

HOW MARIJUANA AFFECTS THE DEVELOPING BRAIN

MARIJUANA

Length: 30-45 minutes | Age Range: Designed for 5th and 6th grade

Summary

The *Ask, Listen, Learn* video series and supplemental lesson plans have been designed to teach kids about the impact alcohol has on the developing brain, the short and long-term consequences of underage drinking, and how to make healthy decisions. In this 8th installment, the curriculum will focus on how marijuana affects the developing brain and risks associated with youth use. Here, students will learn the basics of the endocannabinoid system, how marijuana obstructs its regular function, how that can affect their body and behavior, and how they can make smart choices. This lesson is designed to follow the first seven videos and lesson plans but can be used as a freestanding unit as well. Before you get started, be sure to read the [Educator Primer on Marijuana](#) and the [Ask, Listen, Learn Facilitator's Guide](#).

Materials:

- [Marijuana Comprehension Questions](#)
- [Marijuana Vocabulary Cards](#)
- [Chemical Messages Sheet with THC](#)
- [Chemical Messages Sheet No THC](#)
- [Enzyme Code Key](#)
- [Decision-Making Worksheet](#)

Objectives

Students will:

1. Identify the three parts of the endocannabinoid system and understand its function
2. Communicate the way in which marijuana affects the endocannabinoid system
3. Understand the risks associated with youth marijuana use including addiction and mental health issues
4. Demonstrate the ability to make healthy decision

Comprehension Questions

- What are the three parts of the endocannabinoid system?
- What does the endocannabinoid system do?
- What are three ways marijuana can be taken?
- What does THC do to the endocannabinoid system?
- What are some of the risks that marijuana use in kids can lead to?

Vocabulary

- Marijuana
- Cannabis
- Endocannabinoid system
- Endocannabinoids
- Cellular receptors
- Enzymes
- THC
- Vaping or vaporizer
- Cognitive damage
- Motor skills
- CBD
- Medical marijuana



For your next class...

How Alcohol Affects Your Developing 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](https://www.AskListenLearn.org)

Artwork created by Brandan "BMike" Odums.



- 1 Introduce the unit by playing, “[Video 8: How Marijuana Affects Your Developing Brain.](#)” Ensure every student has a paper or virtual copy of the Comprehension Questions to answer as they watch the video.
- 2 When the video is over, have the students get into groups or Zoom rooms to discuss the questions.
- 3 Bring the class back together for a discussion. Start by clarifying that marijuana, like alcohol, is OK for some adults to use, but not for kids because it impairs the developing brain. Make sure to note that in some medical cases, marijuana can be used as medicine when deemed appropriate by a doctor.
- 4 Lead a discussion on the endocannabinoid system and review the three parts (endocannabinoids, cellular receptors, and enzymes). Explain that when someone uses marijuana, it sticks around in and disrupts their system because the enzymes can’t break it down, making it harder to for the brain to perform basic functions. More information about the endocannabinoid system can be found in the Educator Primer on Marijuana.

- 5 [Activity 1 - Break the Code](#)
- 6 [Activity 2 - Decision-making Activity](#)
- 7 Pass out or send link to 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

▶ Watch the Video “How marijuana affects your developing brain”



Watch

ACTIVITY: BREAK THE CODE

Share the following messages with your students:

1. Endocannabinoids communicate very carefully with receptors throughout your body, sending all sorts of important messages that help you with memory, keeping hunger and body temperature in balance, and coping with stress and anxiety.
2. We’re going to review a message that the endocannabinoids are trying to send. First, we’re going to try to decode a message that has been [impaired by THC](#). We will come back together and discuss what we think it means.
3. Then, we will try to decode a message that has [NOT been impaired by THC](#).

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Instructions:

1. Break students out into groups or Zoom rooms and let them spend 10 minutes decoding the first set of chemical messages, "Impaired by THC"
2. Come back together as a class and ask the students if anyone could figure out what the message is. Lead a discussion with the following questions
 - a. Why do you think it might be difficult to understand the message?
 - i. THC throws the system off, making it harder for endocannabinoids to deliver their messages - things in the body get confused.
 - b. So, if developing brain is impaired by THC, what might be some of the effects?
 - i. Harder time remembering things
 - ii. Problems coping w stress and anxiety
 - iii. Trouble regulating body temperature and hunger
 - iv. Potential for long-term harm, addiction, and mental health problems.
3. Break students out into groups or Zoom rooms for a second time, and let them spend 10 minutes decoding the second set of chemical messages, "Not Impaired by THC"
4. Come back together to reveal the message and lead a reflection
 - a. How does THC affect the developing brain?
 - b. Is it easier for the body to send important messages and regulate your functions with or without THC in the system?
 - c. Remember, THC throws off the precise coordination of endocannabinoids, making it harder for them to communicate important messages to keep the body balanced. Long-term use of marijuana can lead to long-term health consequences by continuing to throw the body off balance.



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