

Teacher's Guide for ODYSSEY

September 2011: "Addicted?"

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Teacher's Note:

This guide contains project ideas, short answer, extended response, fill-in, and true/false with correction. The variation is designed to have the students think critically, as well as to test their comprehension. An answer key to the short answer sections can be found at the end of the guide.

Extended Response: Comprehension & Critical Thinking

The questions below can be used as written, simply answered in complete sentences or easily transformed into longer essay (ELA) style questions, or even research topics. In any case, have the students support their answers with details from the text or use critical thinking skills to create a thorough and interesting answer. The questions, essays and projects have been aligned with the **Common Core Standards**. Consider the level of your students when deciding how to use the questions.

"Facing Up To Underage Drinking" p. 6-8

1. What does this article say research shows about how young a person starts drinking?
2. What are some of the problems that underage drinking can lead to?
3. Why do you think that underage drinking becomes an even more serious issue as students begin college?
4. What criteria defines 'alcohol abuse'?
5. How does alcohol tolerance lead to organ damage and further risks?
6. What is physically happening to the body during alcohol withdrawal? What is psychologically happening to the body?
7. What is meant by 'medically managed' detoxification?
8. What types of treatments are available to alcoholics who want to get sober?

Essay: *Write an essay describing how you would try to help a friend who seemed to have an alcohol problem. Use the information from the article, and feel free to include any personal knowledge you have on the subject of addiction.*

"Robots in Disguise: The Psychology of Addiction" p. 9-13

1. How are cutting edge theories of how the mind works changing the way that we view and treat addictions?
2. Explain the two basic operating systems of our brains. (reflective, impulsive)
3. How does the malfunctioning of the 'robot system' reinforce addictive behavior?
4. Explain how the brain associates patterns of behavior with cues from the environment. How can this be an advantage? How can this be a disadvantage?
5. What is 'classical conditioning'?
6. The ability to change, and choosing to change, are part of what makes us human. Explain this statement in reference to addiction and our robot functions.
7. What do psychological experiments indicate regarding 'intermittent rewards'?

8. After reading this article, explain why one treatment method would not work for all people with all addictions.

Essay: Write an essay explaining the three models of addictions discussed in this article. (disease model, psychological model, biopsychosocial model) Decide which model you believe to be the most helpful for understanding addiction and state why you chose that model.

"The Neuroscience of Addiction" p. 14-17

1. How do you interpret Jim Morrison's quote, "Taking drugs is like making a bet with your mind."?
2. Paragraph 3 in this article discusses how the brain works, and fundamentally how addictions form. Reread this paragraph and explain the functions in your own words.
3. The 'reward system' of the brain is a positive function for our survival. Explain why this is the case, and also use an example to show how it can work to cause addictions.
4. How do drugs mislead the brain from within?
5. What are some of the effects of persistent drug use?
6. Define the two major neurological processes of the brain. (reinforcement, neuroadaptation)

Research: Page 17 of this article discusses the major reward systems in the brain. (dopamine system, opioid system, gaba system, serotonin system.) Choose one of these systems and research its function. Explain how the system works and how it contributes to specific types of addictions. Jim Morrison is mentioned in this article...find another addicted rock star/celebrity to discuss in your own research paper in order to 'put a face' on your research.

"The Rat Pack Researchers and the Zippy Mystery" p. 18-22

Read the article in its entirety and then fill in the blanks. Refer back to the text if necessary.

1. The _____ is the part of the brain that helps you with balance and coordinate movement.
2. _____ is the most powerful hallucinogen known and is created in a lab.
3. Chemicals that replace oxygen in the lungs and brain when inhaled, and cause difficulty moving and thinking are called _____.
4. Found in tobacco products like cigarettes and chew tobacco, _____ causes mood changes and is one of the most used addictive drugs.
5. The ingredient, _____, found in marijuana interferes with your cerebellum. It decreases your coordination and makes it harder to think and remember things.
6. _____ is an opiate that relieves pain, causes wakefulness and clouded thinking. It can also slow breathing or make the user suddenly fall asleep.
7. A white powder made from the coca plant, _____, speeds up the heart, increasing body temperature, blood pressure and heart rate.
8. The dangerous stimulant, _____, is made illegally from ingredients such as battery acid and drain cleaner. It can cause wakefulness, low appetite, irritability, quick breathing, tremors, increased body temperature, and violent behavior.
9. _____ is a neurotransmitter that carries signals in your brain. It is involved in reward system pathways.

