



C I G A R E T T E D P I L W P  
 E F O N M C G M S P N D D T P  
 J N B M U X T A P S L E E P  
 I G I F B R F K C S E N K X X  
 F R C M P M W T E K N C W H C  
 V W R P A A E N T F I M X I P  
 Z V J I C P T Y J T K L O P  
 L I D U T R O G L M O F L C C  
 T O B A C C O F L C C  
 Q D C Y E A J D C C Y R S A  
 P A T C H  
 G P R L T B B C H D I S H F N  
 D O P A M I N E  
 G T A P G K G I O P N A X K C  
 A L E R T N E S S  
 Y V M T Z Z J D L P K I P R E  
 N I C O T I N E  
 K E S H C B L M I R G B J R  
 A P A V H H Q S N T R C W Y  
 O C C A B O T G E R D Y C W K  
 A C E T Y L C H O L I N E  
 C I G A R E T T E  
 N I C O T I N E  
 S L E E P  
 A L E R T N E S S  
 D O P A M I N E  
 P A T C H  
 T O B A C C O  
 C A N C E R  
 I R R I T A B I L I T Y  
 S H A K I N G

### NICOTINE NOOK

Directions: Search for words in the Nicotine Nook. Make sure to look in all directions—up, down, and diagonal!

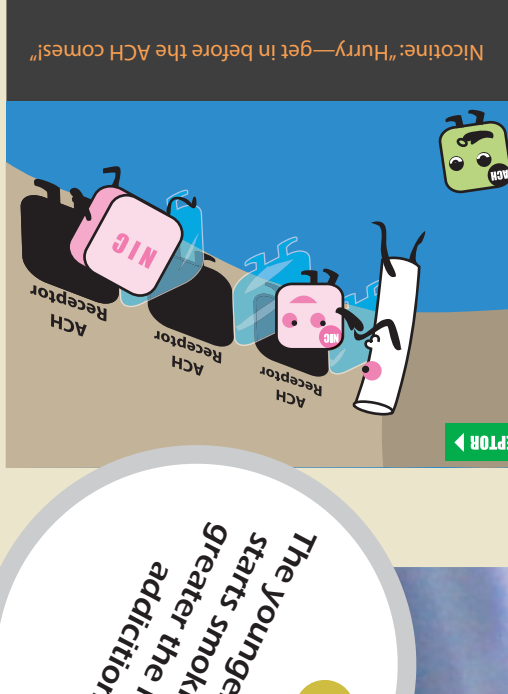
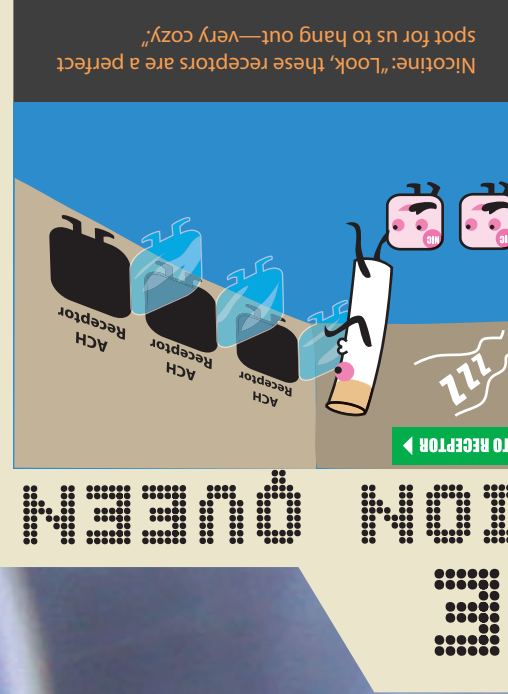
1. A body part besides the brain that can be damaged by alcohol abuse
2. Describes a neurotransmitter that slows down or stops an action
3. Describes a neurotransmitter affected by pleasurable aspects of alcohol
4. An inhibitory neurotransmitter
5. A neurotransmitter responsible for the mood and behavior
6. A substance in certain drinks that changes speed up an action
7. The uncomfortable feeling a drug user experiences after quitting a drug



