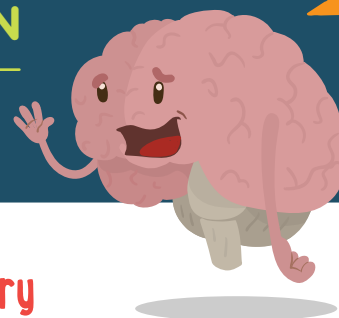


ALCOHOL AND YOUR DEVELOPING BRAIN

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



Summary

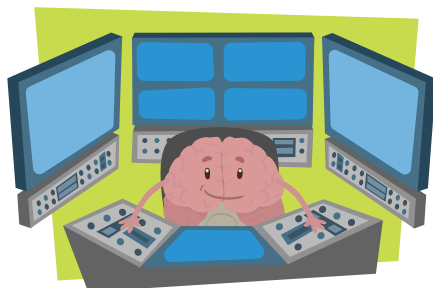
The videos and corresponding classroom lessons have been designed to teach kids about the physical impact underage drinking has on the developing brain and body. In this lesson, students will learn the basics of brain function and neurotransmission, and how alcohol obstructs brain activity and development.

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

- 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

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](#)

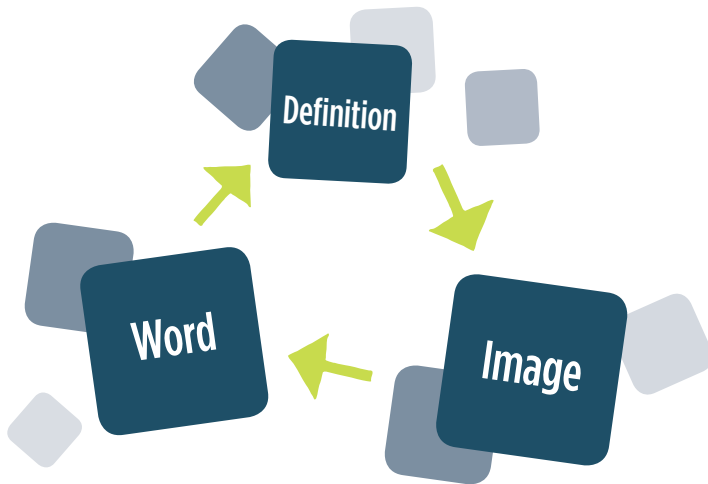


Kids and alcohol don't mix.

For more info head to AskListenLearn.org

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.

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

ALCOHOL AND YOUR DEVELOPING BRAIN

Vocabulary Words

Alcohol

A substance also called ethanol, found in drinks like beer, wine, and liquor, that can make a person drunk. Drinking alcohol is illegal and dangerous for anyone under the age of 21.

Neuroscience

The study of the brain and nervous system.

Nervous System

A system in your body that is made up of your brain, spinal cord, and nerves. This system sends messages between the brain and other parts of your body that are responsible for controlling movement and feeling.

Neuron

A nerve cell; a special cell that carries messages between the brain and other parts of the body.

Neurotransmitter

A chemical substance that carries a message from one neuron to another.

Excitatory neurotransmitter

A neurotransmitter that stimulates brain activity; makes brain functions more active.

