Teaching Points

Students explore the shape and chemical properties of the 20 amino acid sidechains with engaging plastic models. The sidechains feature dual coloring schemes – color on the plastic clip indicates chemical properties, while the individual atoms of the sidechains are colored by atom type. Since understanding protein structure begins with this unique combination of shape and chemical properties of the amino acid sidechains, students will gain a basic knowledge of the laws that determine protein folding.

Protein folding is influenced by several factors, one of which is the chemical properties of the amino acid sidechains. Through this exercise, students will explore the chemical properties that dictate the way a protein will fold. A flexible, foam-covered wire represents the backbone of the peptide to which the plastic sidechains are attached.

Models in this Collection

- 12 Amino Acid Starter Kits©
Documentation Included

- How do the models fit back in the suitcase?
- AASK introduction
- Amino Acid Side Chain Chart©
- AASK Standard Genetic Code
- AASK Student Handout 1
- AASK Student Handout 1 Key
- AASK Student Handout 2
- AASK Student Handout 2 Key
- AASK Student Handout 3
- AASK Student Handout 3 Key
- AASK Teacher Notes
- AASK Additional Activities
- AASK National Framework

All instructional materials for classroom use are available for printing. They are accessible online at:

http://www.3dmoleculardesigns.com/Teacher-Resources.htm

Model Details

- **Amino Acid Starter Kit©** contents:
  - 1 Chemical Properties Circle with rubber bumpers for each amino acid
  - 22 plastic amino acid sidechains (1 of each amino acid, plus 1 additional cysteine and 1 additional histidine)
  - 1 four-foot Mini-Toober
  - 2 Mini-Toober Endcaps (1 red and 1 blue)
  - 6 Hydrogen Bond Connectors
  - 1 Cover Page/Contents List
  - 1 New & Improved Contents Page
  - 1 Laminated Amino Acid Side Chain Chart©