

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Pd: \_\_\_\_\_

**Chapter 19 Lesson 1 The Role of Medicines Pages 524-529**

**Main Idea 1: Medicines are classified based on how they work in your body**

- 1. Define Medicines 1a. \_\_\_\_\_  
\_\_\_\_\_
- 2. Define Drugs 2a. \_\_\_\_\_  
\_\_\_\_\_

\* All medicines are drugs but not all drugs are medicines

**Taking Medications- Main Idea 2: Medicines enter the body in a variety of ways**

- 3. Oral medicines 3a. \_\_\_\_\_  
3b. can pass from the \_\_\_\_\_ system into the blood stream
- 4. Topical Medicines 4a. \_\_\_\_\_  
4b. \_\_\_\_\_ skin patches also deliver a medicine through the skin
- 5. Inhaled Medicines 5a. \_\_\_\_\_  
(ex. asthma medicine)
- 6. Injected medicine 6a. \_\_\_\_\_

\*However you take medicine, it is always important to follow the directions on the medicine label

**Reactions to Medications-Main Idea 3: The effect of medicine depends on many factors**

- 7. Types of medicine reactions 7a. \_\_\_\_\_  
7b. \_\_\_\_\_  
7c. \_\_\_\_\_
- 8. What is Additive Interaction? 8a. \_\_\_\_\_
- 9. What is Synergistic effect? 9a. \_\_\_\_\_  
\_\_\_\_\_
- 10. What is Antagonistic interaction? 10a. \_\_\_\_\_  
\_\_\_\_\_
- 11. Define Tolerance 11a. a condition in which the body becomes used to the effect of a medicine so the body requires \_\_\_\_\_ larger doses to produce the same effect.
- 12. Define Withdrawal 12a. \_\_\_\_\_  
12b. Symptoms can include severe headaches, vomiting, chills, and insomnia which gradually ease over time.

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Pd: \_\_\_\_\_

Article "Drug Facts: Understanding Drug Abuse and Addiction"

1. Why is quitting so difficult even for those who are ready to do so?
2. How does self-control relate to drug addiction?
3. What is the best way to help people overcome addiction? Why?
4. True or False: After treatment, it is uncommon for someone to relapse.
5. Which drug causes the release of large amounts of dopamine?
  - A) heroine
  - B) cocaine
  - C) marijuana
  - D) glutamate
  - E) alcohol
6. How does dopamine urge an addicted person to continue to abuse drugs?
7. Why do some people become addicted while others do not?
8. True or False: Although many events and cultural factors affect drug abuse trends, drug addiction can be prevented.

Name : \_\_\_\_\_ Date: \_\_\_\_\_ Pd. \_\_\_\_\_

### Facts About Drug Use, Abuse and Addiction

<http://eschooltoday.com/drug-abuse-and-teens/factsheet-on-teens-and-drug-abuse.html>

1. Among adults who smoke, \_\_\_\_\_ percent began smoking regularly at age 18 or younger, and 85 percent started when they were 21 or younger.
2. Every day, almost 3,900 children under 18 years of age try their first cigarette, and more than 950 of them will become new, regular daily smokers. \_\_\_\_\_ of them will ultimately die from their habit.
3. People who begin smoking at an early age are more likely to develop a severe \_\_\_\_\_ to nicotine than those who start at a later age.
4. Cigarette smoking is the number \_\_\_\_\_ cause of preventable disease and death worldwide. Smoking-related diseases claim over 393,000 American lives each year. [2]
5. Cigarette smoking accounts for at least 30% of all \_\_\_\_\_ deaths.
6. \_\_\_\_\_ of U.S. teens who start drinking alcohol before age 14 will be addicted to it at some point.
7. Alcohol-related motor accidents are the \_\_\_\_\_ leading cause of teen death in the United States.
8. Did you know that kids who learn a lot about the risks of drugs from their parents are up to \_\_\_\_\_ percent less likely to use drugs?
9. 2007 National Survey in the USA on Drug Use and Health showed that \_\_\_\_\_ of the population aged 12 or older used illegal drugs.
10. The most commonly used illegal drug is \_\_\_\_\_.

### Definitions

Define Drug Abuse: using an illegal substance or using a legal substance in the \_\_\_\_\_ way

Define Drug Addiction: a chronic, often relapsing brain disease that causes \_\_\_\_\_ drug seeking and use, despite harmful consequences to the addicted individual and to those around him or her

### Activity: How does the brain learn

- |     |     |     |
|-----|-----|-----|
| 1.  | 11. | 21. |
| 2.  | 12. | 22. |
| 3.  | 13. | 23. |
| 4.  | 14. | 24. |
| 5.  | 15. | 25. |
| 6.  | 16. | 26. |
| 7.  | 17. | 27. |
| 8.  | 18. | 28. |
| 9.  | 19. |     |
| 10. | 20. |     |

# Train Your Brain!

Through repetition, you can train your brain to become faster at a new skill. When you process a thought, messages are sent across connections in the brain called *synapses*. Synapses that are used repeatedly become strengthened and more productive. The exercise below will show you the effect of repetition on your brain's synapses.

*Directions:* Using the code breaker below, decipher each scrambled sentence and record how long it takes you to the nearest second using a clock or timer. Then answer the questions that follow.