Inhibitory neurotransmitter

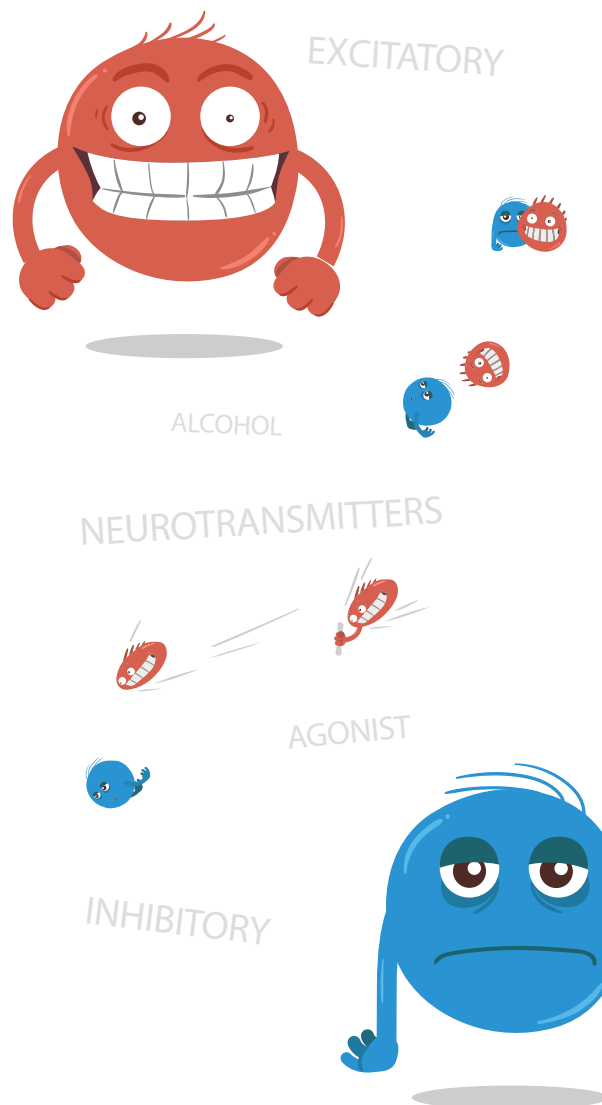
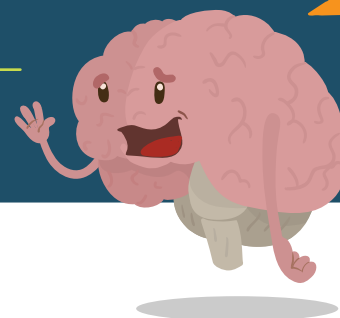
A neurotransmitter that slows down brain activity.

Agonist

A chemical substance that can boost the effects of other chemicals in the brain.

Antagonist

A chemical substance that reduces the effects of other chemicals in the brain.



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

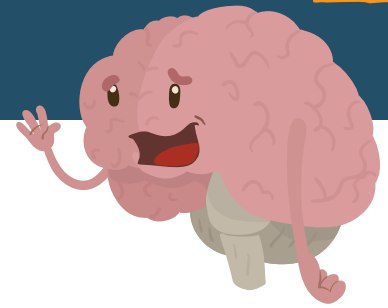
[See all lessons](#)



For more info head to AskListenLearn.org

VOCABULARY WITH PHONETICS

Brain



Alcohol

al•co•hol



**CUT
OUT**

Neuroscience

neu•ro•sci•ence

Neurotransmitter

neu•ro•trans•mit•ter

Nervous system

ner•vous sys•tem

**Excitatory
Neurotransmitter**

ex•cit•ato•ry
neu•ro•trans•mit•ter

Neuron

neu•ron

**Inhibitory
Neurotransmitter**

in•hib•ito ry neu•ro•trans•mit•ter

Antagonist

an•tag•o•nist

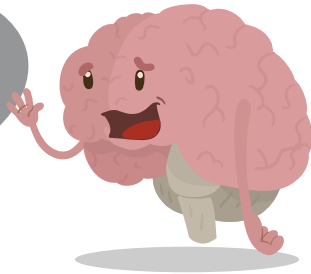
Agonist

ag•o•nist

VOCABULARY WITH PHONETICS

Brain

Use these
Flashcards For
extra practice!



A substance also called ethanol, found in drinks like beer, wine, and liquor, that can make a person drunk. Drinking alcohol is illegal and dangerous for anyone under the age of 21.

A chemical substance that carries a message from one neuron to another.

The study of the brain and nervous system.

