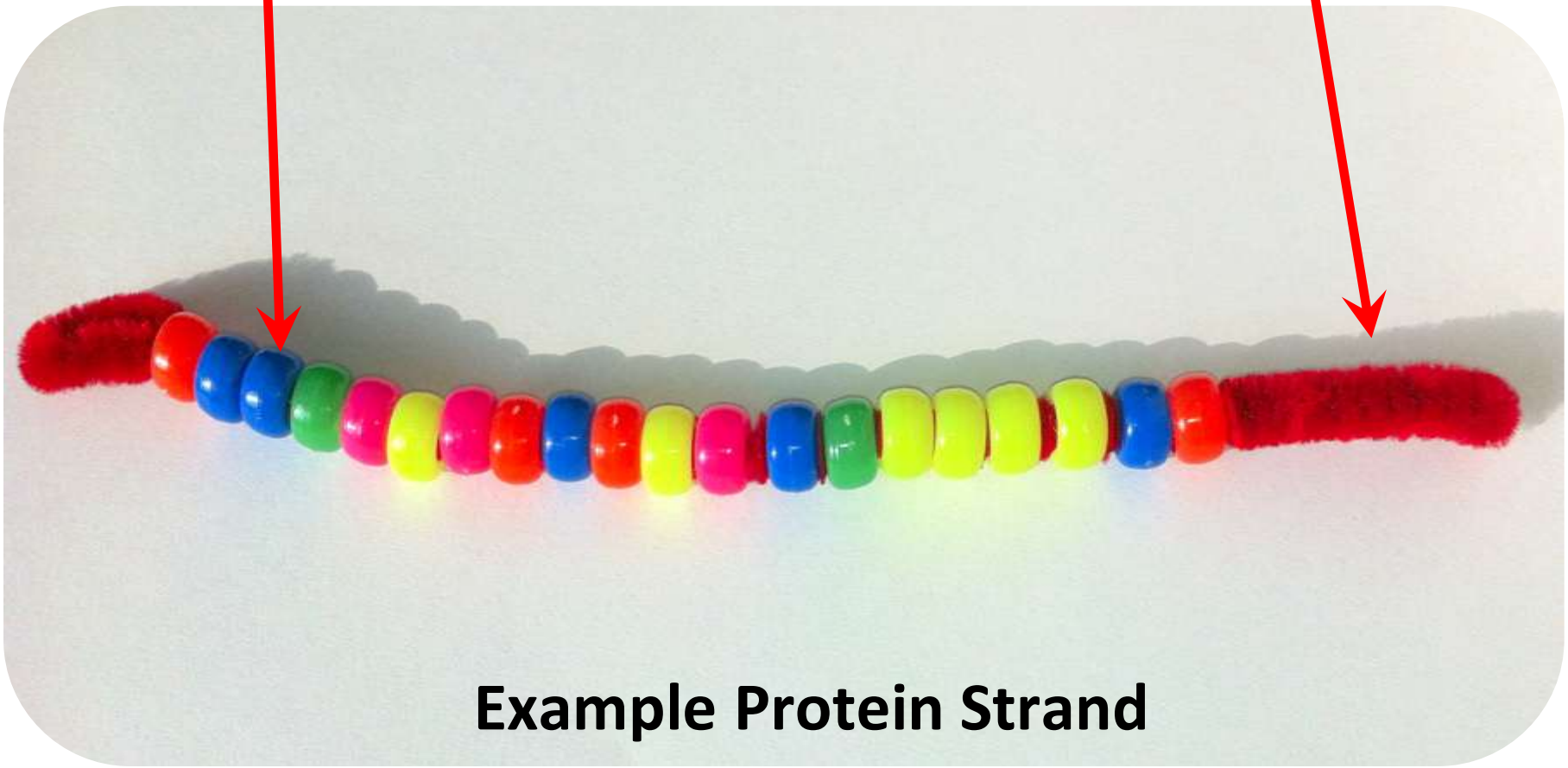
Chapter 6: Meat, Fish, Poultry & Eggs

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

Food Explorations Lab I: The Building Blocks

Student Lab Investigations



Food Explorations Lab II:
Synthesizing Muscles

Lab II: Synthesizing Muscles

Getting started… Making foam muscles.