## Code Breaker

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

1. Vcvi xrhv hgivmtgsvmh blfi ylwb zmw rnkilevh blfi nrmw.

\_\_\_\_\_

Time it took to solve: \_\_\_\_\_

2. Ksbhrxzo zxgrergb kilwfxvh kilgvr mh gszg rnkilev nvnlib.

\_\_\_\_\_

Time it took to solve: \_\_\_\_\_

3. Vcvi xrhv kilwfxvh z yizrm xsvnr xzo gszg rnkilevh nilw.

\_\_\_\_\_

Time it took to solve: \_\_\_\_\_

**Think It Through:** Write your answers on separate paper.

1. You were likely able to decode the third sentence more quickly than the first one. What was your difference in seconds?
2. If you were able to solve the third sentence more quickly, why do you think that was so?
3. Write the following sentence using the coding key above: "I am a super decoder." You may have written some of the letters in code without looking at the code breaker. Explain the brain process at work.
4. How can you use this knowledge of how your brain works to improve your grades?
5. How can you use this knowledge to improve your ability to stop and think before making a decision?

# HEADS UP REAL NEWS ABOUT DRUGS AND YOUR BODY



## Your Brain At-a-Glance

Using drugs changes the way the brain works. The brain is very important. It controls body functions such as breathing, walking, and thinking. Discover the different parts of your brain and the jobs they do. Then, learn how drugs can get in the way. After reading, complete the diagram activity below.

The largest part of your brain is the **cerebral cortex**. When it's functioning normally, this section takes care of thinking, seeing, hearing, and the sense of touch.

Next is the **cerebellum**. The cerebellum coordinates movements you do everyday, such as brushing teeth and riding a bike.

Just above the spinal cord, a small section of your brain called the **brain stem** controls basic functions, such as breathing, digesting food, and maintaining your heartbeat.

Then, there's the **limbic system**, also known as the emotional brain. This is where feelings like fear and passion are born.

Scientists have identified a "reward pathway" in the brain that includes the **nucleus accumbens**. When we do something that is key to survival, such as eating when we are hungry, the reward pathway is stimulated. Most addictive drugs also stimulate this reward pathway, often more than natural rewards, such as food.

**How do drugs affect your brain?** Once in the brain, drugs of abuse are similar in size and shape to brain chemicals called neurotransmitters. Brain cells release and absorb these natural chemicals in order to send and receive messages to and from each other. Drugs disrupt this delicate communication system, and can hurt your brain.

### PARTS OF THE BRAIN: WHAT ARE THEY GOOD FOR?

For each brain part, write one of the functions it performs. Plus, include one way you've used this part of your brain recently.

#### LIMBIC SYSTEM

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#### CEREBRAL CORTEX

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#### CEREBELLUM

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#### NUCLEUS ACCUMBENS

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#### BRAIN STEM

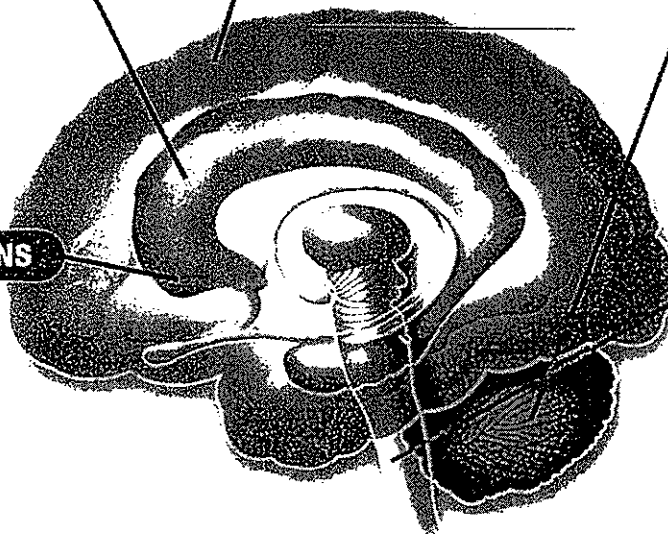
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Questions: THINK PAIR SHARE

1. How do you learn? What do you think happens in your brain when you learn something?
2. Describe how you would teach your brain something. Is there something you could do that would make you learn faster or better?
3. How does drug abuse "teach" the brain?
4. Why is drug addiction a brain disease?
5. How could someone end up getting addicted to drugs?

Analyzing the risk and protective factors that influence the use, abuse and addiction of drugs

Risk Factors	Protective Factors
<ul style="list-style-type: none"> <li>• Early _____ behavior</li> <li>• _____ of parental supervision</li> <li>• Academic _____</li> <li>• Undiagnosed _____ health problems</li> <li>• _____ substance use</li> <li>• Drug _____</li> <li>• _____</li> <li>• _____ rejection</li> <li>• Child abuse or _____</li> </ul>	<ul style="list-style-type: none"> <li>• Positive _____ development</li> <li>• _____ self-esteem</li> <li>• Good _____ skills and problem-solving skills</li> <li>• Engagement and connections in _____ or more of the following contexts: at school, with peers, in athletics, employment, religion, culture</li> <li>• Family provides structure, limits, _____, monitoring, and predictability</li> <li>• _____ relationships with family members</li> <li>• Clear expectations for behavior and _____</li> </ul>