A neurotransmitter that stimulates brain activity; makes brain functions more active.

A system in your body that is made up of your brain, spinal cord, and nerves. This system sends messages between the brain and other parts of your body that are responsible for controlling movement and feeling.

A neurotransmitter that slows down brain activity.

A nerve cell; a special cell that carries messages between the brain and other parts of the body.

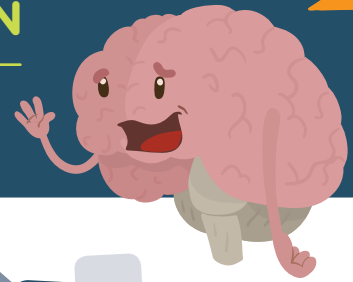
A chemical substance that can boost the effects of other chemicals in the brain.

A chemical substance that reduces the effects of other chemicals in the brain.

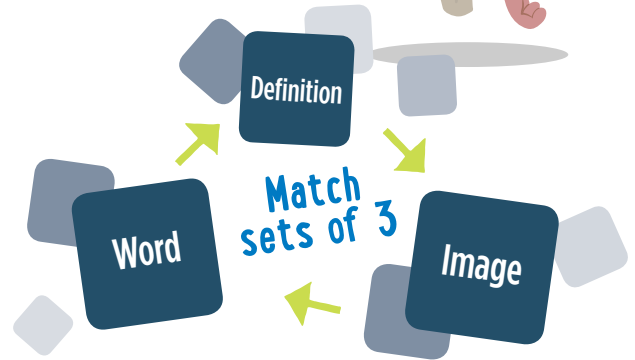
ALCOHOL AND YOUR DEVELOPING BRAIN

Brain

Neurotransmission Matching Cards and CNS



Neuron



Neurotransmitter

Agonist

Excitatory Neurotransmitter

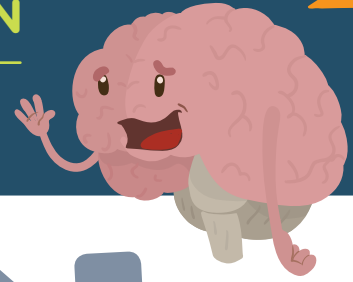
Antagonist

Inhibitory Neurotransmitter

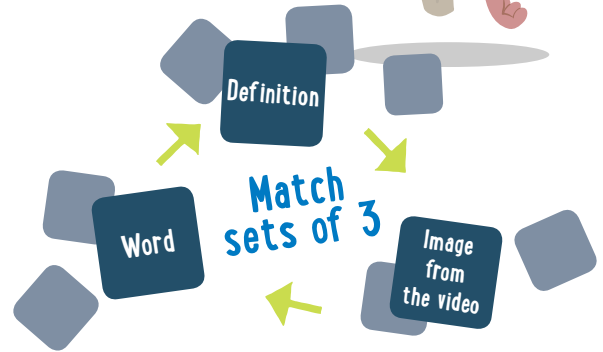
Dopamine

ALCOHOL AND YOUR DEVELOPING BRAIN

Neurotransmission Matching Cards and CNS



A nerve cell; a special cell that carries messages between the brain and other parts of the body



A chemical substance that carries a message from one neuron to another

A chemical substance that can boost the effects of other chemicals in the brain

A neurotransmitter that stimulates brain activity; makes brain functions more active

