

Achievements and Competencies

Learning Outcomes

Grades 7-9
Mixtures and solutions
Analysing and interpreting
Fluids

Achievements and Competencies are based on the Common Framework of Science Learning Outcomes (K-12) set by the Canadian Council of Ministers of Education (1997).

Specific Expectations

Grade 7

PHYSICAL SCIENCE

Mixtures and solutions

109-10 Relate personal activities in formal and informal settings to specific science disciplines (e.g., relate science disciplines to personal settings, such as using chemistry to explain why a pop drink fizzes, applying material science when using the proper amount of paint thinner and knowing that meteorology is applied when the smog index is determined for a city or region).

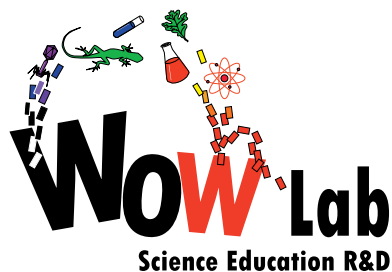
The use of soda in the *Buoyancy* activity gives students the ability to compare the contents of regular soda to diet soda drinks.

210-9 Calculate theoretical values of a variable (e.g., calculate concentrations of solutions in g/100 mL).

Determining the mass of the water and white powder before and after they have been mixed together allows the students to calculate the change in mass.

210-16 Identify new questions and problems that arise from what was learned (e.g., identify questions such as “Are there mixtures that can’t be separated?” and “What techniques are used to remove pollutants from air and water?”).

The students are expected to use the data they obtained from the *Find the Hidden Message* and *Conservation of Mass* components to complete the activity, and determine if the can of soda can float.



a WOW Lab

BLUEPRINT

Buoyancy - Achievements and Competencies

Grade 8

PHYSICAL SCIENCE

Fluids

307-8 Describe the relationship between the mass, volume and density of solids, liquids and gases using the particle model of matter.

The law of conservation of mass will be tested and proven by the students using the reaction between water and baking soda.

307-10 Describe situations in daily life where the density of substances naturally changes or is intentionally altered.

Determining the differences between regular and diet soda will demonstrate to students that the density and composition of similar substances can vary.

EARTH AND SPACE SCIENCE

Water systems on Earth

210-6 Interpret patterns and trends in data and infer and explain relationships among the variables (e.g., relate ocean currents to coastal climates and the severity of erosion to the type of shoreline).

Conservation of Mass requires the students to record the mass of the reactants and products to determine if there is a change in mass. A relationship between the mass of the reactants and products will be determined and used to explain what chemical reactions have taken place.