

**Teacher:** Ms. Emily Soldner

**Date:** 3/5/10

**School:** Academy of Scholastic Achievement

**Subject:** Chemistry II

**Grade(s):** High school (9-12)

**Overview of Class:** This class content covers chemical quantities, chemical reactions, solutions and acids/bases.

**Overview/Purpose:** This series of lessons was organized to target students' interests and also based on the growing impact of drugs and substance abuse on the surrounding community. The goal and purpose of this lesson is to inform students how drug use actually impacts the body and to encourage students to think critically about some of the long-term effects of use and dependency on illegal substances. To realize this goal, students will be taught lessons that inform them about how drugs change and alter the body's chemistry and students will also be engaged in discussion and activities that ask them to consider the relationship between substance use and overall quality of life. Students will be able to use what they learned to inform their peers about misconceptions and prevention strategies. The discussion of information related to substance abuse will empower students to be stewards of prevention and take positive action to impact their community.

**Prevention Strategies Utilized (and How):**

- 1) Correcting of misperceptions** – In this series of lessons we talked about some of the common ways that using drugs can directly impact the chemistry and functioning of your body. Students learned directly how drug use affects personal health and misinformation was corrected through the presentation of information and in discussion.
- 2) Increasing perceptions of personal risk** – Students will be taught how drug use affects an individual physiologically through the body and the brain's response to the drug. Students will also be asked to examine what the risk factors are for substance addiction and will be asked to reflect on how they themselves or members of their community are at risk.
- 3) Engaging in community prevention** – Students will also be given the task of coming up with ideas of how they themselves or their community members could overcome addiction or temptation to use these substances. Students will be asked to design a public service announcement advertisement that talks about some of the risk factors or effects of using drugs. This project will allow students to think about the motivations people may have for using drugs and to examine the negative effects drugs have on health and people's lives.

<b>Objective:</b> Students will be able to describe how the body regulates the condition of homeostasis through solutions				
<b>Time</b>	<b>Activities</b>	<b>Illinois and SEL Standards</b>	<b>Resources</b>	<b>Assessments</b>
15 minutes	<p>DoNow – students will be asked to answer the following questions:</p> <ul style="list-style-type: none"> <li>• How does your body regulate temperature or fight disease?</li> <li>• How are able to substances or drugs able to affect different systems of your body. Make a hypothesis.</li> </ul>	<p><b>STATE GOAL 12:</b> Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.</p> <p><b>12.A.5a</b> Explain changes within cells and organisms in response to stimuli and changing environmental conditions (e.g., homeostasis, dormancy).</p> <p><b>12.C.5a</b> Analyze reactions (e.g., nuclear reactions, burning of fuel, decomposition of waste) in natural and man-made energy systems.</p> <p><b>12.C.5b</b> Analyze the properties of materials (e.g., mass, boiling point, melting point, hardness) in relation to their physical or chemical structures.</p>		Responses to DoNow questions
15 minutes	<p>Notes and Discussion</p> <ul style="list-style-type: none"> <li>• PowerPoint slides will be used to present information on the properties of water and the body’s homeostatic mechanisms</li> <li>• Students will take notes as the information is presented</li> </ul>		PowerPoint presentation	Guided questions
15 minutes	<p>Video</p> <ul style="list-style-type: none"> <li>• Teacher will introduce the video, which will illustrate the body’s normal biochemistry and homeostatic mechanisms</li> </ul>		<p>Video</p> <p>Guided notes form</p>	Guided notes, video questions

	<ul style="list-style-type: none"> <li>Students will take notes onto a guided notes form as the video progresses</li> </ul>			
10 minutes	<p>Closing/Exit Slip</p> <ul style="list-style-type: none"> <li>Students will be given an exit slip which will ask them to answer questions about the body's biochemistry and homeostatic mechanisms.</li> </ul>		Exit slip	Exit slip

