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. (SL)
Great Falls Public Schools
Great Falls, Montana

TOBACCO, DRUG, AND ALCOHOL UNIT
SEVENTH GRADE

Instructional Materials Center
Title III Project 68-05115-0
Robert C. Jewell, Director
Great Falls Public Schools
Great Falls, Montana

TOBACCO, DRUG, AND ALCOHOL UNIT
SEVENTH GRADE

Prepared by:
Edward Spragg - Tobacco
Robert Roach - Tobacco
Stanley Tolliver - Alcohol
Kenneth Leland - Drugs
### 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

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   B. Biological understanding
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      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
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B. LSD
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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
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2. Personal meaning ................................

III. History of Alcohol ................................

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      1. Date ...........................................
      2. Essentials needed for the discovery of alcohol

   B. Early civilizations .................................
      1. Egypt ...........................................
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   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
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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 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 drinking. Due to their general acceptance by the general public in the United States, other methods 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 an understanding of the facts and figures. Scientists in the fields of physiology, biochemistry, psychology, and sociology have a great amount of knowledge on the subjects of alcohol, drugs, and tobacco that truly inform the involved.

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

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

-1-
INTRODUCTION

A popular concern for social welfare and reform, a concern which
dates back over 100 years. At the present time there are many areas of social
problems which have not yet been corrected or improved by legislation, economic correction, or
methods of control of social problems is education.

Approached by education are the uses of alcohol, drugs, and tobacco.
The general public in the United States, other methods of control have
come short of solving all of these problems. By introducing the facts to the
general public in the United States, other methods of control have

come short of solving all of these problems. By introducing the facts to the
people, derived their own conclusions, we at least have a fighting chance.

Biochemistry, psychology, and sociology have gathered a significant
amount of information on the uses of alcohol, drugs, and tobacco that truly inform the users of the risks

This information is available in the form of books, pamphlets, technical articles,
which now have the means to approach the problems of drug use, smoking,
Drugs and alcohol are complex issues in attitudes and backgrounds of the students and the public,
individuals. As teachers, we must attempt to deal objectively with

Drugs and alcohol are complex issues in attitudes and backgrounds of the students and the public,
individuals. As teachers, we must attempt to deal objectively with

Students need the opportunity to explore and analyze

Students need the opportunity to explore and analyze
the facts and attitudes regarding the use of drugs, alcohol, and
tobacco.

The project were provided by ESEA Title III. Title III of the Elementary
and Secondary Education Act (ESEA) of 1965 was designed to encourage the development of new ideas, to demonstrate worthwhile

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and Secondary Education Act (ESEA) of 1965 was designed to encourage the development of new ideas, to demonstrate worthwhile

OBJECTIVES

GENERAL
To present the facts of tobacco, alcohol, and drugs to the students in such a manner as to be 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 disease.

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

School, and drugs to the students in such a manner that it will be personal decisions regarding its use.

KNOWLEDGE

cause of cancer and is a prime factor in respiratory and heart disease.
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 all

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)

illnesses than non-smokers.

use of drugs.

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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 all living organisms.

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)

The nature of alcohol and to give a realistic concept of its use as a beverage.

Study about drugs because they may affect the quality and quantity of our lives.

To many people.

Alcohol.

Man for many years.

Problems with alcohol.

Rolled excessive drinking by social bans.

Drinking change and can be changed.

Law was not approved by most of the people.

Related to organic compounds that make up the structure of all living things.

Is with a C atom attached to an OH group.

Molar pressure.

Some degree.

Made by the fermentation of sugar by yeast.

Into sugar by malting.

By destructive distillation.
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

To develop the ability to discriminate between fact and fiction.
To develop the ability to critique audiovisual and printed materials with others.
To differentiate between use, misuse, and abuse of alcohol, tobacco, and drugs.
To promote understanding of the scope and nature of their use and abuse on the individual and societal levels.
To increase the knowledge of federal and state regulations regarding the use and abuse of alcohol, tobacco, and drugs.
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, and emotions.
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

ity to discriminate between fact and fiction.
ity to critique audiovisual and printed materials with objectivity.
tween use, misuse, and abuse of alcohol, tobacco, and drugs.
ding of the scope and nature of their use and abuse on family and community life.
ledge of federal and state regulations regarding the use of alcohol, tobacco, and drugs.
of personal worth and integrity.
as well as freedom of verbal and non-verbal expressions of emotions and behavior.
-awareness of mental and physical conditions, feelings, and sensations.
-making skills.
eciation of and respect for the decisions of others.
on.
usage.
tion of ideas and concepts into logical patterns.
y in handling new vocabulary.
OBJECTIVES (continued)

ATTITUDES

Student

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

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

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 resor
tobacco, and drugs.

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

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

To develop an understanding of the scope of the problem and the cause of the o

To develop the understanding in the student that he does not need tobacco, als
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,

To develop a realization of the hazards of social influences that lead to alc
tobacco abuse.
OBJECTIVES (continued)

ATTITUDES

- Dual student a wholesome outlook on the use of subject without bias or
  - understanding of his responsibilities to himself, his family, his
  - which controls and influences him.

- For maintaining good health habits.

- For maintaining good health habits.

- Gone, and now is the time to learn good ones.

- Needs and how they can be fulfilled without resorting to alcohol,
  - the effects of alcohol, tobacco, and drugs on the way people live.

- Realization that one's life can be more satisfying if he takes an
  - of the scope of the problem and the cause of the conditions.

- Ing in the student that he does not need tobacco, alcohol, and drugs to
  - status, or to meet other emotional needs.

- of alcohol, drugs, and tobacco.

- the human body.

- of the human body.

- 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, drugs, and tobacco are dangerous.
Interview A.A., law enforcement, and American Cancer Society people and report.
Set up panel discussions on alcohol, drugs, and tobacco.
Crime associated with these substances.
Social problems.
Family problems.
TEACHING HINTS FOR SLOW AND RAPID LEARNERS

be maintained while allowing for variation.

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with these
**TOBACCO**

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Teacher Materials</th>
</tr>
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<tbody>
<tr>
<td>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.</td>
<td>&quot;Smoking - The Great Dilemma&quot;</td>
</tr>
<tr>
<td></td>
<td>&quot;What We Know About Children and Smoking&quot;</td>
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<tr>
<td></td>
<td>Film: &quot;Cigarettes and Health, Challenge to Educators&quot;</td>
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</tbody>
</table>

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

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

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

_Tobacco and Health, A Handbook for Teachers_

"Cigarettes and the Schools"
<table>
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<tr>
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<th>Student Materials</th>
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<tbody>
<tr>
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<td>&quot;My Dear, This'll Kill You&quot;</td>
</tr>
<tr>
<td>&quot;What We Know About Children and Smoking&quot;</td>
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<tr>
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<td>&quot;Smoking - It's Up To You&quot;</td>
</tr>
<tr>
<td>&quot;Cigarettes and the Schools&quot;</td>
<td>&quot;Here Is The Evidence, You Be The Judge&quot;</td>
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<tr>
<td>Tobacco and Health, A Handbook for Teachers</td>
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</tr>
</tbody>
</table>
Audio Visual

Posters:

Decision, Decision, Decision ...
Is It Worth It?

Filmstrip w/record:

"Smoking or Health"

Films:

"Smoking: Past and Present"

"The Huffless, Puffless Dragon"

"A Time For Decision"

Motivating Questions

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?
<table>
<thead>
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<th>Activities</th>
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<td>Did the history of the South lead to the present use of tobacco on such a large scale?</td>
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<td>Have students research tobacco to find reasons why it became the nation's leading habit.</td>
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</tbody>
</table>

*Fless Dragon*
III. 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

Take-up of are numerous re-harmful

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

Tobacco and Health: A Handbook for Teachers

"The Cigarette, A Dubious Companion"
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<td>Posters:</td>
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<td>Anti-Smoking</td>
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<td>Pro-Smoking</td>
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<tr>
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<th>Activities</th>
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<tbody>
<tr>
<td>From personal observation, why do you think people smoke?</td>
<td>Have the students who smoke respond to this for discussion.</td>
</tr>
<tr>
<td>What methods do television commercials use to sell their cigarettes? Is the propaganda one-sided?</td>
<td>Collect cigarette campaigns from newspapers and discuss.</td>
</tr>
<tr>
<td>Do you feel the ads for cigarettes tell the truth about cigarettes and its real effect on the human body?</td>
<td>Discuss the anti-smoking campaigns now seen on television and in magazines.</td>
</tr>
<tr>
<td>What are the most common substances found in tobacco smoke?</td>
<td>Make posters which in the campaign and display the finished.</td>
</tr>
<tr>
<td>Why do you feel that some brands have tar and nicotine content listed on the package?</td>
<td>Have students research chemical make-up and discuss the machine.</td>
</tr>
<tr>
<td>Do you feel that one of the reasons why some people smoke pipes is to cut down on the amount of tars and nicotine?</td>
<td>Use the mechanical machine.</td>
</tr>
<tr>
<td>What effect do filters have on the amount of tars and nicotine that is consumed in one's lungs?</td>
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<td>Motivating Questions</td>
<td>Activities</td>
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<td>From personal observation, why do you think people smoke?</td>
<td>Have the students question people who smoke and bring responses to the classroom for discussion.</td>
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<td>What methods do television commercials use to sell their cigarettes? Is the propaganda one-sided?</td>
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<td>Discuss the anti-smoking campaigns now seen on television and in the newspapers and magazines.</td>
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<tr>
<td>What are the most common substances found in tobacco smoke?</td>
<td>Make posters which will help in the campaign against smoking and display them when they are finished.</td>
</tr>
<tr>
<td>Why do you feel that some brands have tar and nicotine content listed on the package?</td>
<td>Have students research the chemical make-up of cigarettes and discuss their findings.</td>
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<td>Do you feel that one of the reasons why some people smoke pipes is to cut down on the amount of tars and nicotines?</td>
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TOBACCO (continued)

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

Tobacco and Health, A Handbook
for Teachers

Cancer Statistics for 1970

Cancer Word Book

Disease - Others

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<td>&quot;Emphysema&quot;</td>
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<td>&quot;Where There's Smoke, There's Danger From Heart Disease&quot;</td>
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<td>&quot;What Everybody Should Know About Smoking and Heart Disease&quot;</td>
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<td>&quot;U.S. Government Wants You To Know&quot;</td>
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<tr>
<td>Audio Visual</td>
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<tr>
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<td>---------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Film: &quot;Is Smoking Worth It?&quot;</td>
<td>Have you ever witnessed someone whose health was impaired as a result of smoking?</td>
</tr>
</tbody>
</table>
| (A report to youth)              | Do you feel that smoking does cause cancer?                                            | Discuss the poster: "I Don't Smoke."
<p>| Poster: Cancer Poster            | Do you feel that all the talk about cancer is a scare tactic?                         | Demonstration: &quot;The Smoking Experiments&quot;.       |
| Filmstrip: &quot;Nature's Filter&quot;     | What are some examples of life situations that may lead you to believe that smoking is bad for the respiratory system? |                                               |
| Films:                           | In what way does smoking cause breathing problems?                                    |                                               |
| &quot;Smoking and You&quot;                | What effect does nicotine and tar have on the heart?                                  | Use the smoking experiment to demonstrate the effects found in cigarettes. |
| &quot;Tobacco and the Human Body&quot;     | When smoking a cigarette, is there an immediate effect on the heart?                  |                                               |
| &quot;Getting Through&quot;                | What types of heart diseases are often associated with smoking?                       |                                               |
|                                 | What new type of cigarette ads do you see on T.V.?                                     | Have students review and analyze smoking ads.  |
|                                 | What is the message that these new ads are trying to project?                          | Review television commercials.                 |
|                                 | Why was the Advisory Committee to the Surgeon General formed? By whose request? When? | Research and compare the money spent on these ads. |</p>
<table>
<thead>
<tr>
<th>Motivating Questions</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you ever witnessed someone whose health was impaired as a result of smoking?</td>
<td>Use the manikin to stimulate discussion on the collection of tars and nicotine in the lungs.</td>
</tr>
<tr>
<td>Do you feel that smoking does cause cancer?</td>
<td>Discuss the possible dangers of the materials collecting in the lungs.</td>
</tr>
<tr>
<td>Do you feel that all the talk about cancer is a scare tactic?</td>
<td>Demonstration: #1</td>
</tr>
<tr>
<td>What are some examples of life situations that may lead you to believe that smoking is bad for the respiratory system?</td>
<td>&quot;The Smoking and Health Experiments&quot;</td>
</tr>
<tr>
<td>In what way does smoking cause breathing problems?</td>
<td>Use the smoking machine to demonstrate the residue found in cigarette smoke.</td>
</tr>
<tr>
<td>What effect does nicotine and tar have on the heart?</td>
<td></td>
</tr>
<tr>
<td>When smoking a cigarette, is there an immediate effect on the heart?</td>
<td></td>
</tr>
<tr>
<td>What types of heart diseases are often associated with smoking?</td>
<td></td>
</tr>
<tr>
<td>What new type of cigarette ads do you see on T.V.?</td>
<td>Have students discuss the anti-smoking ads.</td>
</tr>
<tr>
<td>What is the message that these new ads are trying to project?</td>
<td>Review television anti-smoking commercials.</td>
</tr>
<tr>
<td>Why was the Advisory Committee to the Surgeon General formed? By whose request? When?</td>
<td>Research concerning amount of money spent on tobacco in 1969 and compare this amount with that</td>
</tr>
<tr>
<td>Audio Visual</td>
<td>Motivating Questions</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------------</td>
</tr>
<tr>
<td></td>
<td>Who was on this committee?</td>
</tr>
<tr>
<td></td>
<td>What work is being done by the American Cancer Society and the American Heart Association to inform people about smoking?</td>
</tr>
<tr>
<td></td>
<td>Smoking is a costly habit. Is it worth it?</td>
</tr>
<tr>
<td>Motivating Questions</td>
<td>Activities</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>Who was on this committee?</td>
<td>spent on education, highways, and churches.</td>
</tr>
<tr>
<td>What work is being done by the American Cancer Society and the American Heart Association to inform people about smoking?</td>
<td>Organize a student panel discussion on &quot;The Work for the American Heart Association.&quot;</td>
</tr>
<tr>
<td>Smoking is a costly habit. Is it worth it?</td>
<td></td>
</tr>
</tbody>
</table>
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—\( \text{NH}_3 \); used in 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; general ill health; a carcinoma or sarcoma.

carbon monoxide
A 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 heart.

coronary artery disease
disease of the above mentioned arteries.

decision
The act of making up one's mind; a judgment or conclusion reached by 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...
VI. GLOSSARY

Colorless, pungent gas compound of nitrogen and hydrogen—NH₃; 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
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 as 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 odor, distillation of wood, peat, shale; tars are produced as derivatives; used in preserving surfaces and organic products such as cigars, cigarettes, and snuff preparatory to smoking

tobacco  plant which belongs to the nightshade family
GLOSOSPY (continued)

Glossary:

lungs
1. Frequently used as a disinfectant.
2. Nation for an action acquired by repetition.
3. Danger; peril.

As gas; used in execution of criminals.
As gas; smell of rotten eggs (Yellowstone Park).

Action for destroying insects.

Of the lungs.
F 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.

Tering which arouses or excites—spurs on.

1. That stains the inside of a smoker's lungs and acts as a slow tissue poison.
2. Sticky brown to black liquid with a pungent odor; obtained by the destructive action of wood, peat, shale; tars are produced of hydrocarbons and their lives; used in preserving surfaces and organic compounds.
3. Such as cigars, cigarettes, and snuff prepared from the leaves of the tobacco which belongs to the nightshade family.
## DRUGS

### Concepts

<table>
<thead>
<tr>
<th>I. A. To follow up sixth grade curriculum</th>
<th>Teacher Materials</th>
<th>Student Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. To give students a good biological understanding of drugs and terms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. To saturate students with terms, proper use and misuse they will encounter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. So students can make an intelligent decision as to what they want to do</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. To expose them to all terms and drugs of use and misuse</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### II. Terms (define for students)

| A. Drugs |
| B. Drug dependency |
| C. Illusion |
| D. Hallucination |
| E. Withdrawal sickness |

- "The Up and Down Drugs"
- "Let's Talk About Drugs"
- Drug Abuse Education
- "Fact Sheets"
- "Barbiturates"
- "Young Scientists Look at Drugs"
- "How Safe Are Our Drugs"
- "Drugs and Your Body"
A sixth grade understanding of terms with use and misuse can make an informed decision as to what to do. Students with counter-drug materials can understand the use of these concepts from different points of view.

**Teacher Materials**
A variety of materials to bring forth these concepts from different points of view.

- **Drugs Abuse A Source Guide**
- **Drug Abuse: The Chemical Cop-Out** (Good for research)
- **Fact Sheets**
- **Living Death**
- **Fact Sheets** (Reprint)
- **Young Scientists Look at Drugs**
- **Barbiturates**
- **Drugs and Your Body**
- **Let's Talk About Drugs**
- **The Up and Down Drugs**
- **Students and Drug Abuse**
- **How Safe Are Our Drugs**

**Student Materials**
Materials that the students can understand the use to get the proper idea on use and abuse.

- **Dru Abuse - A Source Guide**
- **Drug Abuse: The Chemical Cop-Out** (Good for research)
<table>
<thead>
<tr>
<th>Audio Visual</th>
<th>Motivating Questions</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Films to put forth these concepts</td>
<td>Why are drugs misused?</td>
<td>Do bullet following</td>
</tr>
<tr>
<td>Filmstrips that will bring out the true facts</td>
<td>Does it do any harm to discuss drug misuse and abuse?</td>
<td>Diff.</td>
</tr>
<tr>
<td>Transparencies to help support all of these points</td>
<td>Do people start abusing drugs through ignorance?</td>
<td>Reason</td>
</tr>
<tr>
<td></td>
<td>What do we mean by the drug problem?</td>
<td>How do you feel about it or use?</td>
</tr>
<tr>
<td></td>
<td>When a person abuses or uses drugs illegally, is it only his business or the concern of everyone?</td>
<td></td>
</tr>
</tbody>
</table>

**Film:** "Drugs and the Nervous System"

**Transparencies:**
- "Comparison of different units of measure"
- D-7 - #1 - #5

**Motivating Questions:**
- How do drugs affect our lives?
- What stimulants or depressants have you taken or come in contact with?
- Have you ever seen an illusion?
- Do you know anyone who is psychologically addicted to drugs or anything?
- What is drug use?
- What do abuse, misuse, habituation, and dependency mean?
<table>
<thead>
<tr>
<th>Motivating Questions</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why are drugs misused?</td>
<td>Do bulletin boards on the following subjects:</td>
</tr>
<tr>
<td>Does it do any harm to discuss drug misuse and abuse?</td>
<td>Different drugs</td>
</tr>
<tr>
<td>Do people start abusing drugs through ignorance?</td>
<td>Reason against abuse</td>
</tr>
<tr>
<td>What do we mean by the drug problem?</td>
<td>How drugs are obtained or used illegally</td>
</tr>
<tr>
<td>When a person abuses or uses drugs illegally, is it only his business or the concern of everyone?</td>
<td></td>
</tr>
<tr>
<td>How do drugs affect our lives?</td>
<td>Do bulletin boards showing:</td>
</tr>
<tr>
<td>What stimulants or depressants have you taken or come in contact with?</td>
<td>Drugs that have been used by students or that students have been exposed to</td>
</tr>
<tr>
<td>Have you ever seen an illusion?</td>
<td>Different ideas between illusion and hallucination</td>
</tr>
<tr>
<td>Do you know anyone who is psychologically addicted to drugs or anything?</td>
<td></td>
</tr>
<tr>
<td>What is drug use?</td>
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</tr>
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<td>What do abuse, misuse, habituation, and dependency mean?</td>
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</tbody>
</table>
DRUGS (continued)

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Teacher Materials</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>F. Psychotic</td>
<td>&quot;Living Death&quot; (very good on withdrawal)</td>
<td></td>
</tr>
<tr>
<td>G. Medical uses</td>
<td>&quot;Students and Drug Abuse&quot; (Reprint)</td>
<td></td>
</tr>
<tr>
<td>H. Relationship of millogram-microgram</td>
<td>&quot;Drug Abuse: The Chemical Cop-Out&quot;</td>
<td></td>
</tr>
<tr>
<td>I. Depressant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. Stimulant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K. Hallucinogen</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

III. Hallucinogens

A. Marijuana

1. Effects on the body
   a. physical
   b. psychological

2. Legal use (if any)

3. Illegal use or abuse (Is there much general abuse?)

4. Method taken and dosage

5. Slang terms

6. Most common type abused

7. Identification

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"

