3D Molecular Designs
...where molecules become real ™

Flow of Genetic Information Kit©

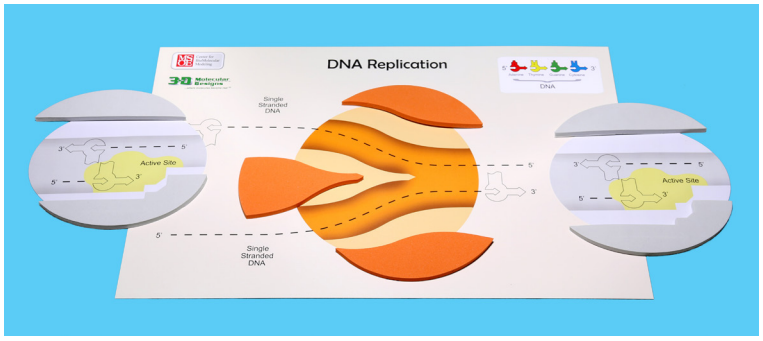
Assembly Instructions

Each of the key proteins represented in the Flow of Genetic Information Kit© requires minor assembly. Adhesive-backed foam cutouts will need to be attached. To watch a step-by-step assembly video, visit *3dmoleculardesigns.com/Teacher-Resources/Flow-of-Genetic-Information-Kit.htm*. *Please allot approximately 45 minutes to assemble the first kit and 30 for each additional kit (if you have more than one).*

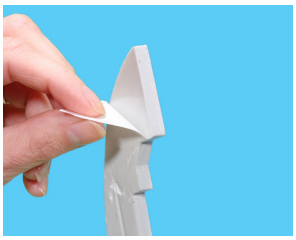
Warning: No cutting or trimming of parts is necessary!

Caution: The adhesive is very sticky. Do not attach the foam pieces to the placemats until you are certain of their placement. They will be difficult to remove. Work slowly and carefully to affix the pieces.

Helicase and DNA Polymerase Direction



1. Lay out the DNA Replication Placemat and DNA Polymerase Ovals with the corresponding foam pieces to become familiar with where the foam pieces should be attached. Foam pieces are color-coded to cover the lighter-shaded areas of the placemat and ovals. (More detailed photos follow on page 2.)



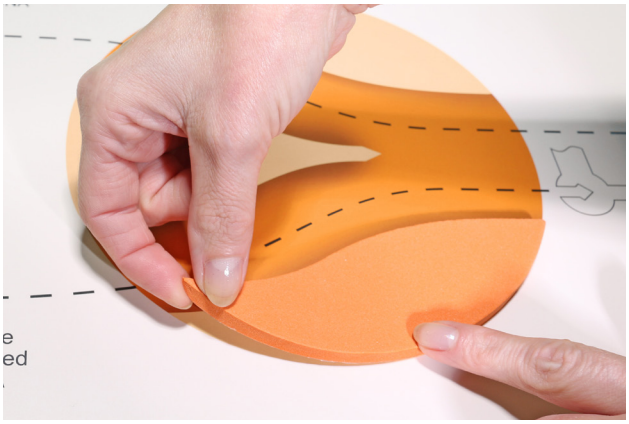
2. Peel the paper backing away from the foam pieces. Note that this backing can be difficult to remove and may even tend to pull the adhesive away from the foam. Make sure you are only pulling the paper away and leaving the adhesive on the foam pieces.

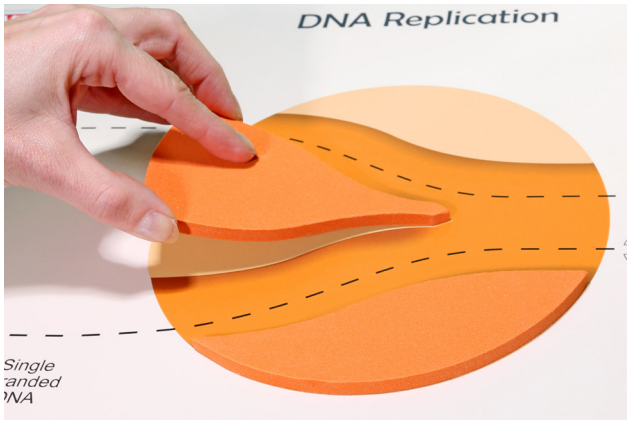
3. Stick the foam pieces to the protein placemats. The foam should cover all of the lighter-shaded areas.

