

CHAPTER 3- CARBON-BASED SOCIETY & THE ENVIRONMENT

ACTIVITY 1: Developing a Formula to Make Ethanol

Activity Objective: Develop a formula to make Ethanol using distilled water, yeast and sugar and write a report detailing this formula and process.

Chapter 3 Definition: Ethanol (EtOH or C₂H₆O), also commonly called alcohol, ethyl alcohol, and drinking alcohol, is the principal type of alcohol found in alcoholic beverages, produced by the fermentation of sugars by yeasts. It is a neurotoxic, psychoactive drug, and one of the oldest recreational drugs. It can cause alcohol intoxication when consumed in sufficient quantity.

Ethanol is a volatile, flammable, colorless liquid with a slight chemical odor. It is used as an antiseptic, a solvent, a fuel, and due to its low freezing point, the active fluid in many alcohol thermometers. The molecule is a simple one, being an ethyl group linked to a hydroxyl group. The stem word "eth-" used in many related compounds originates with the then-German word for ethanol (äthyl) developed in the 19th century, used to identify the alkyl chain as consisting of 2 carbon atoms.

VIDEO: <https://www.youtube.com/watch?v=txm7eu8KxVI>

Materials: Chapter 3, paper, computer, printer. Internet Access

SAFETY NOTE: YOU ARE NOT TO ACTUALLY MAKE THIS MATERIAL JUST EXPLAIN HOW IT IS MADE

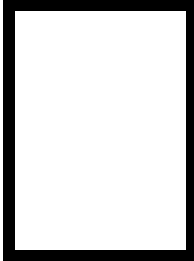
Procedure:

1. Work as partners or small teams
2. Review the embedded video above and any other videos on www.youtube.com
3. Research the formula for making Ethanol and list it in your report
4. Research any applicable safety instructions regarding this process and list them in your report
5. List all of the ingredients need to formulate Ethanol
6. Write down the detailed process to formulate Ethanol in your report



RUBRIC

4 World-Class Learner	3 Proficient Learner	2 Developing Learner	1 Emergent Learner
Learner at this level has gone beyond mastery of knowledge, skills, & attitudes described in project. World-class learner consistently exhibits high-quality performance.	Learner at this level has had opportunities to apply knowledge, skills, & attitudes of component of project. Proficient learner has mastered essential attributes, thus proving mastery.	Learner at this level has been exposed to & had opportunity to apply knowledge, skills, & attitudes of project. Developing learner may have only a few essential attributes to master before mastery.	Learner at this level may or may not have been exposed to knowledge, skills, & attitudes required by academic standards of the project.



1= Emergent Learner

2 = Developing Learner

3 = Proficient Learner

4 = World-Class Learner