

# Cupcake Investigation

## *Science in the Kitchen*



Ellen Swallow Richards was the most prominent female American chemist of the 19<sup>th</sup> century. As the first woman admitted to MIT, she conducted pioneering studies that eventually lead to the universal availability of safe drinking water, modern sewage treatment facilities, and standards for safe food and drugs. Ellen's work effectively touches the lives of every person living in the United States today.

Ellen used her own home, which she labeled the Center for Right Living, as the first consumer home testing laboratory where she and her students applied scientific principles to domestic topics such as nutrition, sanitation and efficiency. Ellen committed her life to improving the quality of life for American families.

The purpose of this activity is to provide you the opportunity to compare two recipes for the same product—Apple Cupcakes. Following the example of Ms. Richards' and her students, you will be recording your observations as you prepare the recipe assigned to you. Each recipe calls for the use of a different convenience food product. Following the preparation of your recipe, you will draw a series of conclusions regarding product quality, nutritional content and time management.

Record your recipe preparation observations in the spaces below.

### Quick and Easy Apple Cupcakes

Category	Observation
Total preparation time	
Total baking time	
Calories per cupcake*	
Volume	
Tenderness	
Moistness	
Flavor	
Appearance	

## Shortcut Apple Cupcakes

Category	Observation
Total preparation time	
Total baking time	
Calories per cupcake*	
Volume	
Tenderness	
Moistness	
Flavor	
Appearance	

\* Calculate the calories in one cupcake using the nutrition label on the cake mix package or apple pie filling can. Check other ingredients at USDA data base <http://www.nal.usda.gov/fnic/foodcomp/search/> (eggs, vegetable oil, apples, sugar, pecans).

## Conclusions

	Q & E Apple Cupcakes	Shortcut Apple Cupcakes
Which recipe was prepared most efficiently?		
Which recipe produced the most satisfactory product?		
Which cupcake was the lowest in calories?		

Summarize your observations regarding the use of convenience products in making Apple Cupcakes.

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