

Reality Matters: Under the Influence: Teacher's Guide

Grade Level: 6-8

Curriculum Focus: Health

Lesson Duration: Three class periods

Program Description

No big deal. That's what many kids – and even some parents – think about drinking alcohol. But disturbing research from the American Medical Association finds that alcohol permanently shrinks the area of a teenager's brain that controls memory and learning. This damage is being done in greater numbers and at younger ages. In addition to the risk of brain damage and alcohol poisoning, getting drunk also puts teens at greater risk of becoming a victim or even a perpetrator of crime. This program features the deadly decisions often related to alcohol.

Discussion Questions

Before watching the video

- How does alcohol affect the brain?
- Does alcohol affect a teen's brain differently from an adult's?
- What are ways drinking can affect a teen's life?
- How can you tell if you or someone you know has a drinking problem?

After watching the video

- What are some of the ways drinking can affect teens' lives? (They could become addicted to alcohol; they could become involved in a crime while drinking; they could become the victim of a crime while impaired; their grades could fall; their lives may be interrupted; they could hurt themselves or others; they could suffer irreparable brain damage.)
 - Why do teens and adults respond differently to alcohol? (Because the teen brain isn't fully developed yet, alcohol can have permanent repercussions on that development.)
 - How can you tell if you or someone you know has a drinking problem? (Questionnaires and quizzes can help; see the Extensions below for a link to one such quiz.)
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Lesson Plan

Student Objectives

- Review how alcohol affects the brain.
- Map the areas of the brain affected by teenage drinking.
- Learn what brain functions teenage drinking might impact.

Materials

- *Reality Matters: Under the Influence* video and VCR, or DVD and DVD player
- Computer with Internet access
- Print and online resources about alcohol and its effects on the brain
- Drawing paper and markers

Procedures

1. After watching the video, review some of the statistics presented in the program.
 - Kids who begin drinking before age 15 are four times more likely to become alcoholics than those who begin after age 21.
 - Teenagers can become addicted to alcohol in only six to eight months, whereas adults may take up to two years to become addicted.
 - The average age for a child's first drink is 12.
 - One in four teens who drink will experience problems with alcohol.
2. To explain the alcohol-brain connection, students will "map" the areas of the brain affected by drinking. Divide students into groups of three or four, and explain that each group will draw a diagram of the brain. They should label the areas of the brain affected by alcohol and list what those effects are. In their research, students should answer these questions:
 - What areas of the brain does alcohol affect?
 - What functions do these areas of the brain carry out?
 - What are the short-term effects of drinking and brain function?
 - What can be long-term consequences of teenage drinking on brain development and function?
 - How does drinking affect a teenage brain versus an adult brain?.
3. Students should use print and online resources to complete their brain maps. These Web sites are helpful:
 - Neuroscience for Kids
<http://faculty.washington.edu/chudler/neurok.html>

- Neuroscience for Kids: Alcohol
<http://faculty.washington.edu/chudler/alco.html>
 - HowStuffWorks: How Your Brain Works
<http://science.howstuffworks.com/brain.htm>
 - HowStuffWorks: How Alcohol Works
<http://www.howstuffworks.com/alcohol4.htm>
 - Society for Neuroscience's Brain Briefings: Young Brains on Alcohol
http://web.sfn.org/content/Publications/BrainBriefings/brain_on_alcohol.html
 - PBS's The Secret Life of the Brain: 3-D Brain Anatomy
<http://www.pbs.org/wnet/brain/3d/index.html>
 - PBS's The Secret Life of the Brain: The Teenage Brain
<http://www.pbs.org/wnet/brain/episode3/index.html>
 - KidsHealth: Kids and Alcohol
http://www.kidshealth.org/kid/stay_healthy/body/alcohol.html
 - Discovery Health Teen Center: Substance Abuse
<http://health.discovery.com/centers/teen/takingrisks/substance.html>
4. After completing their research, each group will present its findings to the class. To avoid repeating the same information, you can assign each group a different region of the brain to focus on for the presentation.

Assessment

Use the following three-point rubric to evaluate students' work during this lesson.

- **3 points:** Students were highly engaged in class discussions, conducted thorough research, and answered all the questions provided to make their brain maps.
- **2 points:** Students participated in class discussions and answered most of the questions provided to make their brain maps.
- **1 point:** Students participated minimally in class discussions and presented a simplistic brain map, answering few or none of the questions provided.