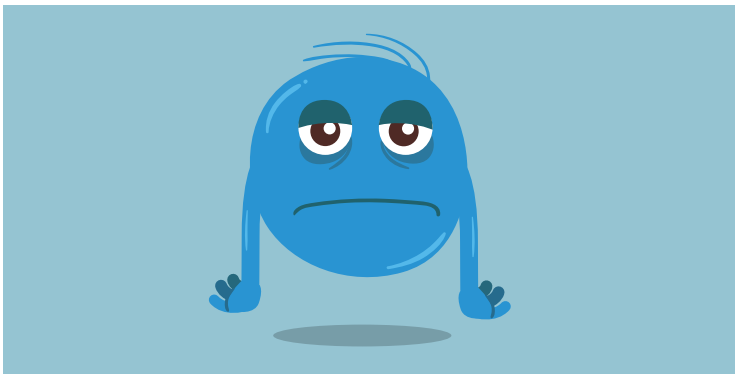
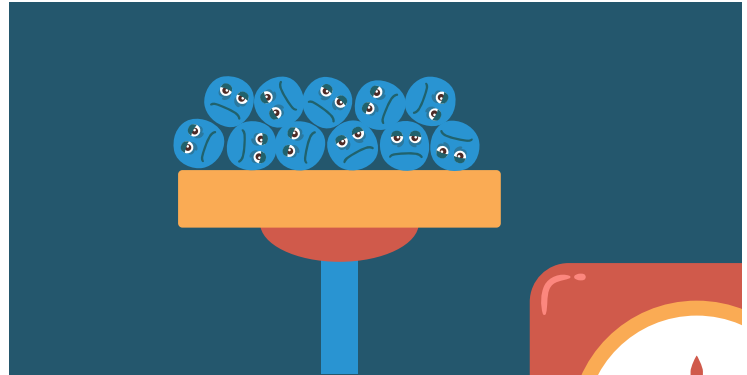
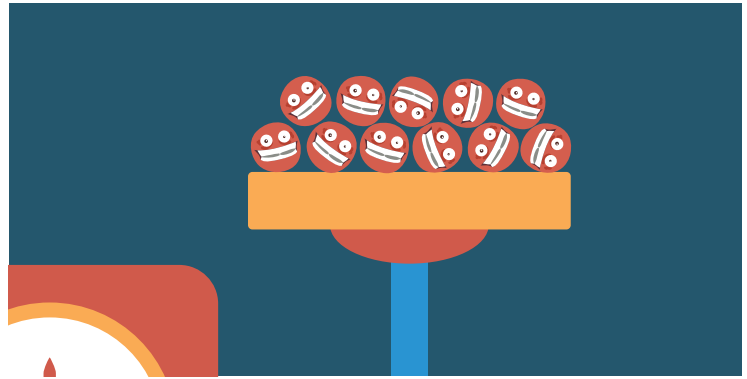
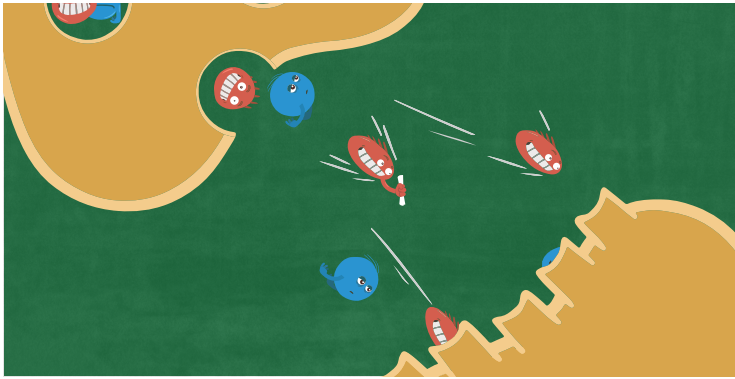
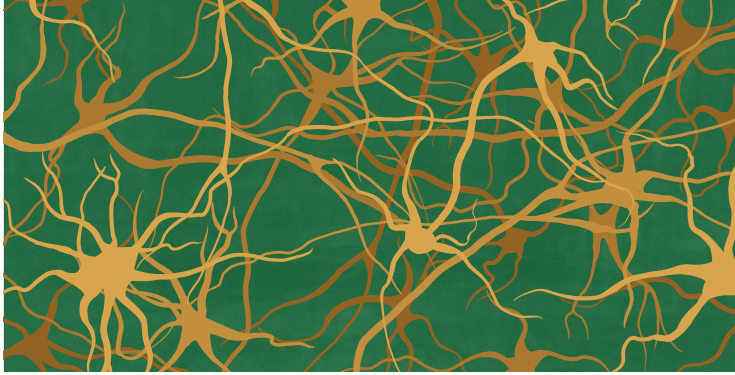
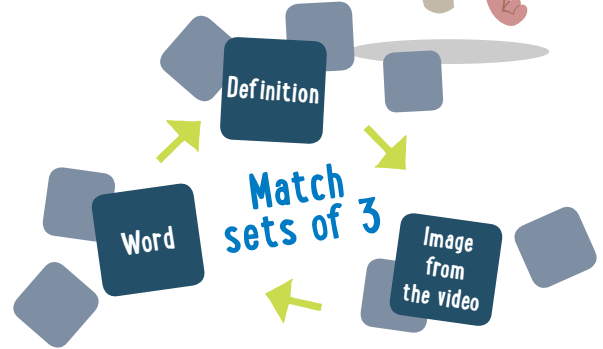
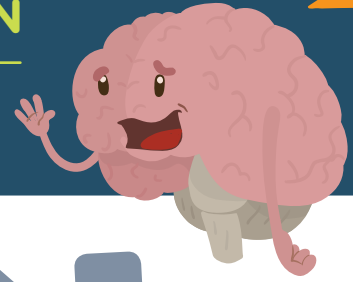
A chemical substance that reduces the effects of other chemicals in the brain

