

Protein Set

Teach abstract concepts in concrete ways

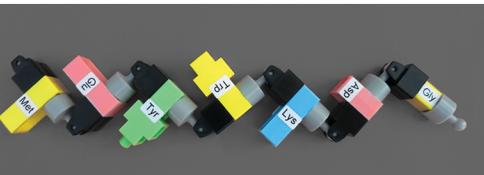


About the models

Our models are designed to teach function, in addition to structure. They are made to be manipulated, so learners can fold proteins into specific shapes.

Lessons are appropriate for middle school, high school, AP Biology, and adult levels. Diverse populations including English language learners, nurses, and judges have all found the lessons an engaging way to learn difficult concepts.

Additionally, teachers can use the models to illustrate key proteins in human body systems, such as the immune and digestive systems.



Learn about protein structure and function using our unique manipulatives



Appropriate for secondary school and higher education

About the curriculum

Booklet 1 Activities:

- Name the parts of an amino acid
- Compare amino acid side chains
- Assemble your own proteins
- Fold a protein using hydrophobic and hydrophilic interactions
- Construct a channel protein
- Convert one protein into another by changing the amino acid order

Booklet 2 Activities:

- Model all 4 levels of protein structure
- Assemble alpha helices and beta pleated sheets
- Create disulfide bonds and salt bridges in proteins
- Build and fold:
 - Trypsin and Chymotrypsin
 - Insulin
 - Antibody
 - Actin and Myosin



Classroom Set: \$1550

14 Protein Kits

14 Booklet 1

14 Booklet 2

14 Protein Card Packs

14 Cell Membrane Mats

14 Trypsin Mats

14 Chymotrypsin Mats

28 Actin Filament Mats

Storage Crate

Teacher Guide (online)

Price includes shipping to continental U.S. only. Shipping to additional destinations will require additional costs.

DNA Classroom Set: \$1950

tRNA Classroom Set: \$400

See flyers for additional information



Download Teacher Guide and additional materials online:
<http://edgerton.mit.edu/DNA-proteins-sets>

Curriculum questions:
kathymv@mit.edu

Purchasing questions/Ordering:
edgerton-k12-info@mit.edu



Massachusetts
Institute of
Technology

Teach abstract concepts in concrete ways

Learn about DNA and RNA
using our unique manipulatives

Appropriate for secondary
school and higher education



About the models

Our models are designed to teach processes, in addition to structure. They are made to be manipulated, so learners can perform cellular functions with their own hands.

Lessons are appropriate for middle school, high school, AP Biology, and adult levels. Diverse populations including English language learners, nurses, and judges have all found the lessons an engaging way to learn difficult concepts.

About the curriculum

Booklet 1 Activities:

- Name the parts of a nucleotide
- Assemble the double helix structure
- Discover the base pairing rule
- Complete basic DNA replication
- Copy DNA into mRNA messages
- Decode messages in DNA and RNA
- Compare genes and amino acid sequences

Booklet 2 Activities:

- Discover 3' and 5' DNA structure
- Assemble triphosphate nucleotides
- Replicate DNA with leading and lagging strands
- Damage DNA using free radicals
- Repair oxidative DNA damage
- Create 4 kinds of mutations: missense, nonsense, silent, and frameshift

Classroom Set: \$1950

14 DNA/RNA Kits

14 Booklet 1

14 Booklet 2

14 Gene Strips

14 Codon Card Sets

Storage Crate

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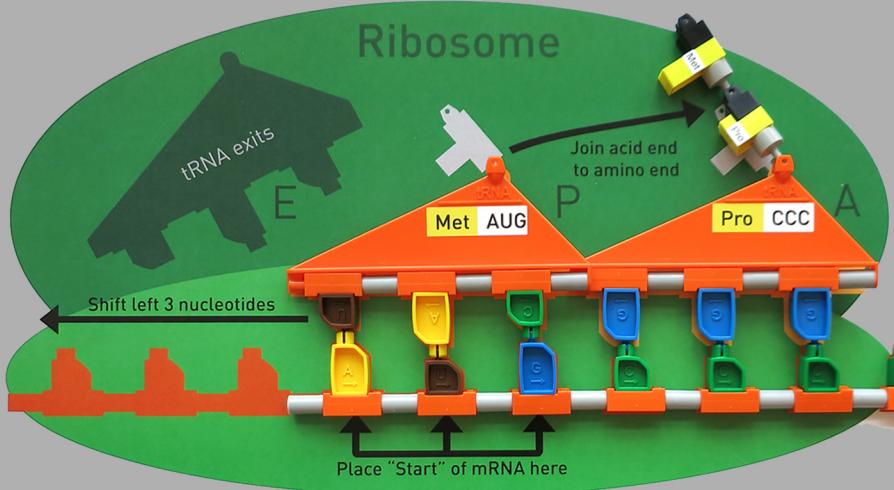
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Teach abstract concepts in concrete ways

Learn about protein synthesis using our unique manipulatives



Appropriate for secondary school and higher education

About the models

Our models are designed to teach function, in addition to structure. They are made to be manipulated, so learners can translate messenger RNA into protein chains.

Lessons are appropriate for middle school, high school, AP Biology, and adult levels. Diverse populations including English language learners, nurses, and judges have all found the lessons an engaging way to learn difficult concepts.

About the curriculum

Booklet 1 Activities:

- Name the parts of a tRNA molecule
- Discover the structure of a ribosome
- Assemble and load tRNA molecules
- Construct messenger RNA
- Review the steps of protein synthesis
- Complete translation for 4 different channel protein genes
- Compare the difference between original and mutated protein chains



Classroom Set: \$400

Designed for use with DNA/RNA and Protein Sets

4 tRNA Kits

4 Booklet 1

4 Ribosome Mats

Teacher Guide (online)

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Protein Classroom Set: \$1550

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