Vocabulary

addiction

Definition: Physical dependence on a drug

Context: An addiction to alcohol can be very difficult to treat.



alcoholism

Definition: Disease in which someone is physically dependent on alcohol

Context: Alcoholism is four times more common in those who begin drinking before age 15 than those who don't drink until after age 21.

cerebellum

Definition: Part of the brain located between the brain stem and the cerebrum that coordinates muscle movement and balance

Context: Alcohol's effect on the cerebellum makes people lose their balance and become clumsy.

cerebral cortex

Definition: The thought processor of the brain that is also the seat of sensory perception

Context: Alcohol effects a person's ability to think clearly by depressing the functions of the cerebral cortex.

hippocampus

Definition: The part of the brain's limbic system that aids in forming memories

Context: The hippocampus of teenage drinkers may become permanently shrunken.

limbic system

Definition: Portion of the brain that controls emotions and regulates such functions as temperature, blood pressure, and blood sugar

Context: A person can experience heightened emotions and memory loss because of alcohol's effects on the limbic system.

medulla

Definition: Also known as the brain stem, part of the brain that controls automatic functions such as consciousness, breathing, and heart rate

Context: Shallow breathing and loss of consciousness are signs of alcohol's effect on the medulla.

Academic Standards

National Academy of Sciences

The National Science Education Standards provide guidelines for teaching science as well as a coherent vision of what it means to be scientifically literate for students in grades K-12. To view the standards, visit <http://books.nap.edu>.

This lesson plan addresses the following science standards:

- Life Science: Structure and function in living systems
- Science in Personal and Social Perspectives: Personal health; Risks and benefits

Mid-continent Research for Education and Learning (McREL)

McREL's Content Knowledge: A Compendium of Standards and Benchmarks for K-12 Education addresses 14 content areas. To view the standards and benchmarks, visit <http://www.mcrel.org/>.



This lesson plan addresses the following national standards:

- Language Arts – Viewing: Uses viewing skills and strategies to understand and interpret visual media
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Support Materials

Develop custom worksheets, educational puzzles, online quizzes, and more with the free teaching tools offered on the Discoveryschool.com Web site. Create and print support materials, or save them to a Custom Classroom account for future use. To learn more, visit

- <http://school.discovery.com/teachingtools/teachingtools.html>
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DVD Content

This program is available in an interactive DVD format. The following information and activities are specific to the DVD version.

How To Use the DVD

The DVD starting screen has the following options:

Play Video – This plays the video from start to finish. There are no programmed stops, except by using a remote control. With a computer, depending on the particular software player, a pause button is included with the other video controls.

Video Index – Here the video is divided into four parts (see below), indicated by video thumbnail icons. Watching all parts in sequence is similar to watching the video from start to finish. Brief descriptions and total running times are noted for each part. To play a particular segment, press Enter on the remote for TV playback; on a computer, click once to highlight a thumbnail and read the accompanying text description and click again to start the video.

Curriculum Units – These are specially edited video segments pulled from different sections of the video (see below). These nonlinear segments align with key ideas in the unit of instruction. They include onscreen pre- and post-viewing questions, reproduced below in this Teacher's Guide. Total running times for these segments are noted. To play a particular segment, press Enter on the TV remote or click once on the Curriculum Unit title on a computer.

Standards Link – Selecting this option displays a single screen that lists the national academic standards the video addresses.

Teacher Resources – This screen gives the technical support number and Web site address.

Video Index

I. The First Drink (7 min.)

This segment introduces problems that can result from drinking and takes a look at statistics about teen drinking. A girl with a predisposition to addiction tells how destructive her alcohol addiction became.

II. Wake-Up Call (5 min.)

The segment focuses on the physical, emotional, and social problems caused by teen drinking. Three teens describe events that finally made them decide to quit drinking.

III. Rock Bottom (6 min.)

This segment presents the stories of two girls who did not stop drinking until their parents and the court enrolled them in alcohol rehab programs.

IV. Straight Ahead (6 min.)

Emphasizing the physical, medical, and emotional problems, the segment encourages teens to stop drinking. Teens urge non-drinkers to avoid alcohol, at least until they are of legal age.

Curriculum Units

1. No Big Deal

Pre-viewing question

Q: Why do you think teens should not drink alcohol?

A: Answers may include the following: Drinking can lead to addiction, damage a teen's brain, lead to blackouts and doing things that you can't remember, and driving and drinking can be fatal.

Post-viewing question

Q: Why do some teens think drinking is no big deal?