Teacher Preparation – Arm Construction

- 7” x 1/8” rubber bands
- 16” tubular pipe insulation
- 3” single cord channel

- Knife, scissors
- Measuring tape
- 4” and 8” cable ties

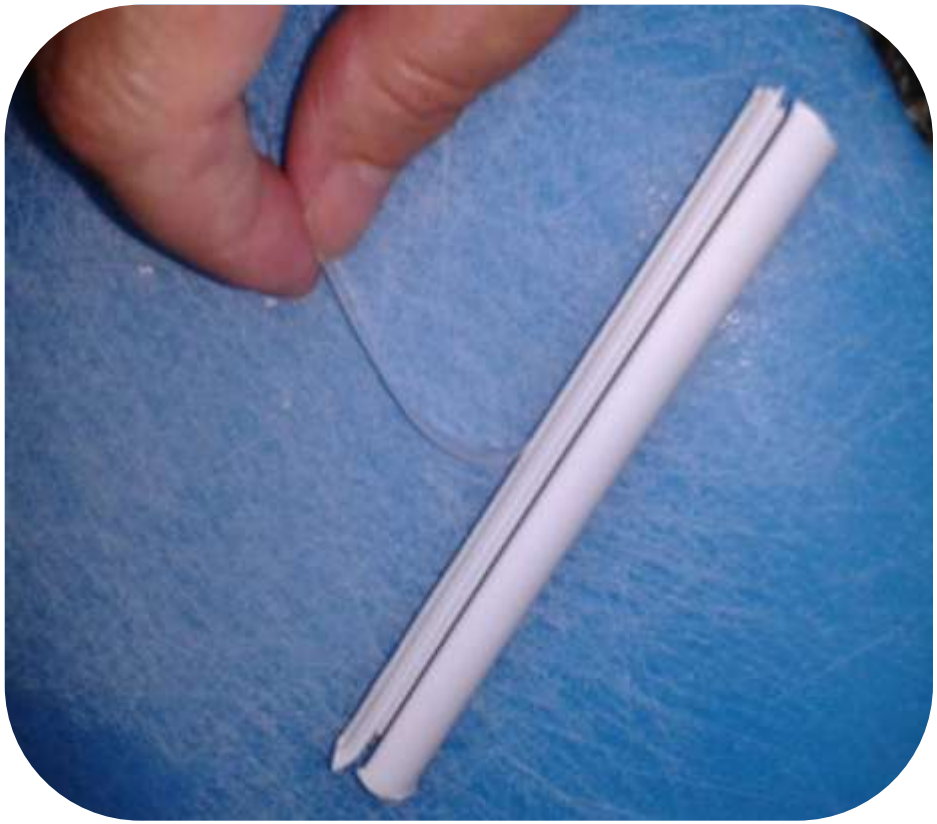
Teacher Preparation – Making the “elbow”

Prepare ½” Tubular Pipe

In the center of the pipe, with slit side up, cut a wedge out of the top ~~P~~portion of the pipe. Do not cut through the pipe.

Teacher Preparation – Attaching the Cord Channel

Notice that the cord channel has a slit down one side. This makes it easier to insert the rubber bands.



Remove the film covering the adhesive of the cord channel. Stick it to the pipe, about 1” from the end (it should cover the slit in the pipe).

Teacher Preparation – Making the Tendon

Pull the tie tight!

Teacher Preparation – Pulling it Together

Place the 8” tie about 3” above the elbow. Insert the rubber band bundle and pull tight. Trim the tails off all 3 ties.

Teacher Preparation – Arm in Action

Food Explorations Lab III: Foam Formulations

Student Lab Investigations

Separate egg yolk from white using an egg separator.

