gin: This is made by mixing neutral spirits and water. Juniper berries, etc., are added to the mixture for flavoring and the fluid is either distilled or aged. Vodka is only water plus neutral spirits.

ALCOHOL ON THE BODY

Ask the following questions: What is alcohol to the body? Is it a drug or is it both. It is a drug in the sense that it affects many organs without nourishment to them. It is the poorest of foods, supplying many calories but no vitamins or fats.

TEACHER INFORMATION (continued)

First, let us take a look at alcohol as a food. When foods are taken into the body, certain processes must take place; digestion, absorption, distribution, oxidation, elimination. Alcohol is not necessary since its molecular form is already simple enough to be directly absorbed into the blood stream. 2. Absorption, which takes place in the stomach or small intestine, is at a highly variable rate. 3. Distribution, the way in which alcohol is carried to each organ, tissue, and cell. Alcohol leaves the blood stream and enters the cells. 4. Oxidation, in which the liver, at a fixed speed, remodels the chemical structure of alcohol and releases heat and energy. The heat and energy, or calories, resulting from the oxidation of alcohol are used by the body cells instead of calories released from any other food. When alcohol is metabolized in any cell of the body, alcohol is metabolized chiefly in the cell. During oxidation, during which a small quantity, 2% to 10%, of the alcohol escapes unused.

Alcohol, though a very inadequate food, is a rich source of fuel. Less than 10% of alcohol leaves the body through the breath and urine. The other 90% is absorbed into the blood stream and small intestine, is transported to the liver, and then circulates throughout the body.

The liver is the only organ able to initiate the process by which the body disposes of alcohol. It works steadily as long as any alcohol is present, but even the healthiest liver can dispose of only two or three drops of it at one time. Excessive alcohol cannot be stored and must be eliminated from the blood while it waits its turn in the liver's chemical laboratory.

Each individual disposes of alcohol at a unique and constant rate. The average person disposes of alcohol in one ordinary highball in about an hour. Nothing is known which will speed up the oxidation, but much is known about factors which may slow down the absorption of alcohol. Incompatible with the oxidation capacity of the liver. If absorption is delayed or slow, the effects of alcohol, even its mildest effects will not be apparent.

To a great extent, a knowledgeable drinker can prevent, or minimize, the sedative effects of alcohol. If he limits his drinking to one or two well-diluted drinks, sips slowly, and eats while, or before, drinking, he is unlikely to become even moderately intoxicated. Under these conditions the alcohol can be disposed of as fast as it is absorbed.

Having completed taking a quick look at the effect of alcohol as the body uses it, let us now see how it affects the body as a drug. The pharmacological effects of alcohol are in direct relation to various areas and functions of the body. Most of these effects are due to alcohol in the brain. If there were some magical way of preventing absorbed alcohol from reaching the brain, the drinker would never become intoxicated, but this, of course, is impossible.

TEACHER INFORMATION (continued)

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TEACHER INFORMATION (continued)

to remember that there are several factors that are important determinants of the body; the length of time the body has been exposed to alcohol, be it in the amount of alcohol the body is exposed to over a given time; the general health of the individual; the rate at which the alcohol is absorbed, due to type of food and when it was eaten; in what form the alcohol was consumed.

With occasional drinking there is little effect, as far as deterioration is concerned in the body. Small amounts of alcohol, however, begin almost immediate deterioration of the brain. Different parts of the brain begin to malfunction in a predictable order as alcohol content increases.

The brain is composed of three levels: The cerebrum, comprising more than two-thirds of the brain, the cerebellum, the little brain and the mid-brain, and the medulla oblongata.

The cerebrum is the seat of such functions as judgment, caution, self-control, concentration, attention, intelligence. The cerebellum controls muscular coordination. The brain stem connects the cerebrum with the spinal cord and control all involuntary actions. The medulla oblongata connects to the correct area in the brain.

TEACHER INFORMATION (continued)

several factors that are important determinants in considering any effects on the time the body has been exposed to alcohol, be it minutes, days, hours, or years; the time the body is exposed to over a given time; the general physical and mental health of the individual; the rate at which the alcohol is absorbed, due to type and quantity of food eaten, and the form the alcohol was consumed.

There is little effect, as far as deterioration is concerned, on the organs of the body. The effects of alcohol, however, begin almost immediately. Deterioration of the functions of the parts of the brain begin to malfunction in a precise pattern as the alcohol

is absorbed. The brain is divided into three levels: The cerebrum, comprising more than three-fourths of the entire brain; the cerebellum, the little brain and the mid-brain, and the medulla, or the lower brain.

The cerebrum controls such functions as judgment, caution, self-control, reason, will power, and memory. The cerebellum controls muscular coordination. The medulla and mid-brain control the spinal cord and control all involuntary actions and put the right message to the brain.

TEACHER INFORMATION (continued)

TESTS AND EVALUATION

Tests, quizzes, and examination are a means of judging progress. Because evaluation is a continuous process rather than just a terminal process, tests may be used at the beginning of a unit to establish a base for instruction. They may be used during the unit to assess what is learned and at the conclusion of the unit to appraise the outcome of instruction. They may be used months, or years later to check the durability of learning.

Self-tests, pre-tests, or diagnostic tests are designed to establish a base for instruction - a means of determining course content and a way of identifying the needs of the student. They are never graded, although one means of checking new learning is to keep a record of scores to compare with the score on the same questions after the unit is completed. An illustrated self-test follows:

SELF-TEST: OPINIONS ON THE USE AND CONTROL OF BEVERAGE ALCOHOL

The following statements are concerned with the use and effects of alcohol as a beverage. Some statements deal with facts and some reflect opinions. You are asked to consider each statement and indicate your choice in the proper column. If you are in agreement with what is stated, place an "X" opposite the statement in the column headed "agree." If you disagree, place an "X" in the column headed "disagree." If you do not know whether you agree or disagree with the statement, or if you are doubtful, place an "X" in the column marked "uncertain."

Agree

1. Even among the experts, very little is known of the effects of alcohol upon the human body.
2. Frequent drunkenness and alcoholism means the same thing.
3. Drinking alcoholic beverages, though begun in moderation, will lead eventually to alcoholism.
4. The present trend in the consumption of alcoholic beverages in the United States indicates a decrease in per capita consumption.