Drugs Abuse - A Source Guide For Teachers
<table>
<thead>
<tr>
<th>Teacher Materials</th>
<th>Student Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Living Death&quot; (very good on withdrawal)</td>
<td></td>
</tr>
<tr>
<td>&quot;Students and Drug Abuse&quot;</td>
<td></td>
</tr>
<tr>
<td>(Reprint)</td>
<td></td>
</tr>
<tr>
<td>&quot;Drug Abuse: The Chemical Cop-Out&quot;</td>
<td></td>
</tr>
<tr>
<td>Drugs From A-Z, A Dictionary</td>
<td>&quot;Why Not Marijuana?&quot;</td>
</tr>
<tr>
<td>Marijuana</td>
<td></td>
</tr>
<tr>
<td>Marijuana: Social Benefit or Social Detriment</td>
<td></td>
</tr>
<tr>
<td>&quot;The Dangers of Marihuana: Facts You Should Know&quot;</td>
<td></td>
</tr>
<tr>
<td>&quot;Have You Ever Been Convicted of a Felony? (Reprint)</td>
<td></td>
</tr>
<tr>
<td>&quot;Restricted Drugs: For Use by Law Enforcement Agencies&quot;</td>
<td></td>
</tr>
<tr>
<td>&quot;What About Marijuana?&quot;</td>
<td></td>
</tr>
<tr>
<td>&quot;Narcotics and Dangerous Drugs&quot;</td>
<td></td>
</tr>
<tr>
<td>Drug Abuse - A Source Guide For Teachers</td>
<td></td>
</tr>
<tr>
<td>Audio Visual</td>
<td>Motivating Questions</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Film: &quot;Marihuana&quot;</td>
<td>Why do people abuse drugs?</td>
</tr>
<tr>
<td>Winston Identification Kit Folder: &quot;Drugs of Abuse&quot; (Good for identification of all drugs)</td>
<td>How does marijuana affect you physically?</td>
</tr>
<tr>
<td>Transparencies: D-7 - #6, #7-#12</td>
<td>Why do people use marijuana?</td>
</tr>
<tr>
<td></td>
<td>What are the effects of constant, long-term use?</td>
</tr>
<tr>
<td></td>
<td>How is it obtained? In U.S.? By pusher? By user?</td>
</tr>
<tr>
<td></td>
<td>How is it used by abuser?</td>
</tr>
<tr>
<td></td>
<td>Do certain types of people use it?</td>
</tr>
<tr>
<td></td>
<td>If anyone uses it, do they become stereotyped, or is it an actuality?</td>
</tr>
<tr>
<td></td>
<td>What area of the body does it affect the most?</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Motivating Questions</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why do people abuse drugs?</td>
<td>Have students organize a bulletin board on slang terms for marijuana.</td>
</tr>
<tr>
<td>What is tolerance?</td>
<td>Give extra credit for extra work for posters on marijuana.</td>
</tr>
<tr>
<td>How does marijuana affect you physically?</td>
<td>Have &quot;buzz&quot; groups on &quot;Alcohol, Marijuana, Which Is Worse?&quot;</td>
</tr>
<tr>
<td>Why do people use marijuana?</td>
<td>Have reports on discussions.</td>
</tr>
<tr>
<td>What are the effects of constant, long-term use?</td>
<td>(Probably use after you have presented most of the material.)</td>
</tr>
<tr>
<td>How is it obtained? In U.S.?</td>
<td></td>
</tr>
<tr>
<td>By pusher? By user?</td>
<td></td>
</tr>
<tr>
<td>How is it used by abuser?</td>
<td></td>
</tr>
<tr>
<td>Do certain types of people use it?</td>
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<td>If anyone uses it, do they become stereotyped, or is it an actuality?</td>
<td></td>
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<tr>
<td>What area of the body does it affect the most?</td>
<td></td>
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</tbody>
</table>
### DRUGS (continued)

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Teacher Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Where obtained</td>
<td>&quot;Why Not Marijuana?&quot;</td>
</tr>
<tr>
<td>a. drug itself</td>
<td>&quot;Marijuana - Some Questions and Answers&quot;</td>
</tr>
<tr>
<td>b. traffic to U.S. or city</td>
<td></td>
</tr>
<tr>
<td>9. Value to individual</td>
<td></td>
</tr>
<tr>
<td>10. Results from long-term use</td>
<td></td>
</tr>
<tr>
<td>B. LSD - rye plant fungus (ergot)</td>
<td>&quot;LSD: The False Illusion&quot;</td>
</tr>
<tr>
<td>1. Effects on the body</td>
<td>The LSD Story</td>
</tr>
<tr>
<td>a. physical</td>
<td>&quot;LSD: Trip or Trap?&quot;</td>
</tr>
<tr>
<td>b. psychological</td>
<td>Drugs: A-Z Dictionary</td>
</tr>
<tr>
<td>2. Legal use (if any)</td>
<td></td>
</tr>
<tr>
<td>3. Illegal use or abuse (Is there much general abuse?)</td>
<td>Drug Abuse - A Source Guide For Teachers</td>
</tr>
<tr>
<td>4. Method taken and dosage</td>
<td>&quot;Narcotics and Dangerous Drugs&quot;</td>
</tr>
<tr>
<td>5. Slang terms</td>
<td></td>
</tr>
<tr>
<td>6. Most common type abused</td>
<td></td>
</tr>
<tr>
<td>7. Identification</td>
<td></td>
</tr>
<tr>
<td>8. Where obtained</td>
<td></td>
</tr>
<tr>
<td>a. drug itself</td>
<td></td>
</tr>
<tr>
<td>Teacher Materials</td>
<td>Student Materials</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>obtained</td>
<td>&quot;Why Not Marijuana?&quot;</td>
</tr>
<tr>
<td>drug itself</td>
<td>&quot;Marijuana - Some Questions and Answers&quot;</td>
</tr>
<tr>
<td>traffic to U.S. or to individual</td>
<td></td>
</tr>
<tr>
<td>effects from long-term</td>
<td></td>
</tr>
<tr>
<td>plant fungus (ergot) &quot;LSD: The False Illusion&quot;</td>
<td>&quot;LSD: Trip or Trap?&quot;</td>
</tr>
<tr>
<td>effects on the body</td>
<td>The LSD Story</td>
</tr>
<tr>
<td>physical and psychological</td>
<td>&quot;LSD: Trip or Trap?&quot;</td>
</tr>
<tr>
<td>use (if any)</td>
<td>Drugs: A-Z Dictionary</td>
</tr>
<tr>
<td>illegal use or abuse (Is there much general use?)</td>
<td>&quot;Narcotics and Dangerous Drugs&quot;</td>
</tr>
<tr>
<td>good taken and dosage</td>
<td>Drug Abuse — A Source Guide For Teachers</td>
</tr>
<tr>
<td>terms</td>
<td>&quot;Narcotics and Dangerous Drugs&quot;</td>
</tr>
<tr>
<td>common type abused</td>
<td></td>
</tr>
<tr>
<td>classification</td>
<td></td>
</tr>
<tr>
<td>obtained</td>
<td></td>
</tr>
<tr>
<td>drug itself</td>
<td></td>
</tr>
<tr>
<td>Audio Visual</td>
<td>Motivating Questions</td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Film: &quot;LSD&quot;</td>
<td>Is there a case for legalization of marijuana?</td>
</tr>
<tr>
<td>Filmstrips:</td>
<td>Does it build up a tolerance?</td>
</tr>
<tr>
<td>&quot;LSD: The Acid World&quot;</td>
<td></td>
</tr>
<tr>
<td>&quot;LSD: Trip or Trap?&quot;</td>
<td></td>
</tr>
<tr>
<td>Transparencies:</td>
<td>Does it cause physical or psychological dependency?</td>
</tr>
<tr>
<td>&quot;Example of Comparison&quot;</td>
<td></td>
</tr>
<tr>
<td>D-7 - #13-16, #17</td>
<td>Where do we get LSD?</td>
</tr>
<tr>
<td>Winston Identification Kit</td>
<td>What is the true name of LSD?</td>
</tr>
<tr>
<td></td>
<td>What does it look and taste like?</td>
</tr>
<tr>
<td></td>
<td>Does it come in different forms?</td>
</tr>
<tr>
<td></td>
<td>What does an LSD trip amount to?</td>
</tr>
<tr>
<td></td>
<td>Is it the strongest of the hallucinogens?</td>
</tr>
<tr>
<td></td>
<td>What effect of LSD causes it to be abused?</td>
</tr>
<tr>
<td></td>
<td>Can a person die from an overdose?</td>
</tr>
<tr>
<td></td>
<td>Is tolerance built up?</td>
</tr>
<tr>
<td>Motivating Questions</td>
<td>Activities</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Is there a case for legalization of marijuana?</td>
<td>Have students report on how the effects can be harmful.</td>
</tr>
<tr>
<td>Does it build up a tolerance?</td>
<td>Do a bulletin board on articles about people who have taken LSD.</td>
</tr>
<tr>
<td>Does it cause physical or psychological dependency?</td>
<td></td>
</tr>
<tr>
<td>Where do we get LSD?</td>
<td></td>
</tr>
<tr>
<td>What is the true name of LSD?</td>
<td></td>
</tr>
<tr>
<td>What does it look and taste like?</td>
<td></td>
</tr>
<tr>
<td>Does it come in different forms?</td>
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<tr>
<td>What does an LSD trip amount to?</td>
<td></td>
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<tr>
<td>Is it the strongest of the hallucinogens?</td>
<td></td>
</tr>
<tr>
<td>What effect of LSD causes it to be abused?</td>
<td></td>
</tr>
<tr>
<td>Can a person die from an overdose?</td>
<td></td>
</tr>
<tr>
<td>Is tolerance built up?</td>
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### Concepts

<table>
<thead>
<tr>
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<tr>
<td><strong>b. traffic to U.S. or city</strong></td>
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<td>9. Value to individual</td>
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</tr>
<tr>
<td>10. Results from long-term use</td>
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<tr>
<td><strong>C. Mescaline (peyote cactus)</strong></td>
<td>&quot;Narcotics and Dangerous Drugs&quot;</td>
</tr>
<tr>
<td>1. Effects on the body</td>
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</tr>
<tr>
<td>a. physical</td>
<td>Drugs: A-Z Dictionary</td>
</tr>
<tr>
<td>b. psychological</td>
<td>&quot;Fact Sheets&quot;</td>
</tr>
<tr>
<td>2. Legal use (if any)</td>
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</tr>
<tr>
<td>3. Illegal use</td>
<td>Drugs: A-Z Dictionary</td>
</tr>
<tr>
<td>4. Method taken</td>
<td>Drug Abuse Education</td>
</tr>
<tr>
<td>5. Slang terms</td>
<td>Drug Abuse - A Source Guide For Teachers</td>
</tr>
<tr>
<td>6. Identification</td>
<td></td>
</tr>
<tr>
<td>7. Where obtained</td>
<td></td>
</tr>
<tr>
<td><strong>D. STP - Dom</strong></td>
<td>&quot;Narcotics and Dangerous Drugs&quot;</td>
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<tr>
<td>1. Effects on the body</td>
<td>Drugs: A-Z Dictionary</td>
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<tr>
<td>b. psychological</td>
<td>Drug Abuse - A Source Guide For Teachers</td>
</tr>
<tr>
<td>2. Illegal use (Is it commonly abused?)</td>
<td></td>
</tr>
</tbody>
</table>
Winston Identification Kit

What are some of its uses?

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

Is there long range problems from use?

How much use is there in the United States?

How does it compare to LSD?
### DRUGS (continued)

<table>
<thead>
<tr>
<th>Concepts</th>
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<th>Student</th>
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<tr>
<td>3. Slang terms</td>
<td>&quot;Narcotics and Dangerous Drugs&quot;</td>
<td>Drugs: A-Z Dictionary</td>
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<tr>
<td>4. Where obtained</td>
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<td></td>
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<tr>
<td><strong>E. Psilocybin</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Effects on the body</td>
<td>Drugs: A-Z Dictionary</td>
<td>&quot;Let's Talk About Pep Pills and Goof Balls&quot;</td>
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<tr>
<td>a. physical</td>
<td>Drug Abuse Education</td>
<td>&quot;Barbiturates&quot;</td>
</tr>
<tr>
<td>b. psychological</td>
<td>Drug Abuse – A Source Guide For Teachers</td>
<td></td>
</tr>
<tr>
<td>2. Illegal use</td>
<td></td>
<td></td>
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<tr>
<td>3. Slang terms</td>
<td></td>
<td></td>
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<tr>
<td>4. Where obtained</td>
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<tr>
<td>5. Use (purpose)</td>
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**IV. Depressants**

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<thead>
<tr>
<th>A. Barbiturates (Barbituric acid)</th>
<th>&quot;Narcotics and Dangerous Drugs&quot;</th>
<th>&quot;Barbiturates&quot;</th>
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<tbody>
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<td>&quot;The Up and Down Drugs&quot;</td>
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<tr>
<td>b. psychological</td>
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<td></td>
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<tr>
<td>2. Legal and medical use</td>
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<tr>
<td>3. Illegal use or and abuse (Is there much general abuse?)</td>
<td>&quot;Fact Sheets&quot;</td>
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<tr>
<td>4. Method taken and dosage</td>
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<tr>
<td>Teacher Materials</td>
<td>Student Materials</td>
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<tr>
<td>&quot;Narcotics and Dangerous Drugs&quot;</td>
<td>Drugs: A-Z Dictionary</td>
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<td>Drug Abuse Education</td>
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<tr>
<td>Drug Abuse - A Source Guide For Teachers</td>
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<tr>
<td>&quot;Let's Talk About Pep Pills and Goof Balls&quot;</td>
<td>&quot;Let's Talk About Pep Pills and Goof Balls&quot;</td>
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<td>&quot;Narcotics and Dangerous Drugs&quot;</td>
<td>&quot;Barbiturates&quot; (reports)</td>
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<tr>
<td>&quot;The Up and Down Drugs&quot;</td>
<td>&quot;The Up and Down Drugs&quot; (reports)</td>
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<td></td>
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<tr>
<td>&quot;Barbiturates&quot;</td>
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<tr>
<td>Audio Visual</td>
<td>Motivating Questions</td>
<td>Activities</td>
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<td>------------------------------------------</td>
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<td>-----------------------------------------------------------------------------</td>
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<tr>
<td>Winston Identification Kit</td>
<td>How and why is it used by natives?</td>
<td>Have students identify effects of barbiturates and overdose</td>
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<tr>
<td>Transparency: D-7 - #17</td>
<td>Why do the native Indians of South America use it?</td>
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<tr>
<td>Filmstrip: &quot;Let's Talk About Pep Pills</td>
<td>What effects of barbiturates cause them to be abused?</td>
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<tr>
<td>and Goof Balls&quot;</td>
<td>Do barbiturates cause physical and psychological addiction?</td>
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<tr>
<td>Drugs of Abuse Folder for Identification</td>
<td>What are the medical uses of tranquilizers and barbiturates?</td>
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<tr>
<td>Winston Identification Kit</td>
<td>What is withdrawal from barbiturates like?</td>
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<tr>
<td>Transparencies: D-7 - #18-#21</td>
<td>Can a person die from an overdose?</td>
<td></td>
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<tr>
<td></td>
<td>What are some long range results from abuse of barbiturates?</td>
<td></td>
</tr>
</tbody>
</table>
Motivating Questions | Activities
--- | ---
How and why is it used by natives? | Have students report on the effects of barbiturates, legal, and overdose illegal.
Why do the native Indians of South America use it? |

Talk About Pep Pills Balls" for Identification on Kit

- #18-#21

What effects of barbiturates cause them to be abused?
Do barbiturates cause physical and psychological addiction?
What are the medical uses of tranquilizers and barbiturates?
What is withdrawal from barbiturates like?
Can a person die from an overdose?
What are some long range results from abuse of barbiturates?
<table>
<thead>
<tr>
<th>Concepts</th>
<th>Teacher Materials</th>
<th>Student</th>
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<tbody>
<tr>
<td>5. Slang terms</td>
<td>Drug Abuse - A Source Guide For Teachers</td>
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<tr>
<td>6. Most common type abused</td>
<td></td>
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<tr>
<td>7. Identification</td>
<td></td>
<td></td>
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<tr>
<td>8. Where obtained</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. legally</td>
<td></td>
<td></td>
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<tr>
<td>b. illegally</td>
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</tr>
<tr>
<td>9. Value to individual</td>
<td></td>
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</tbody>
</table>

B. Narcotics

1. Opiates
   a. Opium
      (1) Effects on the body
          (a) physical
          (b) psychological
      (2) Legal use (if any)
      (3) Illegal use (is there common abuse?)
      (4) Method taken and dosage
      (5) Slang terms

"The Life Cycle of a Narcotic Addict" "Fact Sheets"
"Narcotic Drug Addiction"
"Narcotics and Dangerous Drugs"
"Drugs: A-Z Dictionary"
"Narcotics - Some Questions and Answers"
"The Control and Treatment of Narcotics Use"
<table>
<thead>
<tr>
<th>Teacher Materials</th>
<th>Student Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug Abuse - A Source Guide For Teachers</td>
<td></td>
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<tr>
<td>Terms</td>
<td>&quot;The Life Cycle of a Narcotic Addict&quot; &quot;Fact Sheets&quot; (reports)</td>
</tr>
<tr>
<td>Common type abused</td>
<td>&quot;Fact Sheets&quot;</td>
</tr>
<tr>
<td>Obtained</td>
<td>&quot;Narcotic Drug Addiction&quot;</td>
</tr>
<tr>
<td>Legally</td>
<td>&quot;Narcotics - Some Questions and Answers&quot;</td>
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<tr>
<td>Illegally</td>
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<tr>
<td>to individual</td>
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</tr>
<tr>
<td>1) Effects on the body</td>
<td>&quot;Narcotics and Dangerous Drugs&quot;</td>
</tr>
<tr>
<td>(a) Physical</td>
<td>Drug Abuse - A Source Guide For Teachers</td>
</tr>
<tr>
<td>(b) Psychological</td>
<td>Drugs: A-Z Dictionary</td>
</tr>
<tr>
<td>2) Legal use (if any)</td>
<td>&quot;Narcotics - Some Questions and Answers&quot;</td>
</tr>
<tr>
<td>3) Illegal use (is there common abuse?)</td>
<td>&quot;The Control and Treatment of Narcotics Use&quot;</td>
</tr>
<tr>
<td>4) Method taken and dosage</td>
<td></td>
</tr>
<tr>
<td>5) Slang terms</td>
<td></td>
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</tbody>
</table>
What happens if I take barbiturates and amphetamines at the same time?

Film: "Pit of Despair"

Motion Identification Kit

Transparencies: D-7, #22-#28

What are the medical uses of opium?

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

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

Does it cause physical and psychological addiction?

What effects of narcotics cause them to be abused?

Have you heard of "The Heroin Myth"?
<table>
<thead>
<tr>
<th>Motivating Questions</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>What happens if I take barbiturates and amphetamines at</td>
<td>Have students research and report on &quot;The History of Narcotics.&quot; (each</td>
</tr>
<tr>
<td>the same time?</td>
<td>individual drug)</td>
</tr>
<tr>
<td>What effects of narcotics cause them to be abused?</td>
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<tr>
<td>What are the medical uses of opium?</td>
<td></td>
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<tr>
<td>What are the long range problems developed through use</td>
<td></td>
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<tr>
<td>of opium?</td>
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<tr>
<td>How is opium taken?</td>
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<tr>
<td>Is there any use in the United States? (today or</td>
<td></td>
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<tr>
<td>yesterday)</td>
<td></td>
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<tr>
<td>Does it cause physical and psychological addiction?</td>
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<tr>
<td>Concepts</td>
<td>Teacher Materials</td>
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<tr>
<td>(6) Identification</td>
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<tr>
<td>(7) Where obtained</td>
<td></td>
</tr>
<tr>
<td>(8) Derivatives</td>
<td></td>
</tr>
<tr>
<td>b. Morphine (derived from opium)</td>
<td>Same as for opium</td>
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<tr>
<td>(1) Effect on the body</td>
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<tr>
<td>(a) physical</td>
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<td>(2) Legal use</td>
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<td>(3) Illegal use or abuse</td>
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<td>(4) Method taken (abuse)</td>
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<td>(5) Slang terms</td>
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<td>(6) So commonly abused</td>
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<td>(7) Identification</td>
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<td>(8) Where obtained</td>
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<tr>
<td>(a) drug itself</td>
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<td>(b) traffic in U.S. or city</td>
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<td>(9) Value to individual</td>
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</tbody>
</table>
Winston Identification Kit

Transparencies:
- D-7 - #23
- D-7 - #25, #26

Audio Visual

Motivating Questions

1. Does morphine cause physical addiction?
2. Are there medical uses for morphine?
3. Is it a good pain killer?
4. How does it compare to the other opiates?
5. What are the physical effects after use of morphine?
6. What causes it to be abused?
<table>
<thead>
<tr>
<th>Motivating Questions</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does morphine cause physical addiction?</td>
<td>Have students report or make a bulletin board on why morphine is used as a medical drug.</td>
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<tr>
<td>Are there medical uses for morphine?</td>
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<tr>
<td>Is it a good pain killer?</td>
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<td>What causes it to be abused?</td>
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<td>Concepts</td>
<td>Teacher Materials</td>
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<tr>
<td>c. Heroin (derived from opium)</td>
<td>Same as for opium</td>
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<tr>
<td>(1) Effects on the body</td>
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<td>d. Codeine (derived from opium)</td>
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<td>Same as for opium</td>
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<tr>
<td>Audio Visual</td>
<td>Motivating Questions</td>
<td>Activity</td>
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<tr>
<td>Winston Identification Kit</td>
<td>Are there any uses of heroin medically?</td>
<td>Have students list uses</td>
</tr>
<tr>
<td>Transparencies: D-7 - #27-#29</td>
<td>Is heroin stronger than morphine?</td>
<td>Have students write about differences</td>
</tr>
<tr>
<td></td>
<td>Does it cause physical addiction?</td>
<td></td>
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<td></td>
<td>How is heroin abused most often?</td>
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<tr>
<td></td>
<td>What is a fix?</td>
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<td></td>
<td>What is a kit?</td>
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<td></td>
<td>What are some of the implements necessary to use heroin?</td>
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<td></td>
<td>Why would a person turn to heroin?</td>
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<td></td>
<td>How much does the heroin habit cost? (Does it cost more than money?)</td>
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<td></td>
<td>How was heroin used and abused during the Civil War?</td>
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<tr>
<td></td>
<td>Which is worse, heroin or LSD?</td>
<td></td>
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<td></td>
<td>Have you ever taken codeine?</td>
<td></td>
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<tr>
<td></td>
<td>What is the most common medical use for codeine?</td>
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</tbody>
</table>
Motivating Questions

- Are there any uses of heroin medically?
- Is heroin stronger than morphine?
- 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?