### Across:

**Alcohol Alley**

### Down:



## THE DECEPTION QUEEN

Nicotine is just as addictive as heroin or cocaine

Long-term smoking can dull the senses of smell and taste

Infants and unborn babies are at risk of developing health problems

80% to 90% of all smokers began smoking in their teens

The younger a person starts smoking, the greater the risk of nicotine addiction

Since the production of the nicotine patch and gum, more than 1 million people have been successfully treated for nicotine addiction

90% of smokers would like to quit, but fewer than 10% are successful each year

Chewing tobacco can cause damage to gum tissue and teeth

- Nicotine is a drug found in all tobacco products
- Nicotine is very addictive!
- Nicotine stimulates the nervous system and causes an increase in blood pressure, heart rate, and respiration by stimulating receptors for acetylcholine
- Cigarettes release more than 4,000 chemicals when smoked, including tar and carbon monoxide.
- Chemicals in cigarettes can cause lung cancer, emphysema, bronchial diseases, and heart problems
- Smoking is also linked to cancers of the throat, mouth, pancreas, esophagus, and stomach

## Nicotine Background

### Science in the Spotlight:

#### Misleading the Brain with Nicotine

Have you ever wondered why people who want to stop smoking can't just quit?

Quitting is so difficult because smoking causes changes in the brain

After a while, the brain has changed so much it's only happy when it receives nicotine

When the nicotine stops, the withdrawal begins—shaking, irritability, headaches, and decreased alertness. No wonder it's so hard to quit!

Nicotine use causes increased activity at the acetylcholine receptors and fools the brain into thinking there's too much acetylcholine

Because nicotine causes changes in the brain that lead to nicotine addiction, people often need professional help to quit smoking

Nicotine, the chemical in cigarettes that causes addiction, acts like the neurotransmitter acetylcholine—binding to the receptors responsible for heart rate, alertness, and muscle movement

Because the brain thinks there's too much acetylcholine, it reduces the number of receptors and amount of acetylcholine released into the synapse

**BP Weekly**



**NIDA**  
 NATIONAL INSTITUTE  
 ON DRUG ABUSE



# Do Try This At Home

(only with the help of a parent or teacher)

## Plants Can't Eat THAT!

### Materials

\*these materials should only be handled by an adult!

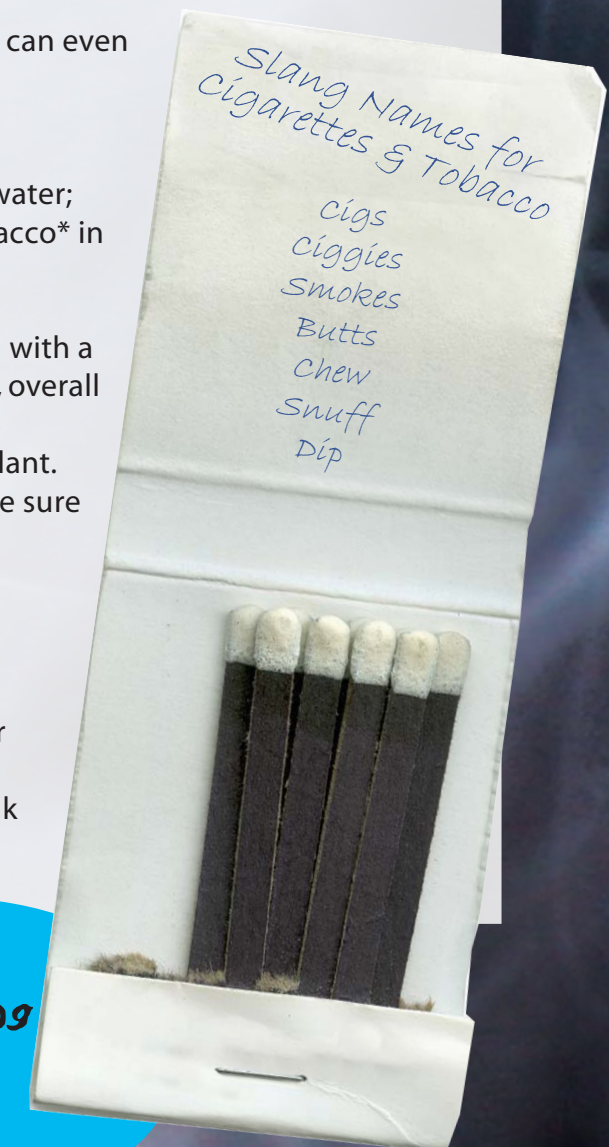
- 3 houseplants of the same kind
- Water
- Marker
- Alcohol\*
- Ruler
- Cigarettes\* (one per feeding)
- 3 clear plastic cups
- Paper and pencil
- Newspaper