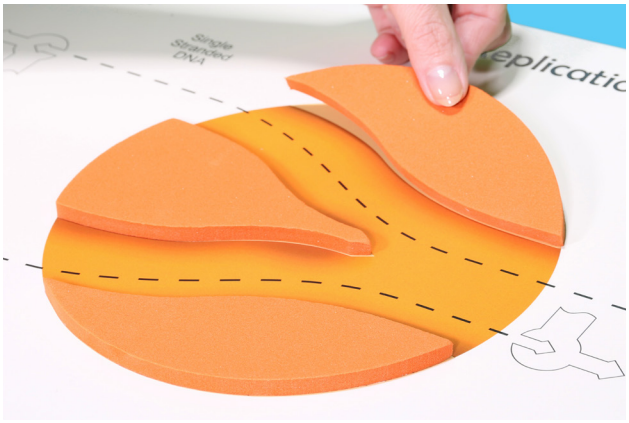
DNA Polymerase

Assembly Instructions Continued

Helicase

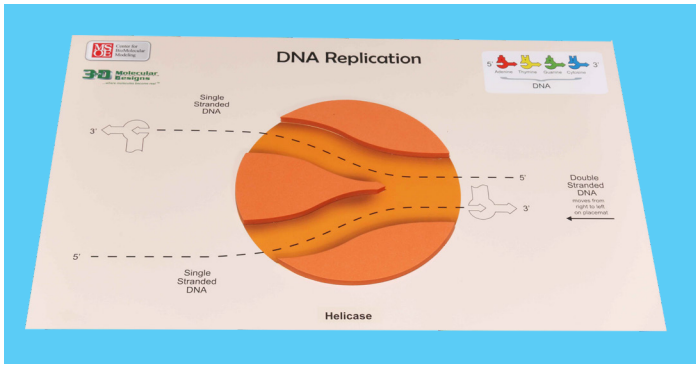


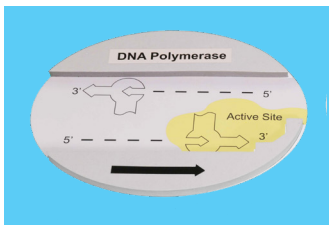


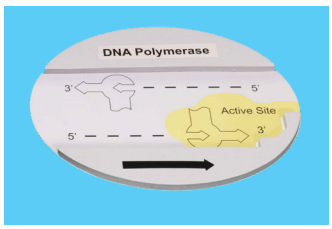


4. Optional: Affix Helicase and DNA Polymerase labels to the Replication Placemat and DNA Polymerase Ovals. Refer to the images below for recommended placement.

The fully-assembled Replication placemat and DNA Polymerase Ovals should look like the images below.



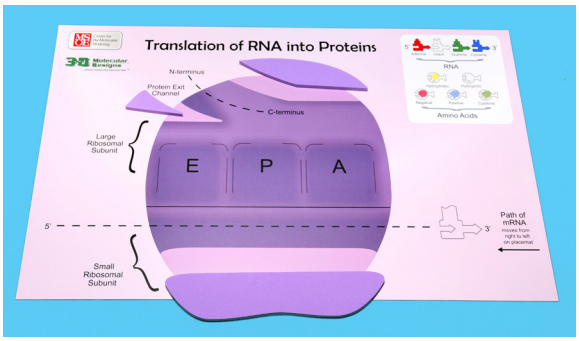




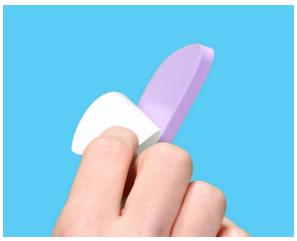
Assembly Instructions Continued

Ribosome Directions

1. Lay out the Translation Placemat and the corresponding foam pieces to become familiar with where the color-coded foam pieces should be attached. Foam pieces cover the lighter-shaded areas of the ribosome.

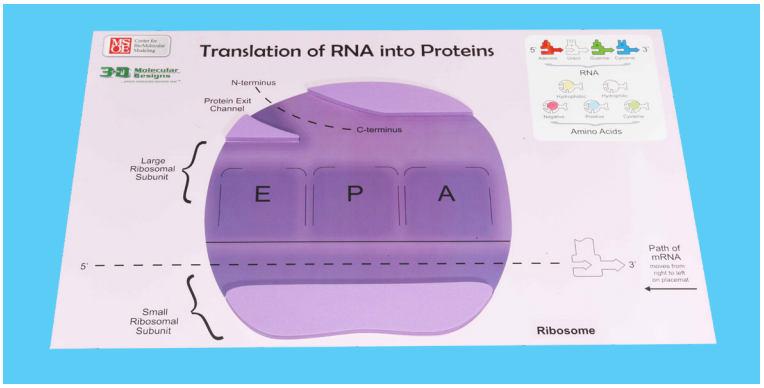


2. Peel the paper backing away from the foam pieces. Note that this backing can be difficult to remove and may even tend to pull the adhesive away from the foam. Make sure you are only pulling the paper away and leaving the adhesive on the foam pieces.