Activities

- Have students make posters on effects, sources
- Have students make bulletin board on problem that heroin addiction brings to a community or to the individual.
### DRUGS (continued)

<table>
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<tr>
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<tr>
<td>e. Percodan</td>
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<td>f. Demerol</td>
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<td>g. Methadone</td>
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<td>h. Alcohol</td>
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</table>

**V. Volatile Chemicals**

A. Most common types abused

*Drugs: A-Z Dictionary*

*Drug Abuse - A Source Guide For Teachers*

*Narcotics and Dangerous Drugs*

*Will be expanded in a separate section*

*Glue Sniffing: Big Trouble In A Tube*
<table>
<thead>
<tr>
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<tr>
<td>(a) drug itself</td>
<td></td>
</tr>
<tr>
<td>(b) traffic in U.S. or city</td>
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</tr>
</tbody>
</table>

- Pencodan
- Demerol
- Methadone
- Alcohol
- Chemicals

Common types abused

Drugs: A-Z Dictionary

Drug Abuse - A Source Guide For Teachers

"Narcotics and Dangerous Drugs"

*Will be expanded in a separate section

"Glue Sniffing: Big Trouble In A Tube"

"Glue Sniffing: Big Trouble In A Tube"
<table>
<thead>
<tr>
<th>Audio Visual</th>
<th>Motivating Questions</th>
<th>Activities</th>
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<tbody>
<tr>
<td>Filmstrip: &quot;Glue Sniffing&quot;</td>
<td>Is it as strong as morphine or heroin?</td>
<td>Have students investigate and discuss various chemicals and their uses.</td>
</tr>
<tr>
<td>Transparencies: D-7 - #31, #32</td>
<td>Are the effects the same as morphine and heroin?</td>
<td></td>
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<tr>
<td></td>
<td>Is withdrawal from codeine as severe as from morphine and heroin?</td>
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<tr>
<td></td>
<td>What types of chemicals are abused the most?</td>
<td>Have students discuss the dangers of drug abuse.</td>
</tr>
<tr>
<td>Motivating Questions</td>
<td>Activities</td>
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<tr>
<td>-------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Is it as strong as morphine or heroin?</td>
<td>Have students make lists, bulletin board, and reports on potential dangerous chemicals pertaining to drug abuse.</td>
<td></td>
</tr>
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<td>B. Effects on the body</td>
<td>Drugs: A-Z Dictionary</td>
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<tr>
<td>1. physical</td>
<td>&quot;Glue Sniffing&quot;</td>
</tr>
<tr>
<td>2. psychological</td>
<td>&quot;The Glue Sniffing Problem&quot;</td>
</tr>
<tr>
<td>C. Legal and medical use</td>
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<tr>
<td>D. Method taken and abuse</td>
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<td>E. Slang terms</td>
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<td>F. Identification</td>
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<td>G. Where obtained</td>
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<td>VI. Stimulants</td>
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<tr>
<td>A. Amphetamines</td>
<td>&quot;Drugs and Your Body&quot;</td>
</tr>
<tr>
<td>1. Most common commercial names of abused amphetamines</td>
<td>Drugs: A-Z Dictionary</td>
</tr>
<tr>
<td>2. Effects on the body</td>
<td>&quot;Let's Talk About Goof Balls and Pep Pills&quot;</td>
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<tr>
<td>a. physical</td>
<td>&quot;The Up and Down Drugs&quot;</td>
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<tr>
<td>b. psychological</td>
<td>&quot;Fact Sheets&quot;</td>
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<tr>
<td>3. Legal use and dosage</td>
<td>Drug Abuse Education</td>
</tr>
<tr>
<td>4. Illegal use or abuse</td>
<td>&quot;A Guide to Some Drugs Which Are Subject to Abuse&quot;</td>
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<tr>
<td>5. Slang terms</td>
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<tr>
<td>6. Identification</td>
<td></td>
</tr>
<tr>
<td>7. Value to individual</td>
<td>-39-</td>
</tr>
</tbody>
</table>
### Teacher Materials

- Drugs: A-Z Dictionary
  - "Glue Sniffing"
  - "The Glue Sniffing Problem"

### Student Materials

- Drugs: A-Z Dictionary
  - "The Glue Sniffing Problem"

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<table>
<thead>
<tr>
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<td>Psychological</td>
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<tr>
<td>Legal terms</td>
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</tr>
<tr>
<td>Identification</td>
<td>&quot;The Up and Down Drugs&quot;</td>
</tr>
<tr>
<td>Alcohol</td>
<td>&quot;A Guide to Some Drugs Which Are Subject to Abuse&quot;</td>
</tr>
</tbody>
</table>
## Audio Visual

| Film: "Speed Scene: The Abuse of Amphetamines" |
| Filmstrips: |
| "Let's Talk About Goof Balls and Pep Pills" |
| "Drug Misuse and Your Health" |
| Transparencies: D-7 - #33-#36 |
| Folder: "Drugs of Abuse" (for identification) |

## Motivating Questions

| Why do teenagers turn to these drugs? |
| Are they really as dangerous as printed materials state? |
| Are aerosols dangerous? |

| What are some proper uses of amphetamines? |
| What are the dangers of overdosage and abuse of amphetamines? |
| Are they really dangerous? |

| What effects of amphetamines cause them to be abused? |
| 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? |

<p>| Have students discuss these questions. |
| Make a poster of the dangers of amphetamines. |
| Have students on the dangers of amphetamines. |</p>
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<td>What are some proper uses of amphetamines?</td>
<td>Make a bulletin board or posters on the common and medical use of amphetamines.</td>
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<td>What are the dangers of overdosage and abuse of amphetamines?</td>
<td>Make a bulletin board or posters on the abuses and reactions to amphetamines.</td>
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<td>B. Cocaine</td>
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<tr>
<td>1. Effects on the body</td>
<td>Drugs: A-Z Dictionary</td>
</tr>
<tr>
<td>a. physical</td>
<td>Drug Abuse - A Source Guide For Teachers</td>
</tr>
<tr>
<td>b. psychological</td>
<td>&quot;A Guide To Some Drugs Which Are Subject to Abuse&quot; (Good for review for evaluation of materials)</td>
</tr>
<tr>
<td>2. Legal use</td>
<td>&quot;Fact Sheets&quot;</td>
</tr>
<tr>
<td>3. Method taken and abuse</td>
<td>&quot;First Facts About Drugs&quot; (good questions)</td>
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<tr>
<td>4. Slang terms</td>
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<td>5. Identification</td>
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<td>6. Where obtained</td>
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<td>7. Value to individual</td>
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<tr>
<td>Teacher Materials</td>
<td>Student Materials</td>
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<td>Audio Visual</td>
<td>Motivating Questions</td>
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<td>--------------</td>
<td>--------------------------------------------------------------------------------------</td>
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<tr>
<td></td>
<td>What are some medical uses of cocaine?</td>
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<tr>
<td></td>
<td>Is it still used extensively?</td>
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<tr>
<td></td>
<td>Does it cause physical dependency like heroin?</td>
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<tr>
<td></td>
<td>Who uses it the most?</td>
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<td></td>
<td>How greatly is it abused?</td>
</tr>
<tr>
<td></td>
<td>Where is it obtained?</td>
</tr>
</tbody>
</table>
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 single continued use it takes more of a drug to reach the desired effect)
   2. Psychological: a craving for the pleasurable mental effect produced
   3. Addiction: the overwhelming involvement with a craving for a substance
   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 taken

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

1. used as medicine
2. a state of psychic or physical dependency
3. prolonged administration of a drug in sufficient dosages which induces alteration of the body
4. Tolerance: resistance built up to the effects of a single dose of drug - with continued use it takes more of a drug to reach the desired effect
5. a craving for the pleasurable mental effect produced by a drug
6. the overwhelming involvement with a craving for a substance or drug
7. drug abuse of lesser degree than addiction (obsolete)
8. Illusion of things that do exist
9. Visions of things that exist only to the person seeing them
10. Drugs that produce hallucination - many times the user knows they are hallucinations

11. 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 di

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

II. Hallucinogens

A. Marijuana (marihuana - cannabis sativa)

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

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

b. Psychological: produces some illusion and hallucination - loss of time and 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

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, oregano, and parsley - one ounce (mixed) usually makes "joints," depending on how much additive is added.
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
o central nervous system's functions - used to combat fatigue, control weight

- cannabis sativa)

ody: stimulates appetite, acts as depressant, causes hallucination and illusion
raving 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
l: 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
owing - teenagers are using it in place of alcohol - said to be 60% trial use -
t parties are very common
ually 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
is tea, oregano, and parsley - one ounce (mixed) usually makes anywhere from 5-20
joints," depending on how much additive

-44-
5. Slang term: grass, pot, tea, weed, mary jane, cannabis, Indian hay.

6. Identification: may come in many forms but is usually deep green odor such as hay or alfalfa when burning - the cigarettes will usually burn.

7. Where obtained:
   a. Drug itself: comes from female (Indian hemp, cannabis sativa) - where effects are obtained - manicured marihuana has stems and plant is used for hemp rope, paint, and cloth.
   b. Traffic: most comes from Mexico, some grows in U.S. but these and oriental types - U.S. type is the weakest of all - as much as Mexico - there are so many methods of smuggling that they are untraceable.

8. Value to individual: pushers usually buys 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 extracted - is said to be 5-8 times as potent as marihuana, and reactions and long lasting - usually chewed and swallowed.

10. Results from long term abuse: not completely known as yet - believes stupor, and lack of initiative - can also lead to, or open the door.

B. Lysergic Acid Diethylamide: (LSD 25) synthetic form - (rye plant fungus)

1. Effects on body: can result in deep depression, but hallucinations:
   a. Physical: 'no physical addiction determined yet - relation between biological are closely knit - person has feeling that laws of nature do not apply and results in person feeling he can do impossible human.'
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

falfa when burning - the cigarettes will usually have an orange color when

as 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)

nes from Mexico, some grows in U.S. but these are not as potent as middle East

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.

and 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

ally chewed and swallowed

abuse: not completely known as yet - believed to cause loss of ambition,

itiative - can also lead to, or open the door to, other more potent drugs

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

result in deep depression, but hallucinations are the major effects

ysical addiction determined yet - relation between physical and psychologi-

nit - person has feeling that laws of nature do not apply to them, which is
	s in person feeling he can do impossible human feats - almost always,

trip - sensory changes are extreme
b. Psychological: person has hallucination and sensory changes - music can be color tasted, colors are very brilliant, always - sometimes visions are very 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 widespread use, however it varied with availability LSD are impure

4. Method: usually taken orally - is a very potent drug, 50-150 micrograms can produce effect and for this reason, doesn't need to be injected - may be taken in many forms - cookies, licked off stamps and now may be made into tablet form - now doesn't

5. Slang terms: LSD, acid, sunshine, royal blue, heavenly blue, pearly gates, se

6. Identification: difficult at best because it is colorless, odorless, and tasteless

7. Traffic: usually through underground pusher (small time) - made in home chemistry labs - 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 - pressure and availability

9. Long term results: hasn't been determined yet - may result in chromosomes break, danger is that person will become psychotic if he uses LSD long enough, or may 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)

- Hallucination and sensory changes - music can be seen or felt,
- 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
- (both effect usually last 24 hours)

- Pocket - only for scientific study, psychiatric experimentation only

- be wide spread use, however it varied with availability - most sources of

- orally - is a very potent drug, 50-150 micrograms can result in effects,
- isn't need to be injected - may be taken in many forms as sugar cubes,
- tabs 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
- result at best because it is colorless, odorless, and tasteless

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

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

- isn'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

- buttons

- almost exactly like LSD 25

- 46-
2. Method taken: ingested orally - usually chew the buttons with wine - not 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.

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 orally

2. Use: is used by natives of Mexico and South America as a religious drug

3. is not very prominent in abuse scene at present - usually used only by

III. Depressants

A. Barbiturates (barbituratics acid)

1. Effects on body: causes intoxication, confusion, tremors, and in general body functions

   a. Physical: can result in physical addiction, tolerance is built up - can take overdose and death can result - 3000 suicidal

   b. Psychological: intoxication, confusion, can result in auditory and visual addition

2. Method taken and dosage: 100-200 milligrams daily - abuser may take up to 400-500 milligrams daily - usually taken orally in capsule form, but long time user turns directly into vein
orally - usually chew the buttons with wine - now separated and is just

buttons, mescal, semee, moon
tail market - authorized only for members of Native American Church, Indians
not as potent as LSD but trip lasts up to three days
lar to LSD in respects as hallucinogen, not legal,
Mexie and South America
in effects on body, no legal market, taken orally
es of Mexico and South America as a religious drug
in abuse scene at present - usually used only by hard core users

acid)
es 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.
toxication, confusion, can result in auditory and visual illusion - *psychologi-

ge: 100-200 milligrams daily - abuser may take upwards of 400+ milligrams
orally in capsule form, but long time user turns into liquid and injects
3. Medical and legal use: sedation and sleep, nervousness - prescription drug

4. Illegal use: abuser takes in large doses mostly for intoxication feeling - tolerance, physical addiction, withdrawal, depression, euphoria.
   dosage - forces self to stay awake for feeling - often mixes downers with amphetamines.
   general abuse and also availability

5. Slang terms: bars, yellow jackets, goofballs, downers, candy, blue heavens, 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 capsules by pusher - also can be 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 capsule 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
sedation and sleep, nervousness - prescription drug

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

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

use: pentobarbital, secobarbital, nembutal

drug

made in laboratories and capped by pusher - also can be hijacked from
also pushers steal doctor's order blanks from factory

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

phoria

tolerance, 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

-48-
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

-49-
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 than morphine—was first developed in 1898

      (2) Traffic: most comes from France or Mexico—that from France or is brought to Turkey as raw opium, then converted to morphine, then 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.
the same as heroin

of morphine, which is opium

ity: same as morphine

tolerance, physical dependency, withdrawal euphoria - is much stronger than

, 2-3 times

gical: almost exactly the same as morphine

al use: no legal retail market

f: 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

use 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

ed:

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,

ght 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

ated to be about 10% of the amount smuggled into the U.S.
h. Value: Raw opium sold by the grower in the orient brings about $50,000. It has been cut (diluted, mixed) with sugar and can range from $500 to $5,000. One single bag sells for about $5.00 to the addict, however, the 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, of minor pain, or as a cough depressant

c. Illegal abuse: usually abuse is in the form of cough syrup - the 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 "w" or heroin)
Opium sold by the grower in the Orient brings about $35.00 a kilogram (2.2 lbs.), but it reaches the U.S., in the form of heroin, it will bring about $40,000 to $80,000. This has been cut (diluted, mixed) with sugar and can range from 3% heroin to 10%. It sells for about $5.00 to the addict, however, the addict may need as much as $50.00 worth of opium to provide one hit of heroin. Habits can range up to $100.00 per day.

**Habit of opium**

The body:

- Almost exactly the same as morphine and heroin, but less intense as it is
- As potent as morphine - withdrawal is as intense as heroin
- As potent as morphine - withdrawal is as intense as heroin

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

- Usually abuse is in the form of cough syrup - the alcohol content will assist
- Usually orally in cough medicine
- Similar to that of morphine and heroin

Ed:

- Is obtained from opium
- Is used by Rx - is not smuggled in any quantity - is usually stolen from companies or drug stores in smaller quantities
- A derivative of morphine
- In case of minor pain causing sleeplessness
- Scored tablets or pink scored tablets - a class "A" narcotic (same as morphine)
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
      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 of "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 usually substituted for heroin. The addict has only methadone withdrawal. For this reason hospitals to withdraw addicts.

V. Volatile chemicals
   A. Most common types abused: Model airplane glue, shoe polish, lacquer, aerosols, gasoline
that it is popular among addicts in California
i been used as a sedative
n to assist in childbirth - effects are similar to morphine but it does not
bility in hospitals, and mistaken belief it is non-addicting, it is used
"n narcotic (same as morphine)
ctly the same as morphine, but with less respiratory depression - different
as morphine
ief of pain similar to morphine
by addicts in place of heroin or morphine to relieve withdrawal - class
phine and heroin)
- taken orally or injected
as a treatment of heroin or morphine withdrawal. Withdrawal is less intense
n. The addict has only methadone withdrawal. For this reason, it is used
addicts.

Model airplane glue, shoe polish, lacquer, aerosols, paint thinner,
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 that behavior is a common occurrence - there is also a self-destruction to 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 stores are not putting them on the display counters and clerks are to notify and report them to the local authorities - low cost has also contributed

VI. Stimulants

A. Amphetamines

1. Most common types abused: benzodrine, 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, dilated pupils
   b. Psychological: psychoses can be induced - hallucinations are possible - many times user will have feelings that everyone is against him, psychological dependency is developed
TEACHER INFORMATION (continued)

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

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

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

t all circumstances the chemicals are inhaled into the respiratory system

glu-sniffing

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

se chemicals are readily available in most retail stores, however, most
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:

es a tolerance and no physical addiction or withdrawal sickness - usual effects
itability, rapid, unclear speech, sweating, dry lips, dilated pupils, psychoses
choses can be induced - hallucinations are present with high dosage and long
user will have feelings that everyone is against him or want to harm him -
dency is developed
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 use them for added mental energy to cope with a situation, and for purposes of large amounts of work - does not improve performance (increase 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 (erythroxylon 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 - losesingested - the user seeks extreme mood elevation, elation, and mental prow
all are legal by Rx and are used to assist in weight loss, relieve mild
depression - average medical dosage is 15-30 milligrams

For tablets or capsules are taken orally, but in some circumstances they are
also 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
olor of capsule or tablet, otherwise it would require laboratory testing

Habitual use may result in loss of appetite, nausea, loss of weight, occasional
nocid delusions - no tolerance or withdrawal

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

The coca bush (erythroxylon coca) of South America
gal by Rx - occasionally used for local anesthesia

Frequently it is sniffed or injected - loses most of its effect if
seeks extreme mood elevation, elation, and mental prowess induced by the drug
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
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 lead to 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.
SELECT QUESTIONS FOR PRE AND POST TESTS

applies only to substances that are used as medicines.  False

The term "narcotic" differs from the legal meaning of the term. True

is said to exist only when a person is physically and psychologically False

dependence on a drug is easier to overcome than physical dependence. False

As developed tolerance to a drug, he needs increasing amounts of that True

to react satisfactorily to its presence.

self-administered to prevent sleepiness while driving, may cause True

which affects the driver's ability to handle his car safely.

taken in excessive amounts, cause a severe depression of the central Rtrue

which may result in unconsciousness or death.

barbiturates are taken together, the drugs tend to neutralize each False

a relatively mild reaction.

taken repeatedly, may cause total drug dependence which is comparable True

heroin dependence.

be self-administered with relative safety because it does not lead to False

dependence, whereas narcotic abuse leads to both psychological and False

who abuses dangerous drugs is likely already to have a history of False

through experimentation that the use of amphetamines can sub- False

-56-
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 at least a 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 failures by drinking alcohol or taking drugs.

25. Since most marihuana users today do not progress to heroin, there is little reason to use marihuana.
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

Marihuana is derived has been known and used as a drug for several centuries. True

Marihuana is derived drug because of its effectiveness as a pain-killer. False

The United States today comes by way of Mexico. True

Indica, from which marihuana is derived, grows only in warm, humid climates. False

Users today do not progress to heroin, there is little reason not to. False
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 centers 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 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 and other effects.
SELECT QUESTIONS FOR PRE AND POST TESTS

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

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

3. A person who forms a habit of marihuana use may find it exceedingly difficult to
   True
   quit.  

4. Marihuana opens the way for many persons to the use of other drugs.  
   True

5. If said to be "non-addicting," it means that a person using the drug
   False
   can make decisions in terms of his own standards and convictions rather than the pressure and practices of other people.  

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

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

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

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

10. A physician can obtain LSD from the Food and Drug Administration for the conducting scientific investigations.  
    False

11. Stable personalities seldom experience adverse effects after taking LSD.  
    False

Early 1940's, scientists have known that LSD causes hallucinations.  
   True
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
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
an experience similar to the one he had the first time.
44. An hallucination experience, after a person has taken LSD, can recur sever
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 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 eff
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
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" it helps people to solve their problems and adjust better to life.
SELECT QUESTIONS FOR PRE AND POST TESTS

1. The most potent drugs known to man.

   True

2. Accepted place in medical practice.

   False

3. Takes LSD, his mind "expands" and he becomes more aware of his surroundings.

   False

4. Dependence may result from the use of LSD.

   True

5. The same amount of LSD in the same surroundings a second time will have similar to the one he had the first time.

   False

6. On experience, after a person has taken LSD, can recur several months later if he has not taken any more of the drug.

   True

7. Value system often changes after he has taken LSD.

   True

8. LSD, the user becomes more social; that is, he relates more closely to his surroundings.

   False

9. Persons have committed suicide after taking LSD.

   True

10. LSD in order to withdraw from reality.

    True

11. LSD several times can predict the kind of side effects, if any, one might expect.

    False

12. LSD seldom use any other drugs.

    False

13. It is illegal to have LSD in one's possession.

    True

14. LSD is formed from the sacred mushroom, which has long been used by the Indians in Mexico.

    False

15. LSD is a lively mild drug which can be used safely in large amounts.

    False

16. Under medical control, LSD promises to be a "miracle" drug in that it can solve their problems and adjust better to life.

    False
True-False Questions

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 with the experience of 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 attributable 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 clinics, is entitled automatically to receive a supply of drugs sufficient to maintain the 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.
SELECT QUESTIONS FOR PRE AND POST TESTS

**Psychoactive Substances**

1. LSD for persons who have symptoms of anxiety and depression.
   - True

2. Inhaling around for adolescents who are searching for identity.
   - False

3. Centres resolve the conflicts of "growing up."
   - False

4. Cannabinoids are now subject to the same federal controls as the
   - False

5. Frequently accompanied by severe and dangerous side effects.
   - True

6. False

7. False

8. False

9. False

10. False

11. False

**Heroin Use**

12. In the United States today as a medicinal drug.
   - False

13. False

14. False

15. False

16. False

17. False

**Drug Addiction**

18. False

19. False

20. False

21. False

22. False

23. False

24. False

25. False

26. False

27. False

**Drug Policies**

28. Administering sustaining doses of narcotics to addicts was tried
   - False in the 1920's and deemed a success at that time.

29. In Great Britain, once he has registered with designated authorities, False
   technically to receive a supply of drugs sufficient to maintain his desired

30. False
True-False Questions

69. The American Medical Association has come out in favor of the adoption of narcotics control in the United States.

70. The United States has made significant progress in international narcotic control.

71. In the United States the dispensing of drugs by a physician to an addicted patient of his desire or need for drugs is now considered by the courts to be legitimate medical practice.

72. Whereas control of drug abuse in the United States rests largely in the jurisdiction of the 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 legally 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 analgesic.