1 inch line—



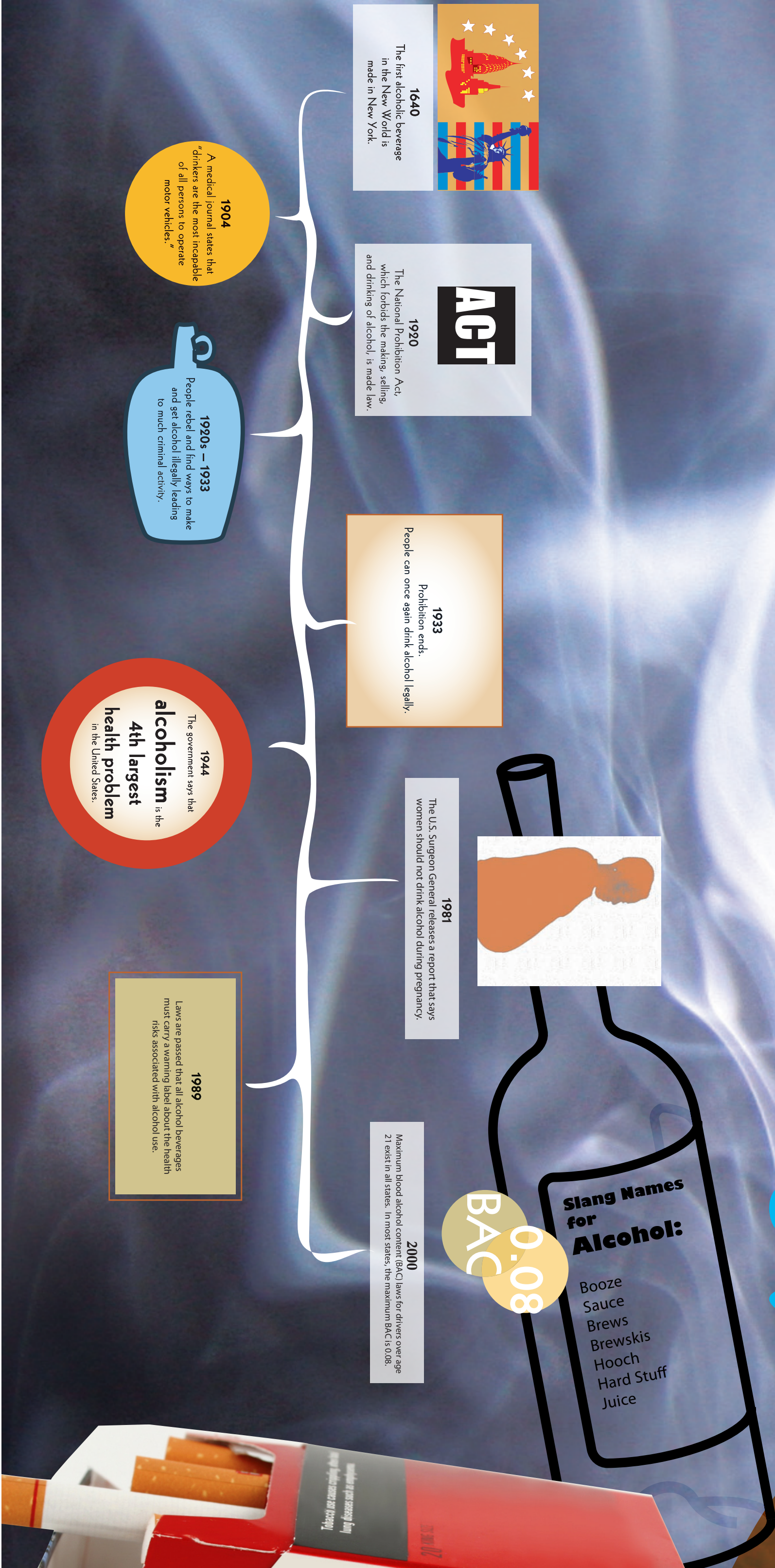
### Follow These Steps

- Set up the experiment.**
  - Label each plant with the substance with which it will be fed: water, alcohol, or tobacco.
  - Label each of the cups: water, alcohol, or tobacco. Each cup will only be used for that specific substance.
  - With a ruler, measure 1 inch from the bottom of the clear plastic cups and draw a line. To feed the plants, fill the cups only to the line so that each plant receives the same amount of food.
  - Record your observations on how each plant looks. You can even take pictures if you have a camera.
- Every 3rd day for 3 weeks, do the following:**
  - The night before, fill the tobacco glass to the line with water; remove the paper from one cigarette\*, and put the tobacco\* in the glass. Let it soak overnight.
  - The next day, place the plants on a table.
  - Measure each plant at its highest point (the tallest leaf) with a ruler. Record each plant's height and appearance (color, overall health, and number and health of its leaves).
  - Record your observations, and draw a picture of each plant.
  - Gather the tobacco water, fresh water, and alcohol. Make sure they are at room temperature.
  - Water each plant with the appropriate substance.
  - Keep the plants in a sunny area between feedings.
- At the end of 3 weeks, examine each plant and record your observations. Compare with the observations over the three weeks. What are the differences? What effect did each substance have on the plant? Why do you think this happened?**



### Alcohol Background

Alcohol is found in beer, wine, and liquor, such as gin, vodka, or whiskey. It interferes with messages carried by many neurotransmitters found throughout the brain. This affects functions like thinking, coordination, and emotions. Alcohol is often used with other drugs, which can increase the effects of BOTH drugs. Alcohol and certain drugs work in the same areas of the brain. Combining them can greatly intensify their effects, which can be very dangerous to the brain and body.



