

Crafty Low-Cost Molecular Biology Manipulatives

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The abundant availability of computer-aided graphics and videos to display the complexities of biological systems at the molecular level has been beneficial to student learning, especially for those who respond well to visual aids. Concern over retention of material presented in this manner has led us to create a number of kinesthetic models that require active student participation. In this workshop, we will present a number of classroom models and activities that we have used to demonstrate concepts such as: electron configuration and chemical bonds, transcription, translation, electron transport chains, and cytoskeleton assembly. While some of these models work well for introductory-level biology courses, many are designed to highlight the finer details covered in upper-level molecular biology courses. Materials used to create these models are inexpensive and require varying degrees of artistic/skill level. In addition to providing low-cost options, most of these models were developed because no commercial models were available. Participants will be provided descriptions and/or detailed designs for many of these models and will be given the opportunity to participate in at least two specific group activities.

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