2. A substance, other than food, that affects body structure and function is (a) a depressant; (b) a narcotic; (c) an analgesic; (d) a drug; or (e) an opiate.

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.
### SELECT QUESTIONS FOR PRE AND POST TESTS

<table>
<thead>
<tr>
<th>Question</th>
<th>True/False</th>
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<tbody>
<tr>
<td>Association has come out in favor of the adoption of the British</td>
<td>False</td>
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<td>control in the United States</td>
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<td>Britain.</td>
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<td>narcotic control.</td>
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<td>Legal possession of marihuana or of a narcotic (other than one</td>
<td>True</td>
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<td>that is illegal.</td>
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<td><em>Sleep, lethargy, and relief of pain</em> is the definition of</td>
<td>c</td>
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<td>(a) rest; (b) an anesthetic; (c) a narcotic; (d) an opiate; or (e) an</td>
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<td>analgesic.</td>
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<td>A food that affects body structure and function is called (a) a</td>
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<td>(b) carbohydrate; (c) an analgesic; (d) a drug; or (e) an intoxicant.</td>
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<tr>
<td>Sed medically in reference to (a) marihuana; (b) the barbiturates;</td>
<td>c</td>
</tr>
<tr>
<td>(c) hallucinogens; or (e) the hypnotics.</td>
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<tr>
<td>Peated administration of a drug on a periodic or continuous basis'</td>
<td>c</td>
</tr>
<tr>
<td>drug abuse; (b) depression; (c) drug dependence; (d) analgesia;</td>
<td></td>
</tr>
<tr>
<td>(e) opiate.</td>
<td></td>
</tr>
</tbody>
</table>
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.

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.

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.

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.

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.

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.

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.

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.
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) 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 LSD is (a) distortion of perception; (b) withdrawal illness; (c) delusions; (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 worthwhile; 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 narcotic drugs requiring registration and payment of an occupational tax by those who deal in them 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.
LSD has proved to be (a) safe and 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 any disease.

Side effects, the one which has not resulted from the use of (a) LSD perception; (b) withdrawal illness; (c) delusions; or

Often continues to take it because (a) it improves his ability to use sexual stimulation; (c) it creates a sensation which he likes; (d) physical craving.

Opiate from which raw opium is derived is (a) dried flowers; (b) ripe 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 ... (e) the Narcotic Drugs Import and Export Act.
Bread
Drop
Goof Balls
Hang-up
Horse
Kick
Monkey
Roach
STP
Ups
Barbs
Blow a stick
Hash
Joint
Mainline
Man
Meth
Smashed

1. Money
2. A personal problem
3. To take by mouth
4. A drug habit where physical dependence is present
5. To abandon a drug habit
6. The butt of a marijuana cigarette
7. Stimulants
8. A highly potent hallucinogen
9. Heroin
10. Barbiturates
11. Intoxicated (drug or alcohol)
12. Barbiturates
13. A marijuana cigarette
14. To inject drugs directly into a vein
15. To sniff powdered narcotics into nostrils
16. Hashish, marijuana
17. The police
18. Being "high" on hallucinogens
PRE AND POST TEST

- Personal problem
- Take by mouth
- Drug habit where physical dependence is present
- Abandon a drug habit
- Use butt of a marijuana cigarette
- Stimulants
- Highly potent hallucinogen
- Heroin
- Barbiturates
- Intoxicated (drug or alcohol)
- Barbiturates
- Marijuana cigarette
- To inject drugs directly into a vein
- To sniff powdered narcotics into nostrils
- Hashish, marijuana
- The police
- Being "high" on hallucinogens
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 a continued puncturing
Drop a cap 24. A cache of narcotics
Grass 25. Under the influence of narcotics
Kilo 26. A large amount of narcotics
Outfit 27. The materials and equipment used by an addict to inject 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
marijuana cigarette

disturbed

condition of the veins resulting from abcesses and puncturing narcotics

infilenced of narcotics

ount of narcotics

als and equipment used by an addict to inject a drug

se of LSD

ant experience with LSD

shes

ic needle

hood, a shake-down or search

g withdrawal

(blow a stick)

(meth)

(up tight)

(clean)

(burned out)

(stash)

(stoned)

(kilo)

(outfit)

(drop a cap)

(grass)

(bum trip)

(bennies)

(truck drivers)

(stoolie)

(gun)

(rumble)

(cold turkey)
Rumble 37. To break with present reality
Stoolie 38. Under the influence of drugs
Truck drivers 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)

break with present reality
the influence of drugs
the influence of LSD or other hallucinogens
ous drug user
ers home
ine
-dollar purchase of narcotics
of liquor
shades or glasses
rine, usually injected
juana cigarette
ed
the influence of drugs
lants
ject drugs
tly into the vein
er repeat trip from the same dose
ine, cocaine, or heroin

(blow one's mind)
(turned on)
(on a trip)
(pill freak)
(pad)
(oranges)
(dime bag)
(juice-head)
(tea shades)
(speed)
(reefer)
(hooked)
(high)
(pep pills)
(paper)
(shoot up)
(intravenous)
(flashback)
(hard stuff)
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

ion of narcotics

(downs)

(mary jane)

(junkie)

(straight)

(pot)
SLANG TERMS

A  Benzedrine, dextedrine, 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 activity
Artillery  Equipment for injecting drugs
Backtrack  To withdraw the plunger of a syringe before injecting drugs to make 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
SLANG TERMS

dexedrine, and methedrine
of marijuana and heroin

lar bill (also Lincoln, nickel, fin)
a 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
osition
- peyote
east experience with LSD
iner of drugs
supplier
 of marijuana
acket of narcotics
ect drugs

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

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

LSD made in home or improvised places

amphetamines

Benzedrine tablet or capsule

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

(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

ted very potent hashish

ty narcotics

influence of drugs, to be intoxicated by a drug
Blast a stick
or joint

Blow a stick

Blow one's
mind

Blue devils

Blue heavens

Blue velvet

Bombido

Boo

Boost

Booster stick

Boxed

Boy

Bread

Bull

Bum rap

Bum trip

Bum steer

Bummer

To smoke a marijuana cigarette

To smoke a marijuana cigarette

To break with present reality

Amytal (brand of amobarbital, Eli Lilly and Company) capsules

Amytal (a barbiturate-amobarbital)

Paregoric and an antihistamine (a combination of paregoric and use)

(Bombita) injectable amphetamine

Marijuana

To shoplift

(1) cigarette of treated marijuana, reputedly potent; (2) an object which is dipped in a concentrated essence of marijuana and inhaled

In jail

Heroin

Money

A federal narcotic agent, a police officer

An arrest or conviction for crime one didn't commit

An unpleasant experience with LSD

False or unreliable information about drugs or peddlers - also

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
ata) 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

ral narcotic agent, a police officer
est or conviction for crime one didn't commit
leasant experience with LSD
or unreliable information about drugs or peddlers - also bogus trip, bum wire, jive
leasant experience with LSD
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burned</td>
<td>To receive phony or badly diluted drugs</td>
</tr>
<tr>
<td>Burned out</td>
<td>A sclerotic condition of the veins resulting from an episode</td>
</tr>
<tr>
<td>Business</td>
<td>Amphetamine - short trip</td>
</tr>
<tr>
<td>Bust a man's trip</td>
<td>To inject drugs intravenously</td>
</tr>
<tr>
<td>Busted</td>
<td>To be arrested</td>
</tr>
<tr>
<td>Buttons</td>
<td>Sections of the peyote cactus</td>
</tr>
<tr>
<td>Cactus</td>
<td>Peyote</td>
</tr>
<tr>
<td>Caballo</td>
<td>Heroin</td>
</tr>
<tr>
<td>Can</td>
<td>Approximately an ounce of marijuana</td>
</tr>
<tr>
<td>Candy</td>
<td>Barbiturates</td>
</tr>
<tr>
<td>Cap</td>
<td>A container of drugs (usually a capsule, usually heroin or cocaine)</td>
</tr>
<tr>
<td>Cartwheels</td>
<td>Amphetamine sulfate (round, white, double-scored tablet)</td>
</tr>
<tr>
<td>Cecil</td>
<td>Cocaine</td>
</tr>
<tr>
<td>Champ</td>
<td>Drug user who won't reveal his supplier, even under oath</td>
</tr>
<tr>
<td>Charley</td>
<td>Cocaine</td>
</tr>
<tr>
<td>Charas</td>
<td>Form of marijuana in India; hashish</td>
</tr>
<tr>
<td>Charge</td>
<td>Marijuana</td>
</tr>
<tr>
<td>Charged up</td>
<td>Under the influence of drugs</td>
</tr>
<tr>
<td>Chipping</td>
<td>Taking small amounts of drugs on an irregular basis</td>
</tr>
</tbody>
</table>
phony or badly diluted drugs

condition of the veins resulting from abscesses and continued puncturing

e - short trip

intravenously

sted

f the peyote cactus

e an ounce of marijuana

d of drugs (usually a capsule, usually heroin)

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

who won't reveal his supplier, even under pressure

jua in India; hashish

fluence of drugs

all amounts of drugs on an irregular basis
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
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cocaine</td>
<td>Narcotics</td>
</tr>
<tr>
<td>Cottonhead</td>
<td>User who recoins the cotton fibers found in cookers when they are in need of an injection</td>
</tr>
<tr>
<td>Crater</td>
<td>Gaping hole in a vein caused by repeated injections at the site</td>
</tr>
<tr>
<td>Crystals</td>
<td>Methedrine</td>
</tr>
<tr>
<td>Cube</td>
<td>Sugar cube impregnated with LSD; a non-user of drugs</td>
</tr>
<tr>
<td>Cubehead</td>
<td>Frequent user of LSD</td>
</tr>
<tr>
<td>Cut</td>
<td>To adulterate a narcotic by adding milksugar</td>
</tr>
<tr>
<td>Dabble</td>
<td>To take small amounts of drugs on an irregular basis</td>
</tr>
<tr>
<td>Dagga</td>
<td>Marijuana - India</td>
</tr>
<tr>
<td>D.D.</td>
<td>A fatal dose of narcotics or other drug</td>
</tr>
<tr>
<td>Dealer</td>
<td>A drug supplier</td>
</tr>
<tr>
<td>Deck</td>
<td>A small packet of narcotics (heroin)</td>
</tr>
<tr>
<td>Dexies</td>
<td>Dextedrine (brand of dextroamphetamine sulfate, Smith Kline)</td>
</tr>
<tr>
<td>Dig</td>
<td>Appreciate, enjoy, understand</td>
</tr>
<tr>
<td>Dime bag</td>
<td>A ten-dollar purchase of narcotics</td>
</tr>
<tr>
<td>Dirty</td>
<td>In possession of narcotics; liable to arrest if searched</td>
</tr>
<tr>
<td>Dollies</td>
<td>Delephine (brand of methadone hydrochloride, Eli Lilly and</td>
</tr>
</tbody>
</table>
recooks the cotton fibers found in cookers when their supply is up and they
need of an injection
hole in a vein caused by repeated injections at the same spot
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
a - 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
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domino</td>
<td>To purchase drugs</td>
</tr>
<tr>
<td>Doojee</td>
<td>Heroin</td>
</tr>
<tr>
<td>Dope</td>
<td>Any narcotic</td>
</tr>
<tr>
<td>Doper</td>
<td>Regular user of narcotics</td>
</tr>
<tr>
<td>Double Blind</td>
<td>Term used in research to indicate that neither the patient or the researcher know which of several drugs or placebo is given on any occasion, so that condition if results are attributed to the effects of the drug</td>
</tr>
<tr>
<td>Double trouble</td>
<td>Tuinal (brand of amobarbital sodium and secobarbital sodium, Enhance)</td>
</tr>
<tr>
<td>Do up</td>
<td>Supply of marijuana cigarettes</td>
</tr>
<tr>
<td>Down</td>
<td>Depressed feeling after drugs wear off</td>
</tr>
<tr>
<td>Downs</td>
<td>Depressants</td>
</tr>
<tr>
<td>Drivers</td>
<td>Amphetamines</td>
</tr>
<tr>
<td>Drop</td>
<td>To take by mouth</td>
</tr>
<tr>
<td>Drop a cap</td>
<td>Take a dose of LSD</td>
</tr>
<tr>
<td>Dropped</td>
<td>Arrested</td>
</tr>
<tr>
<td>Dummy</td>
<td>Purchase which did not contain narcotics</td>
</tr>
<tr>
<td>Dust</td>
<td>Cocaine</td>
</tr>
<tr>
<td>Dynamite</td>
<td>Narcotics of high potency</td>
</tr>
<tr>
<td>Ego games</td>
<td>A deprecative term applied by LSD users to social conformity and occupations and responsibilities of the majority of people</td>
</tr>
</tbody>
</table>
TEACHER INFORMATION (continued)

purchase drugs

narcotic

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.

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

of marijuana cigarettes

osed feeling after drugs wear off

dants

tamines

ake by mouth

a dose of LSD

ed

ase which did not contain narcotics

ine

otics of high potency

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

-74-
Ends
Experience
Eye-openers
Factory
Fence
Fix
Flake
Flashback
Flea powder
Flip
Flip out
Floating
Fly
Flying
Footballs
Freak out
Fresh and sweet
Fruit salad

Money
An LSD "trip"
Amphetamines
Equipment for injecting drugs
One who acts as a source of stolen goods from additional stolen goods and thus can afford his drugs
An injection of narcotics
Cocaine
A later repeat "trip" from the same dose
Poor quality narcotics
To become psychotic
To lose mental control after using drugs
Under the influence of drugs (to be intoxicated
Take narcotics
Under the influence of marijuana
Oval-shaped amphetamine sulfate tablets (a combination
To have unpleasant reactions while on a hallucinogen
Out of jail
Taking a mixture of pills
I "trip" tamines anent 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 may become psychotic lose mental control after using drugs under the influence of drugs (to be intoxicated by drugs) under the influence of marijuana l-shaped amphetamine sulfate tablets (a combination of dextroamphetamine and amphetamine) have unpleasant reactions while on a hallucinogenic "trip" of jail taking a mixture of pills.
Gage
Ganga
Gassed out
Gassing
Gee-head
Geetis
Geezer
Get high
Gimmicks
Give wings
Girl
Glad rag
Gluey
Gold dust
Goods
Good trip
Goofballs
Goofed up
Gow-head
Marijuana
Marijuana (superior grade)
Overcome emotionally by an experience
Sniffing gasoline fumes
Paregoric abuser
Money
A narcotic injection
Smoke marijuana
The equipment for injecting drugs
Inject somebody with heroin by vein
Cocaine
Cloth material or handkerchief saturated with the chemical
Glue-sniffer
Cocaine
Narcotics
Happy experience with psychedelics
Barbiturates
Under the influence of barbiturates
An opium addict
Grasshopper  Marijuana
Greenies  Green, heart-shaped tablets of dextroamphetamine sulfate and
Griefo  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 sounds that simulates the 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)

A person-to-person delivery 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
- LSD
- marijuana
- marijuana user
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hearts</td>
<td>Benzedrine or dextedrine (brands of amphetamine sulfate and dextroamphetamine) heart-shaped tablets</td>
</tr>
<tr>
<td>Heat</td>
<td>The police</td>
</tr>
<tr>
<td>Heavenly blues</td>
<td>A type of morning glory seed, or LSD</td>
</tr>
<tr>
<td>Heeled</td>
<td>Having narcotics; having money</td>
</tr>
<tr>
<td>Hemp</td>
<td>Marijuana</td>
</tr>
<tr>
<td>High</td>
<td>Under the influence of drugs</td>
</tr>
<tr>
<td>Hikori</td>
<td>Mescaline—peyote</td>
</tr>
<tr>
<td>Hip (Hep)</td>
<td>To understand</td>
</tr>
<tr>
<td>Hit</td>
<td>To purchase drugs, an arrest</td>
</tr>
<tr>
<td>Hocus</td>
<td>A narcotic solution ready for injection</td>
</tr>
<tr>
<td>Hog</td>
<td>An addict who uses all he can get his hands on</td>
</tr>
<tr>
<td>Holding</td>
<td>Possessing narcotics</td>
</tr>
<tr>
<td>Hooked</td>
<td>Addicted</td>
</tr>
<tr>
<td>Hophead</td>
<td>Narcotic addict</td>
</tr>
<tr>
<td>Hopped up</td>
<td>Under the influence of drugs</td>
</tr>
<tr>
<td>Hot shot</td>
<td>A fatal dosage</td>
</tr>
<tr>
<td>Horse</td>
<td>Heroin</td>
</tr>
</tbody>
</table>
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
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hype</td>
<td>Narcotic addict</td>
</tr>
<tr>
<td>Ice cream habit</td>
<td>A small, irregular drug habit</td>
</tr>
<tr>
<td>In</td>
<td>Belonging or accepted by group</td>
</tr>
<tr>
<td>Intravenous</td>
<td>Directly into the vein</td>
</tr>
<tr>
<td>Jab</td>
<td>To inject drugs</td>
</tr>
<tr>
<td>Jag</td>
<td>Intoxication after using benzedrine</td>
</tr>
<tr>
<td>Jive or jive stick</td>
<td>Marijuana</td>
</tr>
<tr>
<td>Job</td>
<td>To inject drugs</td>
</tr>
<tr>
<td>Joint</td>
<td>A marijuana cigarette</td>
</tr>
<tr>
<td>Jolly beans</td>
<td>Pep pills, amphetamines</td>
</tr>
<tr>
<td>Jolt</td>
<td>An injection of narcotics; effects of the drug</td>
</tr>
<tr>
<td>Jones</td>
<td>The habit, an addict</td>
</tr>
<tr>
<td>Joy-pop</td>
<td>To inject small amounts of drugs irregularly</td>
</tr>
<tr>
<td>Joy powder</td>
<td>Heroin</td>
</tr>
<tr>
<td>Juice-head</td>
<td>User of liquor</td>
</tr>
<tr>
<td>Junk</td>
<td>Narcotics</td>
</tr>
<tr>
<td>Junkie</td>
<td>A narcotic Addict</td>
</tr>
<tr>
<td>Juvies</td>
<td>Juvenile officers</td>
</tr>
</tbody>
</table>
Kick or kick habit

Kick parties

Kif

Kilo

Lace

L.A. turnabouts

Layout

Lemonade

Lid

Lid poppers

Lipton tea

Lit up

Locoweed

Long green

M

Machinery

Mainline

Mainliner

To abandon a drug habit

Parties or sessions where LSD is used

Marijuana in North Africa

Large amount of narcotics

Money

Amphetamines

The equipment for injecting drugs

Poor heroin

Approximately one ounce of marijuana

Amphetamines

Poor quality narcotics

Under the influence of drugs

Marijuana

Money

Morphine

Equipment for injecting drugs

To inject drugs directly into a vein

One who injects narcotics into a vein
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make a buy</td>
<td>To purchase drugs</td>
</tr>
<tr>
<td>Make a meet</td>
<td>To purchase drugs</td>
</tr>
<tr>
<td>Man</td>
<td>The police</td>
</tr>
<tr>
<td>Manicure</td>
<td>High-grade marijuana (i.e., to seeds or stems)</td>
</tr>
<tr>
<td>Mary jane</td>
<td>Marijuana</td>
</tr>
<tr>
<td>Match box</td>
<td>Marijuana container; quantity of marijuana</td>
</tr>
<tr>
<td>Member</td>
<td>Negro or some other than a white person</td>
</tr>
<tr>
<td>Mellow yellow</td>
<td>Banana peel</td>
</tr>
<tr>
<td>Mesc</td>
<td>Mescaline, the alkaloid in peyote</td>
</tr>
<tr>
<td>Mescal -</td>
<td>Mescaline or peyote</td>
</tr>
<tr>
<td>Mescal bean</td>
<td></td>
</tr>
<tr>
<td>Meth</td>
<td>Methedrine (also known as desexyn) an amphetamine</td>
</tr>
<tr>
<td>Methhead</td>
<td>Chronic user of methedrine</td>
</tr>
<tr>
<td>Meth monster</td>
<td>User of speed (Methedrine)</td>
</tr>
<tr>
<td>Mezz</td>
<td>Marijuana</td>
</tr>
<tr>
<td>Mickey Finn</td>
<td>Chloral Hydrate</td>
</tr>
<tr>
<td>Mikes</td>
<td>Micrograms (millionths of a gram)</td>
</tr>
<tr>
<td>Miss emma</td>
<td>Morphine</td>
</tr>
<tr>
<td>Moje</td>
<td>Narcotics</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Moon</td>
<td>Peyote</td>
</tr>
<tr>
<td>Mor a grifa</td>
<td>Marijuana</td>
</tr>
<tr>
<td>Mugglehead</td>
<td>Marijuana user</td>
</tr>
<tr>
<td>Muggles</td>
<td>Marijuana</td>
</tr>
<tr>
<td>Mutah</td>
<td>Marijuana</td>
</tr>
<tr>
<td>Naree</td>
<td>Police officer (the law)</td>
</tr>
<tr>
<td>Narks</td>
<td>Slang term for the law enforcement officials concerned with narcotic abuse</td>
</tr>
<tr>
<td>Needle</td>
<td>Hypodermic syringe</td>
</tr>
<tr>
<td>Nickel bag</td>
<td>A five-dollar purchase of narcotics</td>
</tr>
<tr>
<td>Nimby</td>
<td>Nembutal (brand of pentobarbital, Abbott Laboratories) capsules</td>
</tr>
<tr>
<td>Nod</td>
<td>To behave in a sleepy or lethargic manner</td>
</tr>
<tr>
<td>OD</td>
<td>Overdose</td>
</tr>
<tr>
<td>Off</td>
<td>Withdrawn from drugs</td>
</tr>
<tr>
<td>On a rip</td>
<td>Under the influence of LSD</td>
</tr>
<tr>
<td>On a trip</td>
<td>Under the influence of LSD or other hallucinogens</td>
</tr>
<tr>
<td>On the beam</td>
<td>Under the influence of marijuana</td>
</tr>
<tr>
<td>On the nod</td>
<td>Under the influence of drugs</td>
</tr>
<tr>
<td>On the street</td>
<td>Out of jail</td>
</tr>
<tr>
<td>On the stuff</td>
<td>Regular user or addict</td>
</tr>
</tbody>
</table>
Oranges | Dexedrine (brand of dextroamphetamine sulfate, Smith, Kline and French)
---|---
Outfit | The materials and equipment used by an addict to inject a drug into his body
Out of the body | The feeling a person experiences while he is under the influence of a drug
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
Paddler | 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)

