

Gatorade Challenge



Annotation. The utilization of Gatorade, its history and the science behind its formula, incorporates the true definition of “The Science Behind Our food” and introduces scientific methods in a unique and relevant way.

Primary learning outcome: To introduce the scientific method by using the student’s senses and the science behind Gatorade. Students will learn how the body becomes dehydrated and fatigue during rigorous exercise and the nutrients that are needed to prevent it from happening.

Additional learning outcome:
Students will learn about food science and product development.

Assessed Standards

Biology:

SCSh7. *Students analyze how scientific knowledge is developed.*

- b.** Universal principles are discovered through observation and experimental verification.
- d.** Hypotheses often cause scientist to develop new experiments that produce additional data.
- e.** Testing, revising, and occasionally rejecting new and old theories never ends.

SB1. *Students will analyze the nature of the relationship between structures and functions of living cells.*

SB4. *Students will assess the dependence of all organisms on one another and the flow of the energy and matter within their ecosystems.*

Materials

Salt
Sugar
Kool-Aid
Gatorade (must be the same color as the Kool-Aid)
Water
Cups
Power point presentation
Gatorade Scientific method test

Internet links.

www.gatorade.com

Procedure:

Test Taste:

Preparation: Prepare the 2 batches of Kool-Aid. One will be made following the directions on the package. The other will be made by adding 1/3 the amount of sugar and using the rest as salt. The second batch should have a very strong salt taste.

Taste Test:

Pour the regular Kool-Aid, the Kool-Aid with salt and the Gatorade in separate cups marked A, B, and C. There should also be a cup of water used to wash down between each sample.

Each student should taste each samples with the objective to answer these questions:

1. Which one is Gatorade?
2. What is the secret ingredient?
3. Including the water, which one is the best one to drink after you have run a marathon in the 90- degree weather? Why?

Note.

The thing that makes Gatorade so unique is its salt (electrolyte) content. This electrolyte is mixed with the correct concentration of sugar to help re-hydrate and refuel the body.

Science behind Gatorade.

1. Use the power point presentation as a guide. The slogan will be introduced as the hypothesis and the students should guess if they believe it is true or not based on their own opinions.
2. Next, go to the Gatorade website (www.gatorade.com) and go through the story of Gatorade and its development. The students should pay close attention to the steps taken in the history, which exemplify the scientific method.
3. Take the virtual body tour on the Gatorade website and allow the students to learn how the electrolytes and carbohydrate combination refuels and re-hydrates organs and body systems during exercise.
4. The students will now be tested on their knowledge of the scientific method. There are 5 slides in the presentation that all are apart of the Gatorade history. Each slide, numbered 1-5, exemplifies one important step of the scientific method. The students must identify what slide exemplifies each step.

Assessment:

The students will be graded on their participation and their ability to identify the steps in the scientific method.

To help summarize and promote enthusiasm, students could be asked key questions about the activity and its content. If the questions are answered correctly they could win a bottle of Gatorade.