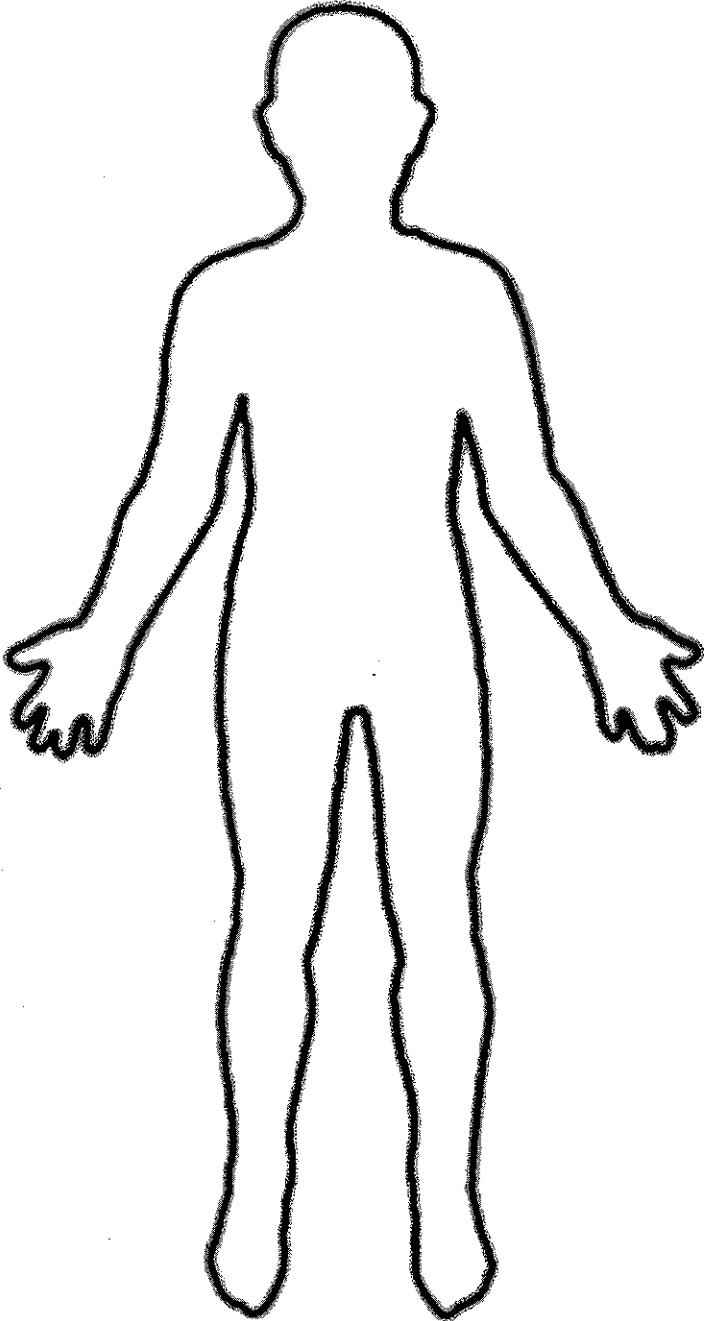
Name: \_\_\_\_\_ Date: \_\_\_\_\_ Pd. \_\_\_\_\_

Students will be able to explain the short and long term effects of tobacco use, abuse, and addiction.

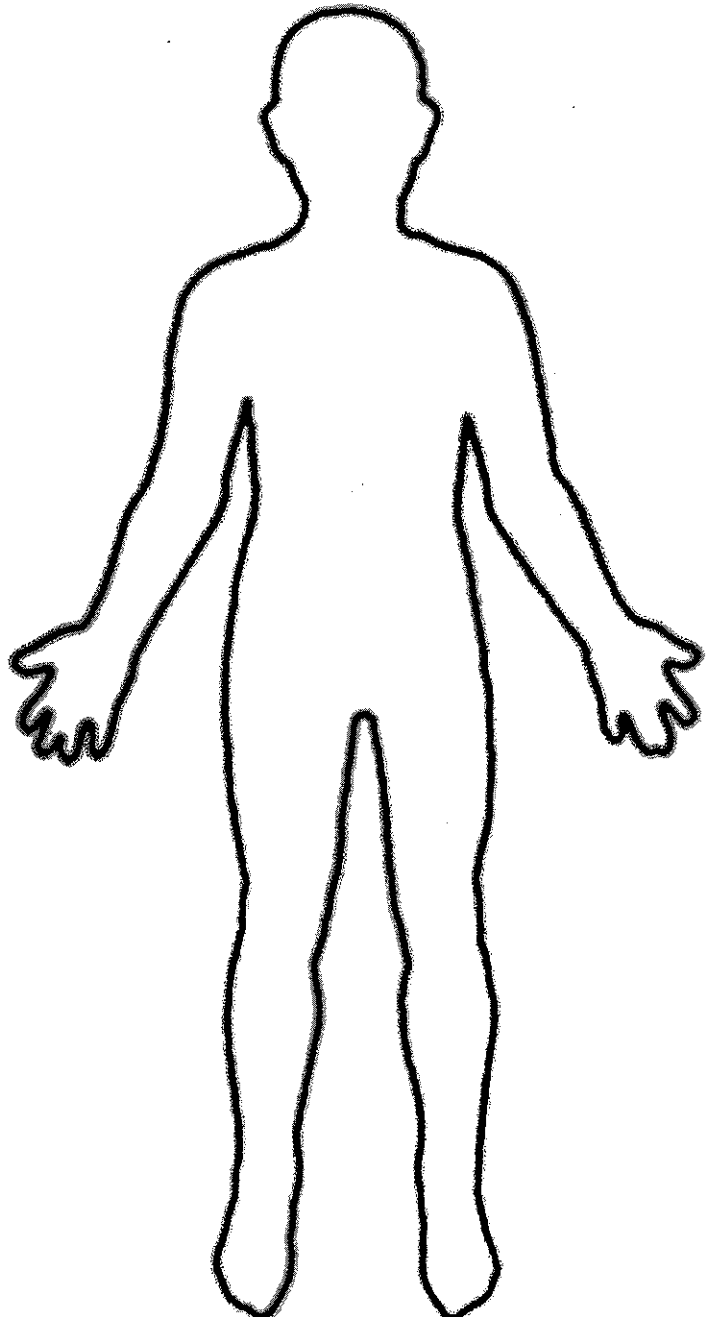
### How Much Do You Know?