TEACHER INFORMATION (continued)

TESTS AND EVALUATION

means of judging progress. Because evaluation should be a continuous, tests may be used at the beginning of a unit to motivate and to they may be used during the unit to assess what is being accomplished appraise the outcome of instruction. They may even be used several durability of learning.

tests are designed to establish a base for individual and group guid- content and a way of identifying the needs and interests of students. means of checking new learning is to keep a record of the pre-test score e questions after the unit is completed. An example of a simply admin-

OPINIONS ON THE USE AND CONTROL OF BEVERAGE ALCOHOL

ed with the use and effects of alcohol as a beverage. Some of the reflect opinions. You are asked to consider each of the statements er column. If you are in agreement with what the statement says, in the column headed "agree." If you disagree with the statement, disagree." If you do not know whether you agree or disagree with the place an "X" in the column marked "uncertain."

Agree Disagree Uncertain

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lism means the same thing.

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TEACHER INFORMATION (continued)

Agree

5. The increase in alcohol is the fundamental cause of most alcoholism.
6. Most people who drink alcoholic beverages do so moderately.
7. Alcohol is directly responsible for a large proportion of the crimes committed.
8. Alcoholic beverages are a form of poison.
9. Alcohol, in the form of a beverage, is a good stimulant and, therefore, effective in the treatment of snakebite, shock, or a common cold.
10. There are several kinds of alcohol, but ethyl alcohol is the one contained in alcoholic beverages.
11. The alcohol content of alcoholic beverages produced by fermentation is greater than that of beverages produced by distillation.
12. The chemical effect of alcohol on the body is similar to that of ether and acts as an anaesthetic or depressant on the nervous system.
13. Alcohol beverages are a form of food.
14. The same amount of alcohol taken in the form of whiskey is more "potent" than that taken in the form of wine.
15. Alcohol may, when taken in small amounts, serve a beneficial purpose in bringing about relaxation, lessening body tension, and acting as a "social lubricant."
16. People who drink alcoholic beverages do not make good parents.
17. Excessive drinking produces serious physical and mental diseases.

TEACHER INFORMATION (continued)

Agree

Disagree

Uncertain

Alcohol is the fundamental cause of most alcoholism.

Alcoholic beverages do so moderately.

Alcohol is responsible for a large proportion of the

Alcoholic beverages are a form of poison.

Alcohol is a good stimulant and, in the treatment of snakebite, shock, or a

Alcohol is one of the best kinds of alcohol, but ethyl alcohol is the one of the best alcoholic beverages.

Alcoholic beverages produced by fermentation are better than that of beverages produced by distillation.

The effect of alcohol on the body is similar to that of an anaesthetic or depressant on the nervous

Alcoholic beverages are a form of food.

Alcohol taken in the form of whiskey is more harmful than taken in the form of wine.

Alcoholic beverages taken in small amounts, serve a beneficial purpose by giving about relaxation, lessening body tension, and acting as a social lubricant."

Alcoholic beverages do not make good parents.

Alcohol produces serious physical and mental diseases.

TEACHER INFORMATION (continued)

Agri

18. Alcohol in high concentration is known to be irritating to body tissues; therefore, when whiskey, containing 50% alcohol by volume is taken into the body, it irritates and causes inflammation of the organs of the body, especially the brain.
19. Alcohol taken into the body in beverage form is absorbed from the stomach and taken directly into the bloodstream without change.
20. Most people can drink alcoholic beverages without injury to their health.
21. The habit of excessive drinking puts a great strain upon the heart and is thus responsible for much heart disease.
22. Prohibition of the manufacture, sale, and use of alcoholic beverages prevents people from drinking and thereby solves the problems of excessive drinking and alcoholism.
23. The best known method for measuring the amount of alcohol in the brain is to measure the concentration of alcohol in the blood.
24. Magazines and newspapers containing liquor advertisements should not be patronized.
25. Scenes which show persons drinking alcoholic beverages, with or without ill effects, should not be permitted in the movies.
26. The use of alcoholic beverages has existed for thousands of years in all countries despite all legal and social attempts to prohibit it.
27. Many persons can increase their skill in operating an automobile after taking a little alcohol.
28. Chronic alcoholics are more susceptible to respiratory diseases, especially pneumonia, and are less able to survive them than non-alcoholics.

TEACHER INFORMATION (continued)

Agree Disagree Uncertain

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TEACHER INFORMATION (continued)

Agree

29. Any use of alcoholic beverages by the state encourages drinking by giving it official approval.
30. The use of alcoholic beverages in the home is not necessarily harmful to good family life.
31. Various attitudes toward serving and drinking alcoholic beverages are found among different groups in our society.
32. Judgment, vision, and reaction time in individual performance are frequently impaired by even small amounts of alcohol.
33. The money obtained from taxes on alcoholic beverages should not be used for the support of schools or for the aged.

TEACHER INFORMATION (continued)

Agree

Disagree

Uncertain

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VIII. TEACHER AND STUDENT INFORMATION

SCRIPT: SLIDE SERIES HISTORY

PREHISTORIC MAN

When man first encountered alcohol is not known. It is possible to suppose that the form of mead (fermented honey) was known to Paleolithic or Stone Age Man, for there is evidence that his descendants made wine and beer.

We can best date the discovery of alcoholic beverages by stating that Man needed these to produce alcoholic beverages:

1. Water-tight containers
 - a. of clay
 - b. of skins
2. Storage practices
3. Recognition and reproduction of process

It should be remembered that Man did not discover alcohol; small plant-like organisms were making alcohol for millions of years before Man was on the earth. Man simply helped to produce larger quantities.

EGYPT

In the early Egyptian culture, women were encouraged to become drunk to the point where they were vomiting up their food and drink. This provided entertainment for most of the men who drank until they were inebriated.

The records show that the drinking of alcoholic beverages in ancient Egypt was common. The records were wine and beer. The slide is a copy of some of the records left by the ancient Egyptians. They suggest a wild party that we have mentioned above and it is unlikely that it is. Like the Egyptians used wine for many occasions, religious ceremonies, marriages, and just for the flavor.

SPARTA

Of all the Greek states, the Spartans had no drinking parties. Those Spartans who be

II. TEACHER AND STUDENT INFORMATION

SCRIPT: SLIDE SERIES HISTORY

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TEACHER AND STUDENT INFORMATION (continued)

usually given a beating. Spartan soldiers were not allowed drink while on duty, but critical, they were allowed a limited amount of alcoholic beverage.

Plato, a Greek scholar, recommended that wine be prohibited to children under eight, magistrates in office, to pilots (government officials), and to judges.

The Spartan soldiers were one of history's greatest armies of soldiers. When we think of discipline, we often refer to the Spartans.

ROME

Early Rome is to be placed among the nations of simple living. In early times heavy drinking was under social ban. In fact, the cultivation of the vine came in a comparatively late period. In drinking bouts, he was called "crassator" (thick-headed). Children, young men and servants were forbidden to drink at all. Authorities give few instances of heavy drinking days.