drinal (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
- feeling a person experiences while under the influence of LSD
- packet of heroin
- den shutting off of drug supply
- user's home, apartment
- prescription or packet of narcotics
- draline (brand of amphetamine sulfate, Smith, Kline and French Laboratories) tablets
- biturates
- ergoric
- user in drugs
- imulants
- container of drugs
- nanal (brand of secobarbital, Eli Lilly and Company) capsules
- dangerous drug user
- dangerous drug user
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant</td>
<td>Cache of narcotics</td>
</tr>
<tr>
<td>Point</td>
<td>Paraphernalia for injecting narcotics</td>
</tr>
<tr>
<td>Pop</td>
<td>To inject drugs</td>
</tr>
<tr>
<td>Pot</td>
<td>Marijuana</td>
</tr>
<tr>
<td>Pothead</td>
<td>Marijuana user</td>
</tr>
<tr>
<td>Pot party</td>
<td>Marijuana party</td>
</tr>
<tr>
<td>Pure</td>
<td>Pure narcotics of very good grade</td>
</tr>
<tr>
<td>Purple hearts</td>
<td>Luminal</td>
</tr>
<tr>
<td>Pusher</td>
<td>Drug seller or supplier</td>
</tr>
<tr>
<td>Quill</td>
<td>A folded matchbox cover from which narcotics are sniffed through the nose</td>
</tr>
<tr>
<td>Rainbows</td>
<td>Tuinal (brand of amobarbital sodium and secobarbital sodium, Eli Lilly and Company) capsules</td>
</tr>
<tr>
<td>Rap</td>
<td>Rapport</td>
</tr>
<tr>
<td>Reader</td>
<td>A prescription</td>
</tr>
<tr>
<td>Red birds</td>
<td>Seconal</td>
</tr>
<tr>
<td>Red devils</td>
<td>Seconal (brand of secobarbital, Eli Lilly and Company) capsules</td>
</tr>
<tr>
<td>Reefer</td>
<td>A marijuana cigarette</td>
</tr>
<tr>
<td>Re-entry</td>
<td>A return from a &quot;trip&quot;</td>
</tr>
<tr>
<td>Roach</td>
<td>The butt of a marijuana cigarette</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Rope</td>
<td>Marijuana</td>
</tr>
<tr>
<td>Roses</td>
<td>Benzedrine (brand of amphetamine sulfate, Smith, Kline and French)</td>
</tr>
<tr>
<td>Royal blue</td>
<td>LSD</td>
</tr>
<tr>
<td>Rumble</td>
<td>Police in the neighborhood; a shake-down or search</td>
</tr>
<tr>
<td>Runner</td>
<td>Smuggler of illegal drugs</td>
</tr>
<tr>
<td>Sam</td>
<td>Federal narcotic agents</td>
</tr>
<tr>
<td>Satch cotton</td>
<td>Cotton used to strain narcotics before injection</td>
</tr>
<tr>
<td>Seat</td>
<td>Heroin</td>
</tr>
<tr>
<td>Schmack</td>
<td>Heroin</td>
</tr>
<tr>
<td>Score</td>
<td>To purchase drugs</td>
</tr>
<tr>
<td>Script</td>
<td>A doctor's prescription</td>
</tr>
<tr>
<td>Seccies</td>
<td>Barbiturates</td>
</tr>
<tr>
<td>Seggy</td>
<td>Seconal (brand of secobarbital, Eli Lilly and Company) caps</td>
</tr>
<tr>
<td>Sex juice</td>
<td>Aphrodisiac, supposedly a sex stimulant drug</td>
</tr>
<tr>
<td>Shake the habit</td>
<td>Completely conquer the habit</td>
</tr>
<tr>
<td>Shooting gallery</td>
<td>A place where narcotic addicts inject drugs</td>
</tr>
<tr>
<td>Shoot up or shoot</td>
<td>To inject drugs</td>
</tr>
<tr>
<td>Shrink</td>
<td>Psychiatrist (head shrinker)</td>
</tr>
</tbody>
</table>
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

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)
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)

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

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

Torch up
Light a marijuana cigarette
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toss</td>
<td>Search</td>
</tr>
<tr>
<td>Tour guide</td>
<td>An experienced LSD user who helps or guides a new user</td>
</tr>
<tr>
<td>Toxy</td>
<td>The smallest container of prepared opium</td>
</tr>
<tr>
<td>Tracks</td>
<td>Scars along veins from many injections</td>
</tr>
<tr>
<td>Travel agent</td>
<td>An experienced LSD user who helps or guides a new user</td>
</tr>
<tr>
<td>Trip, tripping</td>
<td>Being &quot;high&quot; on hallucinogens, particularly LSD</td>
</tr>
<tr>
<td>Trip out</td>
<td>To take drug and have the drug experience, good or bad (bum trip)</td>
</tr>
<tr>
<td>Truck drivers</td>
<td>Amphetamines</td>
</tr>
<tr>
<td>Turkey</td>
<td>A capsule purported to be narcotic but filled with a non-narcotic substance</td>
</tr>
<tr>
<td>Turned off</td>
<td>Withdrawn from drugs</td>
</tr>
<tr>
<td>Turned on</td>
<td>Under the influence of drugs</td>
</tr>
<tr>
<td>Turps</td>
<td>Elixis of terpin hydrate with codeine, a cough syrup</td>
</tr>
<tr>
<td>Twist</td>
<td>Marijuana cigarette</td>
</tr>
<tr>
<td>Uncle</td>
<td>Federal narcotic agent</td>
</tr>
<tr>
<td>Ups</td>
<td>Stimulants</td>
</tr>
<tr>
<td>Up tight</td>
<td>Anxious, disturbed</td>
</tr>
<tr>
<td>Uppers</td>
<td>Stimulants, cocaine, and psychedelics</td>
</tr>
<tr>
<td>Vic</td>
<td>One who has been given a hot shot, a victim</td>
</tr>
<tr>
<td>Wake-ups</td>
<td>Amphetamine</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Wakowi</td>
<td>Mescaline</td>
</tr>
<tr>
<td>Washed up</td>
<td>Withdrawn from drugs</td>
</tr>
<tr>
<td>Wasted</td>
<td>Under the influence of drugs</td>
</tr>
<tr>
<td>Weed</td>
<td>Marijuana</td>
</tr>
<tr>
<td>Weehead</td>
<td>Marijuana user</td>
</tr>
<tr>
<td>Weekend habit</td>
<td>A small, irregular drug habit</td>
</tr>
<tr>
<td>Wedding bells</td>
<td>LSD</td>
</tr>
<tr>
<td>Whiskers</td>
<td>Federal narcotic agents</td>
</tr>
<tr>
<td>Whites</td>
<td>Amphetamine sulfate tablets</td>
</tr>
<tr>
<td>White stuff</td>
<td>Morphine</td>
</tr>
<tr>
<td>Wired</td>
<td>Under the influence of drugs (usually stimulants)</td>
</tr>
<tr>
<td>Works</td>
<td>Equipment for injection of drugs</td>
</tr>
<tr>
<td>Yellow-jackets</td>
<td>Nembutal (brand of pentobarbital, Abbot Laboratories) capsules (solid yellow)</td>
</tr>
<tr>
<td>Yen</td>
<td>Desire for</td>
</tr>
<tr>
<td>Yen hok</td>
<td>(Hook) instrument used in opium smoking; needle used to cook opium pellets</td>
</tr>
<tr>
<td>Yen Shee</td>
<td>Opium ash</td>
</tr>
<tr>
<td>Zunked</td>
<td>Intoxicated (drug or alcohol) usually addicted to hard drugs</td>
</tr>
</tbody>
</table>
VIII. GLOSSARY

addict refers to any person who habitually uses any habit-forming drug as defined by the Harrison Act of 1914; that is, alkaloids of the opium poppy, hemp, and peyote in all its forms.

addiction the classic term used to describe dependency on a drug; the use of a drug by law enforcement officers rather than medical personnel; it has been identified as compulsion for a drug, tolerance, physical 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 conditions such as asthma, hay fever, etc.

barbiturates a highly addicting group of depressant drugs, varying in use from anesthetics; although highly useful in medicine, they can become addicting.

counterfeit drugs a product manufactured illegally in an attempt to defraud the public; it is a danger to the public in two ways: (1) there is no guarantee of quality of the ingredients used; and (2) for those who have obtained the product from a prescribed medicinal use, it is devoiding them of proper treatment.

dependence this is a general term, in recent years preferred by physicians over the classic term "addiction"; it is a state of psychic or physical need, or both, resulting from the prolonged use of a drug on a periodic or continual basis; it is usually associated with a drug, that is, drug specific

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

drug any chemical compound which produces an effect on the body; it can 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 enforcement officers rather than medical personnel; characteristics of addiction are 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, brain, and the central nervous system.

A group of compounds which are developed in the last thirty years to treat allergic conditions such as asthma, hay fever, etc.

Addicting group of depressant drugs, varying in use from sleep producers to hypnotics; although highly useful in medicine, they can be intoxicating and dangerous if manufactured illegally in an attempt to defraud the public; such a drug is offered to the public in two ways: (1) there is no guarantee as to the amount, kind, quality of the ingredients used; and (2) for those who need the drug for some bed medicinal use, it is deviating them from 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 drugs on a periodic or continual basis; it is usually associated with a particular drug specific 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 toxic 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 prescribed medical reasons, but different from those intended when the drug was prescribed.

**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 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 in tension and inhibitory control.

**exempt narcotics** that group of narcotic drugs which can be purchased without prescription; the law requires the purchaser’s signature.

**habituation** a less binding condition than addiction, but still occurring from repetitive 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, 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; those involving perception and orientation.

**methadone** a drug now being used in the treatment of opiate addicts; it is said to block 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) to be an addiction-forming or addiction-sustaining liability similar to narcotics from the effective date of determination of such finding (by said State Commissioner of Health or other competent state officer).
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. It is characterized by the development of severe acute physical dependence, which is removed when the drug is removed.

psychodelic

a term meaning mind-expanding; associated with the hallucinogenic drug LSD; most authorities believe that the person feels that he is in a productive mind, but in fact he does not.

psychological dependence

a strong mental attachment to a drug which arouses from a sense of emotional or psychic need of an individual; characterized by the development of severe acute psychological dependence, which 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 direct relation to the foremost factor.

stimulants

chief class of drugs, of which the most commonly abused are drugs which stimulate the central nervous system by producing a feeling of alertness, a temporary rise in blood pressure and respiration, etc.

tolerance

the gradual conditioning of the body toward a drug; it is the need of the drug in order to recreate the feeling of well-being for taking the drug; it is this characteristic which helps a snowballing life of no return.

tranquilizers

are a type of sedative in that they depress portions of the brain, those areas responsible for anxiety and tension; normally, hangover and sedative effects are also characteristic of sedative tranquilizers.
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 arouses 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
## 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 10th Century

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

Ethyl alcohol - C₂H₅OH

### D. Other Meanings

1. Solvent
   a. Medical solutions
   b. Cleaning solutions

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Teacher Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Introduction</td>
<td>Introductory statement to teachers</td>
</tr>
<tr>
<td>A. Importance of learning about alcohol</td>
<td>Overview</td>
</tr>
<tr>
<td>1. To better understand its</td>
<td></td>
</tr>
<tr>
<td>a. Social effects</td>
<td>Alcohol Education for Classroom and Community, p. 69</td>
</tr>
<tr>
<td>b. Economic effects</td>
<td>Alcohol, by Berton Roueche, p. 21</td>
</tr>
<tr>
<td>c. Biological effects</td>
<td>Basic Information on Alcohol, p. 2</td>
</tr>
<tr>
<td>d. Nature and uses</td>
<td>The Problem, Alcohol and Narcotics</td>
</tr>
<tr>
<td>II. Meaning of the word &quot;alcohol&quot;</td>
<td>The Story of Industrial Alcohol, p. 115</td>
</tr>
<tr>
<td>A. In the 10th century</td>
<td>Basic Information on Alcohol, pp. -94-</td>
</tr>
</tbody>
</table>
## Teacher Materials

### Introductory statement to teachers

- Understand its effects and uses.
- Learn about the story of industrial alcohol.
- Alcohol Education for Classroom and Community, p. 69
- Alcohol, by Berton Roueche, p. 21
- Basic Information on Alcohol, pp. 91, 93

## Student Materials

### Alcohol Education for Classroom and Community, p. 69

- Alcohol - C₂H₅OH
- The Problem, Alcohol and Narcotics, p. 7
- The Story of Industrial Alcohol, p. 16
- Basic Information on Alcohol, pp. 91, 93
Audio Visual

Material for introduction

1. Yeast cell projected on screen
2. 35mm slides on history
3. Lift on advertisement - #1

Motivating Questions

Why learn about alcohol?

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?

Transparency:

Structure of ethyl alcohol - #2

Transparency:

Amounts and uses of industrial alcohol, #3 (a, b, w/overlays, c)
<table>
<thead>
<tr>
<th>Motivating Questions</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why learn about alcohol?</td>
<td>Observation of introductory materials, note taking, and discussion.</td>
</tr>
<tr>
<td>Why do doctors advise patients with ulcers to avoid drinking?</td>
<td></td>
</tr>
<tr>
<td>Is drinking alcoholic beverages inexpensive?</td>
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<td>What things do adults like about drinking alcohol?</td>
<td></td>
</tr>
<tr>
<td>What are some laws concerning the drinking of alcohol?</td>
<td></td>
</tr>
<tr>
<td>What do we have these laws?</td>
<td></td>
</tr>
<tr>
<td>What things do you have at home that have alcohol in them?</td>
<td></td>
</tr>
<tr>
<td>How is alcohol useful?</td>
<td></td>
</tr>
<tr>
<td>Have students make list of things in home that have alcohol in them. Write library paper on common materials that are made from alcohol.</td>
<td></td>
</tr>
</tbody>
</table>
ALCOHOL (continued)

III. History of Alcohol

A. Discovery

1. Date not known
   Occurred somewhere in the pre-history of man

2. Essentials needed for the discovery of alcohol
   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

   Teacher Materials

   Drinking Among Teen-agers, pp. 83 – 85
   Alcohol, Berton Roueche, pp. 8-13

   Student Materials

   The Problem: Alcohol – Narcotics, p. 24
   Drinking and Intoxication, p. 42 (Suggested answer for evaluation sheet)
   Script for slide series
Drinking Among Teen-agers, pp. 83 - 85

Disinfecting alcohol

Clay jars, plastic containers

Food for lean fermentation process

Drinking and Intoxication, p. 42

The Problem: Alcohol – Narcotics, p. 24

Script for slide series

Script for slides series

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

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

Activities

Write or meaning of students

Research points of historic
<table>
<thead>
<tr>
<th>Motivating Questions</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was fermentation invented by man?</td>
<td>Write or discuss personal meaning of alcohol. Let students supply information.</td>
</tr>
<tr>
<td>What did man discover in relation to discovery of alcohol?</td>
<td>Research on other interesting points of history of alcohol.</td>
</tr>
<tr>
<td>How do scientists find out about events that occurred so long ago?</td>
<td>Make cartoons depicting the historical use of alcohol.</td>
</tr>
</tbody>
</table>
ALCOHOL (continued)

B. Early civilizations

1. Egypt
   a. Most Egyptians drank, both men and women
   b. Drank in religious ceremonies, but mostly for inebriety

2. Greece
   a. Drinking occurred in most Greek states
   b. Drank in religious ceremonies and for inebriety

3. Sparta
   a. Believed over-indulgence showed a weakness
   b. Soldiers on duty were not allowed to drink alcohol

4. Rome
   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 inebrieted, then killed them

Drinking and Intoxication, pp. 39, 65-66
Drinking and Intoxication, p. 36
Drinking and Intoxication, pp. 53, 54, pp. 58-61
<table>
<thead>
<tr>
<th>Teacher Materials</th>
<th>Student Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Drinking and Intoxication</strong>, pp. 39, 65, 66</td>
<td><strong>Drinking and Intoxication</strong>, pp. 39, 65, 66</td>
</tr>
<tr>
<td>Egyptians drank, men and women drank in religious ceremonies, but mostly for inebriety</td>
<td></td>
</tr>
<tr>
<td>Drinking and Intoxication, p. 39</td>
<td></td>
</tr>
<tr>
<td>Drinking occurred in Greek states and in religious ceremonies and for inebriety</td>
<td></td>
</tr>
<tr>
<td>Drinking and Intoxication, p. 36</td>
<td></td>
</tr>
<tr>
<td>Believed over-indulgence showed a weakness</td>
<td></td>
</tr>
<tr>
<td>Soldiers on duty were not allowed to drink alcohol</td>
<td></td>
</tr>
<tr>
<td>Drinking and Intoxication, pp. 53, 54, pp. 58-61</td>
<td>Drinking and Intoxication, pp. 36, 53, 54, 58-61</td>
</tr>
<tr>
<td>Early Romans drank moderately; death was the penalty for women who drank</td>
<td></td>
</tr>
<tr>
<td>The Romans overindulged and women were allowed to drink until northern invaders were inebrieted, then killed them</td>
<td></td>
</tr>
</tbody>
</table>
Audio Visual  

Motivating Questions  

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

Activities  

Discuss lessons learned from the history of alcohol.  

Read to the class 162 of Book Two: Alcohol. Have their views on presented.  

Did they solve their drinking problems?  

What were some of their methods of controlling the abuse of alcohol?
<table>
<thead>
<tr>
<th>Motivating Questions</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did civilizations in the past also have problems because of the drinking of alcoholic beverages?</td>
<td>Discuss lessons that can be learned from the study of the history of alcohol.</td>
</tr>
<tr>
<td>Did they solve their drinking problems?</td>
<td>Read to the class pp. 161, 162 of Book Teaching About Alcohol. Have students give their views of the situations presented.</td>
</tr>
<tr>
<td>What were some of their methods of controlling the abuse of alcohol?</td>
<td></td>
</tr>
<tr>
<td>Concepts</td>
<td>Teacher Materials</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------</td>
</tr>
<tr>
<td>C. Distillation</td>
<td><em>Drinking and Intoxication</em>, p. 43</td>
</tr>
<tr>
<td>1. Discovered about 1200 A.D.</td>
<td><strong>Alcohol</strong>, by Berton Roueche, p. 25</td>
</tr>
<tr>
<td>2. Called aqua vitae</td>
<td></td>
</tr>
<tr>
<td>a. Used as medicine at first</td>
<td></td>
</tr>
<tr>
<td>b. Soon it became a condensed inebriant</td>
<td></td>
</tr>
<tr>
<td>D. American history</td>
<td><em>Alcohol Education for Classroom and Community</em>, p. 13</td>
</tr>
<tr>
<td>1. Introduced alcohol to North American Indians</td>
<td></td>
</tr>
<tr>
<td>2. Became important beverage in westward movement because of these beliefs</td>
<td></td>
</tr>
<tr>
<td>a. A man could work harder if he had a drink</td>
<td></td>
</tr>
<tr>
<td>b. He could better face hardships</td>
<td></td>
</tr>
<tr>
<td>3. Rum became important factor in the slave trade.</td>
<td><em>Alcohol</em>, by Berton Roueche, pp. 38, 39</td>
</tr>
<tr>
<td>a. Alcohol blamed for nation's ills</td>
<td></td>
</tr>
<tr>
<td>b. National movement in U.S. began after World War I</td>
<td></td>
</tr>
<tr>
<td>c. Prohibition was a period of civil unrest and civil crime</td>
<td></td>
</tr>
<tr>
<td>Teacher Materials</td>
<td>Student Materials</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
<td>--------------------------------------------------------</td>
</tr>
<tr>
<td>Drinking and Intoxication, p. 43</td>
<td>Ditto hand-out: On the History of Alcohol</td>
</tr>
<tr>
<td>Alcohol, by Berton Roueche, p. 25</td>
<td>Ditto: Script Slide Series</td>
</tr>
<tr>
<td>Alcoholic Education for Classroom and Community, p. 13</td>
<td>Alcohol Education for Classroom and Community, p. 13</td>
</tr>
<tr>
<td>Facts About Alcohol, p. 17</td>
<td></td>
</tr>
</tbody>
</table>

-100-
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?"

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?
### Motivating Questions

- 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?