Directions: First, label the parts of the body that are affected by tobacco and second, explain what happens to that part of the body before the lecture. You will then do the same after the lecture.

Pre



Post



Name: \_\_\_\_\_ Date: \_\_\_\_\_ Pd. \_\_\_\_\_

I. Timed Pretest on the Short term and long term effects of tobacco and alcohol. You have 5 minutes Label the parts of the body that are affected by smoking cigarettes and explain what happens to that part of the body before the lecture. You will do the same on the back part of your paper for alcohol.

II. Classifications of Drugs

Classification of Drugs	Examples	How it affects the body
_____	Alcohol, valium, Xanax	<ul style="list-style-type: none"> <li>• _____ normal brain function.</li> <li>• _____ addictive potential</li> <li>• _____ effects from long-term use can be _____ and produce some of the worst consequences of any other drug classifications</li> </ul>
Stimulants	cocaine, methamphetamine, amphetamine, MDMA (Ecstasy), nicotine, and _____	<ul style="list-style-type: none"> <li>• Elevates _____</li> <li>• Increases feelings of well-being</li> <li>• Increases energy and _____</li> <li>• _____ heart rate</li> <li>• _____ blood pressure</li> <li>• _____ high addictive potential</li> </ul>
Opiates (powerful _____)	heroin, morphine, codeine, and Oxycontin	<ul style="list-style-type: none"> <li>• Produces a quick, intense feeling of _____ followed by a sense of well-being and calm</li> <li>• _____ high addictive potential</li> </ul>
Hallucinogens	LSD, PCP, MDMA (Ecstasy), marijuana, mescaline, and psilocybin.	<ul style="list-style-type: none"> <li>• Altered perception and _____</li> <li>• Powerful mind-altering effects</li> <li>• Affects regions of the _____ that are responsible for coordination, thought processes, hearing, and sight.</li> <li>• People to hear _____, see things, and feel _____ that do not exist.</li> <li>• _____ potential for addiction</li> <li>• _____ potential for tolerance</li> </ul>

III. The Health Risks of Tobacco Pages 542-547

Define the following:

1. Nicotine: \_\_\_\_\_
2. Stimulant: \_\_\_\_\_
3. Carcinogen: \_\_\_\_\_
4. Tar: \_\_\_\_\_
5. Carbon Monoxide: \_\_\_\_\_
6. Smokeless Tobacco: \_\_\_\_\_
7. Leukoplakia: \_\_\_\_\_





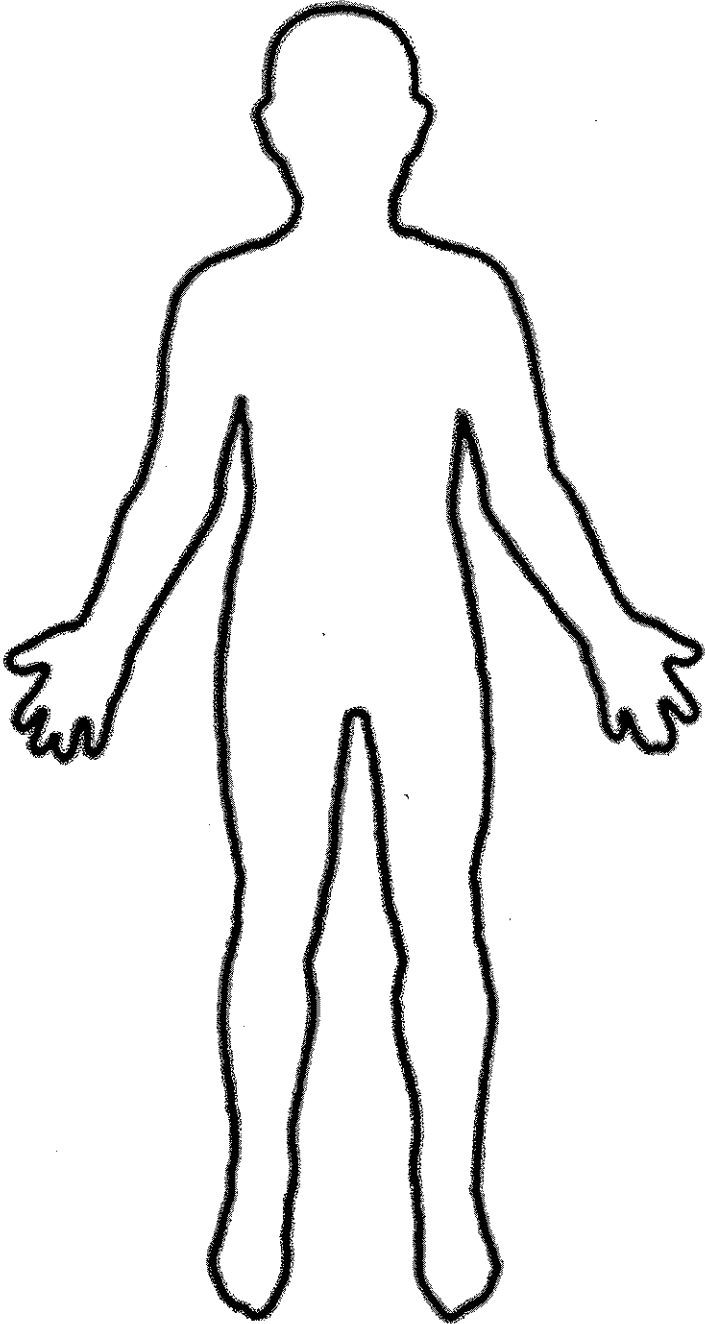
Name: \_\_\_\_\_ Date: \_\_\_\_\_ Pd. \_\_\_\_\_

Students will be able to explain the short and long term effects of Alcohol use, abuse and addiction.

