Assessment of TOPS Foundations Activities 2011-2012

Direct assessment using release questions drawn largely from the Eighth Grade California Standards Test shows the following increase in student conceptual understanding of topics associated with the hands-on activity:

**Topic: Physical and Chemical Change**
**Number of Participants:** 125
**Change in Score:** 11% increase (post-pre)
**Analysis of variance shows this change is highly statistically significant** \( (F(1,124) = 10.8, p = 0.001, \eta^2 = 0.08) \) with a medium effect size of the activity on student scores.

**Topic: Density**
**Number of Participants:** 125
**Change in Score:** 15% increase (post-pre)
**Analysis of variance shows this change is highly statistically significant** \( (F(1,124) = 32.3, p < 0.001, \eta^2 = 0.21) \) with a large effect size of the activity on student scores.