According to the authorities, wine drinking in the later Republic shows a marked change and for the worst. Rome began to forget their ancient discipline. In the first Punic War, Scipio laid the blame for a military reverse upon his soldiers for being drunk. In the Jugurthine War, Jugurtha roamed over the country side and sold their loot for wine. In the same war some Roman soldiers were off their guard at a feast and massacred.

Wine drinking became extremely fashionable. Gladiatorial combats were being staged and the victors were glutted with food and drink, were applauding the contestants when they got their throats cut.

Beginning with early Rome, one notes there was a stringent prohibition of women's drinking. It is said that women were not to touch wine at all. Athenaeus says that no freeborn woman was to drink wine. The law provided the death penalty for women who drank. In later Roman times, when living Romans had been inoculated with the sophistication of older societies, Roman women began to drink like their brothers to drink.

ARABIA

The word "alcohol" is derived from the Arabic word "al kohl," originally designating a substance used for staining the eyes. When we call liquor "eyewash" we little realize that the expression relates to the origin of the word.

TEACHER AND STUDENT INFORMATION (continued)

Spartan soldiers were not allowed drink while on duty, but if the duty was not allowed a limited amount of alcoholic beverage.

It is recommended that wine be prohibited to children under eighteen, to slaves, to pilots (government officials), and to judges.

They were one of history's greatest armies of soldiers. When we think of self-control or refer to the Spartans.

It was not practiced among the nations of simple living. In early times heavy drinking in Rome was not the fact, the cultivation of the vine came in a comparatively late date. If anyone engaged in it was called "crassator" (thick-headed). Children, young men under the age of thirty, were forbidden to drink at all. Authorities give few instances of heavy drinking in these early

times. In later times, wine drinking in the later Republic shows a marked change for earlier times, they began to forget their ancient discipline. In the first Punic War a Roman general was defeated in military reverse upon his soldiers for being drunk. In the Jugurthine War the Romans were on the losing side and sold their loot for wine. In the same war some Roman officers were caught and executed and massacred.

It was extremely fashionable. Gladiatorial combats were being staged at which Romans, when they drank, were applauding the contestants when they got their throats cut.

At the same time, one notes there was a stringent prohibition of women's drinking. Plutarch says that no freeborn woman in Rome was allowed to touch wine at all. Athenaeus says that no freeborn woman in Rome was allowed to drink wine. It provided the death penalty for women who drank. In later Rome, when the plain-people were inoculated with the sophistication of older societies, Roman women were as free as men.

The word "kohl" derived from the Arabic word "al kohl," originally designating a fine powder of sulfur used for shading the eyes. When we call liquor "eyewash" we little realize how closely this is related to the origin of the word.

TEACHER AND STUDENT INFORMATION (cont.)

The Arabian physician, Rhases, is credited with the discovery of distillation in the East. The first distilled liquors were used not as beverages but as medicine. Only later, and cheaper, did they begin to be used widely as beverages.

CHINA

China had one of the earliest prohibition laws. In China during the Chou Dynasty, the reign of the fourth emperor of the Yuan Dynasty, laws against the manufacture, sale, and consumption of wine were established and repealed no less than forty-one times. Penalties for violation were extremely severe.

INDIA

Because the people of India made a fermented drink called "tari" from the sap of a tree, at one time, the emperor ordered the trees to be cut down in an effort to reduce drunkenness.

SPAIN

The people of Spain have shown great restraint in the use of alcohol. Although the spread of distilled beverages in South America, they seem to control themselves with respect to drinking alcoholic beverages.

EARLY AMERICAN COLONIES

When explorers and settlers left their homes in Europe for the New World, they brought with them their foods and beverages, including alcoholic beverages. Alcohol was present even in the early colonies, such as Sir Walter Raleigh's ill-fated "lost colony" in Virginia.

The English colonists were not alone in the New World, of course. There were the Dutch settlers in the South and West, the French in Canada and the Mississippi Valley, and the Spanish in the Atlantic area. These earlier settlers were followed by other immigrants from the European world. Each group brought its religion, customs, beverages, and accustomed drinks.

TRIANGLE OF TRADE

During the colonial period, New England rum became a big trade item on the world market. It was traded for slaves, fish, vessels, and lumber. The New England distillers were the bankers of the trade and provided an international currency that made the commerce possible. Slavers of all nations

TEACHER AND STUDENT INFORMATION (continued)

credited with the discovery of distillation in the tenth century. It was used not as beverages but as medicine. Only later, when they became plentiful, were they used widely as beverages.

Prohibition laws. In China during the Chou Dynasty (1134-256 B.C.) and during the Yuan Dynasty, laws against the manufacture, sale, and consumption of alcohol were passed no less than forty-one times. Penalties for violation of the laws were

severe. In Java a fermented drink called "tari" from the sap of a palm tree, the government decreed trees to be cut down in an effort to reduce drunkenness.

Great restraint in the use of alcohol. Although the Spanish did much toward the spread of alcohol in South America, they seem to control themselves very well when it comes

to drinking. From their homes in Europe for the New World, they brought along their familiar alcoholic beverages. Alcohol was present even in the earliest settlements, including the ill-fated "lost colony" in Virginia.

Alone in the New World, of course. There were the Spanish explorers, traders, and missionaries; the French in Canada and the Mississippi Valley, and the Dutch in the Middle West. Settlers were followed by other immigrants from Europe and other parts of the world, bringing their religion, customs, beverages, and accustomed drinking practices.

By the eighteenth century, rum became a big trade item on the world market. It was traded for slaves. The New England distillers were the bankers of the slave trade. They provided the rum that made the commerce possible. Slavers of all nations used New England



TEACHER AND STUDENT INFORMATION (contin

rum as a means of filling their holds from the pens on the Guinea coast. The slaves from the West Indies. There they sold their slaves and took on a load of slave-produced molasses, which was then brought to New England and traded for another cargo of rum. This trade pattern was a part of the triangular trade of trade."

WESTWARD MOVEMENT

As Americans moved westward, alcohol became more important to many of the people. It was often excused as being necessary for facing the hardships being imposed on them. Other reasons for drinking during this period were, "a good stiff belt now and again keeps a man going when he has a lot of work to do," or "I'm as tough as anyone, and I can drink with the best of them."

As alcohol became more and more of a problem, the temperance movement became stronger. The temperance movement had the purpose of cutting down drinking, or eliminating it completely. Some states restricted sale, manufacture, and transportation of alcohol. In order to make the "dry" states, patent medicines were sold, and they ran about 70 to 80 proof.