<b>Day 2</b>				
<b>Objective:</b> SWBAT describe how drugs alter the body's homeostasis				
<b>Time</b>	<b>Activities</b>	<b>Illinois and SEL Standards</b>	<b>Resources</b>	<b>Assessments</b>
10 minutes	DoNow – students will be asked to answer questions that review that properties of solutions	Same as Day 1		Responses to DoNow questions
15 minutes	<p>Notes and Discussion</p> <ul style="list-style-type: none"> <li>PowerPoint slides will be used to present information on how the brain normally functions to create stable body conditions and how drugs affect the body's ability to do this.</li> </ul>		PowerPoint slides	Guided questions
10 minutes	<p>Activity</p> <ul style="list-style-type: none"> <li>Teacher will read a list of 20 words to students and after reading the list, will ask students to write down as many words as they can remember.</li> <li>After students finish writing down words from the first list, the teacher will ask 6 students to carry on a loud conversation at the back of the classroom as the second list of 20 new words is read.</li> <li>Students will again write down as many words as they can remember after the teacher reads the list.</li> </ul>		Activity materials – list of words, teacher guide, student activity guides	Student activity guide questions and reflection
20 minutes	<p>Reflection/Summary</p> <ul style="list-style-type: none"> <li>Teacher will debrief the activity making the analogy</li> </ul>		Reflection handout	Responses to reflection questions

	<p>to the affect of drugs on the brain.</p> <ul style="list-style-type: none"> <li>• Teacher will introduce the summary/reflection guide and will give students instructions on how to complete it.</li> <li>• Students will work on completing the reflection and will turn in the reflection before the end of class.</li> </ul>			
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### Day 3

<b>Objective:</b> SWBAT describe how social environment affects brain chemistry and susceptibility to drug abuse.				
10 minutes	DoNow – Students will be asked to answer questions reviewing the normal function of the brain and the effects of drugs on the brain	Same as Day 1		Responses to DoNow questions
15 minutes	<p>Notes/Discussion</p> <ul style="list-style-type: none"> <li>• Teacher will walk through a presentation from the National Institute on Drug Abuse about how addiction happens and what factors influence addiction</li> <li>• Students will take notes as we walk through the presentation</li> </ul>		PowerPoint slides	Guided questions
20 minutes	<p>Activity</p> <ul style="list-style-type: none"> <li>• Teacher will present a graphic organizer and will ask students to answer analysis questions about the graphic organizer in small groups. Each small group will write their responses on paper and all of the groups' posters will get hung on the wall.</li> <li>• Teacher will give instructions for the concluding writing activity.</li> </ul>		Activity materials – graphic organizer, poster paper, markers, questions for groups to answer	Writing activity
10 minutes	<p>Closing</p> <ul style="list-style-type: none"> <li>• Teacher will distribute exit slip and will ask students to silently examine the other posters, make observations about their peer's responses and reflect.</li> </ul>		Exit slip	Exit slip

	<ul style="list-style-type: none"> <li>Students will complete the exit slip before leaving class.</li> </ul>			
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<b>Day 4</b>				
<b>Objective:</b> SWBAT design a public service advertisement to prevent drug use in their community				
10 minutes	DoNow – Students will be asked to answer questions about why they think people may use drugs or become addicted to drugs	Same as Day 1		Responses to DoNow questions
10 minutes	Project Introduction/Discussion <ul style="list-style-type: none"> <li>Teacher will lead students through a discussion about why it is important to think about people’s motivations to use drugs when thinking about how to prevent people from using drugs.</li> <li>Teacher will distribute the project rubric and will explain the details of the project.</li> </ul>		Rubric	Rubric
30 minutes	Project Work Time <ul style="list-style-type: none"> <li>Teacher will state the expectations of work time verbally and through writing</li> <li>Students will individually work on completing the project</li> <li>Teacher will monitor progress</li> </ul>		Project materials – rubric, construction paper, markers, crayons, scissors, magazines, glue	Rubric, completion of project
5 minutes	Closing <ul style="list-style-type: none"> <li>Students will complete the exit slip before leaving class.</li> </ul>		Exit slip	Exit slip