

# Chapter 5: Milk & Cheese



**FoodMASTER**

Food, Math, and Science Teaching Enhancement Resource  
Supported by NIH Science Education Partnership Award (SEPA)





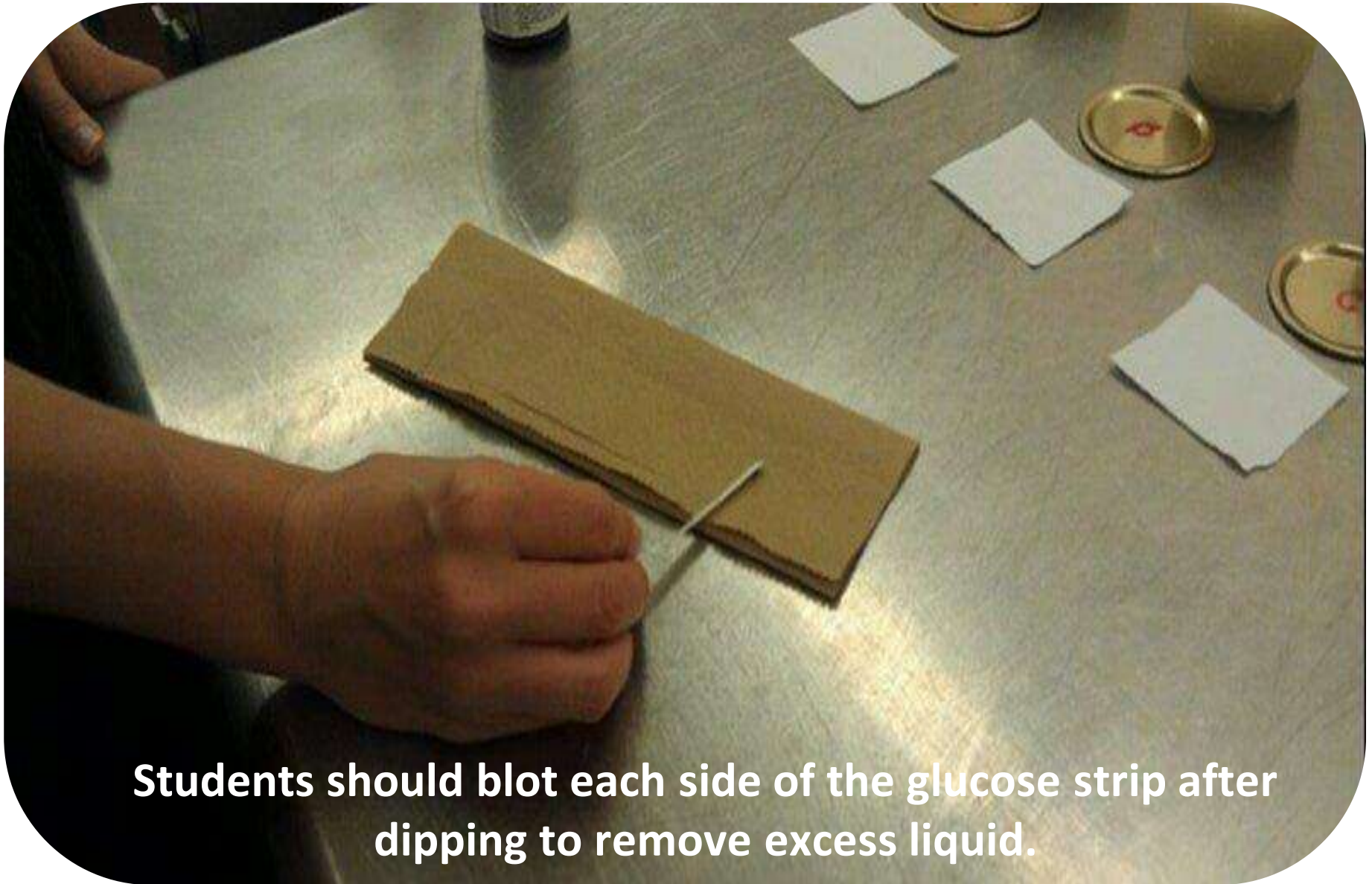
# **Food Explorations Lab I: Explicit Enzymes**