PROHIBITION 1920 - 1933

More and more pressure was applied by the temperance groups, and finally in 1920 the Volstead Act was passed and the United States was a prohibition nation. Informal opposition to the law was rapid. Evasion of the law became widespread. As one historian has put it, "the law was so strict that one cannot make a crime overnight out of something that millions of people had been committing for years." Prohibition was especially resented by beer-drinking Americans of German descent and wine-drinking Americans of Italian parentage.

The beer, wine, and liquor was then only patronized by smugglers, moonshiners, and bootleggers. The world trade in alcohol was a rich and lucrative one. The lack of funds to pay law enforcement made the whole thing a big free-for-all. Many of the few officers that were hired to enforce prohibition laws made more money from the underworld by looking the other way.

PRESENT DAY

Man has studied the history of his predecessors since man first began to record his actions. He has also recorded the fact that man has learned little from lessons learned before him. We are trying to understand ourselves and the problems in our society by studying the past. The history of alcohol may become more meaningful to us. Our problems with alcohol are similar to those of our ancestors, except we live in a different time, a time of over-population, and of technology.

TEACHER AND STUDENT INFORMATION (continued)

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their slaves and took on a load of slave-produced molasses. The molasses was
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of his predecessors since man first began to record his events. History has
man has learned little from lessons learned before him. At least, we can attempt
the problems in our society by studying the past. The laws and social controls
eaningful to us. Our problems with alcohol are similar to those of the past,
t time, a time of over-population, and of technology that is highly advanced

TEACHER AND STUDENT INFORMATION (continued)

and changing very rapidly.

We still live with each other as people in the past have, so by observing what has occurred we can better understand drinking laws that restrict drinking and driving, and drinking. Unfortunate persons that have let alcohol become the guiding force in their lives can be shown that alcohol is not a plaything.

Although the lesson is hard to learn, most of us will learn it well. Alcohol can be too much just what we make it. Millions of people who drink alcohol use their heads and never have it, and many spend their working lives producing it.

TEACHER AND STUDENT INFORMATION (continued)

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king lives producing it.

IX. STUDENT INFORMATION

FERMENTATION-ANAEROBIC RESPIRATION

INTRODUCTION

The food fuel utilized by cells as a source of energy for their metabolic processes in the early stages of glucose decomposition, oxygen is not required and pyruvic acid is formed whether oxygen is present or lacking. When oxygen is present, the pyruvic acid is converted into carbon dioxide and water and there is a release of energy. However, in the absence of oxygen, the pyruvic acid can take many paths, depending upon the enzymatic constitution of the organism. In animals, anaerobic oxidation in muscle cells converts pyruvic acid into lactic acid. In plants, it is known as glycolysis. In yeasts, the pyruvic acid is converted to ethyl alcohol. In some bacteria, pyruvic acid decomposition yields an acid, or acids, and a gas. These types of pyruvic acid are known as fermentation. Therefore, anaerobic respiration consists of glycolysis and fermentation.

This exercise will direct your attention to alcoholic fermentation by yeasts acting as fermenters. In addition, you will investigate the fermentative activity of bacteria.

MATERIALS

Carbon Dioxide Production

Cake of yeast	10% potassium hydroxide	Me
Distilled water	Stirring rod	In
Glucose	250-ml Beaker	10
0.05% phenol red or bromthymol blue	4 Smith fermentation tubes	
	Absorbent cotton	

Alcohol Production

Filter paper
Funnel and support
Test tubes and rack
10% potassium hydroxide piodide-iodine solution

Microscopic Appearance of Yeast Cultures

Yeast suspension in water

Microscope lamp
Slide and cover slip
Fermenting yeast culture

IX. STUDENT INFORMATION

FERMENTATION-ANAEROBIC RESPIRATION

cells as a source of energy for their metabolic processes is glucose. In the decomposition, oxygen is not required and pyruvic acid is formed whether oxygen is present or not. When oxygen is present, the pyruvic acid is converted into carbon dioxide and water and a release of energy. However, in the absence of oxygen, the transformation of pyruvic acid depends upon the enzymatic constitution of the organism and the substrate. In muscle cells, fermentation in muscle cells converts pyruvic acid into lactic acid. This transformation is reversible. In yeasts, the pyruvic acid is converted to ethyl alcohol and carbon dioxide. In the absence of oxygen, decomposition yields an acid, or acids, and a gas. These transformations of pyruvic acid are called anaerobic respiration. Therefore, anaerobic respiration consists of glycolysis and fermentation.

Direct your attention to alcoholic fermentation by yeasts acting upon glucose. Investigate the fermentative activity of bacteria.

10% potassium hydroxide	Medicine dropper
Stirring rod	Incubator oven
250-ml Beaker	100-ml graduate
thymot blue	4 Smith fermentation tubes
Absorbent cotton	

potassium iodide-iodine solution

of Yeast Cultures Yeast suspension in water

STUDENT INFORMATION (continued)

Bacterial Fermentation

2 Fermentation tubes containing
glucose broth and bromcresol purple
24-hr Nutrient broth cultures of
eschercoli and bacillus subtilis

Inoculating loop mm
Ruler
Alcohol lamp
250-ml Beaker
10% potassium hydroxide
Incubator

DEVELOPMENT

Alcoholic fermentation-yeasts are unicellular fungi that are capable of converting glucose and carbon dioxide. This transformation is mediated by different enzymes which are called zymase. This type of respiration is far less efficient than aerobic respiration.

Carbon Dioxide Production: Crumble half a yeast cake into a beaker containing 100 ml of water. Stir the mixture thoroughly. Divide the suspension into 50-ml portions. To each portion add 10 ml of glucose and mix the solution thoroughly. Add enough of the yeast glucose mixture to fill the arm of each tube as well as the bulb. Similarly, fill the other tube with the yeast suspension. Label this tube "A." Add 3-5 drops of phenolphthalein to one of the fermentation tubes containing the yeast-glucose mixture. Label this tube "B."

Be sure that the arm of each fermentation tube is full of the yeast-glucose mixture. Plug the mouth of each tube with absorbent cotton and then place the tubes in an incubator which is set at 30° C. Examine the fermentation tubes at the end of the laboratory day. Examine all the fermentation tubes for gas production as well as for color change. Compare the untreated fermentation tube which shows a long gas column in its arm. Use a pipette to squirt about 2 ml of a 10% solution of potassium hydroxide into this medium. Observe the color change which occurs in the air column. Label this fermentation tube "C." Before you interpret your results, be in mind that both indicators are yellow in acid medium, whereas they retain their original color (blue) in an alkaline or neutral medium. Furthermore, potassium hydroxide is a strong alkali.