Student Lab Investigations: Stages of Foams Peaks

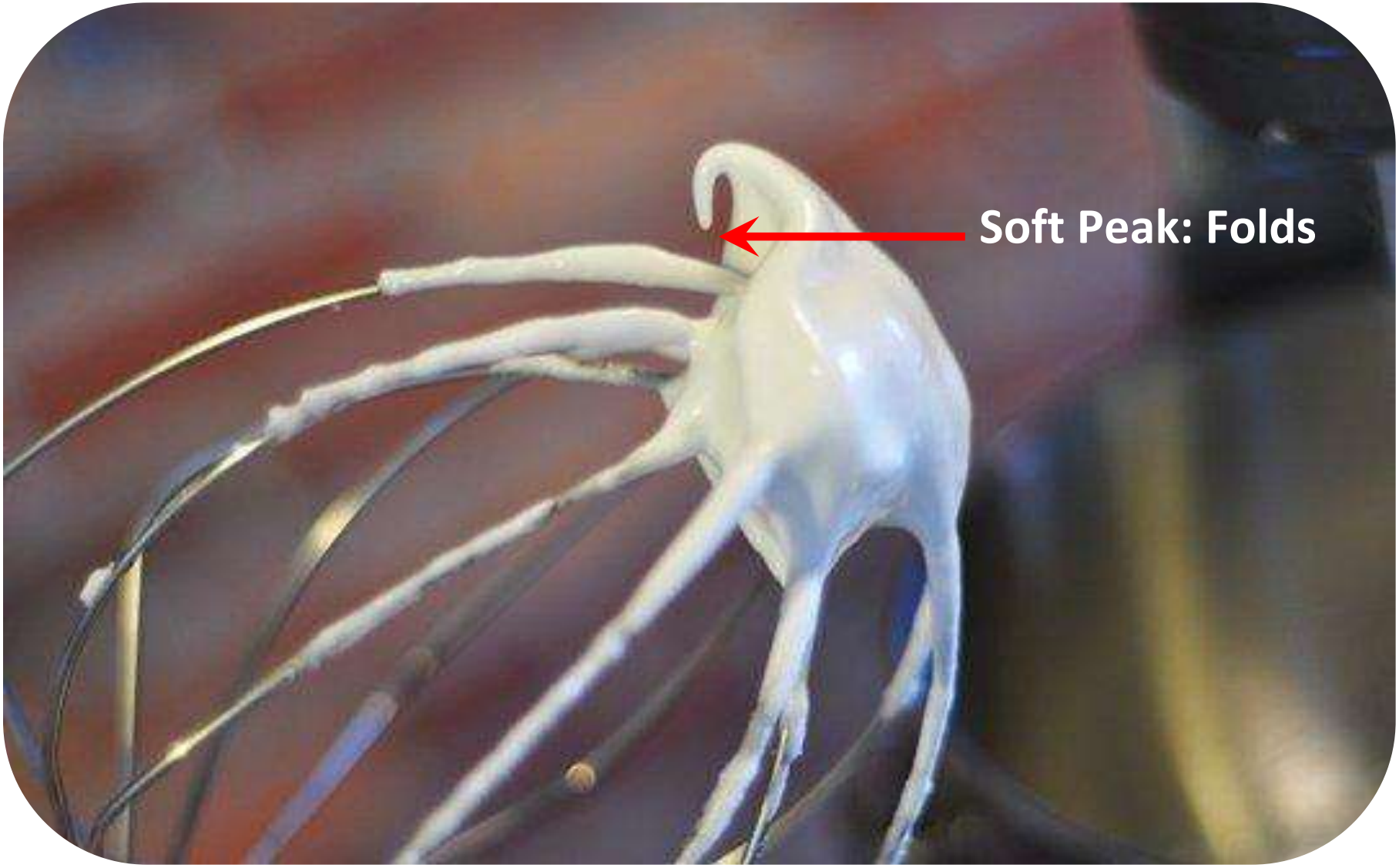
Whisk the egg white until it becomes foamy (i.e. foam on a recently poured carbonated drink). This is the “no peaks” stage.