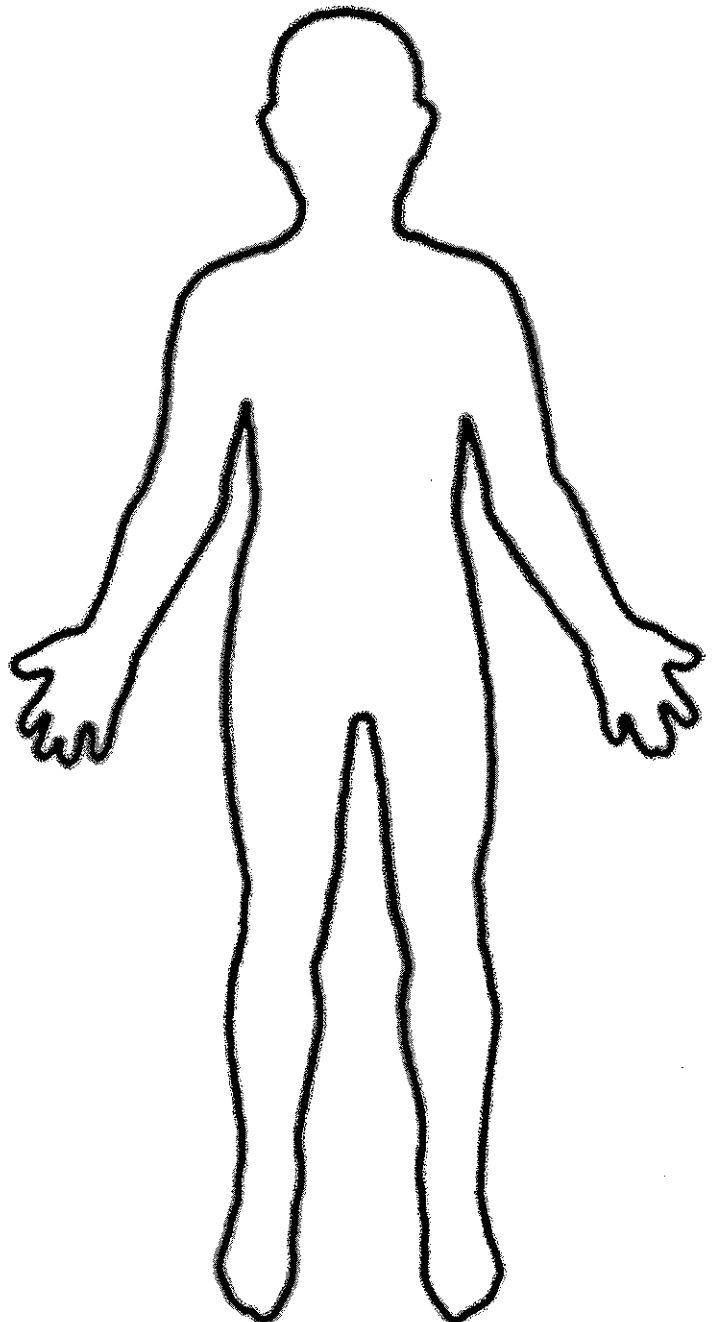
### How Much Do You Know?

Directions: **First, label** the parts of the body that are affected by alcohol and **second, explain** what happens to that part of the body before the lecture. You will then do the same after the lecture.

