

The **Molarity** simulation allows students to qualitatively and quantitatively explore the relationships between solute amount, solution volume, and solution concentration.

## Insights into Student Use

- We recommend using the sim to help students determine qualitative relationships between molarity, moles, and liters before having students complete quantitative problems or data collection.
- The sim demonstrates saturation but does not explain why different solutes have different solubilities. In interviews, students were able to connect saturation to the idea of having “more solute than water can dissolve”. Our Concentration simulation addresses the topic of saturation in more detail.
- The Drink Mix example provides a real-world link to the concept of concentration to help students make connections to the chemical examples.

## Model Simplifications

- Solution volume is the combined volume of solute and water.
- By design, not all solutions will reach saturation. The number of moles that can be added is limited to the range of 0.2-1.0 moles so that students can explore some solutions for the full concentration range (0-5 M).
- Drink mix is assume to have the same solubility as sucrose.
- Solubility of each solution listed was calculated at 25°C, except for  $\text{AuCl}_3$  and Drink mix, which were based on data taken at 20°C.



See all published activities for Molarity [here](#).

For more tips on using PhET sims with your students, see [Tips for Using PhET](#).