Student Lab Investigations: Stages of Foams Peaks

Student Lab Investigations: Stages of Foams Peaks

***Soft Peaks*: Beat until egg whites form peaks that <u>bend slightly at the tips</u>. The foam should be shiny and moist.**

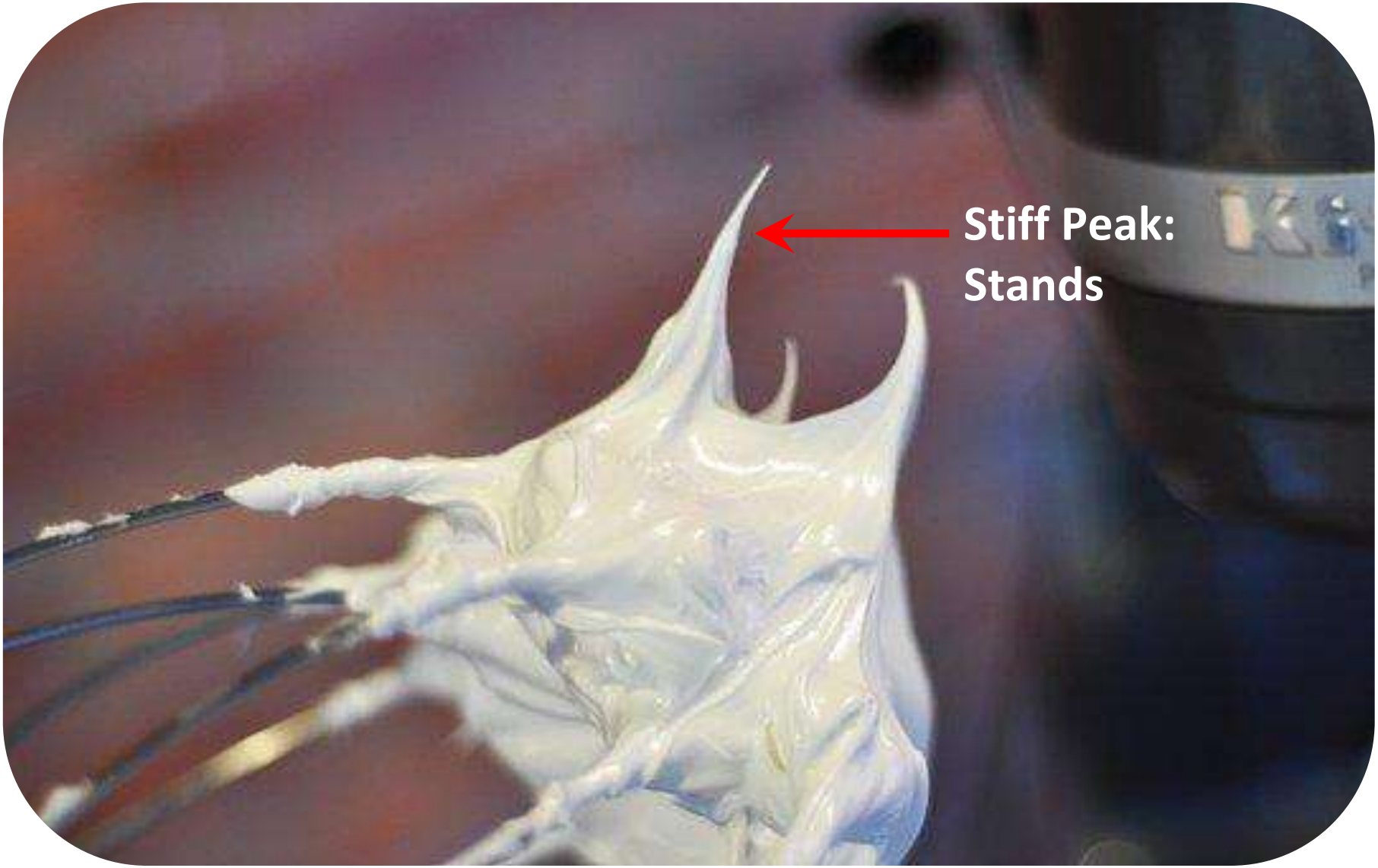
Student Lab Investigations: Stages of Foams Peaks



