**Colligative properties**

**Instructor notes**

Overview

This activity is intended for use in a college-level second term general chemistry course, and is designed to help students complete the following learning objectives:

a) Describe the effect of a solute on the boiling and freezing points of a solvent

b) Determine the boiling and freezing points of solutions

The activity is designed to be done at the beginning of the unit on colligative properties. Students are expected to be familiar with the following concepts before completing this activity:

a) Solution and its components

b) Solution concentration

c) Different types of solutes: electrolytes and non-electrolytes

d) Dissolution

e) Phase changes

f) Boiling and freezing points

Interactive simulation:

This activity is based on the AACT simulation on colligative properties:

<https://teachchemistry.org/classroom-resources/colligative-properties>

Instructors are encouraged to post the simulation link on the learning management system at least a day before the activity, allowing students time to familiarize themselves with the simulation.

In-class Activity

Students should be informed in advance to bring laptops or compatible devices for the activity. The in-class activity can be completed in a 50-minute lecture period. Below is the suggested timeline.

* Introduction to the activity and the background: 5-10 mins
* Groups of 3-4 students work collaboratively on the in-class activity worksheet and answer questions in the free response form: 20-25 mins
* Brief discussion between the instructor and students on the activity questions: 5-10 mins
* Post activity assessment: 10 mins