

ALCOHOL AND YOUR DEVELOPING BRAIN

BRAIN

Length: 30-40 minutes | Designed for 5th and 6th grade

Summary

The videos and corresponding classroom lessons have been designed to teach kids about the physical impact underage drinking has on the developing brain and body. In this lesson, students will learn the basics of brain function and neurotransmission, and how alcohol obstructs brain activity and development.

In the following videos and lessons, we detail the ways in which alcohol impacts six different parts of the brain, while teaching about peer pressure, decision making, communication and more.

All lessons are intended to present students with scientific information about the impact of underage drinking on their bodies in an engaging manner to help students create conversations outside of the classroom with parents and their peers.

Objectives

- Conceptualize neurotransmission
- Communicate the way in which alcohol slows brain function
- Identify alcohol's impact on neurotransmission



Vocabulary

- alcohol
- neuroscience
- nervous system
- neuron
- neurotransmitter
- excitatory neurotransmitter
- inhibitory neurotransmitter
- agonist
- antagonist

What you'll need

- [Brain Comprehension Questions](#)
- [Brain Vocabulary Cards](#)
- [Brain Drain Reading](#)
- [Venn Diagram Worksheet](#)
- [Neurotransmission Matching Cards](#)

Comprehension Questions

- What is neuroscience?
- What do you think "vital involuntary actions" are? What are the two examples in the video?
- What are the two types of neurotransmitters in the video called?
- Does alcohol slow down or speed up brain function?

For your next class...

How Alcohol Affects Your Central Nervous System

To learn more about teaching units on the impacts of underage drinking and peer pressure, see additional lessons from *Ask, Listen, Learn*

[See all lessons](#)

For more info head to [AskListenLearn.org](https://www.AskListenLearn.org)

Artwork created by Brandan "BMike" Odums.



- 1 *Optional Pre-Lesson Activity*
5 minutes
- 2 Introduce the unit by playing the video, “How Alcohol Affects Your Brain”. Have the “class neurotransmitter” (one student chosen at random) pass out the comprehension questions to all students (neurons).
5 minutes
- 3 When the video is over, have the students get into groups to discuss the questions. Have volunteers share their answers with the rest of the class. “Why do you think we played that game in the beginning of this lesson? What did the different teams represent?”
5 minutes
- 4 Have a different “class neurotransmitter” pass out the “Brain Drain” reading and Venn Diagram worksheet and have students read independently or in groups.
5 minutes
- 5 Ask students to compare and contrast the information in the video and the reading with the Venn Diagram worksheet. What was similar? What was different? What did they like better? Was one easier to understand?
5 minutes
- 6 Show the neurotransmission section of the video again (:38 to 1:50). Lead a discussion on how it works and how alcohol affects it.
2 minutes
- 7 Activities: *Neurotransmission*
8-10 minutes
- 8 Have new “class neurotransmitter” pass out the vocabulary cards. For homework, ask the students to rewrite definitions for the vocabulary in their own words, and draw a picture to help them remember.
- 9 At the end of the class have students write down two things they learned and one thing they would like to learn more about.

Watch the Video “How Alcohol Affects Your Brain”



Watch

ACTIVITY IDEAS

Pre-Lesson Activity

- 1 The teams in this game are intended to represent alcohol, excitatory neurotransmitters, and inhibitory neurotransmitters. When alcohol is introduced to the brain, it *increases* the function of inhibitory neurotransmitters and *decreases* the function of excitatory neurotransmitters. This activity will help kids conceptualize how neurotransmission is affected when alcohol is involved.
- 2 Separate half the class into the **A-Team**, a quarter of the class into the **E-Team**, and the remaining quarter into the **I-Team**.
Have **I-Team** and **E-Team** line up on one side of a playing field, gym, or classroom.

Whoever can make it to the other side without getting tagged by an **A-Team** member is allowed to participate in the final round. Privately tell the **A-Team** to only tag the **E-Team** members (feel free to join in as an **A-Team** member too).

Blow the whistle. All of the **I-Team** members should have made it to the other side, while little to none of the **E-Team** should.

The final match between the remaining **E-Team** and **I-Team** players should be very unfair. Ask the students was that a balanced or fair game?

5 minutes

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How Alcohol Affects Your Central Nervous System

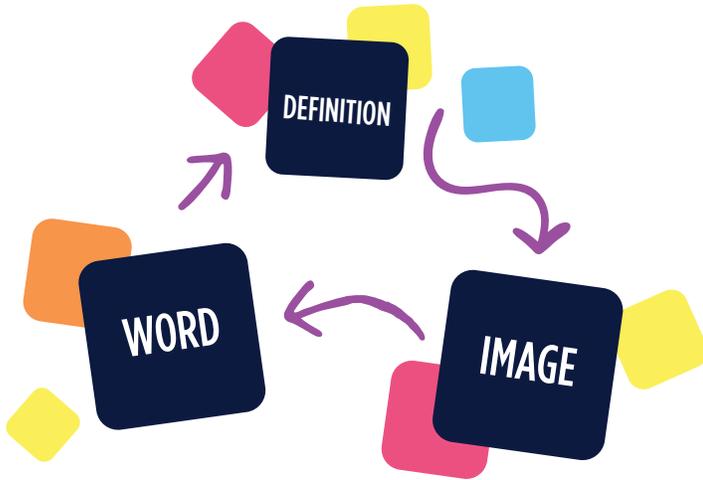
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See all lessons



Neurotransmission Matching Cards

There are seven sets of cards in trios. Pass out sets to students in groups of 3-4.



Students will mix up all of the cards on their desks and place them facedown. Players will take turns flipping the cards, trying to make correct matches of three. Whichever group has the most correct trios in 5 minutes wins!



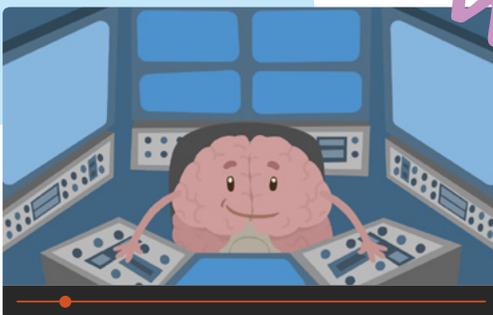
Neuron Bobsled

This activity is intended to help students understand the role of neurons and the difference between inhibitory and excitatory neurotransmitters.

Students in groups of 3 stand one behind the other with their hands on each other's shoulders, in a conga line. Teacher says, "Neurotransmitters Go!" and the groups will all start walking around the room any way they want to go, being careful not to ram into another group.

- When teacher says **"Excitatory"** students will have to move at a faster pace.
- If the teacher says, **"Inhibitory"** the first person in line will have to move at a slower pace.
- If the teacher says, **"Balanced"** the line will return to moving at a moderate pace.

After doing this for a few minutes, ask your students about the functions of inhibitory and excitatory neurotransmitters and see if they can make connections to the first game.



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