**Is It Easy Being Green Game Show**

**MIDDLE SCHOOL**

**Green Chemistry**

**Background:** This introduction to the shampoo challenge is based upon Ellen DeGeneres’s game show spoof, “Grab My Can” or “Family Feud”

**Goal:** Place students in role of materials scientists to create the most benign shampoo possible

**Objectives:** Students will …

* Consider how the 12 Principles relate to the creation of products

**Materials:**

* Copies of Is It Easy Being Green Student Sheet – cut in half
* Optional: game show host costume & cheesy music
* Computer and LCD projector
* Is It Easy Being Green PowerPoint
* Optional: shampoo name and logo grading rubric

**Time Required:** 45–60 minute class period

**Standards Met:**

* Science and technology in society
* Science as a human endeavor

**Procedure:**

* Divide students into 2 teams to compete on the game show.
* The host, Kelly Chartreuse (or any host name of your choice) enters and introduces the game show. It is similar to Family Feud or “Grab My Can” from Ellen DeGeneres.
* Show first question.
  1. Use the answer keys in this lesson to determine the number associated with each answer
  2. Click on the number to reveal the answer
* Ask one student from each team to come up and stand next to the host. After you ask the question, the first student should to grab the “can” may answer the question.
  1. That team now has control of the board. Ask each student one at a time to give an answer.
  2. If that team gets 3 strikes, the other team may answer. They get all of the points if the answer correctly.
* Repeat the process for questions 2 and 3.
* Tell the students that they are now entering into the final challenge.
* Read the Final Challenge.
* Pass out Is It Easy Being Green Student Sheet to each student.
* Optional: Hand out the Is It Easy Being Green –Shampoo Name and Logo Grading Rubric. Give students the rest of the class period to design the Name and Logo.

**Assessment:**

* Class participation
* Optional: Product name and logo

**Is It Easy Being Green Game Show - Student Sheet**

Your task is to create a successful shampoo by providing a high-quality hair care product.

**Product Expectations**

* Create name and logo
* Test product efficacy
* Consider product packaging
* Practice ethical decision-making, considering the environment, economics, & human well being

**Chemistry Expectations**

* Demonstrate understanding of chemistry components including:
  + pH neutrality
  + exothermic reactions
  + solvent toxicity
  + packaging feedstocks
  + lab safety
* Practice the 12 Principles of Green Chemistry in all labs
* Determine product effectiveness based on chemical analysis
* Change formulations based on chemical analysis

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**Is It Easy Being Green - Questions & Answers**

**Top 6 clues that you need to take a shower.**

1. Someone tells you that you stink
2. Self-check
3. Girls/guys disperse
4. Nobody wants to sit next to you
5. Grease drips off your hair
6. Flies are attracted to you

**6 habits that ruin hair:**

1. smoking
2. spraying cologne or perfume on it
3. chewing on the ends
4. playing with it (twisting, etc)
5. over-brushing
6. eating poorly

**6 factors that influence which shampoo consumers buy:**

1. color
2. scent
3. product promises
4. brand name and image
5. peer influence
6. ingredients

**final task**

You are green chemists with the task of creating a shampoo more green than Kermit, pea soup or Oscar the Grouch. In our system of capitalism, competition is paramount. You need to behave ethically and consider the environment, economics, & human well being. Remember to use the 12 Principles of Green Chemistry as your guide throughout your lab experience. You will come back for a final game show experience where we will determine, “Is It Easy Being Green?”

For now this has been Kelly Chartreuse. See you next week on “Is It Easy Being Green”. Keep it easy and keep it green.

**Is It Easy Being Green – Shampoo Name and Logo**

**Grading Rubric**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **5** | **4** | **3** | **2** | **1** |
| **Content** | This clearly, creatively, & accurately reflects your product | This accurately reflects your product | Most of your name & logo accurately reflects your product; one element is confusing. | Some of your name & logo accurately reflects your product; more than one element is confusing.  . | Your name & logo misinforms a consumer about the shampoo. OR, you did not complete both parts. |
| **Vocabulary** | The words for your product name are unique & memorable. | The words for your product name are unique | The words for your product name are average. | The words for your product name are less than average. | My dog has a better vocabulary. |
| **Neatness**  **&**  **Creativity** | Extremely easy to read.  Illustrations & word design is impressive. Michelangelo has nothing on you! | Easy to read  Illustrations & word design helps convey meaning. | Legible  Illustrations & word design is complete, but challenging to understand. | Barely legible  Illustrations & word design is complete, but lacking in thoughtfulness. | Illegible  Illustrations & word design is incomplete & uninspiring. |
| **Spelling** | 0  mistakes | 1-2  mistakes | 3-4  mistakes | 5-6  mistakes | More than 6 mistakes |