



Shampoo – Is there Truth behind the Advertising ?

Teacher's Guide

Starting from the given scenario, students write down their own ideas according to their pre-knowledge and special interests. In this regard the tasks for the students are very prescriptive and allow students opportunities to put their own questions and formulate solutions to the problems.

Starting from the given scenario this activity relates to

- designing experiments testing the properties of different shampoos, changing the variables and drawing conclusions from the results.
- reinforcing previous knowledge of soap and shampoo.
- getting a deeper knowledge and understanding of detergents and their effects.
- the environment impact (life cycle analysis) of products such as shampoos.
- making decisions whether advertising provides sufficient truth about shampoos.

Learning Outcomes per Lesson

Lesson 1

At the end of this lesson, students are expected to be able to :

- Put forward ideas on the ingredients of shampoos and their function
- Indicate questions related to matters yet to be found out
- Suggest investigations and library searches needed

Lesson 2

At the end of this lesson, students are expected to be able to :

- Design experiments to be carried out on the ingredients of shampoos and their function
- Indicate safety factors to be considered
- Explain life cycle analysis from library searches undertaken

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Lesson 3

At the end of this lesson, students are expected to be able to :

- Compile a report (poster) on the outcomes of the experiments undertaken, the library searches and discussions among groups on the role of shampoo in our lives, the ingredients include and their function and the environmental impact of the substances

Lesson 4

At the end of this lesson, students are expected to be able to :

- Based on the knowledge gained about shampoos, and their environmental impact, analyse why people choose a particular brand of shampoo and reach a justified decision related to the truth of advertising put forward on shampoos and whether this is acceptable in modern society.



Suggested Teaching Strategy

1. The first lesson starts with a presentation of the scenario. Hand out the written scenario, let the students read and discuss the scenario in pairs. Ask them to write down in bullet points which ideas about possible investigations which come to mind. This should not take more than 10 minutes.
2. Collect the different ideas. This activity shall be kept as short as possible. Put the ideas from the first pair on the blackboard and, in order to save time, let other pairs just add new ideas.
3. Comments on working scheme for the students.
Collect from the different groups suggestions for teacher inputs in form of mini-lectures etc. There may be questions concerning a special science concept, such as polarity, solvents, solutions or emulsions. As mentioned in the student's notes, then give the mini-lecture to the whole group. On the other hand, some questions might be of a kind that you just give the students a hint of where to search for the answer.
4. Giving students the "go ahead" for the practical activity. This might be a tricky situation if the students come forward with very 'wild' ideas or even bad ones. The problem will be to decide whether the plan is realistic or not. Of course you want to be very supportive but at the same time steer the students in a direction where they will get some scientific outcome so that they can draw conclusions from the practical activity.
5. It is also important to discuss with the students if they really are measuring what they think they are measuring, i.e. if the practical activity has validity. Safety regulations in the laboratory must always be followed.

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6. The next activity will involve the student in seeking information, especially related to the environmental impact of shampoos. This will introduce students to the practice of determining the life cycle analysis.
7. Finally students analyse why people choose a particular brand of shampoo and consider how far advertisers are telling the truth about their product or are acting unethically in portraying the virtues of the shampoo in an inaccurate and unacceptable manner. To play a full part in this discussion, it is expected the students have acquired a strong background of the various components in shampoos and their role in helping hair to be both cleaned and take on a healthy and attractive appearance.



Achieving the Objectives

Objectives	Achieved by
Analysing and deciding the reasons why people choose a particular brand of shampoo	Discussing within the group and be prepared to present this in the form of a poster.
Critically analysing the role of advertising	Discussing within the group and accessing literature. Write down a list of questions and other aspects related to the analysis
Planning and performing experiments with many variables.	Decide as a group on the experiment to perform and the variables to control. Record this in notebooks and show to the teacher
Examining the different ingredients in shampoos	As a group carry out the experiments and record all observations
Co-operating with other students in groupwork	Cooperate with others in the group by joining in the discussions and assisting with the groupwork during experimentation
Communicating orally and written within the group and different companies, research institutions, consumers' organisations etc.	Discuss within the group and prepare a poster on the findings
Explaining the role of different ingredients in shampoos, e.g. detergents, emulsifiers.	Write a report in which the function of different ingredients of the shampoo are explained
Obtaining an awareness of LCA (Life Cycle Analysis).	Record safety concerns and the factors that make the shampoo fit for use.

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