



## Biochemistry and Baseball

Guide for Curriculum Unit 15.04.05  
by Matthew Eveleth

My unit strays from the typical chemistry curriculum and into biochemistry with analogies to baseball. The purpose behind this is to engage students with concepts that reach into their lives with enzymes – those little machines in our bodies – and analogies to sports to capture their imaginations. Throughout this unit, students will encounter a number of challenging concepts related to reactions: how they occur, the math behind them, and how they are mediated biologically. Students will learn about reaction collision theory through an analogy to baseball. They will engage mole ratios and grapple with the concept of the limiting reagent by making s'mores and mixing chemicals. Finally, they will discover the power of enzymes and their kinetics by encountering the Michaelis-Menten equation, enzyme saturation, and the importance of the  $K_m$  constant. In all, students will be challenged and stimulated by the analogies and activities that will bring to life products, reactants, reactions, stoichiometry, enzymes and kinetics.

(Recommended for Chemistry, grades 10-12)

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