### Activities

- 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.
### Concepts

**IV. Nature of Alcohol**

**A. Chemical**

1. Composed of C, H, O atoms
2. Many different kinds of alcohol
   - ethyl
   - methyl
   - isopropyl
   - butyl
3. Characterized by OH group attached to C atom
   - ethyl: \( \text{CH}_3\text{CH(OH)CH}_3 \)
   - methyl: \( \text{CH}_3\text{OH} \)
4. Chemically similar to water
   - Neither base nor acid
   - Soluble in water
5. Have toxic effect on living cells (body can tolerate ethyl ethyl or grain alcohol)
6. Oxidizes easily

**B. Physical**

1. Clear water-like liquid
<table>
<thead>
<tr>
<th>Teacher Materials</th>
<th>Student Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol Education for Classroom and Community, p. 39</td>
<td>Alcohol Education for Classroom and Community, p. 70</td>
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<tr>
<td>Teaching About Alcohol, p. 46</td>
<td>Alcohol Education for Classroom and Community, p. 70</td>
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<tr>
<td>The Story of Industrial Alcohol, p. 19</td>
<td>The Story of Industrial Alcohol, p. 3</td>
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<tr>
<td>Group</td>
<td>Group</td>
</tr>
<tr>
<td>Laboratory Experiment No. 1</td>
<td>Laboratory Experiment No. 1</td>
</tr>
<tr>
<td>Ditto Lab. Exercise No. 1</td>
<td>Characteristics of alcohol, chemical and physical</td>
</tr>
<tr>
<td>Characteristic of alcohol, chemical and physical</td>
<td>Characteristic of alcohol, chemical and physical</td>
</tr>
<tr>
<td>1) Water &amp; acid</td>
<td>1) Water &amp; acid</td>
</tr>
<tr>
<td>Living Laboratory Experiment No. 1</td>
<td>Living Laboratory Experiment No. 1</td>
</tr>
<tr>
<td>(Rate ethyl alcohol)</td>
<td>(Rate ethyl alcohol)</td>
</tr>
<tr>
<td>Alcohol Education for Classroom and Community, p. 46</td>
<td>Alcohol Education for Classroom and Community, p. 70</td>
</tr>
</tbody>
</table>
### Audio Visual

**Transparencies:**

- Series explaining the organic compounds and their position in the nature of things, #5 (a, b, w/overlays)
- Series of the classes or types of alcohol and their uses, #6 (a, b, c, d, e, f)
- Ethyl alcohol as a beverage, #7 (lift and 127 transparency)
- Chemical structures of alcohol illustrating the OH group, #8 (a, b, c)

<table>
<thead>
<tr>
<th>Motivating Questions</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are inorganic compounds?</td>
<td>Collect alcohol samples.</td>
</tr>
<tr>
<td>Our bodies are made up mostly of what group of compounds?</td>
<td></td>
</tr>
<tr>
<td>Is alcohol an important compound in industry?</td>
<td></td>
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<tr>
<td>What kind of alcohol is used in alcoholic beverages?</td>
<td></td>
</tr>
<tr>
<td>What are some of the effects of drinking other types of alcohol (methyl, isopropyl, denatured)?</td>
<td></td>
</tr>
<tr>
<td>Can alcohol be distinguished from water by its color?</td>
<td></td>
</tr>
<tr>
<td>How can you distinguish it from water?</td>
<td></td>
</tr>
<tr>
<td>What happens when you put alcohol on a cut? Why? What is happening to the cells?</td>
<td></td>
</tr>
<tr>
<td>Motivating Questions</td>
<td>Activities</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
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<td>What are inorganic compounds?</td>
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<td></td>
<td>in industry?</td>
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<td></td>
<td>What kind of alcohol is used in</td>
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<td></td>
<td>alcoholic beverages?</td>
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<tr>
<td></td>
<td>What are some of the effects of</td>
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<tr>
<td></td>
<td>drinking other types of alcohol</td>
</tr>
<tr>
<td></td>
<td>(methyl, isopropyl, denatured)?</td>
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<tr>
<td></td>
<td>Can alcohol be distinguished</td>
</tr>
<tr>
<td></td>
<td>from water by it's color?</td>
</tr>
<tr>
<td></td>
<td>How can you distinguish it from</td>
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</tr>
<tr>
<td></td>
<td>on a cut? What is happening</td>
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<tr>
<td></td>
<td>to the cells?</td>
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<td></td>
<td>Laboratory Exercise:</td>
</tr>
<tr>
<td></td>
<td>Show effect on living cells</td>
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<tr>
<td></td>
<td>Have students determine between</td>
</tr>
<tr>
<td></td>
<td>alcohol and other liquids.</td>
</tr>
<tr>
<td></td>
<td>Make bulletin board on different</td>
</tr>
<tr>
<td></td>
<td>alcoholic beverages.</td>
</tr>
</tbody>
</table>
**ALCOHOL (continued)**

<table>
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<tr>
<th>Concepts</th>
<th>Teacher Materials</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Boils at 173° F (water, 212° F)</td>
<td>Teaching About Alcohol, p. 47</td>
<td></td>
</tr>
<tr>
<td>3. Pure alcohol always has 5% water or some water-removing chemical.</td>
<td>Laboratory Exercise No. 2</td>
<td></td>
</tr>
<tr>
<td>4. Mild pleasant odor (ethyl)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Constant vapor pressure (relation between temperature and percent in solution and vapor given off)</td>
<td>Laboratory Exercise No. 2</td>
<td></td>
</tr>
</tbody>
</table>

C. Biological Aspects

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:
   a. Type of alcohol
   b. Concentration
   c. Length of time in contact

V. Manufacture of Alcohol

A. Fermentation

1. Breakdown of sugar by yeast
   
   \[ C_6H_2O_6_{\text{yeast}} \rightarrow 2C_2H_5OH + \text{CO}_2 \]
   
   Laboratory Exercise No. 5

---

**References**

A Syllabus in Alcohol Education, pp. 15-21

Laboratory Exercise No. 5

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

Student Materials

Teaching About Alcohol, p. 47

Laboratory Exercise No. 2

Laboratory Exercise No. 2

A Syllabus in Alcohol Education, Laboratory Exercise No. 3

pp. 16-21

Laboratory Exercise No. 5

by Alcohol Education for the Laboratory Exercise No. 5

Classroom and Community, pp. 70-73 (fermentation and observing yeast)

Laboratory Exercise No. 5
<table>
<thead>
<tr>
<th>Audio Visual</th>
<th>Motivating Questions</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overlays on denatured and methyl alcohol, illustrating the dangers of consuming these alcohols and the compounds used to denature alcohol, #9 w/overlays</td>
<td>What would happen to a frog if strong alcohol was put on its skin?</td>
<td>Lab. Exercise Show: 1. Oxidize 2. Decompose 3. Consign 4. Pet</td>
</tr>
<tr>
<td>Effect of methyl and isopropyl, #10 (a, b)</td>
<td>Would alcohol be good to disinfect a sunburn?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is alcohol very good to put on any kind of wound?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What does alcohol do to the bacteria?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Why do they denature rubbing alcohol?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What do the chemicals that are used to denature alcohol do to the alcohol?</td>
<td>Discuss &quot;can alcohol, and&quot;</td>
</tr>
<tr>
<td></td>
<td>Can alcohol kill? Under what conditions?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Where can we find yeast?</td>
<td>Ferment molasses sugar source</td>
</tr>
<tr>
<td></td>
<td>Is fermentation of sugar to alcohol legal?</td>
<td>Assign student progress of</td>
</tr>
</tbody>
</table>

-105-

208
<table>
<thead>
<tr>
<th>Motivating Questions</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>What would happen to a frog if strong alcohol was put on its skin?</td>
<td>Lab. Exercise:</td>
</tr>
<tr>
<td>Would alcohol be good to disinfect a sunburn?</td>
<td>Show:</td>
</tr>
<tr>
<td>Is alcohol very good to put on any kind of wound?</td>
<td>1. Oxidation</td>
</tr>
<tr>
<td>What does alcohol do to the bacteria?</td>
<td>2. Dehydration</td>
</tr>
<tr>
<td>Why do they denature rubbing alcohol?</td>
<td>3. Coolness - evaporation</td>
</tr>
<tr>
<td>What do the chemicals that are used to denature alcohol do to the alcohol?</td>
<td>4. Permeability</td>
</tr>
<tr>
<td>Can alcohol kill? Under what conditions?</td>
<td></td>
</tr>
<tr>
<td>Where can we find yeast?</td>
<td>Discuss &quot;canned heat,&quot; denatured alcohol, and why it is denatured.</td>
</tr>
<tr>
<td>Is fermentation of sugar to alcohol legal?</td>
<td></td>
</tr>
<tr>
<td>Ferment molasses or other sugar source.</td>
<td></td>
</tr>
<tr>
<td>Assign students to record progress of fermentation.</td>
<td></td>
</tr>
</tbody>
</table>

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### Concepts of Alcohol

2. **Raw Materials**
   - a. sugars from fruits such as beets, grapes, cane
   - b. starch from grains, etc.

3. **Products**
   - a. wine
   - b. beer at 12-24% alcohol/vol.
   - c. vinegar

4. **Malting:**
   Changing of starch to sugar by sprouting barley, then drying and heating.

#### B. Destructive Distillation

1. **Methyl**
   - a. Heating wood in the absence of air
   - b. Reduction of carbon monoxide
   - c. Variation in procedure produces other alcohols.

2. **Ethyl**
   - a. Cracking of ethylene
     \[
     C_2H_4 + H_2O \xrightarrow{\text{H}_3\text{PO}_4} C_2H_5OH \]

---

**Teacher Materials**

- Alcohol Education for Classroom and Community, p. 72
- The Story of Industrial Alcohol, pp. 8-16
<table>
<thead>
<tr>
<th>Teacher Materials</th>
<th>Student Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol Education for Classroom and Community, pp. 70-73</td>
<td></td>
</tr>
<tr>
<td>The Story of Industrial Alcohol, pp. 8-16</td>
<td></td>
</tr>
</tbody>
</table>

2-24% alcohol/vol.

C₂H₅OH

CH₃OH
<table>
<thead>
<tr>
<th>Audio Visual</th>
<th>Motivating Questions</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malting and Fermentation #11 (a, b)</td>
<td>What is the name of the beverage produced from fruits? Molasses? Grain?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What must be done to starches before they can be fermented?</td>
<td></td>
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<tr>
<td></td>
<td>What is wood alcohol?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Where is the plant in Breat Falls that does destructive distillation?</td>
<td>Have students distill process a sample.</td>
</tr>
<tr>
<td></td>
<td>What are some of the products they produce?</td>
<td></td>
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<tr>
<td></td>
<td>The alcohol produced by destructive distillation is used for what purpose?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extra credit, outside assignment, or presentation.</td>
</tr>
<tr>
<td>Motivating Questions</td>
<td>Activities</td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>What is the name of the beverage produced from fruits? Molasses? Grain?</td>
<td>Extra credit:</td>
<td></td>
</tr>
<tr>
<td>What must be done to starches before they can be fermented?</td>
<td>Short reports on fermentation and malting could be presented to the class orally.</td>
<td></td>
</tr>
<tr>
<td>What is wood alcohol?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Where is the plant in Breat Falls that does destructive distillation?</td>
<td>Have students research destructive distillation, then discuss the process and its economic importance.</td>
<td></td>
</tr>
<tr>
<td>What are some of the products they produce?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The alcohol produced by destructive distillation is used for what purpose?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ALCOHOL (continued)

C. Distillation (Fractional)

1. Concentration of wines and beer
   a. to brandies
   b. to other distilled spirits

2. Repeated distillation increases the amount of alcohol

D. Production of different whiskies

1. Bourbon
   a. mash at least 51% corn
   b. distilled to 160 proof

2. Rye
   a. 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
   1. poorest kind
   2. provides many calories
Lab. Experiment No. 6
Demonstration

<table>
<thead>
<tr>
<th>Teacher Materials</th>
<th>Student Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholic fluids and demonstration</td>
<td>Alcohol Education for Classroom and Community, pp. 73-75.</td>
</tr>
<tr>
<td>The Story of the Distilled Spirits Industry, p. 8</td>
<td>Teaching About Alcohol, p. 50</td>
</tr>
<tr>
<td>51% corn 160 proof</td>
<td>Ditto on physiology</td>
</tr>
<tr>
<td>51% rye 100 proof</td>
<td></td>
</tr>
</tbody>
</table>

Ditto on physiology
<table>
<thead>
<tr>
<th>Audio Visual</th>
<th>Motivating Questions</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparency:</td>
<td>How does fractional distillation differ from destructive distillation?</td>
<td>Work in pairs.</td>
</tr>
<tr>
<td>Fractional Distillation, #12</td>
<td>Why are distilleries inspected by the federal government?</td>
<td>Make a list of questions.</td>
</tr>
<tr>
<td></td>
<td>How much alcohol, by volume, is there in a quart of 100 proof alcohol?</td>
<td>Play this game.</td>
</tr>
<tr>
<td></td>
<td>How many different kinds of alcohol would you find in these beverages: beer, ale, rye whiskey, rum?</td>
<td>Explore the answers.</td>
</tr>
</tbody>
</table>

Film:

"The Choice Is Yours"
Motivating Questions

How does fractional distillation differ from destructive distillation?

Why are distillaries inspected by the federal government?

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

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

Activities

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

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

Prepare bulletin board on kinds of package liquor.

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.
<table>
<thead>
<tr>
<th>Concepts</th>
<th>Teacher Materials</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. provides no vitamins</td>
<td>Basic Information on Alcohol, p. 64</td>
<td></td>
</tr>
<tr>
<td>4. needs no digestion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. oxidized only by liver</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Alcohol as a drug</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Affects function of organs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. depresses function of the brain</td>
<td>[Alcohol Education for Classroom and Community, p. 92]</td>
<td></td>
</tr>
<tr>
<td>b. depresses function of vital functions, except heart</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Alcohol as a food</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Processes of foods in the body:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. digestion</td>
<td>Teaching About Alcohol, p. 51</td>
<td></td>
</tr>
<tr>
<td>b. absorption</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. distribution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. oxidation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. elimination</td>
<td></td>
<td></td>
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<tr>
<td>2. Processes of alcohol in the body:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. digestion</td>
<td>Alcohol Education For Classroom and Community, p. 69</td>
<td>Ditto</td>
</tr>
<tr>
<td>(1) none required</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) molecules already simple enough to be absorbed</td>
<td>Teaching About Alcohol, p. 55</td>
<td></td>
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<tr>
<td>b. absorption</td>
<td></td>
<td></td>
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<tr>
<td>in stomach and intestine</td>
<td>Alcohol Education for Classroom and Community, pp. 79, 80</td>
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<td>-110-</td>
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<tr>
<td>Audio Visual</td>
<td>Motivating Questions</td>
<td>Activity</td>
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<tr>
<td>Transparencies:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Brain (showing depression and illustrating memory loss because of excessive consumption of alcohol) #13 w/overlays</td>
<td>Is there any kind of food value in alcohol? How about beer? How about whiskey?</td>
<td></td>
</tr>
<tr>
<td>Processes of food through the body, #14</td>
<td>What other food is like alcohol? (sugar)</td>
<td></td>
</tr>
<tr>
<td>General processes, #15</td>
<td>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?</td>
<td>Resea</td>
</tr>
<tr>
<td>Absorption of food, #16</td>
<td>What is a drug?</td>
<td></td>
</tr>
<tr>
<td>Motivating Questions</td>
<td>Activities</td>
<td></td>
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<tr>
<td>-------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Is there any kind of food value in alcohol? How about beer? How about whiskey?</td>
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<tr>
<td>What other food is like alcohol? (sugar)</td>
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<td>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?</td>
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<td></td>
</tr>
<tr>
<td>What is a drug?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is food?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How are the intestines constructed to increase their ability to absorb?</td>
<td>a. digestion</td>
<td></td>
</tr>
<tr>
<td>What is digestion?</td>
<td>b. absorption</td>
<td></td>
</tr>
<tr>
<td>What other food requires little or no digestion?</td>
<td>c. distribution</td>
<td></td>
</tr>
<tr>
<td>Is the length of time very great for the distribution of alcohol throughout the body?</td>
<td>d. oxidation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>e. elimination</td>
<td></td>
</tr>
</tbody>
</table>
ALCOHOL (continued)

Concepts | Teacher Materials | Student
--- | --- | ---
c. distribution by circulatory system to all parts of the body | Alcohol Education for Classroom and Community, pp. 80, 81 - 87, 88 | Teaching About Alcohol, 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 | | |

D. Alcohol as a drug

1. effect on the brain
   a. almost immediately it begins to deteriorate functions of the brain
   b. parts affected (in order) (1) cerebrum (2) cerebellum (3) mid-brain (4) medulla oblongata

2. effects on other organs
   a. depression of most organs except the heart
   b. depression of organs caused by reaction on nervous system
<table>
<thead>
<tr>
<th>Teacher Materials</th>
<th>Student Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol Education for Classroom and Community, pp. 80, 81-87</td>
<td>Evaluation Sheet</td>
</tr>
<tr>
<td>Teaching About Alcohol, p. 58</td>
<td></td>
</tr>
<tr>
<td>Alcohol Education for Classroom and Community, p. 86</td>
<td></td>
</tr>
</tbody>
</table>

Food can be metabolized in all parts of the body, except the brain, immediately after ingestion. The brain, bulbosa oblongata, is the organ of most affected. Alcohol has a direct reaction on the organs of the body: digestion, respiration, circulation, and the central nervous system.

A Syllabus in Alcohol Education, pp. 25, 26

Basic Information on Alcohol, pp. 95-106

Alcohol Education for Classroom and Community, pp. 90-92
Transparencies:

Oxidation of alcohol by the liver, 217

Effect of alcohol on the brain (related to certain areas and how amounts of alcohol affect the brain) #18 (a, b, w/overlays)

Audio Visual

Motivating Questions

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?
<table>
<thead>
<tr>
<th>Motivating Questions</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is alcohol a stimulant or a depressant?</td>
<td>Discuss difference between the use of food by the body and the use of alcohol by the body.</td>
</tr>
<tr>
<td>Why do so many people think it is a stimulant?</td>
<td>Construct a bulletin board explaining the process of oxidation.</td>
</tr>
<tr>
<td>Why is it hard to quit drinking after the first drink?</td>
<td>Make a list of ten or more questions on alcohol.</td>
</tr>
<tr>
<td>Is alcohol a poison to the brain? (no - depressant)</td>
<td>Research and answer questions in class.</td>
</tr>
<tr>
<td>Will enough alcohol put the brain to sleep permanently?</td>
<td>Have the students construct a graphic explanation of functions of the brain and effects of alcohol on those functions.</td>
</tr>
<tr>
<td>Is there any proof that alcohol, as it is consumed in alcoholic beverages, does any harm to any of the body's organs?</td>
<td>Have a discussion of the reasons for not using alcohol when you have been bitten by a snake.</td>
</tr>
<tr>
<td>Define the word &quot;depression.&quot;</td>
<td>Define the word &quot;depression.&quot;</td>
</tr>
</tbody>
</table>
3. Factors that create variation in effects of alcohol
   a. length of time exposed
   b. amount of alcohol
   c. amount of alcohol per unit of time
   d. physical and mental health of individual

E. Prolonged Use of Alcohol

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Teacher Materials</th>
<th>Student Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Factors that create variation in effects</td>
<td></td>
<td></td>
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<tr>
<td>of alcohol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. length of time exposed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. amount of alcohol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. amount of alcohol per unit of time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. physical and mental health of individual</td>
<td></td>
<td></td>
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<tr>
<td>Audio Visual</td>
<td>Motivating Questions</td>
<td>Activity</td>
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<tr>
<td>--------------</td>
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</tr>
<tr>
<td>Effects of alcohol on the brain, #18 (a, b, w/overlays)</td>
<td>Does eating butter or other greasy foods keep a person from becoming inebriated?</td>
<td>Discuss progress of alcohol increase</td>
</tr>
<tr>
<td>Cirrhosis of the liver, #19 w/overlay</td>
<td>Does alcohol cause cirrhosis of the liver?</td>
<td>Drama to the physical effects of alcohol</td>
</tr>
<tr>
<td>Motivating Questions</td>
<td>Activities</td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
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</tr>
<tr>
<td>Hol on the brain, )</td>
<td>Discuss the step by step progress in relation to increasing amount of alcohol in the body.</td>
<td></td>
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<tr>
<td>Liver, 19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does eating butter or other greasy foods keep a person from becoming inebriated?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does alcohol cause cirrhosis of the liver?</td>
<td>Dramatize effects, social, physical, economic, related to the variation in factors of alcoholic consumption.</td>
<td></td>
</tr>
</tbody>
</table>
Introductory Statement to Teachers

It is important that on the subject of alcohol, we present the facts with a reality. These facts are important, but they must have meaning to the students. Let the students think about the dangers and make 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 historical background, the physiological effects of alcohol on the body, and the effects of alcohol addiction.

Teaching materials and information are available in the kit so you, the teacher, can select and present the information on certain topics. Study the unit and materials available in the kit so you can present 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 reactions of students when you are presenting the materials, and help them visualize all aspects of the topic presented.
VII. TEACHER INFORMATION

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

information available in the kit so you, the teacher, can condense or expand topics. Study the unit and materials available in the kit and pick the topics of alcohol on the body.

information available in the kit so you, the teacher, can condense or expand topics. Study the unit and materials available in the kit and pick the

your student’s needs. Each article of audiovisual material and other instructional to tell or a question to ask. Anticipate the reactions of the students, when

, and help them visualize all aspects of the topic presented by these materials.
ALCOHOL AND ITS NATURE

When the word "alcohol" is spoken, it means many things to many people, depending on the social, cultural, and environmental associations with alcohol. As educators, we can inform students about the chemical properties of alcohol, its social and economic effects, and just keep in mind that the word "alcohol" is said to come from an ancient Arabic term, "al-kohl," meaning ground powder used to color the eyes. Later, the term included other fine powders, and in the sixteenth century, it also meant a volatile liquid. During this time, Paracelsus, used the term "alcoolvini" in his writings to designate the fine ground powder that 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 of other carbon atoms. In the second usage, compound, hydroxy and \( \text{C}_2\text{H}_4\text{OH} \), which is also called ethyl alcohol, grain alcohol, or ethanol, is essentially the sole alcohol in an alcoholic beverage, though used in this text, means ethyl alcohol.

Sometime in the past, long before man began to keep written records of his deeds, he learned to ferment certain food into alcohol. Just when man began to make alcohol can draw some conclusions from these facts: Fermentation of alcohol in large quantities, where it was still very primitive, was associated with religious practices. During this phase of man's cultural development, his storage practices for alcohol tended to be tight containers, such as clay jars and goatskin bottles, racing practices.

Alcoholic beverages were regarded with some awe by early man and are regarded as sacred by present-day primitive tribes. Drinking was closely associated with sacred worship, and religious rituals. Supernatural qualities were sometimes attributed to wine and beer played an important part in primitive life, especially in ceremonies for homage to the dead, the rites of initiating the young into...
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 alcoholic 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 its.

"Alcohol" is said to come from an ancient Arabic term, "al-kohl," which meant, originally, a finely ground powder used to color the eyes. Later, the term included other fine powders and in the first half of the 15th century, it also meant a volatile liquid. During this time the alchemist-physician, Gerbert of Aurillac, used the term "alcohol" in his writings to designate the fluid distilled from wine which he called "alcohol vin".