# Student Lab Investigations

## Milk Samples



# Student Lab Investigations



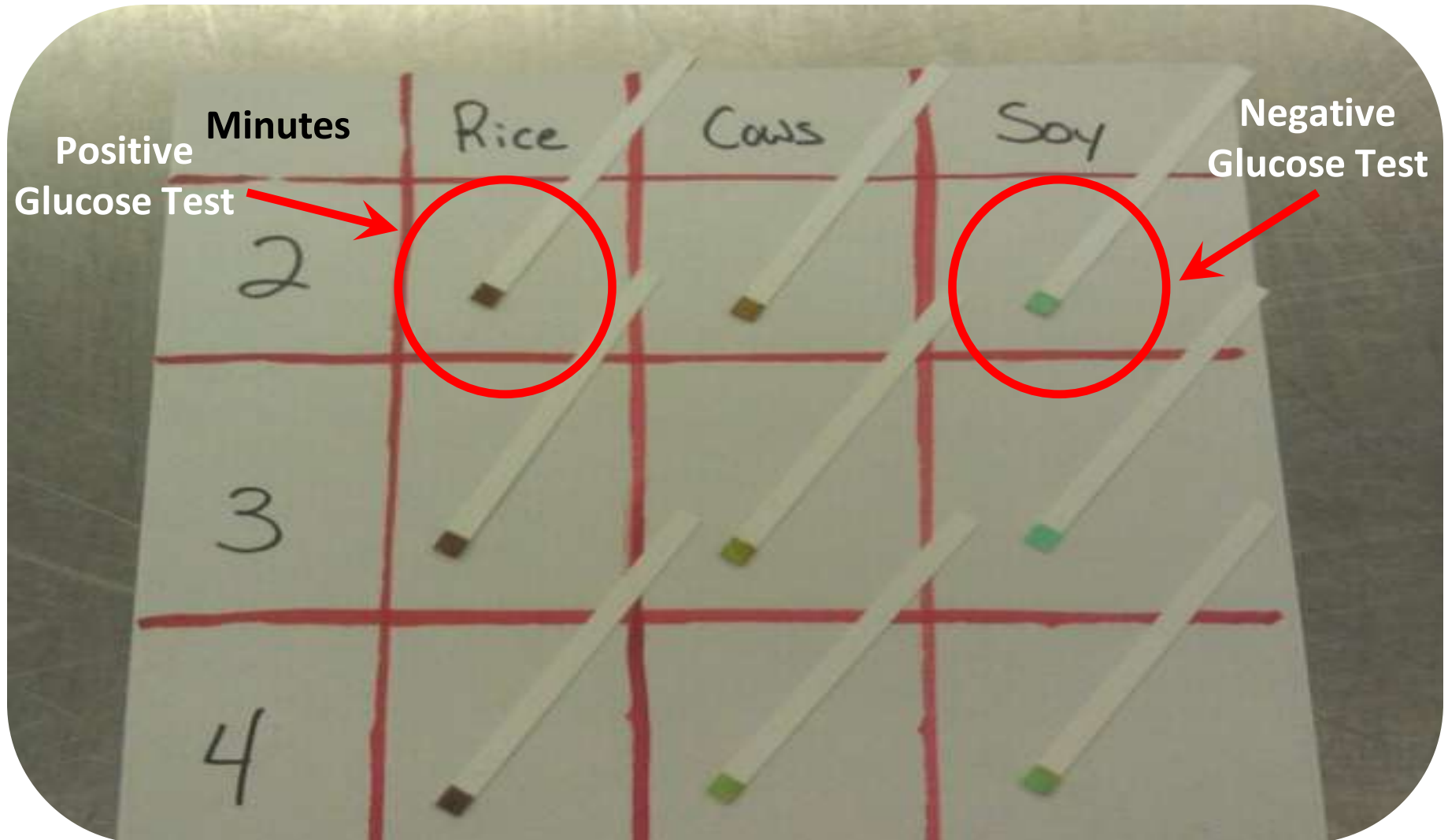
**Students should blot each side of the glucose strip after dipping to remove excess liquid.**