(1) Compare the reactions and color changes which occurred in all the fermentation tubes. Do you have evidence do you have that carbon dioxide is an end product of yeast fermentation?

Alcohol Production: Remove the cotton plugs from all the fermentation tubes. You are right if you identify the odor in all the fermentation tubes with the exception of tube "A." To give greater validity to the experiment, you will

STUDENT INFORMATION (continued)

Inoculating loop mm
Ruler
Alcohol lamp
250-ml Beaker
10% potassium hydroxide
Incubator

are unicellular fungi that are capable of converting glucose to ethyl alcohol. This transformation is mediated by different enzymes which have been collectively known as zymase. Anaerobic respiration is far less efficient than aerobic respiration.

Crumble half a yeast cake into a beaker containing 100 ml of distilled water. Divide the suspension into 50-ml portions. To one portion, add 5 grams of yeast thoroughly. Add enough of the yeast-glucose mixture to three fermentation tubes as well as the bulb. Similarly, fill a fourth fermentation tube with the yeast-glucose mixture. Label this tube "A." Add 3-5 drops of phenol red or bromthymol blue to the remaining three fermentation tubes containing the yeast-glucose mixture. Label this fermentation tube "B."

Each fermentation tube is full of the yeast-glucose mixture and devoid of air. Stopper each tube with absorbent cotton and then place them into an incubator which maintains a temperature of 30°C. Examine the fermentation tubes at the end of the laboratory period and also the next day. Record the amount of gas production as well as for color changes. Select an arm of the fermentation tube which shows a long gas column in its arm. Use a long medicine dropper to add a solution of potassium hydroxide into this medium. Watch for any changes which occur. Label this fermentation tube "C." Before you interpret your observations, bear in mind that the color changes are yellow in acid medium, whereas they retain their original color (red, purple, or blue) in neutral or alkaline medium. Furthermore, potassium hydroxide is a carbon dioxide absorbent. Record the color changes which occurred in all the fermentation tubes. (2) What is carbon dioxide? Is carbon dioxide an end product of yeast fermentation?

Remove the cotton plugs from all the fermentation tubes. Smell the contents of all the tubes. Do you identify the odor in all the fermentation tubes as alcoholic, with the exception of tube "C."? To give greater validity to the experiment, you will identify the presence of

STUDENT INFORMATION (continued)

ethyl alcohol by the haloform reaction. The presence of ethyl alcohol is predicated by the formation of a yellow precipitate from an alkaline solution of the halogen, iodine, which then yields iodoform.

Use the contents of the remaining unlabeled fermentation tube to detect the presence of ethyl alcohol by the haloform method. Filter about 5 ml of the fermenting mixture into a test tube. Add a few drops of a 1% potassium iodide-iodine solution to give the solution a persistent faint yellow color (see Figure 1 and Joseph). Shake the mixture as you add the reactants. Place the test tube in a beaker of water and heat to about 70° C. Remove the test tube from the beaker and waft the fumes toward your hand. The sharp pungent odor is due to the presence of iodoform. Remove a drop of the mixture and examine it microscopically. The crystalline design you should see is the result of iodoform. Let the test tube should appear. Since a pungent odor and yellow crystals can assume that they were derived from the interaction of ethyl alcohol and the iodine.

Microscopic Appearance of the Yeast Cultures: Remove samples from the fermentation tubes and examine only yeast cells, as well as from the fermenting medium. Make wet mounts of the samples and examine microscopically with the high dry power. Compare the appearance of the yeast cells in the different tubes. (3) What morphological changes in the yeast cells have occurred in the fermenting tubes? What is the biological significance of these changes?

Bacterial Fermentation: The pattern of fermentation varies with the bacterial species. By inoculating with a variety of bacteria different carbohydrate broths, which contain indicators, it becomes possible to detect these fermentation characteristics.

Obtain nutrient broth cultures of bacillus subtilis and escherichia coli. In addition obtain tubes containing sterile glucose broth and two tubes containing sterile glucose broth and two tubes containing sterile lactose broth. All four fermentation tubes also contain bromocresol green. Inoculate one tube of glucose broth with bacillus subtilis and the other with escherichia coli. Inoculate one tube of lactose broth with bacillus subtilis and the other with escherichia coli. Make sure that sterile conditions are maintained at all times. Label all the tubes. Keep the controls. Incubate all the cultures at 30° C. After 24 hours, remove the tubes and examine all the cultures for acid and gas productions. Measure the height of the gas column in the fermentation tube. Use a medicine dropper to add 10% potassium hydroxide to the tubes. Let the tubes stand and again measure the height of the column of gas.

As you record your observations, focus your attention on the color present in each tube and the presence of a gas column. In addition, you should be aware that the base color of the medium changes to yellow in an acid medium. (5) Compare the fermentative characteristics of the organism to glucose and to lactose. (6) Distinguish between the effect produced by the organism on these substrates.

STUDENT INFORMATION (continued)

reaction. The presence of ethyl alcohol is predicated upon its reaction with halogen, iodine, which then yields iodoform.

Using an unlabeled fermentation tube to detect the presence of alcohol by the addition of 5 ml of the fermenting mixture into a test tube. Add 4 drops of a 10% iodine solution to give the solution a persistent faint yellow color (Morholt, Brandwein, 1954). Observe the color change as you add the reactants. Place the test tube in a beaker of warm water. Remove the test tube from the beaker and waft the fumes towards you with your hand. The color change is due to the presence of iodoform. Remove a drop of the solution to a slide. Observe the crystalline design you should see is the result of hexagonal crystals. The design should appear. Since a pungent odor and yellow crystals were formed, you can conclude that the reaction is due to the interaction of ethyl alcohol and the iodine.

Yeast Cultures: Remove samples from the fermentation tubes which contain yeast from the fermenting medium. Make wet mounts of the samples and examine them under a microscope in dry power. Compare the appearance of the yeast cells in the cultures. What changes in the yeast cells have occurred in the fermenting medium? (4) What is the cause of these changes?

The pattern of fermentation varies with the bacterial species and their substrate. Prepare and observe the fermentation of bacteria in different carbohydrate broths, which contain a suitable indicator, and note these fermentation characteristics.