"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 which are used to hydrogen of other carbon atoms. In the second usage, "alcohol" means a specific alcohol, such as C₂H₅OH, which is also called ethyl alcohol, grain alcohol, or ethanol. Since it is essentially the sole alcohol in an alcoholic beverage, the unmodified word, "alcohol, " the unit, means ethyl alcohol.

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

Drinking was 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 rituals, and supernatural qualities were sometimes attributed to alcoholic beverages. Drinking played an important part in primitive life, especially on great occasions. Marriages, homage to the dead, the rites of initiating the young into adulthood, and important
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. 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 was tied with 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 societies refer to the use of alcoholic beverages. The origin of these "necessities" was attributed to the gods. The Egyptians attributed to Osiris the cultivation of the vine, as well as the manufacture of a type of beer from grain. To the Greeks and the Romans it was one of the beneficent acts of Bacchus.

Alcoholic beverages were produced from grains such as barley and wheat. The northern European and 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 to make koumiss.

Distilled spirits are a relatively late development. The Arabian physician, Rhazes, described 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 inebriation. In Europe distilled liquors were used, not as beverages, but as medicine; only later when the beverages became 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 was an integral part in the very existence of cultures. Certainly, it was important in minor ways, influencing the condition of the fighting men. Records of the social effects on society are vague and, at best, can just be speculated upon. In the Americas, especially North America, account of the influences of alcohol, the controls on alcohol, and the attitudes of the Indians toward alcohol are lacking.

When explorers and settlers left their homes in Europe for the New World, they brought with them foods and beverages, including alcoholic beverages. The famed French explorer, Jacques Cartier, was undoubtedly the first exchange of alcoholic beverages between the white man and the Indians. In America, served wine to Chief Donacina and his braves during a banquet on the Isla de los Estados. (North American Indians did not know about alcohol.)
TEACHER INFORMATION (continued)

ried by sessions of brewing and ceremonial drinking. When all persons
they had a sense of belonging and of good fellowship. If someone got
ied up and kept under control until he was sober and ready to behave.
was important, but they also saw to it that drunkenness didn’t threaten
his activities and form ancient civilizations, the making of alcohol,
established in their cultural patterns. Records of ancient civil-
olic beverages. The origin of these "necessities" of existence was
attributed to Osires the cultivation of the vine, the manufacture
ure of a type of beer from grain. To the Greeks and Romans the giving
acts of Bacchus.
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onacimna and his braves during a banquet on the Island of Orleans on the
African Indians did not know about alcohol.)

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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" 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 lost a bad example for young people, and was debasing to human dignity.

Moral suasion against intemperance was a frequent means of informal social con In Massachusetts Bay Colony, the Puritan clergy spoke out vehemently against e was an urging moderation in drinking by the Puritans; those guilty of excessiv 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 problems developed during this period that have not been solved today. One of the toslaves, which by some persons is directly related to the brewing indu England rum was traded for slaves and in turn, the slaves were traded for sug used to produce more rum.

With the country in civil war and the opening of the west, the use of alcohol it to release the pressures that were on them and many believed that drinking 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 att moral grounds. And the women, who were kept in a position of social, economi 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 re many turned their attention to alcohol. Some of the people used it to dilute began to blame the use of alcohol as the root of all of their problems and the the turmoil began; the first controls were imposed by the government in the few those persons in the business of brewing alcohol. During this period, the era set up that reached its peak during the prohibition era. This pattern was in the "wets" and the "drys." The "wets" were the producers and sellers of alcohol groups of persons looking for a solution for problems incurred because of excess drinking (drunkenness) that they considered immoral and punished. It meant lost a bad example for young people, and was debasing to human dignity.

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Intemperance was a frequent means of informal social control in colonial America. In the Puritan Colony, the Puritan clergy spoke out vehemently against excessive drinking. There was a glass of wine or other beverage as much as anyone else. It was excessive

moms that they considered immoral and punished. It meant loss of working time, set young people, and was debasing to human dignity.

Intemperance was a frequent means of informal social control in colonial America. There was a glass of wine or other beverage as much as anyone else. It was excessive

by having to sit in the stocks.

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

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

As a growing nation fell upon the people, for a variety of reasons, real and imaginary, attention to alcohol. Some of the people used it to dilute their problems, others use of alcohol as the root of all of their 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 its peak during the prohibition era. This pattern was influenced by two factions, "drys." The "wets" were the producers and sellers of alcohol and the "drys" were the looking for a solution for problems incurred because of excessive drinking, and groups of al and social recognition. The stronger of these groups, and led the prohibitionists, Christian Temperance Union and the Anti-Saloon League.

ion was led by prohibition in several states from 1850 to 1900. Some of these states law repealed before national prohibition was introduced. Maine, Massachusetts,
Rhode Island, Kansas, Iowa, and the Dakotas were some of these early prohibitions. There were twenty-four states with some kind of laws that were passed and included in this list.

The National Prohibition Act was passed in 1919 and included in the national 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 could not import, export, sell or transport liquor, could be sent to prison for violation of the federal law. Prohibition was followed at once by widespread violation of the federal laws, and to great proportions. The phrase, "home brew," became very common. Many denounced the drinking of denatured alcohol. Flavoring extract, bay rum, and medicinal pills were used for beverage purposes, regardless of the after effects. Liquor raids and smuggling were daily occurrences. Liquor was fraudently withdrawn from bond and sold.

Due to the vast violation of the Prohibition Act and the loss of revenues, the 21st Amendment was passed in 1933, which repealed the 18th Amendment. Controls and regulations, then, have been educational such as promotion of self-restraint, medical and social problems are involved, and laws restricting alcohol consumption during certain age requirements, etc.

**NATURE OF ALCOHOL - CHEMICAL, PHYSICAL**

All of the alcohols are composed of carbon, hydrogen, and oxygen atoms. Because alcohol has the same chemical formula as ether, 
\[ \text{C}_2\text{H}_5\text{O} \]
This relationship makes these compounds isomers. There are a large number of alcohols, many of these having different chemical names depending on the system. There are also several common names, or trade names, given to the more common alcohols. There are a few examples of the many alcohols.

Three structural features are important when considering the chemistry of alcohols. The carbon-oxygen and the carbon-hydrogen bonds are two bonds, the carbon-oxygen and the carbon-hydrogen bonds. The atom has two pairs of unshared electrons which may be employed to form further structure features, except for the carbon-oxygen bond, the resemblance will be considerable. Like water, alcohol is neutral. That is, it is neither...
and the Dakotas were some of these early prohibition states. Before national
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
itions of intoxicating beverages, enforcement, and strict regulations of
Jones Act in 1929, which provided that persons convicted of manufacture,
transporting liquor, could be sent to prison for five years and fined $10,000,
ce by widespread violation of the federal laws. Illicit distilling increased
base, "home brew," became very common. Many deaths were reported from the
Flavoring extract, bay rum, and medicinal preparations were widely used
less of the after effects. Liquor raids and seizures by enforcement agents
or was fraudently withdrawn from bond and sold at ever mounting prices.
nal borders and along the coast lines went on for a time almost unmolested.
the Prohibition Act and the loss of revenues, and a popular unrest, the 21st
which repealed the 18th Amendment. Controls for legal consumption, since
such as promotion of self-restraint, medical and social assistance where
was restricting alcohol consumption during certain activities as driving,

CAL

used of carbon, hydrogen, and oxygen atoms. Because of the arrangement of these
to be closely related to water and compounds such as ether. Ethyl alcohol
as ether, C₂H₅O. The difference is in the way the atoms are bonded together.
compounds isomers. There are a large number of compounds that are called
g different chemical names depending on the system of naming used. There
, or trade names, given to the more common alcohols. Ethyl, methyl, isopropyl,
ly alcohols.

e of importance when considering the chemistry of the alcohols. In the func-
the carbon-oxygen and the oxygen-hydrogen bonds. Besides these bonds, the oxygen
ed electrons which may be employed to form further bonds. Since water has the
pt for the carbon-oxygen bond, the resemblance between water and the alcohols
water, alcohol is neutral. That is, it is neither an acid nor a base. It
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 only at this alcohol and methyl alcohol.

\[
\text{ETHYL} \quad \text{METHYL}
\]

\[
\begin{align*}
\text{R-OH} & \quad \text{H-} & \quad \text{H-C-O-H} \\
\text{C-H} & \quad \text{H} & \quad \text{H}
\end{align*}
\]

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 restrictions on our topic to ethyl alcohol.

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

**MANUFACTURE OF ALCOHOL**

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

\[
\begin{align*}
\text{C}_6\text{H}_{12}\text{O}_6 & \quad \text{yeast} & \quad 2 \text{C}_2\text{H}_5\text{OH} + 2 \text{CO}_2 \\
\text{Glucose} & & \text{ethyl alcohol} \quad \text{carbon dioxide}
\end{align*}
\]

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 metabolism consumes some of the glucose and forms traces of other products besides alcohol.
under certain conditions both alcohols and water will show slight tendencies
to mix.

If we think of the structure of alcohol, we will look only at the structure of
ethyl alcohol, which is a compound of carbon, hydrogen, and oxygen.

\[
\text{METHYL WATER} \\
\begin{array}{l}
\text{H} \
\text{H} \\
\text{H} \
\text{O} \\
\text{H} \\
\end{array}
\begin{array}{l}
\text{H} \
\text{O} \\
\text{H} \\
\end{array}
\begin{array}{l}
\text{H} \\
\end{array}
\]

Characteristics that are probably of more significance to us at this time will be
considered as being physical characteristics. Since there are many alcohols, we will
look only at ethyl alcohol.

Ethyl alcohol is produced by the distillation of grain alcohol at 173°F. It is a clear,
thin liquid that vaporizes very readily and is very volatile; it has, due to its nature, some
important characteristics; has a cooling effect on the body, is toxic to tissue, and passes
readily through semi-permeable membranes.

Alcohol is now manufactured synthetically from certain petroleum products,
since the production of ethyl alcohol by fermentation of sugar, or with yeast. This
fermentation is carried out through a series of steps, but the overall reaction may be
expressed by a chemical equation:

\[
\text{Glucose} \rightarrow \text{Ethyl alcohol + Carbon dioxide}
\]

Glucose should yield 92 g. of ethyl alcohol and 88 g. of carbon dioxide. In
practice, this figure is slightly below because the yeast cells consume a little
of other products besides alcohol.
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. For the fermentation, a sugar (sucrose or cane sugar), or it may be a cereal grain such as oats, wheat, rye, or corn, or from potatoes and other primary raw materials, it is initially treated so as to break it down to form a material suitable for fermentation. The primary raw material is treated with barley sprouts, which contain malt to break it down to glucose. The action of the yeast ceases when the ethanol content reaches about 14% because yeast cannot live in the medium. Consequently, to prepare alcohol of reasonable purity, separation of the excess of water present is necessary. Fractional distillation is used to concentrate alcohol containing as little as 4.4% water. This roughly 95% ethanol is termed grain alcohol and cannot be removed by fractional distillation because ethanol and water form a mixture that has a lower boiling point than pure ethanol. Industrially, 100% 95% alcohol by adding benzine and distilling fractionally. In the laboratory, calcium oxide, is added to react with the water and remove it chemically.

Starch and Water $\rightarrow$ Malt $\rightarrow$ Maltose $\rightarrow$ Glucose $\rightarrow$ Ethanol or $\mathrm{CO}_2$

Sucrose and Water $\rightarrow$ Invertose $\rightarrow$ Glucose and Fructose

Glucose and Water $\rightarrow$ Zymase $\rightarrow$ Ethanol or $\mathrm{CO}_2$

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

$$\text{CO} + 2 \text{H}_2 \xrightarrow{\text{Zinc Chromite}} \text{OH}_3 \text{OH}$$
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 initial treated so as to break it down to form a sugar mixture. The mixture is then fermented with yeast, an enzyme, zymase, being the active ferment for glucose. Starches, which contain malt to break it down to glucose, and sucrose, which is not hydrolyzed. The enzyme which accomplishes this step is invertase, also known as invertase. When the ethanol content reaches about 14% because the micro-organism begins to die. Consequently, to prepare alcohol of reasonable purity, it is necessary to distill it further. Fractional distillation is used to obtain ethyl alcohol containing 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. Industrially, 100% ethanol is prepared from the alcohol and distilled fractionally. In the laboratory a drying agent, such as calcium chloride, react with the water and remove it chemically.

Malt → Maltose → Glucose
Water

Invertose → Glucose and Fructose

Zynose → Ethanol or CO₂

Methanol, also known as wood alcohol because for many years the source of methanol was wood. When heated in the absence of air, wood forms charcoal and pyrolytic acid. More recently, methanol has been prepared commercially. A special catalyst containing zinc chromite is used and the reaction takes place at elevated temperatures and high pressure. By modifying conditions in the process, ethylene can be obtained.

Chromite: OH₃ OH

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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 fever 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 crushed or treading by human feet. In red wines, the skin is used. Yeast that are necessary for the fermentation. Fermentation is allowed to proceed at a temperature of around 80° F. The change from sugar to alcohol every day is sometimes necessary. At the end of the fermentation period, the fluid is transferred to tanks for periods ranging from a few months to several years. During this time, the fluid settles out and there is an improvement in the flavor. The concentration of alcohol can range from 10% to 14%, by volume. If sugar is added to sweeten the wine, the alcohol concentration increases to prevent further fermentation.

Beer: Malt is formed by sprouting barley grains and then cooking the process leaves amylase which changes the starches into sugars so the yeast can multiply. Whiskey: Like beer, whiskey is made from vegetable starches which must be fermented after fermentation, is called "distiller's beer" and this is diluted with water up to 60%, by volume of weight. 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 out of the charred wood, part of which imparts an amber color to the whiskey. So we get a mixture of alcohol and higher alcohols from the raw whiskey combine to form esters. This gives the whiskey its characteristic flavor.

Brandy: Brandy is made by distilling wine in a still similar to that used for whiskey, and the start material for wine is molasses. Gin: This is made by mixing neutral spirits, herbs, berries, orange peel, etc., are added to the mixture for flavoring and then 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 supplying vitamins or nourishment to them. It is the poorest of foods, no vitamins, proteins, or fats.
in alcoholic beverages that we should ponder on is distillation. Distilling is the separation of substances that have different boiling points. Alcohol boils at a lower temperature than water. When the fermented liquid is heated to a high temperature, alcohol and some of the water rises off in a vapor above the heated vat and are condensed into a liquid in a condenser called a "still."

Concerned with alcoholic beverages, let's take a closer look at the production process. The raw material is fresh juice of grapes, which is removed from the skin by human feet. In red wines, the skin is used. The skin has on it the yeasts that ferment the grapes. Fermentation is allowed to proceed for from four to ten days at about 80°F. The change from sugar to alcohol evolves heat so that cooling is required. 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 from the wine. The concentration of alcohol in wine ranges from 10% to 15%. If sugar is added to sweeten the wine, the alcohol content has to be over 15% to dissolve.

Sprouting barley grains and then cooking the sprouts to kill them. This process changes the starches into sugars so the yeasts can change them into alcohol. Malt is made from vegetable starches which must first be malted. The fluid, called "distiller's beer," is then distilled to a concentration of 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 to give it a rich color. During the aging process, the whiskey dissolves certain substances from the oak that impart 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.

By distilling wine in a still similar to that used for whiskey, we get rum. The raw material used is molasses. Gin: This is made by mixing neutral spirits and water. Juniper berries are added to the mixture for flavoring and the fluid is either distilled or filtered. Vodka is only water plus neutral spirits.

ON THE BODY

I ask the following questions: What is alcohol to the body? Is it a drug or medicine? It is both. It is a drug in the sense that it affects many organs without harm to them. It is the poorest of foods, supplying many calories but no fats.
First, let us take a look at alcohol as a food. When foods are taken into the body, a series of processes must take place; digestion, absorption, distribution, oxidation, elimination. Of these, only absorption is necessary since it's molecular form is already simple enough to be directly absorbed into the bloodstream. 2. Absorption, which takes place in the stomach or small intestine, causes alcohol to enter the bloodstream at a highly variable rate. 3. Distribution, the way in which alcohol is transported to each organ, tissue, and cell. Alcohol leaves the bloodstream and enters the blood stream at a highly variable rate. 4. Oxidation, in which the liver, at a fixed speed, remodels the chemical structure of alcohol into a substance that releases heat and energy. The heat and energy, or calories, resulting from the metabolism of alcohol is 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 itself, with a small quantity, 2% to 10%, of the alcohol escaping unmetabolized in the breath and urine. The other 90% is absorbed into the bloodstream and small intestine, is transported to the liver, and then circulates through the body. The liver is the only organ able to initiate the process by which the body digests and metabolizes alcohol. The liver works steadily as long as any alcohol is present, but even the healthiest liver can metabolize the equivalent of two or three drops of it at one time. Excessive alcohol cannot be stored and the body waits its turn in the liver's chemical laboratory. Each individual disposes of alcohol at a unique and constant rate. The average American male, for example, in one ordinary highball in about an hour. Nothing is known which will accelerate elimination, but much is known about factors which may slow down the absorption rate. The absorption rate of alcohol depends on the time, place, and body condition of the drinker. The effect of alcohol is related to these factors, and the rate at which the body metabolizes alcohol. If absorption is delayed, 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 of time, and eats while, or before, drinking, he is unlikely to become even moderately intoxicated under these conditions. The body can dispose of alcohol at a rate as fast as it is absorbed.

Having completed a quick look at the effect of alcohol as the body uses it to meet its energy needs, we can see how it affects the body as a drug. The pharmacological effects of alcohol are related to various areas and functions of the body. Most of these effects arise from the fact that alcohol is a powerful depressant of the brain. If there were some magical way of preventing absorption of alcohol, even its mildest effects would not be apparent. The effects of alcohol in the brain. If there were some magical way of preventing absorption of alcohol, the drinker would never become intoxicated, but this, of course, is impossible.
alcohol as a food. When foods are taken into the body, certain processes occur, distribution, oxidation, elimination. Digestion of alcohol is a form that is already simple enough to be directly absorbed into the bloodstream. 1. Place in the stomach or small intestine, where alcohol enters the bloodstream. 2. Distribution, the way in which alcohol travels in the bloodstream. Alcohol leaves the bloodstream and enters the cells by simple diffusion. 3. Oxidation, the way in which alcohol is oxidized and energy, or calories, resulting from the oxidation of alcohol are calories released from any other food. Whereas most foods may be broken down into simple sugars and energy, alcohol is metabolized chiefly in the cells of the liver. 4. Elimination, 2% to 10%, of the alcohol escapes unused via the breath or urine.

Food, is a rich source of fuel. Less than 10% of the alcohol consumed in food is absorbed into the blood and urine. The other 90% is absorbed into the blood from the stomach and circulated throughout the body.

To initiate the process by which the body disposes of alcohol. The liver is present, but even the healthiest liver cannot cope with more than 10% of alcohol at a unique and constant rate. The average person can oxidize the alcohol consumed in about an hour. Nothing is known which will significantly hasten the rate at which alcohol is disposed of in the liver. Excessive alcohol cannot be stored and so continues to travel in the liver's chemical laboratory.

Alcohol at a unique and constant rate. The average person can oxidize the alcohol consumed in about an hour. Nothing is known which will significantly hasten the rate at which alcohol is disposed of in the liver. Excessive alcohol cannot be stored and so continues to travel in the liver's chemical laboratory.

The drinker can prevent, or minimize, the sedative and anesthetic effects of alcohol by not drinking too much. If absorption is delayed until the liver can dispose of the alcohol consumed, the effects will not be apparent.

Look at the effect of alcohol as the body uses it as a food, let's now look at the pharmacological effects of alcohol. The pharmacological effects of alcohol will be discussed in sections of the body. Most of these effects are due to the presence of alcohol in the bloodstream. Some magical way of preventing absorbed alcohol from reaching the brain is impossible. It is important...
to remember that there are several factors that are important determinant of the body; the length of time the body has been exposed to alcohol, be it the amount of alcohol the body is exposed to over a given time; the genus of the individual; the rate at which the alcohol is absorbed, due to type and when it was eaten; in what form the alcohol was consumed.

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

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

The cerebrum is the seat of such functions as judgment, caution, self-control, attention, intelligence. The cerebellum controls muscular coordination. Connect the cerebrum with the spinal cord and control all involuntary acts to the correct area in the brain.
Several factors that are important determinants in considering any effects on the body have been exposed to alcohol, be it minutes, days, hours, or years; the body is exposed to over a given time; the general physical and mental health at which the alcohol is absorbed, due to type and quantity of food eaten, and what form the alcohol was consumed.

There is little effect, as far as deterioration is concerned, on the organs of alcohol, however, begin almost immediate deterioration of the functions of the brain begin to malfunction in a precise pattern as the alcohol.

Three levels: The cerebrum, comprising more than three-fourths of the entire brain and the mid-brain, and the medulla, or the lower brain.

The functions as judgment, caution, self-control, reason, will power. The cerebellum controls muscular coordination. The medulla and mid-brain in the spinal cord and control all involuntary actions and put the right message the brain.
Tests, quizzes, and examination are a means of judging progress. Because evaluation is not 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 has been learned and at the conclusion of the unit to appraise the outcome of instruction. They may also be used at intervals of 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 learners. They are never graded, although one means of checking new learning is to keep a record of the scores and compare them with the score on the same questions after the unit is completed. An administered self-test follows:

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

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 a statement, or if you are doubtful, place an "X" in the column marked "uncertain."

1. Even among the experts, very little is known of the effects of alcohol upon the human body.  
   *Agree*

2. Frequent drunkenness and alcoholism means the same thing.  

3. Drinking alcoholic beverages, though 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.  

-126-
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 key 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 lace an "X" in the column marked "uncertain."

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
<th>Uncertain</th>
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</table>

ittle is known of the effects lism means the same thing. hough beverages, though begun ally to alcoholism. eption of alcoholic beverages a decrease in per capita -126-
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.
Alcohol is the fundamental cause of most alcoholism.

Alcoholic beverages do so moderately.

Responsible for a large proportion of the

Are a form of poison.

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Taken in small amounts, serve a beneficial about relaxation, lessening body tension, social lubricant."

Alcoholic beverages do not make good parents.