# Student Lab Investigations



Glucose strips - 0 minutes

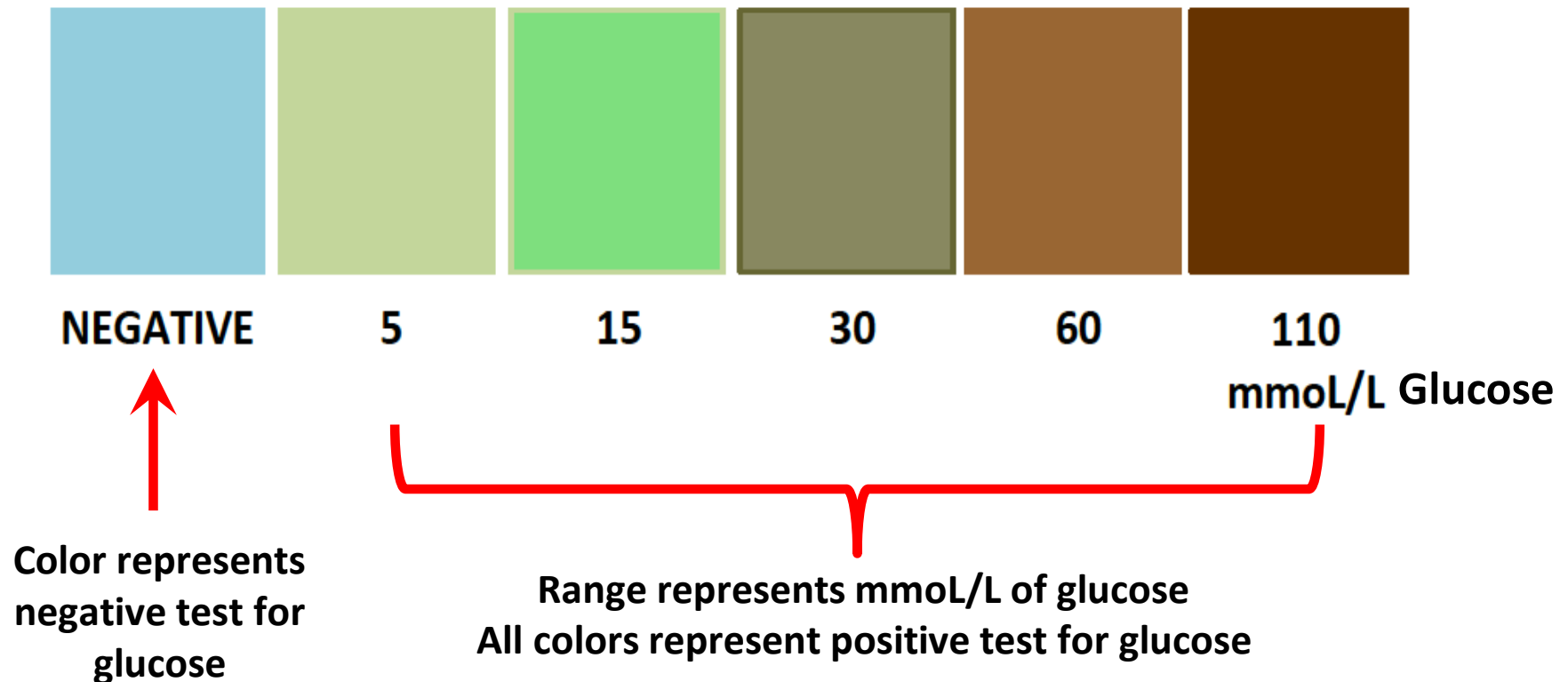
# Student Lab Investigations



Glucose concentrations at 2, 3, and 4 minutes.

