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Section: 12A-St. John the Evangelist

Introduction

Biology is the study of your body and the environment. It helps you in understanding the functions and reactions of your body. It also explains your behavior in various situations

Objective

Identify biological concepts in certain activities that human perform in everyday living

Materials

- Pen and paper
- Reference materials such as biology books and internet

Estimated time frame: 1 hour

Procedure

1. Your teacher will randomly divide the class into seven groups
2. Each group will be assigned the following topics to work on:
 - a. Scrubbing of calluses during a foot spa
 - b. Adding a janitor fish in an aquarium with a gold fish
 - c. Planting an orchid on a full-grown tree
 - d. Adding vinegar and salt when preparing pickled fruits and vegetables
 - e. Gargling warm water with salt for sore throat
 - f. Adding a layer of oil in water with wrigglers
 - g. Scrubbing the skin with a towel when someone has fever
3. Discuss with your groupmates the topic assigned to your group by looking at the biological principles involved. You may refer to certain biology textbooks or the Internet to validate your answers.
4. List the biological principles involved in the topic assigned to your group.
5. Report in class the results of your discussions.

Observations

Topic: Planting an orchid on a full grown tree		
Number	Biological Principles/ Facts	Explanation
1.	Commensalism	It is a relationship between two organisms, in which one organism gains benefits (such as food, nutrients, shelter) from another organism without harming each one.
2.	Photosynthesis	It is a process wherein plants obtain energy from the sun; to be able to use carbon dioxide and water to make food and oxygen.

Conclusion

Symbiosis is the relationship in which two organisms live closely together and at least one benefit in the relationship. One of the symbiotic relationships is Commensalism, a kind of relationship where one benefits while the other is neither helped nor harmed. Orchids, particularly Epiphytes, grows on another plant. It can be found on the branches, trunks, and leaves of trees; so as to get closer to the sunlight. But, orchids are not the cause of harm to the tree even though orchids planted/ attached to it.

In the photosynthesis, the orchids cannot get their water from roots in the soil, but from the air or rain. This process of photosynthesis is also known as Crassucalan Acid Metabolism (CAM). Generally, orchids collect water and nutrients from the air, however orchids release oxygen.

Post-laboratory Questions

- 1. Other than those discussed in the class, give another example of your daily activities that most likely involve some biological principles**
 - Every night, I gently put a cube of ice on my face. It feels satisfying and relaxing because of the coldness of the ice. Furthermore, it helps to reduce oiliness, to ease acne, and to stop tighten the pores of the skin that result from healthier skin.
- 2. Explain why tears naturally come out of your eyes when you slice onions. Do you think there is a way to prevent this tear secretion when slicing onions?**
 - Onions contain amino acid sulfoxides. When we cut an onion in half, onion cells will rupture. Releasing the amino acid sulfoxides together with special enzymes will compose a chemical called Syn-propanethial-S-oxide. This kind of chemical is evaporative, therefore it forms a gas. When this type of gas comes up to our

eyes, it reacts with the result of a substance that keeps our eyes lubricated. This sulfuric acid obtains us a burning sensation.

- The ways to prevent this tear secretion when slicing onions are:
 - Put the onion in the refrigerator
 - Soak the onion in water to remove amino acids
 - Wear protective eye goggles