A: Accept students' ideas from their own experiences. Some teens get the idea from adults who don't think drinking is a problem; others don't consider alcohol a drug. Some teens think that it is OK to experiment with alcohol.

2. Young Drinkers

Pre-viewing question

Q: Do you know any kids who drink? How old do you think they were when they started drinking?

A: Use students' answers as an introduction to the video segment.

Post-viewing question

Q: Why do teens start drinking so young?

A: Teens may see adults drinking, and advertisements, television, and movies show people drinking and having fun. Some have friends who drink and encourage them to try it. Others believe drinking will help them escape their problems.



3. Leading to Addiction

Pre-viewing question

Q: What is alcoholism?

A: Students' answers will vary, but most should know that it is a form of addiction.

Post-viewing question

Q: What does it mean to have an addiction gene?

A: Addictive behavior is genetic. When a parent has an addiction, the children are likely to have a similar problem. When both parents have addictions, it is even more likely that the children will have a genetic predisposition for addiction.

4. Blackouts

Pre-viewing question

Q: What does it mean to black out from drinking?

A: Answers will vary based on the experiences of the students and their friends.

Post-viewing question

Q: Did Heather's bad experience make her stop drinking? When did she decide to stop?

A: After her rape, Heather drank even more. She was arrested when she stole her mother's car. She decided to go into an alcohol rehab program after spending a month in jail.

5. Affecting the Brain

Pre-viewing question

Q: How do you think alcohol affects the brain?

A: Students' answers will vary. After viewing, compare their comments to the information presented in the video.

Post-viewing question

Q: What does medical research show about alcohol affecting the brain?

A: Drinking can cause the teen brain to stop developing; a drinker's hippocampus may be 10 to 12 percent smaller than normal. Drinking can also cause stuttering and forms of brain damage, which is irreversible.

6. More Risk Factors

Pre-viewing question

Q: In addition to brain damage, what else do teens risk from drinking?

A: Answers will vary, but most students are likely to mention injuries from drunk driving.

Post-viewing question

Q: What happened to Derek and Nick when they drank alcohol?

A: Derek got violent and angry, and he dropped out of high school in his freshman year. Nick had three drunk-driving accidents before he turned 17. His best friend almost died in the last accident.



7. Social and Emotional Issues

Pre-viewing question

Q: Do you think the age at which someone starts to drink makes a difference?

A: Accept students' answers without discussion until the end of video.

Post-viewing question

Q: Why does the age at which one starts to drink make a difference?

A: Statistics show that kids who drink before they turn 14 are four times more likely to become alcoholics. Teens can become alcoholics in 6 to 18 months, while it usually takes older people several years. Alcohol prevents the teen brain from maturing.

8. Rock Bottom

Pre-viewing question

Q: What is alcoholism?

A: Answers will vary. Some students may say that it is when a person can't stop drinking; others may say that it is when a person needs to drink every day.

Post-viewing question

Q: How did Kim and her father describe her rock bottom?

A: By age 13, Kim had been expelled from school. She was stealing alcohol from neighbors and using other drugs, and she became irrational and violent. Her father said she tried to hit him with her guitar.

9. Role Models

Pre-viewing question

Q: What is a role model?

A: Answers will vary.

Post-viewing question

Q: What were some examples of bad role models that encourage kids to drink?

A: Role models encouraging kids to drink could include family members, movie stars, and others seen in advertisements.

10. Recognizing the Problem

Pre-viewing question

Q: How would you know if you had a problem with drinking?

A: Answers will vary.

Post-viewing question

Q: What are some indicators of a drinking problem?

A: Indicators include loss of memory or getting into trouble related to alcohol consumption, drinking alone or to feel better, riding in a car with a drunk driver.



11. Leaving Alcohol Behind

Pre-viewing question

Q: Do you think it would be difficult to stop drinking?

A: Accept students' ideas and compare them to answers following the video.

Post-viewing question

Q: What were the experiences of Kim, Christine, and Heather?

A: Kim and Christine spent one year away from family and friends in residential rehab programs. After getting out of such a program, Heather went back to drinking, so she had to return to the facility.

12. Understanding the Risks

Pre-viewing question

Q: Do you think drinking will hurt you?

A: Accept students' ideas and compare them to answers following the video.

Post-viewing question

Q: What are the medical and other risks of drinking?

A: (Teens who drink alcohol may suffer brain damage, blackouts, and memory loss. Associated risks include committing a crime or becoming a crime victim, injury in a car accident, losing friends and family, becoming violent, and arrest and jail time.)