# Student Lab Investigations

## Glucose Reference Color Chart





# **Food Explorations Lab II: Magnificent Microbes**



# Teacher Preparation



**Heat milk types to 175°F for each group.**

# Student Lab Investigations



Milk Samples for Students

# Student Lab Investigations



**Comparison of the consistencies of the yogurt.**

# Student Lab Investigations



**Comparison of the consistencies of the yogurt.**

# Student Lab Investigations

Lactose Free Milk


Whole Milk - Warm

**Comparison of excess liquid on top of yogurt.**

# Student Lab Investigations



**Comparison of excess liquid on top of yogurt.**

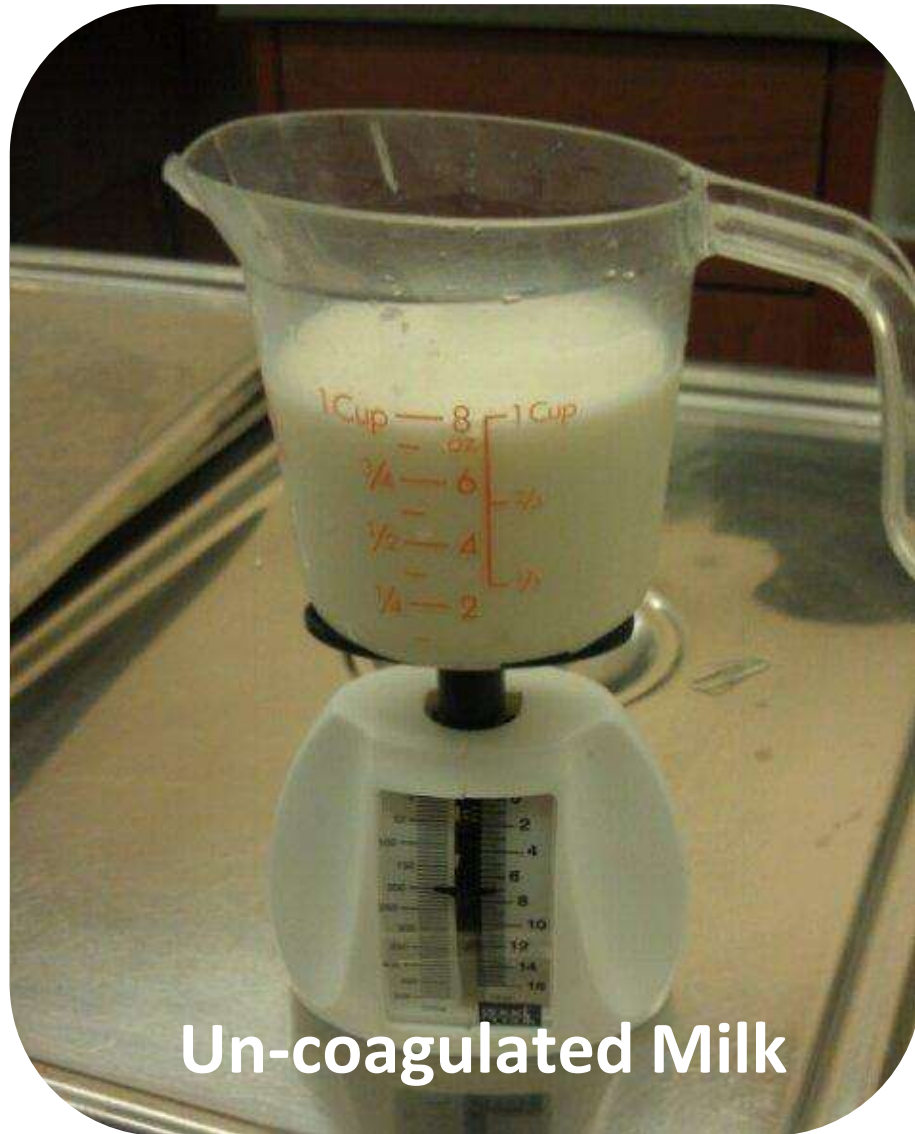


# **Food Explorations**

## **Lab III:**

# **Maintaining Mass**

# Student Lab Investigations



**Un-coagulated Milk**



**Vinegar**

**Weight of un-coagulated milk and vinegar.**



# Student Lab Investigations



2 cups of 2% milk - before treatment.

## Student Lab Investigations



**2% milk after vinegar treatment.**

**Vinegar is an acid. You should observe obvious separation of whey and curd after vinegar is added.**

# Student Lab Investigations

**2% milk after baking  
soda treatment.**

**No separation.  
Baking soda is a base.**



## Student Lab Investigations



**Coagulated proteins from vinegar treatment.**

## Student Lab Investigations



**No coagulated proteins resulted from baking soda treatment.**