Student Lab Investigations: Stages of Foams Peaks

***Stiff Peaks*: Beat the egg white until the foam no longer slips when the bowl is tilted.**

Student Lab Investigations: Stages of Foams Peaks



Student Lab Investigations: Stages of Foams Peaks

***Overbeaten*: Beat the egg white until the foam begins to break down and become grainy. Liquid may begin to drain from the foam.**

Student Lab Investigations: Stages of Foams Peaks

Student Lab Investigations: Observations of Foam Emulsions

Sugar Treatment

Sugar will not interfere with foam formation.

Student Lab Investigations: Observations of Foam Emulsions

Fat Treatment

Fat will interfere will the foam formation.

Student Lab Investigations: Observations of Foam Emulsions

Acid Treatment

Adding an acid after a frothy foam has formed will not hinder foam formation. However, if students were to add an acid before forming a frothy foam, it would hinder overall foam formation.

Student Lab Investigations: Observations of Foam Emulsions

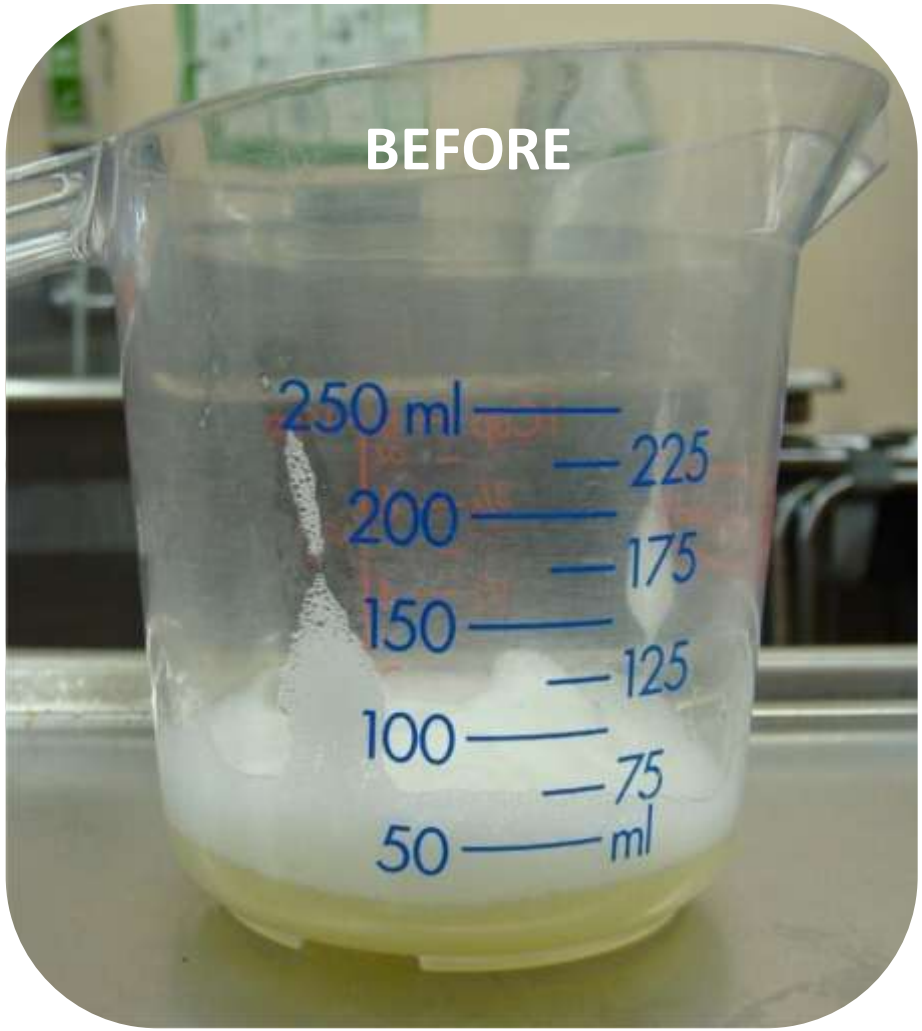
Salt Treatment

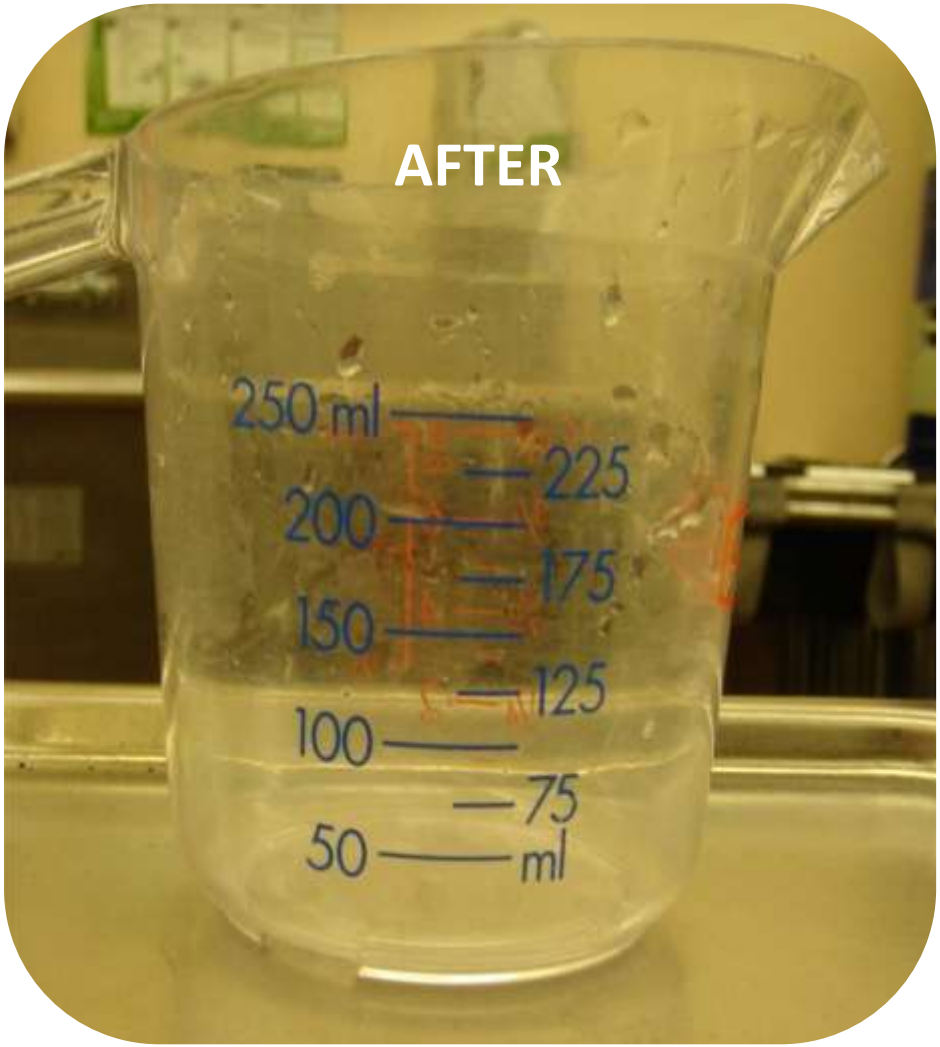
Salt will interfere will the foam formation, but not as much as fat.

Student Lab Investigations: Observations of Foam Emulsions

Using a rubber spatula, push the egg white foam into a funnel.

Student Lab Investigations: Observations of Foam Emulsions





Foam Leakage

(Sugar Treatment)

Student Lab Investigations: Example Egg Dishes

Deviled Eggs

Omelet

Student Lab Investigations: Example Egg Dishes

Quiche

Fried Egg

Student Lab Investigations: Example Egg Dishes

Poached Eggs

Lemon Meringue Pie