Prepare fermentations of *Bacillus subtilis* and *Escherichia coli*. In addition, take two fermentation tubes containing glucose broth and two tubes containing sterile glucose broth and two tubes containing water. All four fermentation tubes also contain bromocresol purple as the indicator. Inoculate one tube with *Bacillus subtilis* and the other with *Escherichia coli*. Similarly, inoculate one tube with *Bacillus subtilis* and the other with *Escherichia coli*. Be sure the tubes are kept inverted at all times. Label all the tubes. Keep the original cultures as controls. Incubate the cultures at 30° C. After 24 hours, remove the tubes from the incubator and observe for acid and gas productions. Measure the height of the column of produced gas. Use a medicine dropper to add 10% potassium hydroxide to these fermentation tubes. Then measure the height of the column of gas.

In your reports, focus your attention on the color present in each tube, as well as the pH. In addition, you should be aware that the base color of the indicator is purple and the color changes to yellow in an acid medium. (5) Compare the fermentative response of each organism to lactose. (6) Distinguish between the effect produced by both organisms upon

STUDENT INFORMATION (continued)

INTERPRETATION

- (a) Devise a controlled experiment which will show that fermenting yeast do produce carbon dioxide.
(b) Compare the wet mounts of yeast suspended in water and in a glucose medium. How do the observations provide evidence that energy is liberated during fermentation?
(c) Design a controlled experiment which would make it possible to measure the energy released during fermentation of yeast.
(d) Compare the energy exchanges during aerobic and anaerobic respiration.
(e) In the experiment on fermentation, the potassium hydroxide did not completely remove the gas present in the fermentation tube. How do you account for this?
(f) Suppose in the experiment on bacterial fermentation, the glucose broth did not change color following its inoculation and incubation. How could it be that it was the result of the inability of the organism to ferment the contents of the tube or that it failed to grow?

STUDENT INFORMATION (continued)

which will show that fermenting yeast do produce carbon dioxide. (b) Yeast are suspended in water and in a glucose medium. How does this observation support the theory of fermentation? (c) Design a controlled experiment to determine the energy released during fermentation of yeast. (d) Compare aerobic and anaerobic respiration. (e) In the experiment on bacterial fermentation, the gas was not completely removed from the arm of the fermentation tube. How could you tell whether the organism was able to ferment the contents of the tube or its inability to do so?

STUDENT INFORMATION (continued)

HAND-OUT ON THE HISTORY OF ALCOHOL

Direction: Answer the questions exploring your ideas in a short outline form to broad. There are, also, some short factual answers to be given on the history of alcohol.

1. What did early man have to invent before he could make alcoholic beverages?
2. What small plant produces the alcohol?
3. What raw materials does yeast use to produce alcohol?
4. Give your opinion:
 - a. What were some reasons early man may have had for drinking alcoholic beverages?
 - b. Did early man probably think alcohol had some mystic powers? Why, or why not?
5. Did all drinking done by the Egyptians end with the drinkers being inebriated or not?
6. Give your opinion:
 - a. Is vomiting pleasant in any way?

STUDENT INFORMATION (continued)

HAND-OUT ON THE HISTORY OF ALCOHOL

Questions exploring your ideas in a short outline form to broaden your concepts.
Factual answers to be given on the history of alcohol.

When did man first invent before he could make alcoholic beverages?

How does man use the alcohol?

What is the yeast use to produce alcohol?

What reasons early man may have had for drinking alcoholic beverages?

Why do you probably think alcohol had some mystic powers? Why, or why not?

Why do you think the Egyptians end with the drinkers being inebriated or sick?

What is the alcohol used in any way?

STUDENT INFORMATION (continued)

- b. How do you think they got Egyptian women to drink until they became sick?
- c. Do people today drink until they are sick? Until they are dead? Why, or why not?
- d. Is the taste of alcohol beverages a pleasant one?

7. What are some laws that we have today that are similar to Plato's recommendations?

8. Why is it wise to control the drinking of soldiers on duty?

9. Give your opinion:

- a. Should a person be able to drink as much as he wants, when and where he wants to? Why?
- b. Does drinking make a poor soldier?

10. What is meant by a social ban?

11. What are some names that are used, in our culture, to describe those persons who drink too much?

STUDENT INFORMATION (continued)

12. Did drink and fighting mix well for the Romans?
13. What similar problem are we having with our soldiers in Southeast Asia?
14. Write the penalty for women who drank in early Rome?
15. Give your opinion:
Is the age of thirty a good time to permit a person to begin drinking alcoholic beverages?
16. Who named alcohol?
17. What is aqua vitae?
18. What is prohibition?
19. Who had the earliest prohibition laws?
20. Can alcohol be made from the products of trees in this area?

STUDENT INFORMATION (continued)

21. What was rum made from?
22. Explain the "triangle of trade."
23. Why did certain states pass laws to keep down drinking?
24. What false attitudes during the westward movement tended to increase the drinking problem?
25. In what form was alcohol legally sold in "dry" states?
26. What is a "dry" state?
27. Give your opinion:
What is happening to a family when the provider is over-indulging in alcoholic beverages?
28. Do your parents or grandparents remember the prohibition era?
29. What were the dates when national prohibition went into effect?

STUDENT INFORMATION (continued)

30. During the prohibition era were there any smugglers, moonshiners, or bootleggers?
31. Give several reasons why enforcement of prohibition laws were a failure?
32. Give your opinion:
 - a. Can we learn anything about drinking problems that might face us in the future?
 - b. Will there be anyone in this class who may have problems develop in his life with alcohol?
 - c. Does anyone have control over the way alcohol is going to affect your life?
 - d. Is it true that your friends are the ones who are most likely to lead you in...

STUDENT INFORMATION (continued)

ion era were there any smugglers, moonshiners, or bootleggers operating in Montana?

s why enforcement of prohibition laws were a failure?

anything about drinking problems that might face us in the future by studying the past?

nyone in this class who may have problems develop in his life because of drinking .

re control over the way alcohol is going to affect your life? Who?

your friends are the ones who are most likely to lead you into trouble with alcohol?

STUDENT INFORMATION (continued)

LABORATORY EXERCISES (Warning: A
are toxic!!)

Number I (May be presented as a demonstration)

Chemical Properties

Materials

Ethyl alcohol - 95%
Methyl alcohol
Isopropyl alcohol
Litmus paper (red, blue)
Watch glass
Basic and acidic solution

Part I - Acid or Base

Test alcohol for OH or H ions.

