

Chapter 7: Grains



FoodMASTER

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





Food Explorations Lab I: Great Grains

Student Lab Investigations

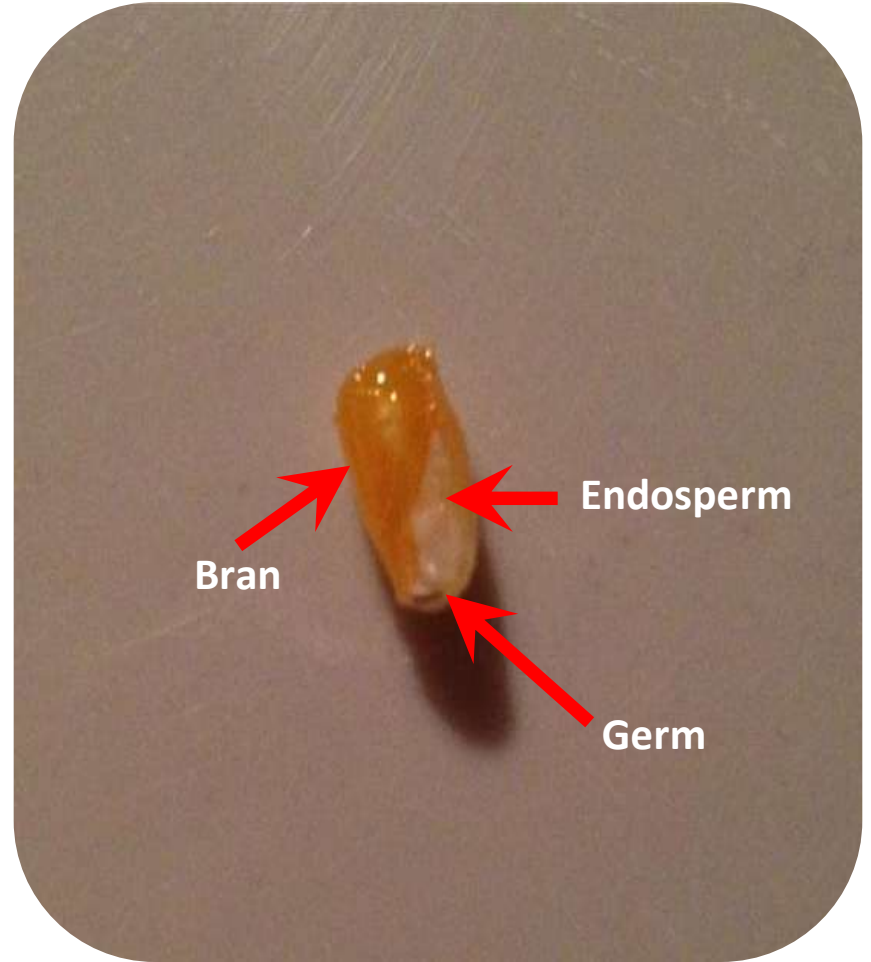


Pre-soak corn kernels in water.

Student Lab Investigations



BEFORE Slicing



AFTER Slicing

Carefully slice the corn kernel in half.

Student Lab Investigations



BEFORE Adding Iodine



AFTER Adding Iodine

Place 1 drop of iodine solution on each part of the dissected kernel.