10. _____ is the process that occurs when dopamine gets sent out carrying a message and it comes back to a nerve cell and gets reabsorbed.

"Winning Science: Are cell phones addictive?" p. 23-25

1. What does Michelle Hackman's study about cell phones indicate?
2. Does your personal experience with cell phone usage support her finding?
3. Think about what you know about valid research studies. What can be done to make this study more credible?
4. Create a pro/con list regarding cell phones.
5. Challenge yourself to give up your cell phone for a day. Keep a journal during this period of time and record your feelings and changes in behavior.

"Unplugging a Surprise" p. 26-29

Project: This article discusses the importance of distinguishing between quantitative research and qualitative research. There is an example in the box on page 28 regarding electronic devices and these types of research. Be sure you understand the differences in the types of research. Demonstrate your understanding of these concepts by choosing 3 of your own topics for research. Next, make a chart showing how you would change the focus to complete both quantitative and qualitative research for your subject matter.

"Pain Pills?" p. 30-34

1. Explain how it's possible for a teen to innocently find themselves on the brink of prescription pill abuse, as in Craig's case?
2. The abuse of doctor-prescribed medications can take many forms. List three ways teens are abusing prescription pills.
3. The CDC reports that prescription drug abuse is on the rise. In your opinion, what is the reason for this?
4. Why are opiates particularly attractive drugs to teens?
5. What is the phenomenon known as psychological addiction?
6. Where do teenagers get prescription drugs?

"Is Addiction in Your Genes?" p. 35-37

Mark the following statements TRUE or FALSE. Provide the correct answer if FALSE.

_____ 1. Prescription drugs are the most heavily studied drugs so far in the area of addiction and genetics.

_____ 2. To break down and use a substance within the body is to metabolize that substance.

_____ 3. A gene variant is a specific mutation or variation for a gene.

_____ 4. Genetic research has found specific gene variants that cause certain personality traits.

_____ 5. Correctly matching patients to treatment programs might improve chances for recovery.

_____ 6. States with stricter regulations and more restrictive attitudes have higher rates for alcohol addiction and abuse.

_____ 7. Genetic variations can predict who will or won't become addicted to alcohol or other drugs.

_____ 8. Even one drunken episode can cause death from alcohol poisoning.

_____ 9. Risks of rape, assault, and theft crimes rise when alcohol is involved.

_____ 10. NIAAA is the molecule in cells that encode your genetic information.

"Time-Slipping" p. 38-41

The article "Time-Slipping" paints a picture of the future in a world challenged by temperature and climate changes. Many scientists predict that if humans continue on their current path, destroying ecosystems and living irresponsibly, that such a future may become a reality.

Essay: Realistic Fiction

Write in the style of journal entries describing your life in the future as presented in the article. Include 'time-slipping' entries to provide a contrast for how different your life is. Your writing should include information about your environment, your daily life, and your time-slipping trips. Provide the reader with details regarding your emotional state, and your reaction to the changes. Your final entry should outline how you plan to thrive and survive (or wither!) in this new world.

"Caffeine: How Hooked are You?" p. 42-45

1. According to the Food and Drug Administration, what is the ruling regarding caffeine in alcoholic energy drinks?
2. Why is the combination of caffeine and alcohol so dangerous?
3. How does caffeine affect the central nervous system?
4. Construct a chart showing the positive and negative aspects of caffeine.
5. What is caffeine toxicity?
6. What are some of the possible withdrawal symptoms regarding caffeine use?

ANSWER KEY:

"The Rat-Pack Researchers and the Zippy Mystery"

1. *cerebellum*
2. *LSD*
3. *inhalants*

4. *nicotine*
5. *THC*
6. *heroin*
7. *cocaine*
8. *methamphetamine*
9. *dopamine*
10. *reuptake*

"Is Addiction in your Genes?"

1. *False, alcohol*
2. *True*
3. *True*
4. *False, research has NOT found any clear evidence*
5. *True*
6. *False, lower rates*
7. *False, cannot predict*
8. *True*
9. *True*
10. *False, DNA*