Pre



Post



Name: \_\_\_\_\_ Date: \_\_\_\_\_ Pd: \_\_\_\_\_

## Chap 21 Lesson 1 The Health Risks of Alcohol Pages 566-571

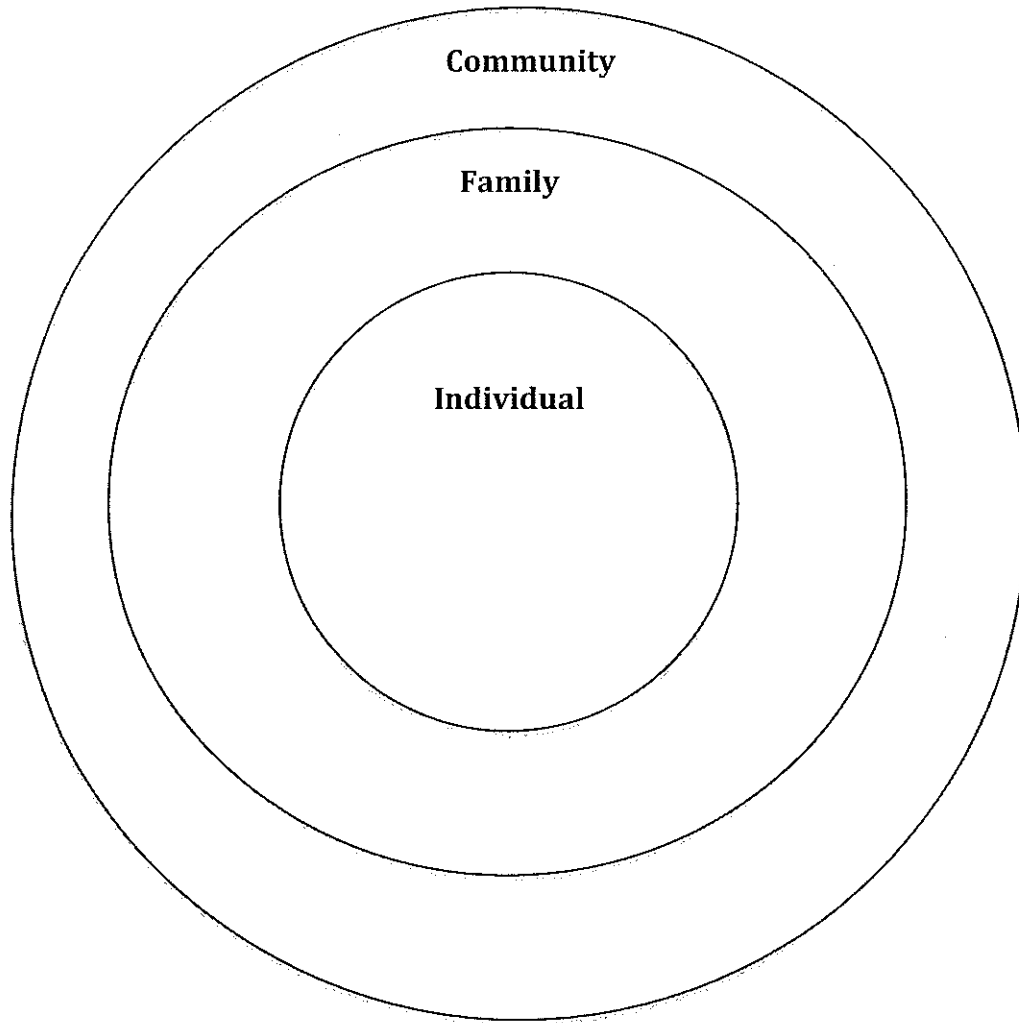
### Define the following

1. Ethanol: \_\_\_\_\_
2. Depressant: \_\_\_\_\_
3. Intoxication: \_\_\_\_\_
4. Binge drinking: \_\_\_\_\_
5. Alcohol poisoning: \_\_\_\_\_

Short Term Effects of Alcohol	Long-Term Effects of Alcohol
<p>1. The Brain</p> <ul style="list-style-type: none"><li>• Pathways and connections necessary for _____ may be permanently damaged.</li><li>• Thought processes are _____, memory and concentration are _____.</li><li>• _____ is altered and _____ is impaired.</li><li>• Risk of _____ increases</li></ul> <p>2. Heart</p> <ul style="list-style-type: none"><li>• Increases heart rate and blood pressure when small amounts are consumed</li><li>• Large amounts of alcohol _____ heart rate, blood pressure, heart rhythm becomes _____ and body temperature _____</li></ul> <p>3. Liver and Kidneys</p> <ul style="list-style-type: none"><li>• _____ chemicals released when the liver metabolizes alcohol causing inflammation and scarring of the liver tissue</li><li>• Causes kidneys to increase urine output, which can lead to _____</li></ul> <p>4. Digestive System</p> <ul style="list-style-type: none"><li>• _____ stomach acid production and can cause nausea and _____</li></ul> <p>5. Pancreas</p> <ul style="list-style-type: none"><li>• Pancreatitis: _____ of the pancreas</li><li>• Disrupts the absorption of _____ in food</li></ul>	<p>1. Brain</p> <ul style="list-style-type: none"><li>• _____</li><li>• Loss of _____ functions</li><li>• Brain _____</li></ul> <p>2. Heart</p> <ul style="list-style-type: none"><li>• Heart damage</li><li>• _____ Blood Pressure</li></ul> <p>3. Digestive system</p> <ul style="list-style-type: none"><li>• _____ of the digestive lining</li><li>• Fatty _____</li><li>• Alcoholic _____: inflammation or infection of the liver</li><li>• _____ of the liver (tissue scarring in liver)</li></ul> <p>4. Pancreas</p> <ul style="list-style-type: none"><li>• Swelling of the _____ lining</li></ul>

**Video: The Truth About Alcohol.**

While watching the video, fill out the circles below to show alcohol's "Ripple Effect"