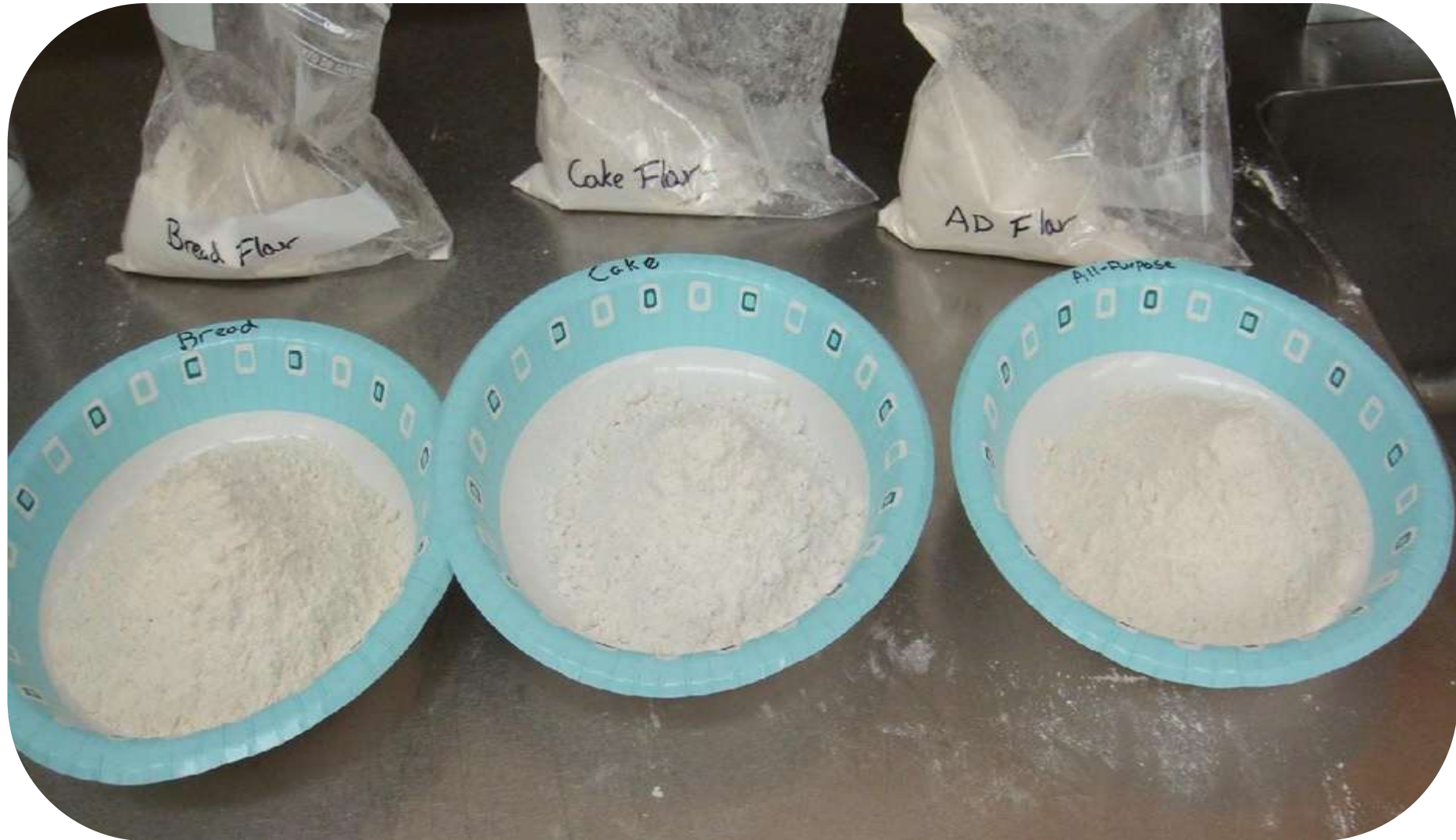
Food Explorations Lab II: Globs of Gluten