1. Test basic solution with litmus.

The red litmus turns to what color? _____

2. Test acidic solution with litmus.

The blue litmus turns to what color? _____

3. Test the alcohol solution with litmus.

The red litmus turns to what color? _____

The blue litmus turns to what color? _____

(May also test water as control)

Conclusion: _____

STUDENT INFORMATION (continued)

LABORATORY EXERCISES (Warning: All laboratory alcohols are toxic!!)

s a demonstration)

95%

l
d, blue)

solution

se

OH or H ions.

c solution with litmus.

litmus turns to what color? _____

ic solution with litmus.

litmus turns to what color? _____

alcohol solution with litmus.

litmus turns to what color? _____

litmus turns to what color? _____

also test water as control)

Part II - Solubility

Pour small amount of alcohol in water and observe.

(May use oil and water to help illustrate solubility.)

Conclusion: _____

Part III - Oxidation (chemical addition of O to atom or compound)

Place small amount of alcohol in a watch glass and ignite. (Use

Conclusion: _____

Number II

Physical Characteristics

Materials

- Ethyl alcohol (denatured)
- Methyl alcohol
- Isopropyl alcohol
- 250 ml flask
- 2-holed stopper
- Burner
- Several beakers

Part I

Place ethyl alcohol in beakers and examine.

1. What common liquid does alcohol look like? _____

STUDENT INFORMATION (continued)

ity
unt of alcohol in water and observe.
and water to help illustrate solubility.)

on (chemical addition of O to atom or compound)
ount of alcohol in a watch glass and ignite. (Use water or gasoline as control)

CS
(denatured)

cohol
er
rs
lcohol in beakers and examine.

ommon liquid does alcohol look like? _____

STUDENT INFORMATION (continued)

2. Is the odor of ethyl alcohol pleasant? _____
3. Does the strength of the odor increase with the increase in percent solution? _____ (Called constant vapor pressure) (May use solutions of different percents to illustrate)
4. Does alcohol diffuse readily throughout the room? _____

Part II - Boiling Point of Alcohol

Place alcohol in 250 ml flask, about 100 ml, with a thermometer at the surface. Bring to a boil and record the temperature.

1. The temperature is _____ ° F
2. Why is this different than the temperature given in class? _____

Number III - Biological Effects

Biological Effects

Materials

95% Ethyl alcohol (denatured)
Methyl alcohol
Isopropyl alcohol
Algae, earth worms

Part I - Dehydration

Place algae on a slide, observe under the microscope, add 95% alcohol.

1. What happened to the algae cells? _____
2. What caused this? _____

STUDENT INFORMATION (continued)

ethyl alcohol pleasant? _____

How does the odor increase with the increase in percent of alcohol in the

_____ (Called constant vapor pressure) (May set out some alcohol
percentages to illustrate)

Does it diffuse readily throughout the room? _____

Alcohol

Place a flask, about 100 ml, with a thermometer at the surface of the alcohol,
and read the temperature.

The temperature is _____ ° F

Is it different than the temperature given in class? _____

denatured)

After you observe under the microscope, add 95% alcohol.

Do you see the algae cells? _____

STUDENT INFORMATION (continued)

Place a drop of alcohol on the back of your hand, repeat several times in the same spot as the alcohol evaporates.

1. Does the alcohol feel warm or cold? _____
2. Is there any change in the skin where the alcohol was placed? Why? _____

Part II - Toxic Effects

Place three earthworms in different concentrations of alcohol, 4%, 47%, 95%, and observe reaction over a period of time, record observations.

<u>Time</u>	<u>4% Alcohol</u>	<u>47% Alcohol</u>	<u>95% Alcohol</u>
1 Min.	_____	_____	_____
2 Min.	_____	_____	_____
3 Min.	_____	_____	_____
4 Min.	_____	_____	_____
5 Min.	_____	_____	_____
10 Min.	_____	_____	_____
15 Min.	_____	_____	_____
20 Min.	_____	_____	_____

X. GLOSSARY

atom	the smallest part of an element
abstain	a doing without
alcoholic content	the amount of alcohol in a given substance by weight or volume
alcoholism	a diseased condition caused by habitually drinking too much alcohol
"al kohl"	Arabic word referring to distilled alcohol
amnesia	partial or total loss of memory
anesthetic	a drug, gas, etc., that produces a partial or total loss of the sense of pain or touch
antiseptic	free from infection; stopping the action of microorganisms
aqua vitae	name given to distilled alcohol in the 16th century
blood pressure	the pressure exerted by the blood against the inner walls of the arteries
carbon	a non-metallic chemical element found in many compounds
compound	a chemical bonding of two or more atoms
culture	the sum of living patterns in a given civilization
depressant	a substance which lowers the rate of muscular or nervous activity
digestion	breakdown of large molecules into smaller ones
dilation	enlargement of an organ, cavity, or opening of the body beyond its normal size
disinfectant	anything that destroys harmful bacteria or virus
distillation (fractional)	the process of first heating a mixture to separate the more volatile parts and then cooling and condensing the resulting vapor so as to obtain a pure or refined substance

X. GLOSSARY

smallest part of an element

ing without

amount of alcohol in a given substance by weight or volume

seased condition caused by habitually drinking too much alcoholic liquor

ic word referring to distilled alcohol

ial or total loss of memory

rug, gas, etc., that produces a partial or total loss of the sense of pain, temperature, touch

e from infection; stopping the action of microorganisms

e given to distilled alcohol in the 16th century

pressure exerted by the blood against the inner walls of the veins and arteries

on-metallic chemical element found in many compounds

hemical bonding of two or more atoms

sum of living patterns in a given civilization

substance which lowers the rate of muscular or nervous activity

akdown of large molecules into smaller ones

argement of an organ, cavity, or opening of the body beyond normal size

thing that destroys harmful bacteria or virus

process of first heating a mixture to separate the more volatile from the less volatile
ts and then cooling and condensing the resulting vapor so as to produce a more nearly
e or refined substance

GLOSSARY (continued)

distillation (destructive)	process of changing the form of organic molecules by heat and pressure
drug	compounds that affect the body other than to nourish it
elimination	to remove, excrete
ethyl alcohol	beverage alcohol which is composed of carbon, hydrogen, and oxygen - C ₂
euphoria	a feeling of well being
external	on the outside or exterior
false confidence	an inaccurate or mistaken feeling of being assured or certain
fermentation	breakdown and change of molecules in a substance due to a ferment such
food	compound that produces growth and energy in the body
habit forming	a substance is habit forming if it causes its user to repeat its use over again so that it becomes automatic
hydrogen	an inflammable, colorless, odorless, gaseous chemical element
indulged	to yield to the desire of
inferiority	the quality or condition of feeling lower in value, below average, or m
inflammation	diseased condition characterized by redness, heat, and swelling
internal	of, or on, the inside
inebriate	to make drunk, to intoxicate
malnutrition	undernourishment resulting from insufficient food or improper diet
mature	full grown; fully developed; mental and physical development