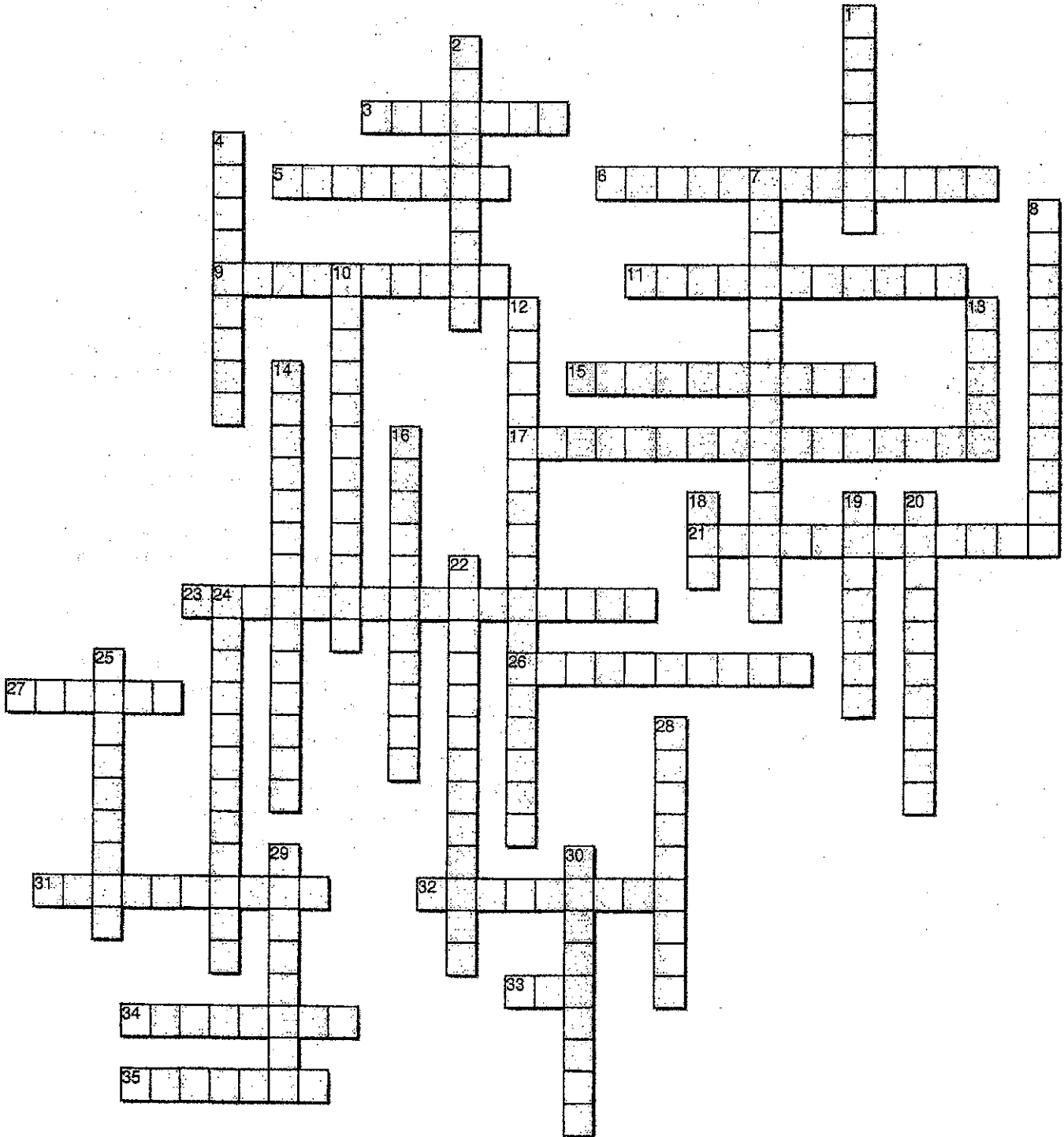
Compare and Contrast by filling out the chart below on Tobacco and Alcohol

TOBACCO DIFFERENCES	SIMILARITIES	ALCOHOL DIFFERENCES
1.	1.	1.
2.	2.	2.
3.	3.	3.
4.	4.	4.
5.	5.	5.
6.	6.	6.

Name: \_\_\_\_\_

# Drugs, Tobacco and Alcohol

Complete the crossword below using your notes from class



## Across

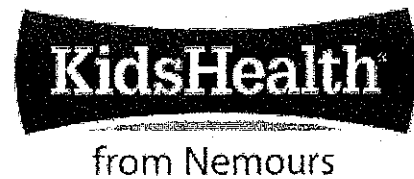
3. it is common for this to happen to someone after going through treatment
5. the addictive drug found in tobacco leaves
6. Powerful mind-altering effects, People to hear voices, see things, and feel sensations that do not exist
9. a cancer-causing substance
11. a drug that slows the central nervous system
15. a drug that increases the action of the central nervous system, the heart, and other organs
17. part of the brain known as the 'reward pathway' and stimulated when eating or using drugs
21. interaction that occurs when the effect of one medicine is cancelled or reduced when taken with another medicine.
23. a severe and potentially fatal physical reaction to an alcohol overdose
26. coordinates movements you do everyday like brushing your teeth or riding a bike
27. nearly \_\_\_\_\_ percent of lung cancer deaths are caused by smoking
31. key to decreasing the use of tobacco, alcohol, and other drugs
32. tissue scarring in the liver
33. a thick, sticky, dark fluid that is produced when tobacco burns
34. occurs when medicines work together in a positive way
35. powerful painkillers

## Down

1. the type of alcohol in alcoholic beverages
2. controls basic functions, such as breathing, digesting food and maintaining your heartbeat
4. a chronic, often relapsing brain disease
7. this part of the brain is responsible for thinking, seeing, hearing and the sense of touch
8. the reaction of two or more medicines that results in a greater effect than when each medicine is taken alone.
10. the state in which the body is poisoned by alcohol, or another substance
12. occurs when the cilia in the bronchi become so damaged that they are useless. Leads to build up of tar in the lungs
13. substances other than food that change the structure or function of the body or mind
14. a colorless, odorless, and poisonous gas
16. thickened, white, leathery-looking spots on the inside of the mouth that can develop into oral cancer
18. fetal alcohol syndrome
19. medicines applied to the skin
20. Symptoms can include severe headaches, vomiting, chills, and insomnia which gradually ease over time
22. drinking 5 or more alcoholic drinks in one sitting
24. the part of the brain where feelings like fear and passion are born
25. drugs that are used to treat or prevent diseases or other conditions
28. is a disease that destroys the tiny air sacs in the lungs, making them less elastic, causing it difficult for the lungs to absorb oxygen
29. this brain chemical urges an addicted person to continue to abuse drugs
30. a condition in which the body becomes used to the effect of a medicine so the body requires increasingly larger doses to produce the same effect

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health and development



## Fetal Alcohol Syndrome

Alcohol (wine, beer, or liquor) is the leading known preventable cause of developmental and physical birth defects in the United States.

When a woman drinks alcohol during pregnancy, she risks giving birth to a child who will pay the price — in mental and physical deficiencies — for his or her entire life.