Student Lab Investigations



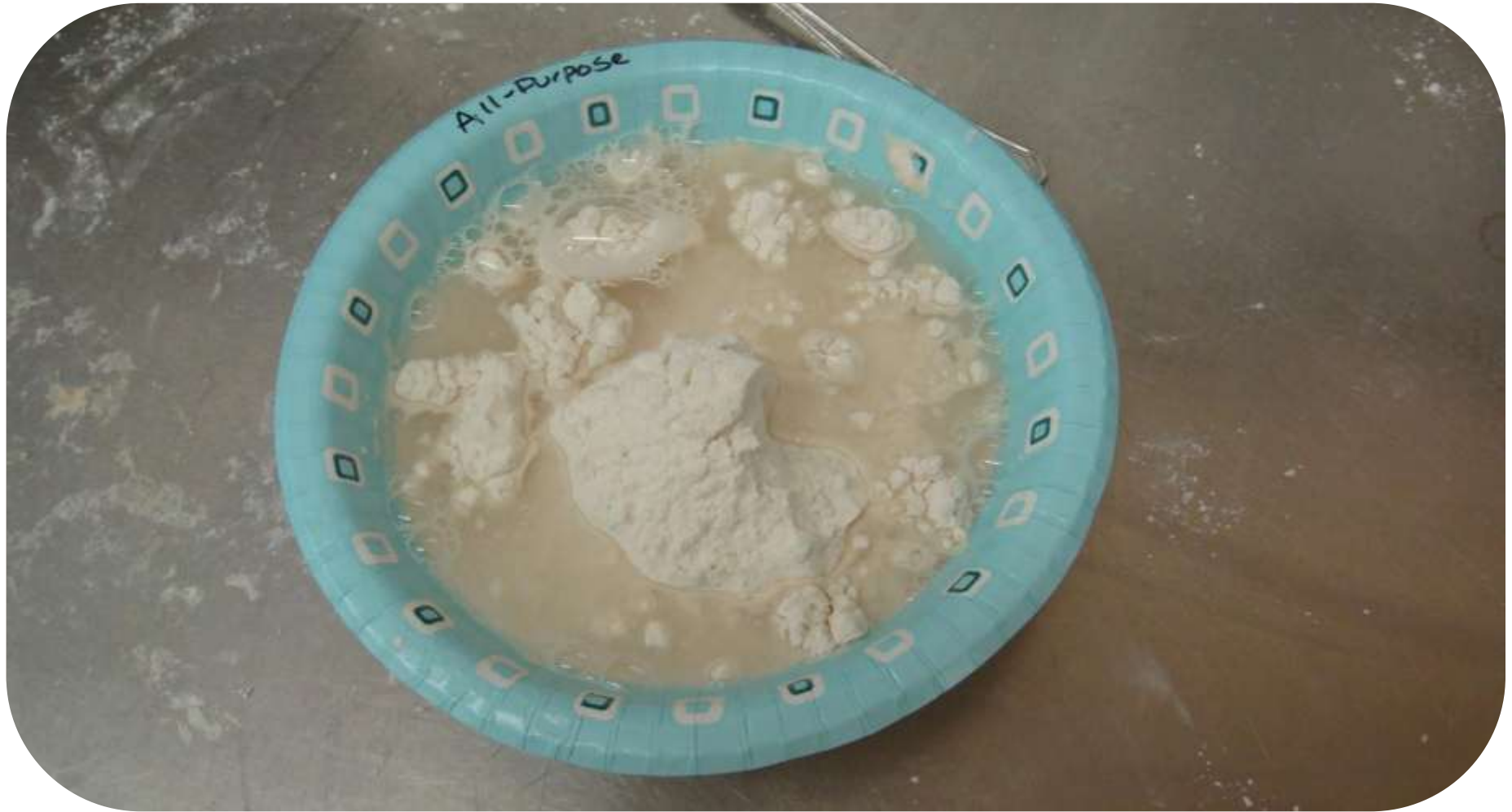
Measure 1 ½ cups of each flour into small-Ziplock bags and label the flours and their corresponding bowls: Bread Flour, Cake Flour, All-Purpose Flour.

Student Lab Investigations



Pour $\frac{1}{2}$ of each flour type into the labeled bowls.

Student Lab Investigations



Prepare your flour type by adding water.

Add 1/4 cup for bread & all-purpose flour. Add 1/8 cup for cake flour

Student Lab Investigations



Stir with a plastic fork.

Student Lab Investigations



**Place the flour ball
onto your work
surface.**

**Using your timer,
knead the flour ball
for 10 minutes.**



Student Lab Investigations



Allow the flour balls to rest in their individual bowls for 10 minutes.

Student Lab Investigations



Wash the flour ball until only a stringy, sticky ball remains in the strainer.

