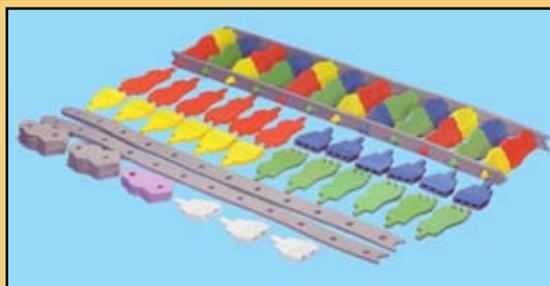


DNA Starter Kit®

1-Group Set Contents

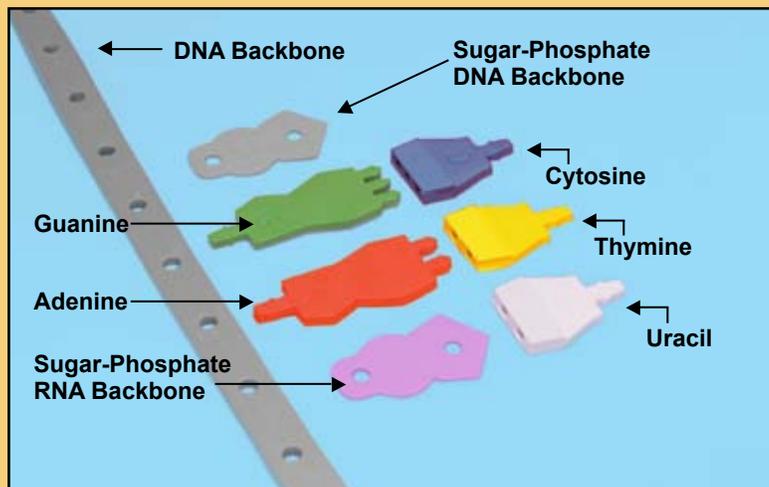
- 12 Red Foam Adenine Bases (DNASK-R-A)
- 12 Blue Foam Cytosine Bases (DNASK-R-C)
- 12 Green Foam Guanine Bases (DNASK-R-G)
- 12 Yellow Foam Thymine Bases (DNASK-R-T)
- 3 White Foam Uracil Bases (DNASK-R-U)
- 4 Gray Foam DNA Backbone Pieces (DNASK-R-Backbone)



- 1 Bag with 24 Blue, 24 Yellow and 12 White Bands (DNASK-R-Bands)*
- 24 Gray Sugar-Phosphate DNA Backbone Pieces (DNASK-R-GSP)
- 12 Purple Sugar-Phosphate RNA Backbone Pieces (DNASK-R-PSP)

Please contact us if any parts are missing or damaged.

Replacement Parts Available Order replacement parts with the item number in parentheses from the above list online at shop3dmoleculardesigns.com or call 414-774-6562



Turn the nucleotide monophosphates in this kit into nucleotide triphosphates with the DNASK Triphosphate Expansion Pack. See more information on page 4.

*Attached to the pyrimidines in photos. See page 1 for assembly directions.

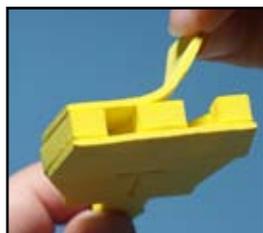
⚠ WARNING:

CHOKING HAZARD -- This product contains small parts and should be kept out of the reach of children under the age of 3, because the parts or their pieces may present a choking hazard to small children.

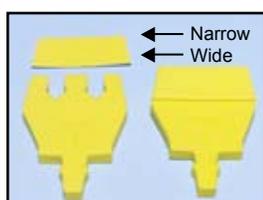
CAUTION:

This is a science education product, not a toy. It is not intended for children under 8 years old.

Assembly



To complete your pyrimidine bases (blue cytosine, yellow thymine & white uracil) you will attach the sticky-backed foam bands to each side of the base as shown at left. (Please remove the paper backing on the bands first.) The prongs of the pyrimidine bases should be completely covered by the sticky-backed bands. These sticky-backed bands provide stability for the model and reduce confusion between base pairs.

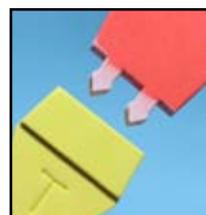


Match the shape of the band to the shape of the base. Note the angle cut on the bands. Place the narrow end at the outside of the prongs. See photo.

Note: If over time the bands on the pyrimidines become loose, or are not sticking to the foam base, use super glue to re-attach them.

Powder Bases Before Using

The adhesive on the bands makes joining and separating the base pairs difficult. This stickiness can be eliminated with talcum powder. Dip the purines' exposed prongs into the talcum powder provided. Insert the purine into the complementary pyrimidine. The bases should easily attach and detach.



Care & Maintenance

The foam will tear if too much force is used. Encourage your students to be careful. Wash with a damp cloth or, if necessary, a mild dishwashing detergent.

Misconception Caution

Models are powerful teaching tools, but can cause misconceptions. With this DNA model, students might develop the misconception that DNA is made by simply adding the four DNA bases (A,T,G,C) to a pre-formed sugar-phosphate backbone. To avoid this misconception, we encourage you to explain that a nucleotide consists of a base, deoxyribose sugar and a phosphate group. You can use the individual sugar phosphate pieces joined to the base to help your students visualize the individual nucleotides.



Individual nucleotide units are then joined together by phosphodiester bonds to build up the alternating sugar-phosphate backbone of DNA as it is synthesized by DNA polymerase enzymes in the cell.