A neurotransmitter that slows down brain activity

A neurotransmitter in the central nervous system that acts with the brain to help regulate emotion. It can give people a relaxed and happy feeling

ALCOHOL AND YOUR DEVELOPING BRAIN

Neurotransmission Matching Cards and CNS

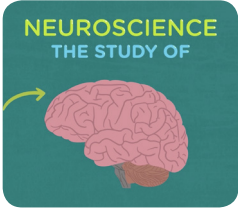
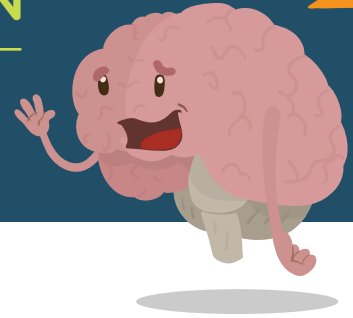


ALCOHOL AND YOUR DEVELOPING BRAIN

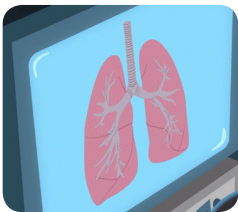
Brain

Comprehension Questions

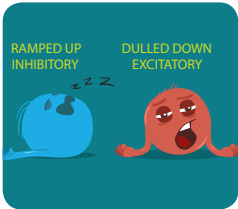
Be sure to write your answers in full sentences and cite evidence from the video.



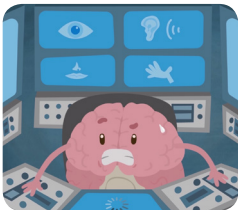
1 What is neuroscience?



