



FOOD SCIENCE DISCOVERED

Written by Amy Rowley and Jeremy Peacock

Annotation

In this project, students will explore the life of a food science innovation through the creation of an innovation resume.

Primary Learning Outcomes:

Students will explore the history and nature of food science and scientific discovery.

Students will be able to use available information sources (e.g. internet search, library research, online databases, books, and periodicals) to research an assigned topic.

Students will be able to organize, synthesize, and evaluate information in the preparation of a written report and oral presentation.

Students will be able to communicate effectively orally and in writing.

Georgia Performance Standards:

Characteristics of Science

SCSh6. Students will communicate scientific investigations and information clearly.

SCSh7. Students will analyze how scientific knowledge is developed.

SCSh9. Students will enhance reading in all curriculum areas.

Duration:

Teacher Preparation: 10 minutes

Introduction: 15 minutes

Student Assignment: Adaptable to class schedule

Conclusion: Adaptable to class schedule

Total Class Time: Adaptable to class schedule

Technology Connection:

Students may use all available information resources (e.g. internet search, library research, online databases, books, and periodicals) to complete the assignment.

Procedures:

Teacher Preparation:

Prepare for each student a copy of the *Food Science Discovered* student handout.

Introduction:

Have you ever wondered why there is a hole in the center of a lifesaver, who discovered sugar, or how the microwave works? The innovations we encounter daily at mealtime were developed as a result of the hard work of thousands of food scientists. In this activity, students will go beyond the textbook to



learn about one of many food science innovations. They will examine the life of an innovation, thus discovering how and why it came to be.

Provide students with the *Food Science Discovered* student handout. Explain to students that in this activity they will select an innovation for study, and research its life. They may choose an original food product or any technology related to the processing, preparation, packaging or storage of food. Review with students the expectations and evaluation procedures.

Student Assignment:

Following the guidelines set forth in the *Food Science Discovered* student handout, each student should construct a resume for a chosen innovation. Upon completion, each student should present an innovation resume to the class during a brief oral presentation.

Assessment:

Project assessment should be based on the attached *Food Science Discovered* scoring rubric.

FOOD SCIENCE DISCOVERED *Scoring Rubric*

| CRITERIA | 3 | 2 | 1 – 0 | SCORE |
|--|--|--|---|------------------------|
| <p>Product Name and Description</p> | <p>Student clearly and accurately describes the innovation. For food items, student describes important ingredients, how product is made, and how product differs from related products. For technologies, student describes function or purpose of the technology, how technology works, and how technology differs from related technologies. Description is thorough and includes information beyond basic facts.</p> | <p>Student clearly and accurately describes the innovation but in little detail.</p> | <p>Product name and description are unclear, inaccurate, or incomplete.</p> | <p>Comments: _____</p> |
| <p>Product History</p> | <p>Student clearly and accurately describes the history of the innovation, including discovering scientist(s) or inventor(s), date of discovery or invention, and how and why product or technology was developed or discovered? History is thorough and includes information beyond basic facts.</p> | <p>Student clearly and accurately describes the history of the innovation but in little detail.</p> | <p>Product history is unclear, inaccurate, or incomplete.</p> | <p>Comments: _____</p> |
| <p>Product Benefits</p> | <p>Student clearly and accurately describes multiple reasons why the innovation was beneficial to the food industry, consumers, and/or society.</p> | <p>Student clearly and accurately describes a single reason why the innovation was beneficial to the food industry, consumers, and/or society.</p> | <p>Product benefits are unclear, inaccurate, or incomplete.</p> | <p>Comments: _____</p> |

| | | | | |
|---------------------------------|--|---|---|-----------------|
| Product Limitations | Student clearly and accurately describes multiple limitations or negative aspects of the innovation. | Student clearly and accurately describes a single limitations or negative aspects of the innovation. | Product limitations are unclear, inaccurate, or incomplete. | Comments: _____ |
| Improvements to Product | Student clearly and accurately describes any recent improvements to the innovation. Student describes improvements he/she would make to improve upon or replace the innovation. | Student clearly and accurately describes any recent improvements to the innovation. | Improvements to product are unclear, inaccurate, or incomplete. | Comments: _____ |
| Written Communication | Written report follows assigned outline and is written in paragraph form. Writing is clear and free of grammar, spelling, and typographical errors. Report utilizes at least five appropriate references. | Written report follows assigned outline and is written in paragraph form. Writing is clear and contains no more than 5 grammar, spelling, or typographical errors. Report utilizes at least five appropriate references. | Written report follows assigned outline and is written in paragraph form. Writing is unclear and/or contains 5 or more grammar, spelling, or typographical errors. Report utilizes fewer than five appropriate references. | Comments: _____ |
| Oral Presentation | Student is well prepared, and oral presentation is complete. Student speaks clearly and professionally and shows a full understanding of the information presented. Student is able to answer accurately almost all questions posed by classmates or instructor. | Student is prepared, and oral presentation is complete. Student speaks clearly and professionally and shows an understanding of the information presented. Student is able to answer accurately most questions posed by classmates or instructor. | Student is somewhat prepared, and oral presentation is complete. Student speaks clearly and professionally but shows little understanding of the information presented. Student is able to answer accurately few questions posed by classmates or instructor. | Comments: _____ |
| Total Score (out of 21): | | | | _____ |



FOOD SCIENCE DISCOVERED *Student Handout*

Introduction:

Have you ever wondered why there is a hole in the center of a lifesaver, who discovered sugar, or how the microwave works? The products we encounter daily at mealtime were developed as a result of the hard work of thousands of food scientists.

Your Task:

In this activity, you will go beyond your textbook to learn about one of many food science innovations. You will examine the life of an innovation, thus discovering how and why it came to be.

Select an innovation for study, and research its life. You may choose an original food product or any technology related to the processing, preparation, packaging or storage of food. The following is a list of possible food science innovations:

- Popcorn
- Milk Chocolate
- Microwave
- Fast Food
- Bubble Gum
- Coca Cola
- Coffee
- Soft Drink Can

A minimum of five resources is required. The following internet resources may contain information regarding your innovation:

- Food Network: Unwrapped – http://www.foodnetwork.com/food/show_cw/0,1976,FOOD_9955,00.html
- HowStuffWorks – <http://www.howstuffworks.com/>

Upon completion of your research, construct a resume for your innovation. The following information should be included:

- Product Name
- Product Description
 - *For Food Items*
 - What is the product?
 - What ingredients are most important to the product?
 - How is the product made?
 - How is the product different from related products?
 - *For Technologies (i.e.. Food Processes, Packages, etc)*
 - What is the technology?
 - What is the function/purpose of the technology?
 - How does the technology work?
 - How is the technology different from related technologies?
- Brief History of Product



- Discovering Scientist(s) or Inventor(s)
- Date of Discovery or Invention
- How/why was the product/ technology developed/discovered?

- Product Benefits
 - Why was the product/ technology beneficial to the food industry, consumers, and/or society?

- Product Limitations
 - Does the product have any negative effects on the food industry, consumers, and/or society?

- Improvements to Product
 - Have there been any recent improvements to the product/ technology?
 - If you were a food scientist, how would you improve upon or replace the product/ technology? (Describe your improvement, your selection of it, and how it could be accomplished.)

NOTE: Additional information regarding your product may be added at your discretion.

Upon completion, you will present your product resume to the class during a five minute oral presentation.

Assessment:

Project assessment should be based on the *Food Science Discovered* scoring rubric.