**1640**  
The first alcoholic beverage in the New World is made in New York.

**1920**  
The National Prohibition Act, which forbids the making, selling, and drinking of alcohol, is made law.

**1933**  
Prohibition ends. People can once again drink alcohol legally.

**1981**  
The U.S. Surgeon General releases a report that says women should not drink alcohol during pregnancy.

**2000**  
Maximum blood alcohol content (BAC) laws for drivers over age 21 exist in all states. In most states, the maximum BAC is 0.08.

**1904**  
A medical journal states that "drinkers are the most incapable of all persons to operate motor vehicles."

**1920s - 1933**  
People rebel and find ways to make and get alcohol illegally, leading to much criminal activity.

**1944**  
The government says that alcoholism is the 4th largest health problem in the United States.

**1989**  
Laws are passed that all alcohol beverages must carry a warning label about the health risks associated with alcohol use.

## Stats & Facts

- Nicotine is just as addictive as heroin or cocaine
- Infants and unborn babies of smoking mothers are at risk of developing health problems
- Autopsies have shown that patients with chronic alcohol abuse have smaller, lighter, more shrunken brains than non-alcoholics
- Mixing alcohol with medicines or other drugs is extremely dangerous and can lead to death

• The more someone abuses alcohol, the more likely they are to abuse illegal drugs too

• 42% of patients in drug treatment are also addicted to alcohol

• Both cocaine and alcohol addiction cause changes in the brain that prevent experience of pleasure from normal activities and increase those from drugs and alcohol

• There are more deaths from underage alcohol use than from all illegal drugs combined

Alcohol Alley answers: 1. liver ; 2. inhibitory; 3. excitatory; 4. GABA; 5. dopamine; 6. alcohol; 7. withdrawal