2 What do you think “vital involuntary actions” are? What are the two examples in the video?



3 What are the two types of neurotransmitters in the video called?



4 Does alcohol slow down or speed up brain function?



5 Summarize the overall message of this video.

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

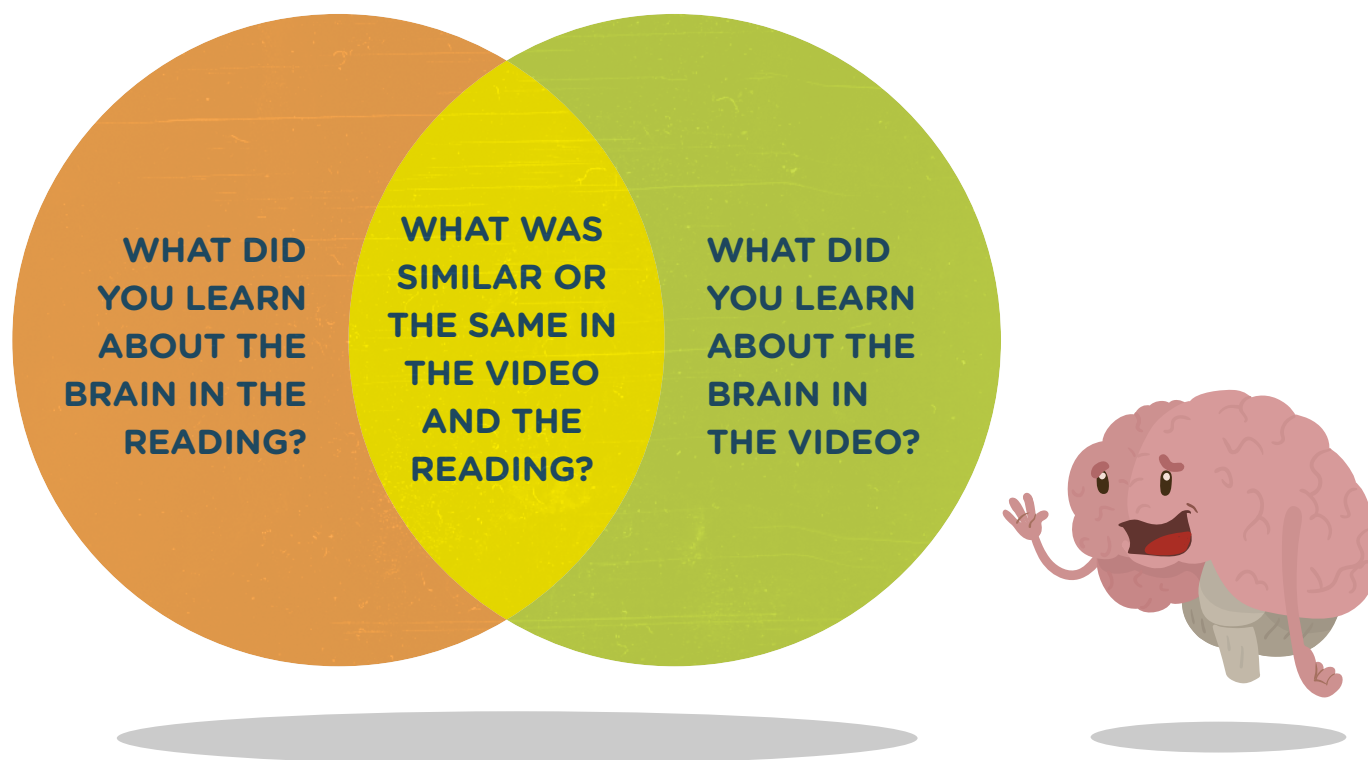
[See all lessons](#)



Kids and alcohol don't mix.

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ALCOHOL AND YOUR DEVELOPING BRAIN



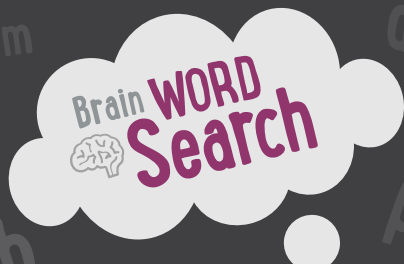
DID YOU PREFER LEARNING ABOUT THE BRAIN WITH THE READING OR THE VIDEO? WHY?
PLEASE USE TWO EXAMPLES FROM THE READING OR VIDEO TO SUPPORT YOUR ANSWER.