GLOSSARY (continued)

process of changing the form of organic molecules by heat and pressure

compounds that affect the body other than to nourish it

to remove, excrete

beverage alcohol which is composed of carbon, hydrogen, and oxygen - C_2H_5OH

a feeling of well being

on the outside or exterior

an inaccurate or mistaken feeling of being assured or certain

breakdown and change of molecules in a substance due to a ferment such as a bacteria

compound that produces growth and energy in the body

a substance is habit forming if it causes its user to repeat its use over and over again so that it becomes automatic

an inflammable, colorless, odorless, gaseous chemical element

to yield to the desire of

the quality or condition of feeling lower in value, below average, or mediocre

diseased condition characterized by redness, heat, and swelling

of, or on, the inside

to make drunk, to intoxicate

undernourishment resulting from insufficient food or improper diet

full grown; fully developed; mental and physical development

GLOSSARY (continued)

muscular coordination	harmonious, orderly adjustment or working of muscles
organic	composed of C,H,O related to living things
oxidation	the chemical bonding of oxygen to another atom
oxygen	colorless, odorless, gaseous chemical element
prohibition	the forbidding, by law, of the sale and sometimes the manufacture of alcoholic liquors as beverages
proof	commercial method of declaring the amount of alcohol in a beverage
reaction	a response to a stimulus
reality	a state or quality of being real
reflex	reaction to a stimulus
self-control	control (command; authority) of oneself, or of one's own emotions
self-discipline	self-training which corrects, molds, strengthens, or perfects
self-respect	proper respect (consideration) for oneself, one's behavior
social problems	problems having to do with human beings living together as a group requiring that they have dealings with one another
solvent	a substance used for dissolving another substance
standard	some measure, principle, or model with which things of the same kind are compared in order to determine their quality or value
stimulant	a substance that increases the action of a body part; stimulates wakefulness, and alertness
temperance	habitual moderation in the indulgence of appetites, etc.

GLOSSARY (continued)

harmonious, orderly adjustment or working of muscles

composed of C,H,O related to living things

the chemical bonding of oxygen to another atom

colorless, odorless, gaseous chemical element.

the forbidding, by law, of the sale and sometimes the manufacture and transportation of alcoholic liquors as beverages

commercial method of declaring the amount of alcohol in a beverage

a response to a stimulus

a state or quality of being real

reaction to a stimulus

control (command; authority) of oneself, or of one's own emotions, desires, and actions

self-training which corrects, molds, strengthens, or perfects

proper respect (consideration) for oneself, one's behavior

problems having to do with human beings living together as a group in a situation requiring that they have dealings with one another

a substance used for dissolving another substance

some measure, principle, or model with which things of the same class are compared in order to determine their quality or value

a substance that increases the action of a body part; stimulants produce excitation, wakefulness, and alertness

habitual moderation in the indulgence of appetites, etc.

CULMINATING ACTIVITIES

Have students discuss the invironmental and cultural pressures which might lead drugs, and alcohol.

Invite guest lecturers who are qualified to keep students informed of new inform drugs, and alcohol.

Plan a "mock trial" to be presented to the student body or the P.T.A.

Invite a law enforcement officer to talk about the local scene.

Plan a program for another class to witness.

Select a panel of students and have each student discuss a phase of the tobacco from the viewpoint of the traffic officer, juvenile court judge, athletic coach, divorce court judge, wife, and a child.

CULMINATING ACTIVITIES

Environmental and cultural pressures which might lead them to use of tobacco,

are qualified to keep students informed of new information dealing with tobacco,

presented to the student body or the P.T.A.

officer to talk about the local scene.

class to witness.

and have each student discuss a phase of the tobacco, drugs, and alcohol problem
traffic officer, juvenile court judge, athletic coach, employment counselor,
and a child.

EVALUATION

ATTITUDES

Has the student:

Gained self-respect in regard to his abilities to make decisions?

Developed a good attitude toward good health practices and ideas?

Gained understanding of the influence of alcohol, drugs, and tobacco?

Developed attitudes on why not to use alcohol, drugs, and tobacco?

Become more willing to assume responsibility for individual and group respon

Gained an understanding about the needs and problems of alcohol, drugs, and

Been prepared for more effective citizenship?

When choices and decisions need to be made, do they have the right attitudes
correct choice on forethought, not afterthought?

EVALUATION

ATTITUDES

- respect in regard to his abilities to make decisions?
- good attitude toward good health practices and ideas?
- standing of the influence of alcohol, drugs, and tobacco?
- attitudes on why not to use alcohol, drugs, and tobacco?
- willing to assume responsibility for individual and group responsibilities?
- understanding about the needs and problems of alcohol, drugs, and tobacco?
- d for more effective citizenship?
- and decisions need to be made, do they have the right attitudes and materials to make the
ce on forethought, not afterthought?

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3022 Fourth Avenue North
Billings, Montana 59101

American Cancer Society
219 East 42 Street
New York, New York 10017

American Heart Association
44 East 23 Street
New York, New York 10010

American Medical Association
535 North Dearborn
Chicago, Illinois 60610

American Temperance Society
Mr. Jesse O. Gibson
6840 Eastern Avenue, N.W.
Washington, D. C. 20212

Association Films, Inc.
600 Grand Avenue
Ridgefield, New Jersey 07657

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Educational Services
Greenfield, Mass. 01301

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Public Health Service
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5454 Wisconsin Avenue
Chevy Chase, Maryland 20203

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Salt Lake City, Utah 84115

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Los Angeles, California 90025

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Pleasantville, New York 10570

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P. O. Box 1283
Albany, New York 1220

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New York, New York 10017

McGraw-Hill Book Company
Text-Film Division
330 West 42 Street
New York, New York 10036

McGraw-Hill Book Company
8171 Redwood Highway
Novato, California 94947

Montana Heart Association
510 First Avenue North
Great Falls, Montana 59401

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825 Helena Avenue
Helena, Montana 59601

National Cancer Institute
United States Public Health Service
Bethesda, Maryland 20014

National Clearinghouse for Smoking and Health
Webb Building, Room 812
4040 North Fairfax Drive
Arlington, Virginia 22203

National Interagency Council on Smoking
and Health
P.O. Box 3654
Central Station
Arlington, Virginia 22203

National Tuberculosis Association
1790 Broadway
New York, New York 10019

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381 Park Avenue South
New York, New York 10016

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| 1. Prehistoric Man | 5. Arabia | 9. Early American Colonies |
| 2. Egypt | 6. China | 10. Triangle of Trade |
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a, b)

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