

Food Science Experiment

Topic Title: Heat and Cold

Length of project: 1 hour

Research. What does society know. Look it up!

Heat and cold changes the way foods look, smell, feel and their nutrient content. When preparing foods, it is important to understand the effect different processes have; such as changing of the food's color, nutritional value, taste and texture. Heat and cold processes can be used in food preservation however they affect food color.

Words to search: food preservation food science heat cold edu

Situation. Try something different or document a problem that has now arrived.

What food processes change the color of foods? Which process can you use to make the food more appealing?

Hypotheses. Guess what may happen.

_____ can be used to keep green beans a bright green.
_____ can be used to keep green beans a dull green.

Equipment. What you need.

Gather

- 1 can green beans
- 1 bag frozen beans
- 1 cup freshly boiled green beans (ready to eat)
- 1 cup raw green beans
- 4 bowls

Methods. Set up a procedure/protocol to test your hypothesis.

- Gather green beans
- Clean and boil the freshly cooked green beans so they are tender and ready to eat
- Label each bowl with the processed treatment used.
 - Canned
 - Frozen
 - Freshly boiled
 - Raw
- Put each type of process beans in the bowl

- Record results

Experiment. Conduct the experiment.

Conduct the experiment to test how each process (heat or cold) treatment affects the color, smell, taste, texture of the food.

Change one factor and re-do the experiment

Option 1: Use eggs (be careful DON'T eat raw eggs!)

Option 2: Use another food you have

Option 3: Change the heat or cold source such as pan frying, grilling, poaching, boiled, microwave, freezer, refrigerator

Redo the experiment.

Results/Observations. What happened?

Record what happened to the food you used. What did each of the treatments do? How green (other color) did they get? Do they smell different? Do they taste different? Is the texture different?

Conclusion. Apply what you found out.

How could you use this knowledge?

How would you change the color of a food you wanted to serve?