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

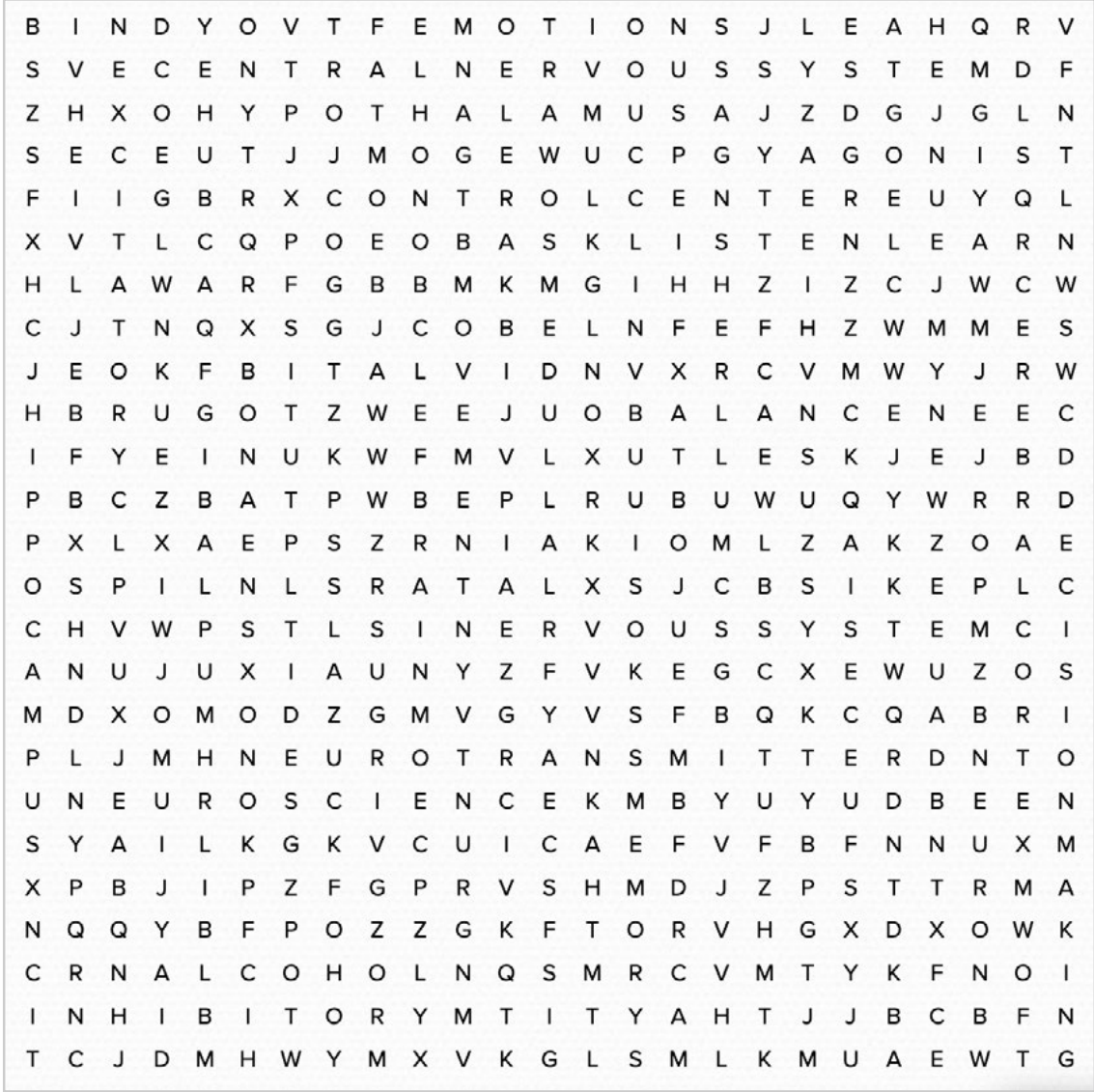
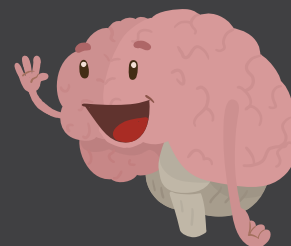
[See all lessons](#)