Yet many pregnant women do drink alcohol. It's estimated that each year in the United States, 1 in every 750 infants is born with a pattern of physical, developmental, and functional problems referred to as fetal alcohol syndrome (FAS), while another 40,000 are born with fetal alcohol effects (FAE).

### Signs and Symptoms

If you adopted a child or consumed alcohol during pregnancy and are concerned that your child may have FAS, watch for characteristics of the syndrome, which include:

- low birth weight
- small head circumference
- failure to thrive
- developmental delay
- organ dysfunction
- facial abnormalities, including smaller eye openings, flattened cheekbones, and indistinct philtrum (an underdeveloped groove between the nose and the upper lip)
- epilepsy
- poor coordination/fine motor skills
- poor socialization skills, such as difficulty building and maintaining friendships and relating to groups
- lack of imagination or curiosity
- learning difficulties, including poor memory, inability to understand concepts such as time and money, poor language comprehension, poor problem-solving skills
- behavioral problems, including hyperactivity, inability to concentrate, social withdrawal, stubbornness, impulsiveness, and anxiety

Children with FAE display the same symptoms, but to a lesser degree.

### Diagnosis and Long-Term Effects

Problems associated with FAS tend to intensify as children move into adulthood. These can include developmental health problems, troubles with the law, and the inability to live independently.

Kids with FAE are frequently undiagnosed. This also applies to those with alcohol-related neurodevelopmental disorder (ARND), a recently recognized category of prenatal damage that refers to children who exhibit only the behavioral and emotional problems of FAS/FAE without any signs of developmental delay or physical growth deficiencies.

Often, in kids with FAE or ARND, the behavior can appear as mere belligerence or stubbornness. They may score well on intelligence tests, but their behavioral deficits often interfere with their ability to succeed. Extensive education and training for the parents, health care professionals, and teachers who care for these kids are essential.

### **How Much Alcohol Is Too Much?**

It's clear that abusing alcohol during pregnancy is dangerous, but what about the occasional drink? How much alcohol constitutes too much during pregnancy?

No evidence exists that can determine exactly *how much* alcohol ingestion will produce birth defects. Individual women process alcohol differently. Other factors vary the results, too, such as the age of the mother, the timing and regularity of the alcohol ingestion, and whether the mother has eaten any food while drinking.

Although full-blown FAS is the result of chronic alcohol use during pregnancy, FAE and ARND may occur with only occasional or binge drinking.

Because alcohol easily passes the placental barrier and the fetus is less equipped to eliminate alcohol than its mother, the fetus tends to receive a high concentration of alcohol, which lingers longer than it would in the mother's system.

Mothers who drink during the first trimester of pregnancy have kids with the most severe problems because that is when the brain is developing. The connections in the baby's brain don't get made properly when alcohol is present. Of course, in the early months, many women don't even know they're pregnant.

It's important for women who are thinking about becoming pregnant to adopt healthy behaviors before they get pregnant.

Women who abstain from alcohol in early pregnancy may feel comfortable drinking in the final months. But some of the most complex developmental stages in the brain occur in the second and third trimesters, a time when the nervous system can be greatly affected by alcohol. Even moderate alcohol intake, and especially periodic binge drinking, can seriously damage a developing nervous system.

### **Prevention Is the Key**

FAS can be completely prevented by not drinking any alcohol during pregnancy.



Name: \_\_\_\_\_ Date: \_\_\_\_\_ Pd: \_\_\_\_\_

**Read Article and the answer the following questions:**

1. What is the leading known preventable cause of development and physical birth defects in the United States?
2. What is the difference between FAS (fetal alcohol syndrome) and FAE (fetal alcohol effects)?
3. How many infants are born each year in the US that has FAS? And FAE?
4. List four characteristics of FAS.
5. T or F: Problems associated with FAS tend to intensify as children move into adulthood
6. T or F: Kids with FAE are frequently underdiagnosed.
7. T or F: Full blown FAS results from chronic alcohol use during pregnancy.
8. T or F: Evidence suggests that drinking a little alcohol during pregnancy is safe.
9. What 3 factors affect how a woman processes alcohol?
10. Explain why is drinking in the first trimester most dangerous to the infant?
11. T or F: FAS and FAE are 100% preventable.

### Activity 23 Hands-On Health Ranking Risky Behaviors

Directions: Members of each group will work together to rank the behaviors noted on the cards from most risky to least risky. Students should discuss their ideas about the risks involved in each behavior. Each group member may have to share and compare their ideas before reaching a consensus on the rankings.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_

#### Questions

1. Which behavior(s) was it most difficult to rank the risks? Why?

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2. Why did your group choose your #1 as the most risky behavior? List 3 possible outcomes of this risky behavior.

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3. Why did your group choose #7 as the least risky behavior? List 3 possible outcomes of this risky behavior.

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4. List 8 different ways you can refuse the pressure by friends or a trusted adult to participate in risky behaviors.

- |          |          |
|----------|----------|
| 1. _____ | 2. _____ |
| 3. _____ | 4. _____ |
| 5. _____ | 6. _____ |
| 7. _____ | 8. _____ |

## Activity 23

## Risk Behaviors

**Teacher Directions:** Photocopy this page, using heavy paper if possible. Then cut each sheet into seven separate cards.

Driving home after drinking two beers.

Attending a party where you know alcohol will be served.

Being driven home by a parent who hired you to baby-sit;  
you know this adult has been drinking.

Driving home after midnight; you have not had any alcohol.

Taking the keys of a friend who is drunk and driving the friend home;  
you do not have a driver's license.

Getting drunk with your boyfriend or girlfriend.

Drinking at a party and calling your sober parents for a ride home.