Produces serious physical and mental diseases.
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.
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re less able to survive them than
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)

<table>
<thead>
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- Beverages by the state encourages drinking by approval.
- Beverages in the home is not necessarily in life.
- Hard serving and drinking alcoholic beverages are trend groups in our society.
- Reaction time in individual performance are by even small amounts of alcohol.
- From taxes on alcoholic beverages should not be of schools or for the aged.
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 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 making alcohol for millions of years before Man was on the earth. Man simply helped 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 entertainent for most of the servants until they were inebriated.

The records show that the drinking of alcoholic beverages in ancient Egypt was common. These were wine and beer. The slide is a copy of some of the records left by the ancient Egyptians suggesting a wild party that we have mentioned above and it is unlikely that it is. Like 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
It is possible to suppose that the beverage alcohol in the form of Paleolithic or Stone Age Man, for there is abundant proof that Man needed these materials and skills of process not discover alcohol; small plant-like organisms called yeast had been before Man was on the earth. Man simply helped the yeast to make it in.

were encouraged to become drunk to the point where they could not walk and talk. This provided entertainment for most of the social affairs. Men also of alcoholic beverages in ancient Egypt was common. The beverages they drank copy of some of the records left by the ancient Egyptians. It does not mentioned above and it is unlikely that it is. Like most other cultures, the Egyptians, religious ceremonies, marriages, and just for relaxation and enjoyment had no drinking parties. Those Spartans who became inebriated were.
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 eighteen 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 discipline, we often refer to the Spartans.

Rome

Early Rome is to be placed among the nations of simple living. In early times heavy under social ban. In fact, the cultivation of the vine came in a comparatively late 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 days.

According to the authorities, wine drinking in the later Republic shows a marked change for the worst. Rome began to forget their ancient discipline. In the first Pun off the guard at a feast and massacred.

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

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

Arabia

The word "alcohol" is derived from the Arabic word "al kohl," originally designating antimony used for staining the eyes. When we call liquor "eyewash" we little realize expression relates to the origin of the word.
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side and sold their loot for wine. In the same war some Roman officers were caught
ast and massacred.

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ing the eyes. When we call liquor "eyewash" we little realize how closely this
the origin of the word.
The Arabian physician, Rhases, is credited with the discovery of distillation in 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, 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 figment, at one time, 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 to drinking alcoholic beverages.

EARLY AMERICAN COLONIES

When explorers and settlers left their homes in Europe for the New World, they brought foods and beverages, including alcoholic beverages. Alcohol was present even in places 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 settlers in the South and West, the French in Canada and the Mississippi Valley, and the Atlantic area. These earlier settlers were followed by other immigrants from Europe from the New world. Each group brought its religion, customs, beverages, and accustomed drink.

TRIANGLE OF TRADE

During the colonial period, New England rum became a big trade item on the world market. Slaves, fish, vessels, and lumber. The New England distillers were the bankers of the slaves, fish, vessels, and lumber. New England distillers were the bankers of the slaves, fish, vessels, and lumber. New England distillers were the bankers of the slave trade, and provided an international currency that made the commerce possible. Slavers of a
credited with the discovery of distillation in the tenth century, used not as beverages but as medicine. Only later, when they became plentiful, used widely as beverages.

Inhibition 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 one year, a fermented drink called "tari" from the sap of a palm tree, the government tried to be cut down in an effort to reduce drunkenness.

Great restraint in the use of alcohol. Although the Spanish did much toward controlling the manufacture of alcohol in South America, they seem to control themselves very well when it comes to their homes in Europe for the New World, they brought along their familiar alcoholic beverages. Alcohol was present even in the earliest settlements, the so-called "lost colony" in Virginia.

Alone in the New World, of course. There were the Spanish explorers, traders, the French in Canada and the Mississippi Valley, and the Dutch in the Middle West were followed by other immigrants from Europe and other parts of the world. Religion, customs, beverages, and accustomed drinking practices were brought with them.

England rum became a big trade item on the world market. It was traded for sugar. The New England distillers were the bankers of the slave trade. They had the growth that made the commerce possible. Slavers of all nations used New England rum.
TEACHER AND STUDENT INFORMATION (continues)

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

WESTWARD MOVEMENT

As Americans moved westward, alcohol became more important to many of the people.
excused as being necessary for facing the hardships being imposed on them. Other
ing during this period were, "a good stiff belt now and again keeps a man going when
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 stron
movement had the purpose of cutting down drinking, or eliminating it completely. It
states to restrict sale, manufacture, and transportation of alcohol. In order to "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
was passed and the United States was a prohibition nation. Informal opposition to
rapidly. Evasion of the law became widespread. As one historian has put it, "the
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plied by the temperance groups, and finally in 1920 the Eighteenth Amendment states was a prohibition nation. Informal opposition to the amendment developed became widespread. As one historian has put it, "the drys ignored the fact over night out of something that millions of people have never regarded as a socially resented by beer-drinking Americans of German ancestry and by wine-

as then only patronized by smugglers, moonshiners, and bootleggers. The under-
rich and lucrative one. The lack of funds to pay law enforcement officers free-for-all. Many of the few officers that were hired to enforce the prohibi-
on the underworld by looking the other way.

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 meaningful to us. Our problems with alcohol are similar to those of the past, at time, a time of over-population, and of technology that is highly advanced
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 us that alcohol is not a plaything.

Although the lesson is hard to learn, most of us will learn it well. Alcohol can be to 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.
as people in the past have, so by observing what has occurred
restrict drinking and driving, and drinking age limits.
let alcohol become the guiding force in their lives can be a reminder to


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king lives producing it.
INTRODUCTION

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

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

MATERIALS

Carbon Dioxide Production

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

Alcohol Production

Filter paper
Funnel and support
Test tubes and rack
10% potassium hydroxide potassium iodide-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, the pyruvic acid is converted into carbon dioxide and... energy. However, in the absence of oxygen, the transformation of pyruvic acid, depending upon the enzymatic constitution of the organism and the substrate. In muscle cells converts pyruvic acid into lactic acid. This transformation... In yeasts, the pyruvic acid is converted to ethyl alcohol and carbon dioxide. In decomposition yields an acid, or acids, and a gas. These transformations of pyruvic acid... Therefore, anaerobic respiration consists of glycolysis and fermentation.

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

10% potassium hydroxide
Stirring rod
250-ml Beaker
Thymol blue
4 Smith fermentation tubes
Absorbent cotton

Medicine dropper
Incubator oven
100-ml graduate

Potassium iodide-iodine solution
Yeast Cultures
Yeast suspension in water
Bacterial Fermentation

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

 DEVELOPMENT

Alcoholic fermentation—yeasts are unicellular fungi that are capable of converting glucose and carbon dioxide. This transformation is mediated by different enzymes 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 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, add 3-5 drops of phenolphthalein to one of the fermentation tubes containing the yeast-glucose mixture. Label this tube "A." Add 2 ml of a 10% solution of potassium hydroxide into this medium. Do this immediately before you place the tube in the incubator. 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 tube in the incubator. The temperature 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 untreated fermentation tube which shows a long gas column in its arm. Use a squirt about 2 ml of a 10% solution of potassium hydroxide into this medium. Look for carbon dioxide in the air column. Label this fermentation tube "C." Before you interpret the results, you need to know that both indicators are yellow in acid medium, whereas they retain their blue color in an alkaline or neutral medium. Furthermore, potassium hydroxide is not affected by carbon dioxide. (1) Compare the reactions and color changes which occurred in all the fermentation tubes. Do you have evidence 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 except for tube "A." To give greater validity to the experiment, you will...
are unicellular fungi that are capable of converting glucose to ethyl alcohol.
Transformation is mediated by different enzymes which have been collectively
respiration is far less efficient than aerobic respiration.

Grind 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
thoroughly. Add enough of the yeast glucose mixture to three fermentation
m of each tube as well as the bulb. Similarly, fill a fourth fermentation
m. Label this tube "A." Add 3-5 drops of phenol red or bromthymol blue to
containing the yeast-glucose mixture. Label this fermentation tube "B."

Fermentation tube is full of the yeast-glucose mixture and devoid of air
each tube with absorbent cotton and then place them into an incubator which
fermentation tubes at the end of the laboratory period and also the next
ation tubes for gas production as well as for color changes. Select an
which shows a long gas column in its arm. Use a long medicine dropper to
olution of potassium hydroxide into this medium. Watch for any changes which
el this fermentation tube "C." Before you interpret your observations, bear
are yellow in acid medium, whereas they retain their original color (red, green medium. Furthermore, potassium hydroxide is a carbon dioxide absorbent.
and color changes which occurred in all the fermentation tubes. (2) What
carbon dioxide is an end product of yeast fermentation?

the cotton plugs from all the fermentation tubes. Smell the contents of all
you identify the odor in all the fermentation tubes as alcoholic, with the
ive greater validity to the experiment, you will identify the presence of
ethyl alcohol by the haloform reaction. The presence of ethyl alcohol is predicated on 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 haloform method. Filter about 5 ml of the fermenting mixture into a test tube. Add potassium iodide-iodine solution to give the solution a persistent faint yellow color (and Joseph). Shake the mixture as you add the reactants. Place the test tube in a beaker 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 solution 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 broth, 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 with the controls.

(3) What morphological changes in the yeast cells have occurred in the fermenting medium? 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 glucose, it becomes possible to detect these fermentation characteristics.

Obtain nutrient broth cultures of bacillus subtilis and escherichia coli. In addition to broth cultures containing sterile glucose broth and two tubes containing sterile glucose broth, all four fermentation tubes also contain bromcresol purple. 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 column of gas. Look at the base color of the organism to glucose and to lactose. (5) Distinguish between the effect produced by these substrates.

As you record your observations, focus your attention on the color present in each fermentation tube. In addition, you should be aware that the base color of the organism to glucose and to lactose. (6) Distinguish between the effect produced by these substrates.
reaction. The presence of ethyl alcohol is predicated upon its reaction with halogen, iodine, which then yields iodoform.

The presence of ethyl alcohol is predicated upon its reaction with halogen, iodine, which then yields iodoform. Examine 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, 1951) as you add the reactants. Place the test tube in a beaker of warm water to allow the test tube from the beaker and waft the fumes towards you with your nose to give the solution a persistent faint yellow color. The crystalline design you should see is the result of hexagonal crystals of iodoform. Since a pungent odor and yellow crystals were formed, you can deduce that you have obtained a product of hexagonal crystals from the interaction of ethyl alcohol and the iodine.

Yeast Cultures: Remove samples from the fermentation tubes which contain yeast cultures from the fermenting medium. Make wet mounts of the samples and examine them in dry power. Compare the appearance of the yeast cells in the cultures. How do the yeast cells appear? (4) What is the reason for these changes?

The pattern of fermentation varies with the bacterial species and their substrate. For example, with different carbohydrate broths, which contain a suitable indicator, the fermentation characteristics are different. For instance, the fermentation of bacillus subtilis and escherichia coli. In addition, take two fermentation tubes containing sterile glucose broth and two tubes containing sterile glucose broth and two tubes containing glucose broth. All four fermentation tubes also contain bromcresol purple as the indicator. Add glucose broth with bacillus subtilis and the other with escherichia coli. Similarly, add glucose broth with bacillus subtilis and the other with escherichia coli. Be sure to maintain all the tubes. Label all the tubes. Keep the original cultures at 30°C. After 24 hours, remove the tubes from the incubator and measure the height of the column of produced gas. Use a medicine dropper to add 10% potassium hydroxide to these fermentation tubes. Measure the height of the column of gas.

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

(a) Devise a controlled experiment which will show that fermenting yeast do produce car
(b) Compare the wet mounts of yeast suspended in water and in a glucose medium. How do
(c) Design a contr
(d) In the experiment on fermentation, the potassium hydroxide did not completely remove the gas present in the a
e(tation tube. How do you account for this? (f) Suppose in the experiment on bacterial glucose broth did not change color following its inoculation and incubation. How could
(g) it was the result of the inability of the organism to ferment the contents of the tube o
to grow?
which will show that fermenting yeast do produce carbon dioxide.

suspended in water and in a glucose medium. How does this observa-
liberated during fermentation? (c) Design a controlled experiment
are the energy released during fermentation of yeast. (d) Compare
and anaerobic respiration. (e) In the experiment on bacterial
it did not completely remove the gas present in the arm of the fermen-
this? (f) Suppose in the experiment on bacterial fermentation, the
allowing its inoculation and incubation. How could you tell whether
the organism to ferment the contents of the tube or its inability
HAND-OUT ON THE HISTORY OF ALCOHOL

Direction: Answer the questions exploring your ideas in a short outline form to broaden your understanding. 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 did it vary?

6. Give your opinion:
   a. Is vomiting pleasant in any way?
STUDENT INFORMATION (continued)

HAND-OUT ON THE HISTORY OF ALCOHOL

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

1. Why did the Egyptians invent before he could make alcoholic beverages?

2. What is the alcohol?

3. What use is made of yeast to produce alcohol?

4. What purposes early man may have had for drinking alcoholic beverages?

5. Possibly think alcohol had some mystic powers? Why, or why not?

6. How by the Egyptians end with the drinkers being inebriated or sick?

7. And in any way?
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?
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?
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?
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 into drinking problems?
In the prohibition era were there any smugglers, moonshiners, or bootleggers operating in Montana?

a. Why enforcement of prohibition laws were a failure?

b. Any drinking problems that might face us in the future by studying the past?

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

Who are you going to 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?
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:  A are toxic!!)
LABORATORY EXERCISES (Warning: All laboratory alcohols are toxic!!)

95%

95% alcohol, blue)

solution

use

OH or H ions.

test solution with litmus.

litmus turns to what color? ____________

test solution with litmus.

litmus turns to what color? ____________

test solution with litmus.

litmus turns to what color? ____________

test solution with litmus.

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

ant of alcohol in water and observe.

l and water to help illustrate solubility.)

on (chemical addition of 0 to atom or compound)

ount of alcohol in a watch glass and ignite. (Use water or gasoline as control)

olcs

(denatured)

cohol

ether

ers

cohol in beakers and examine.

mmon liquid does alcohol look like? ________

-145-
STUDENT INFORMATION

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 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)

thyl alcohol pleasant? __________

ch of the odor increase with the increase in percent of alcohol in the
_______ (Called constant vapor pressure) (May set out some alcohol
rente to illustrate)
ffuse readily throughout the room? __________

Alcohol

flask, about 100 ml, with a thermometer at the surface of the alcohol,
rd the temperature.

is _______ ° F
ferent than the temperature given in class? ________________

(denatured)

observe under the microscope, add 95% alcohol.

the algae cells? ________________

-116-
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.

<table>
<thead>
<tr>
<th>Time</th>
<th>4% Alcohol</th>
<th>47% Alcohol</th>
<th>95% Alcohol</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Min.</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>2 Min.</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>3 Min.</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>4 Min.</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>5 Min.</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>10 Min.</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>15 Min.</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>20 Min.</td>
<td>__________</td>
<td>__________</td>
<td>__________</td>
</tr>
</tbody>
</table>
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 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 normal size

disinfectant
anything that destroys harmful bacteria or virus

distillation
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
GLOSSARY

X. GLOSSARY

smallest part of an element

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

dial or total loss of memory

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

from infection; stopping the action of microorganisms

given to distilled alcohol in the 16th century

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

non-metallic chemical element found in many compounds

chemical bonding of two or more atoms

sum of living patterns in a given civilization

stance which lowers the rate of muscular or nervous activity

akdown of large molecules into smaller ones

gement 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
it and then cooling and condensing the resulting vapor so as to produce a more nearly
e or refined substance

-148- 290
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>distillation</td>
<td>process of changing the form of organic molecules by heat and pressure</td>
</tr>
<tr>
<td>(destructive)</td>
<td></td>
</tr>
<tr>
<td>drug</td>
<td>compounds that affect the body other than to nourish it</td>
</tr>
<tr>
<td>elimination</td>
<td>to remove, excrete</td>
</tr>
<tr>
<td>ethyl alcohol</td>
<td>beverage alcohol which is composed of carbon, hydrogen, and oxygen ( \text{C}_2\text{H}_5\text{OH} )</td>
</tr>
<tr>
<td>euphoria</td>
<td>a feeling of well being</td>
</tr>
<tr>
<td>external</td>
<td>on the outside or exterior</td>
</tr>
<tr>
<td>false confidence</td>
<td>an inaccurate or mistaken feeling of being assured or certain</td>
</tr>
<tr>
<td>fermentation</td>
<td>breakdown and change of molecules in a substance due to a ferment such</td>
</tr>
<tr>
<td>food</td>
<td>compound that produces growth and energy in the body</td>
</tr>
<tr>
<td>habit forming</td>
<td>a substance is habit forming if it causes its user to repeat its use over</td>
</tr>
<tr>
<td></td>
<td>again so that it becomes automatic</td>
</tr>
<tr>
<td>hydrogen</td>
<td>an inflammable, colorless, odorless, gaseous chemical element</td>
</tr>
<tr>
<td>indulged</td>
<td>to yield to the desire of</td>
</tr>
<tr>
<td>inferiority</td>
<td>the quality or condition of feeling lower in value, below average, or</td>
</tr>
<tr>
<td>inflammation</td>
<td>diseased condition characterized by reddness, heat, and swelling</td>
</tr>
<tr>
<td>internal</td>
<td>of, or on, the inside</td>
</tr>
<tr>
<td>inebriate</td>
<td>to make drunk, to intoxicate</td>
</tr>
<tr>
<td>malnutrition</td>
<td>undernourishment resulting from insufficient food or improper diet</td>
</tr>
<tr>
<td>mature</td>
<td>full grown; fully developed; mental and physical development</td>
</tr>
</tbody>
</table>
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 – C₂H₅OH
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
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>muscular coordination</td>
<td>harmonious, orderly adjustment or working of muscles</td>
</tr>
<tr>
<td>organic</td>
<td>composed of $\text{C}<em>\text{x}$,$\text{H}</em>\text{y}$,$\text{O}_\text{z}$ related to living things</td>
</tr>
<tr>
<td>oxidation</td>
<td>the chemical bonding of oxygen to another atom</td>
</tr>
<tr>
<td>oxygen</td>
<td>colorless, odorless, gaseous chemical element</td>
</tr>
<tr>
<td>prohibition</td>
<td>the forbidding, by law, of the sale and sometimes the manufacture of alcoholic liquors as beverages</td>
</tr>
<tr>
<td>proof</td>
<td>commercial method of declaring the amount of alcohol in a beverage</td>
</tr>
<tr>
<td>reaction</td>
<td>a response to a stimulus</td>
</tr>
<tr>
<td>reality</td>
<td>a state or quality of being real</td>
</tr>
<tr>
<td>reflex</td>
<td>reaction to a stimulus</td>
</tr>
<tr>
<td>self-control</td>
<td>control (command; authority) of oneself, or of one's own emotions</td>
</tr>
<tr>
<td>self-discipline</td>
<td>self-training which corrects, molds, strengthens, or perfects</td>
</tr>
<tr>
<td>self-respect</td>
<td>proper respect (consideration) for oneself, one's behavior</td>
</tr>
<tr>
<td>social problems</td>
<td>problems having to do with human beings living together as a group requiring that they have dealings with one another</td>
</tr>
<tr>
<td>solvent</td>
<td>a substance used for dissolving another substance</td>
</tr>
<tr>
<td>standard</td>
<td>some measure, principle, or model with which things of the same class in order to determine their quality or value</td>
</tr>
<tr>
<td>stimulant</td>
<td>a substance that increases the action of a body part; stimulant</td>
</tr>
<tr>
<td>temperance</td>
<td>habitual moderation in the indulgence of appetites, etc.</td>
</tr>
</tbody>
</table>
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 environmental and cultural pressures which might lead to drugs, and alcohol.

Invite guest lecturers who are qualified to keep students informed of new information about 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 product 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.
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 responsibilities?
Gained an understanding about the needs and problems of alcohol, drugs, and tobacco?
Been prepared for more effective citizenship?

When choices and decisions need to be made, do they have the right attitudes to make the correct choice on forethought, not afterthought?
ATTITUDES

- respect in regard to his abilities to make decisions?
- good attitude toward good health practices and ideas?
- understanding 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?
- need for more effective citizenship?

and decisions need to be made, do they have the right attitudes and materials to make the decisions on forethought, not afterthought?
SOURCES OF INFORMATION

American Cancer Society
Montana Division
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

Channing L. Bette Co., Inc.
Educational Services
Greenfield, Mass. 01301

Department of Health, Education and Welfare
Public Health Service
National Institute of Mental Health
5454 Wisconsin Avenue
Chevy Chase, Maryland 20203
Encyclopaedia Britannica
Educational Corporation
Film Department
2150 South Second, West
Salt Lake City, Utah 84115

Film Associates
11559 Santa Monica Blvd.
Los Angeles, California 90025

Harcourt, Brace, and World
Guidance Associates
Pleasantville, New York 10570

Health Education Service
P. O. Box 1283
Albany, New York 1220

Jaylark Instruments Corporation
10 East 49 Street
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

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510 First Avenue North
Great Falls, Montana 59401
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Montana Tuberculosis Association
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
1770 Broadway
New York, New York 10019

Public Affairs Committee, Inc.
381 Park Avenue South
New York, New York 10016

United States Government Printing Office
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#1314 "Smoking - Past and Present" - ACS
#1315 "Huffless, Puffless Dragon" - ACS
#1316 "Is Smoking Worth It?" - ACS
#1329 "A Time For Decision" - ACS
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"Is It Worth It?"
"I Don't Smoke"
"Cancer"
"Anti-smoking - Pro-smoking"

Transparencies

Teenager Response to "Why I Smoke"
Set of 14
Models

"Smoking Sam"

"Modern Millie"
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School District #15 PTA Council, 3800 196 S.W.
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b) Pounds and their position in the nature of things (a, b, w/overlays)

c) Alcohol and their uses (a, b, c, d, e, f)

d) Lift and 127 transparency

i) Illustrating the OH group (a, b, c)

j) Alcohol, illustrating the dangers of consuming these alcohols and the

k) Illustrating memory loss because of excessive consumption of alcohol

l) Related to certain areas and how amounts of alcohol affect the brain)