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Developing Brain



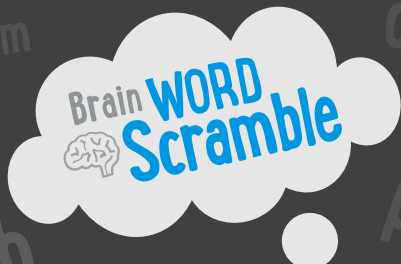
neuroscience
brain
nervous system
agonist
control center
emotions

movement
decision making
memory
neurotransmitter
balance
central nervous system

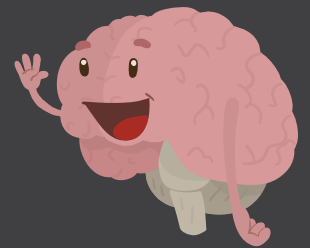
cerebellum
cerebral cortex
hippocampus
hypothalamus
medulla
antagonist

neuron
alcohol
excitatory
inhibitory
ask listen learn

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



Developing Brain



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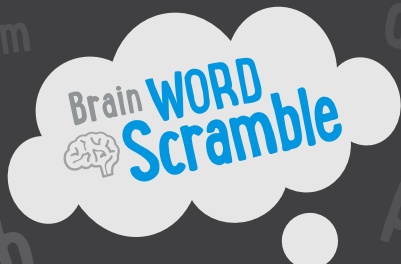
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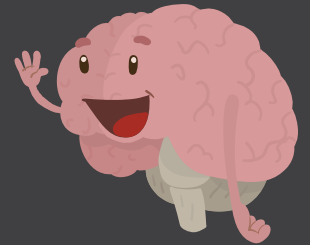
1. neuroscience 2. brain 3. nervous system 4. agonist 5. control center 6. emotions 7. movement 8. decision making 9. memory 10. neurotransmitter 11. balance 12. central nervous system

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Developing Brain



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13. cerebellum 14. cerebral cortex 15. hippocampus 16. hypothalamus 17. medulla 18. antagonist 19. neuron 20. alcohol 21. excitatory 22. inhibitory 23. ask listen learn

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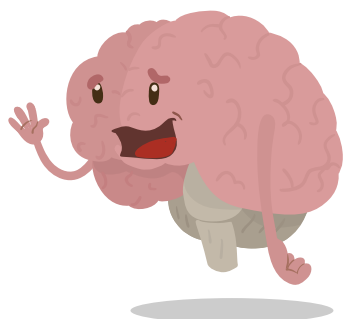
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STANDARDS ALIGNMENT

LESSON 1

Alcohol and Your Brain

Content	Student Objectives	Classroom Activities	Assessment
<ul style="list-style-type: none"> The job of neurotransmitters in the brain How alcohol affects neurotransmitters 	<p><i>Students will be able to:</i></p> <ul style="list-style-type: none"> Conceptualize neurotransmission using physical movement Communicate the way in which alcohol slows brain function through discussion questions and comparing information Identify alcohol's impact on neurotransmission 	<ul style="list-style-type: none"> Pre-lesson neurotransmitter activity Video and class discussion Read "Brain Drain" text and use a Venn diagram to compare to the video Neuron Bobsled game 	<p><i>Formative:</i></p> <ul style="list-style-type: none"> Written discussion questions Venn diagram Vocabulary homework



Standards

CCSS:

RI.5-7.1
 RI.5-7.2
 RI.5-7.4
 RI.5-7.7
 RI.5-7.10
 RST.6-8.1
 RST.6-8.2

RST.6-8.4
 W.5-7.10
 WHST.6-8.10
 L.5-7.4
 SL.5-7.1

NHEA:

1
3

NGSS

MS.LS1.2
 MS.LS1.3
 MS.LS1.8
 MS.LS1.5

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