3. Stick the foam pieces to the Translation Placemats. The foam should cover all of the lighter shaded areas.

Assembly Instructions Continued

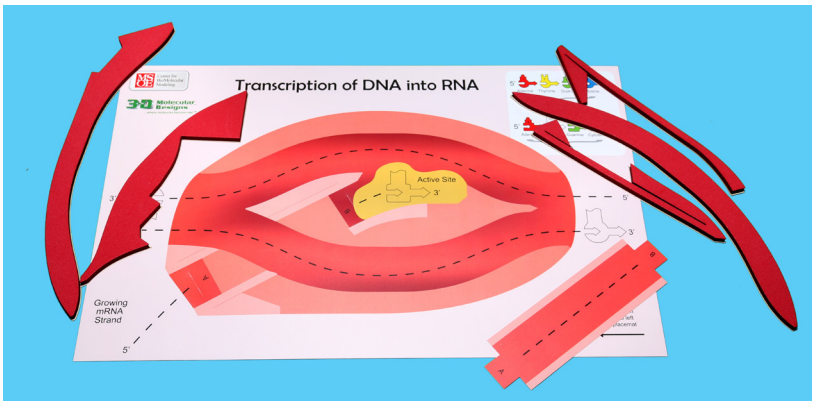


4. Optional: Affix the ribosome label to the Translation Placemat. Refer to the Image to the left for recommended placemat.

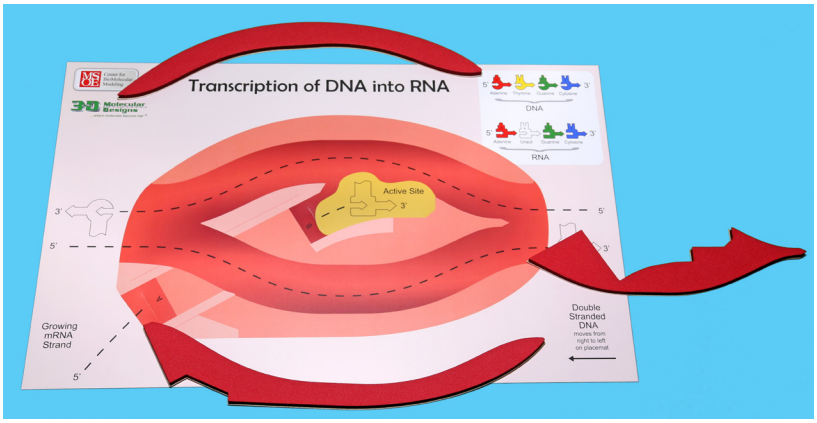
The fully-assembled Translation Placemat should look like the image to the left.

RNA Polymerase Directions

The Translation Placemat assembly is similar to the previously-described placemats, but requires additional steps to construct the exit channel bridge.

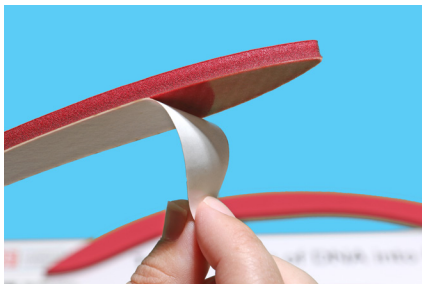


1. Lay out the Translation Placemat with the three foam pieces that will be attached first, as shown in the images to the right. There are two additional foam pieces that will be used later.

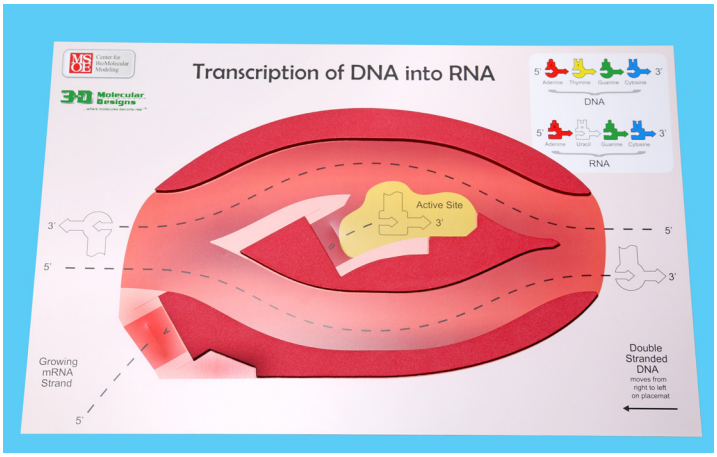


Assembly Instructions Continued

2. Peel the backing away from the foam pieces. Note that this backing can be difficult to remove and may even tend to pull the adhesive away from the foam. Make sure you are only pulling the paper away and leaving the adhesive on the foam pieces.

