

SECTION 4: GASES EXPAND WHEN HEATED

LAB

INTRODUCTION

All gases expand when heated. However, it is not visible to the human eye. As air cools the molecules contract, and take up less space. When air heats up, the molecules expand, and take up more space.

ASSESSMENT ANCHORS ADDRESSED

- S4.A.2.2** Identify appropriate instruments for a specific task and describe the information the instrument can provide.
- S4.C.1.1** Describe observable physical properties of matter.
- S4.C.3.1** Identify and describe different types of force and motion and the effect of the interaction between force and motion.
- S4.A.3.3** Identify and make observations about patterns that regularly occur and reoccur in nature.
- S4.D.1.2** Identify the types and uses of Earth's resources.

PURPOSE

Students complete a variety of activities to show that air expands and contracts. The final activity uses those principals to create a vacuum that sucks an egg into to a bottle.

MATERIALS

For the teacher:

- 2 ice buckets
- 1 small balloon
- 1 bottle (soda type)
- *hot water
- *ice
- 1 rectangular bottle
- Peeled, hard boiled egg

*Teacher provides items marked with **