

## Student Guide

### Lesson # 4 – Ethics in Nanotechnology and Cosmetics

#### “Nano or NoNo”

In the cosmetics industry, nanotechnology used as a delivery system for vitamins and chemicals is becoming more popular. You have already investigated the chemical properties of these delivery systems in the lab and in the classroom. You are now going to look at the ethical issues surrounding this new technology.

The Federal Drug Administration (FDA) regulates twenty percent of consumer purchases including cosmetics, however, the FDA does not regulate technologies. A new British cosmetic company, NanoBeauty, wants to manufacture and distribute their products here in the United States. The NanoBeauty board, of whom some of you are members, will be presenting their product information to the FDA next week. Some of you are members of the FDA Product Review Committee and you must do research on NanoBeauty’s products prior to their presentation. After NanoBeauty’s presentation, you must decide if their products will be allowed to enter the U.S. cosmetic market.

Please make sure you address the following topics:

- How do NanoBeauty’s products function as Vitamin A delivery systems?
- Include the characterization of physical and chemical properties of nanoparticles.
- Are there any known risks associated with this technology?
- How will risks be communicated?

NanoBeauty will make its report to the FDA for approval on \_\_\_\_\_.

As part of your presentation to the FDA, NanoBeauty must have a PowerPoint and handouts. The FDA must be able to ask questions of the board and support any arguments you make based on research you have done on their products up for review. See the attached rubric for grading guidelines.

## Grading Rubric for Class Debate : Nano or Nono

Teacher Name: \_\_\_\_\_

Student Name: \_\_\_\_\_

| CATEGORY                | 4   | 3  | 2  | 1   |
|-------------------------|---|--|--|---|
| Respect for Other Team  | All statements, body language, and responses were respectful and were in appropriate language.  | Statements and responses were respectful and used appropriate language, but once or twice body language was not.                   | Most statements and responses were respectful and in appropriate language, but there was one sarcastic remark.                       | Statements, responses and/or body language were consistently not respectful.                              |
| Information             | All information presented in the debate was clear, accurate and thorough.   | Most information presented in the debate was clear, accurate and thorough.   | Most information presented in the debate was clear and accurate, but was not usually thorough.                                       | Information had several inaccuracies OR was usually not clear.  |
| Rebuttal                | All counter-arguments were accurate, relevant and strong.   | Most counter-arguments were accurate, relevant, and strong.  | Most counter-arguments were accurate and relevant, but several were weak.  | Counter-arguments were not accurate and/or relevant   |
| Use of Facts/Statistics | Every major point was well supported with several relevant facts, statistics and/or examples.   | Every major point was adequately supported with relevant facts, statistics and/or examples.  | Every major point was supported with facts, statistics and/or examples, but the relevance of some was questionable.                  | Every point was not supported.  |
| Presentation Style      | Team consistently used gestures, eye contact, tone of voice and a level of enthusiasm in a way that kept the attention of the audience. | Team usually used gestures, eye contact, tone of voice and a level of enthusiasm in a way that kept the attention of the audience. | Team sometimes used gestures, eye contact, tone of voice and a level of enthusiasm in a way that kept the attention of the audience. | One or more members of the team had a presentation style that did not keep the attention of the audience. |
| Organization            | All arguments were clearly tied to an idea (premise) and organized in a tight, logical fashion.   | Most arguments were clearly tied to an idea (premise) and organized in a tight, logical fashion.                                   | All arguments were clearly tied to an idea (premise) but the organization was sometimes not clear or logical.                        | Arguments were not clearly tied to an idea (premise).   |
| Understanding of Topic  | The team clearly understood the topic in-depth and presented their information forcefully and convincingly.                             | The team clearly understood the topic in-depth and presented their information with ease.  | The team seemed to understand the main points of the topic and presented those with ease.  | The team did not show an adequate understanding of the topic.   |