Student Lab Investigations

AP Flour



Cake Flour



WW Flour

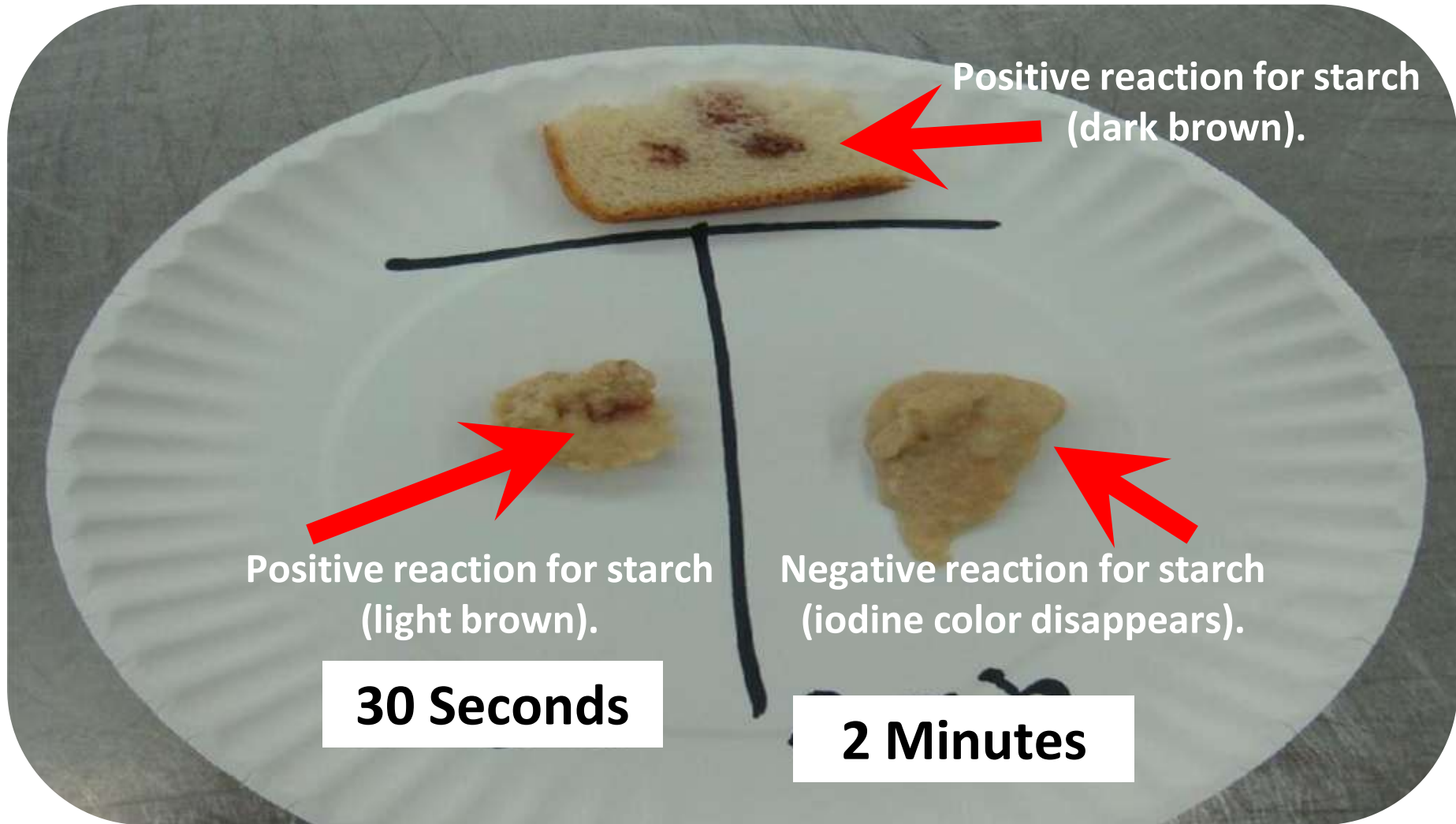


Example balls of gluten.



Food Explorations Lab III: Amylase in Action

Student Lab Investigations



Reaction of white bread to the iodine solution as a control, at 30 seconds, and at 2 minutes.