



## The Chemistry of Playdough

Guide for Curriculum Unit 20.02.05  
by Jason Ward

This five-lesson unit was designed to introduce elementary students to the basic chemistry behind making playdough as they take on the role of a chemical engineer and endeavor to develop a process (or recipe) for making playdough. Moreover, it will inject fundamental knowledge of chemistry. Students will use this knowledge to improve consistency in producing high-quality playdough comparable to retail brand “Play-Doh” in texture, elasticity, and pliability. Along the way, students will learn the role of each ingredient and the reasoning behind each step of the process (mixing, kneading, and applying heat). There will also be room for experimentation as students explore various ingredients and/or different preparation processes. Students will record their measured ingredients and procedures used for each batch in a chemical engineering journal and present their best final product to the class. The unit promotes an introduction to chemistry and engineering, and using an organized method to record notes and observations. Not only that, but making playdough is a lot of fun! Fair warning – students will be excited, and some results may come out sticky and messy! The unit is designed to take five one-hour sessions but can be extended or shortened at the discretion of the teacher.

(Developed for STEM Lab, grade 2; recommended for Science, grades K-5)

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