

REAL SCIENCE: BREAD DENSITY LAB CHECKLIST

1 DAY ACTIVITY: STORE-BOUGHT MUFFINS/BREAD

- have various types of bread or muffins of different densities
- have plastic knives for students to cut bread or muffins
- have paper towels or plates on hand for the mess
- have rulers to measure dimensions and balances to measure mass
- For muffins, perhaps have students measure the density of muffin bottoms (volume of a cylinder)

1 WEEK ACTIVITY: BAKE MUFFINS OR BREAD (VIA BREAD MAKER)

- will need basic muffin recipe or bread recipe
- if baking muffins, demo how to make muffin dough on first period; on second period, students make dough and bake muffins with each group doing a slight variation; on third period, have students measure and compare densities
- if baking bread using bread maker, bake standard loaf on first period; on second period, measure the density of the bread and then bake another with modifications; repeat on third period.

2-3 WEEK ACTIVITY: BAKING BREAD INQUIRY

- On first period, demo how to make dough
- On second period, students make dough. Do not bake yet if time is required for bread to rise.
- Bake before 3rd period and have students measure density on 3rd period.
- On 4th period, have students discuss what factors affect the density of the bread. Each student will decide which ingredient or condition to modify themselves
- On 5th period, students make dough for modified bread. Do not bake immediately, but bake before 6th period
- On 6th period, students measure density of modified bread.
- Repeat to investigate more variables if desired.