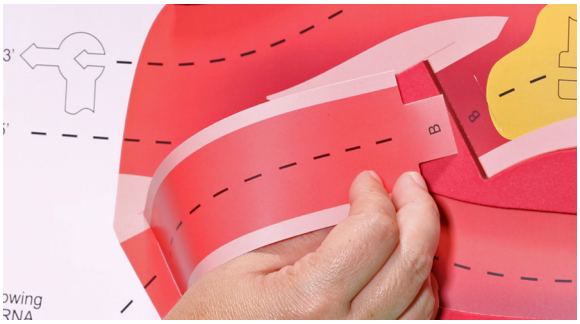


3. Stick the color-coded foam pieces to the Transcription Placemat. The foam should cover all of the lighter-shaded areas.



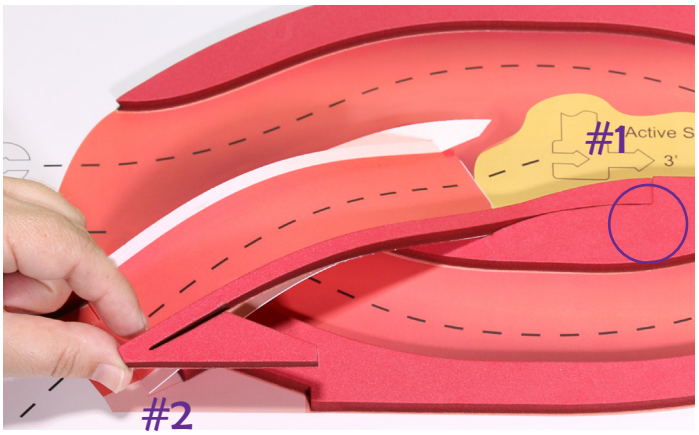
After these three foam pieces have been attached the protein placemat should look like the image above.

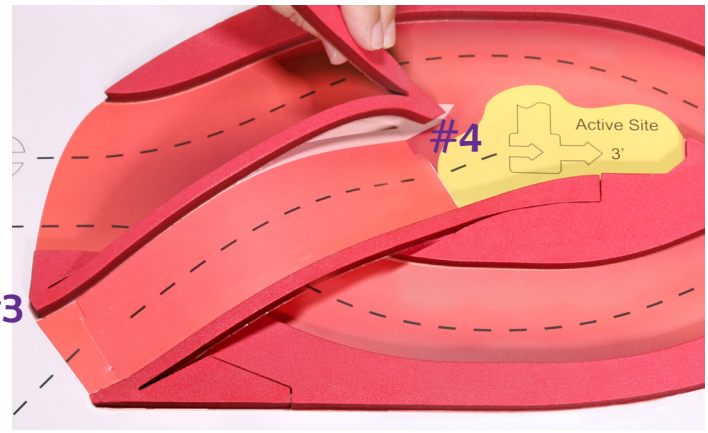
4. Insert the A and B tabs of the exit channel bridge into the pre-cut slits on the RNA polymerase placemat. Note that the A and B tabs on the bridge should match the A and B labels on the placemat.



Assembly Instructions Continued

5. Finally, attach the remaining two foam pieces to the exit channel bridge and the protein placemat See images below.



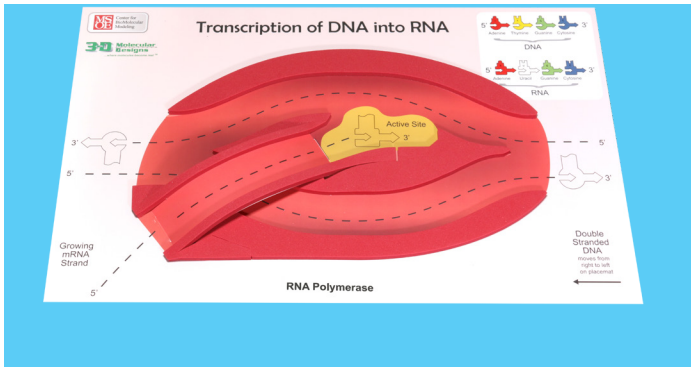


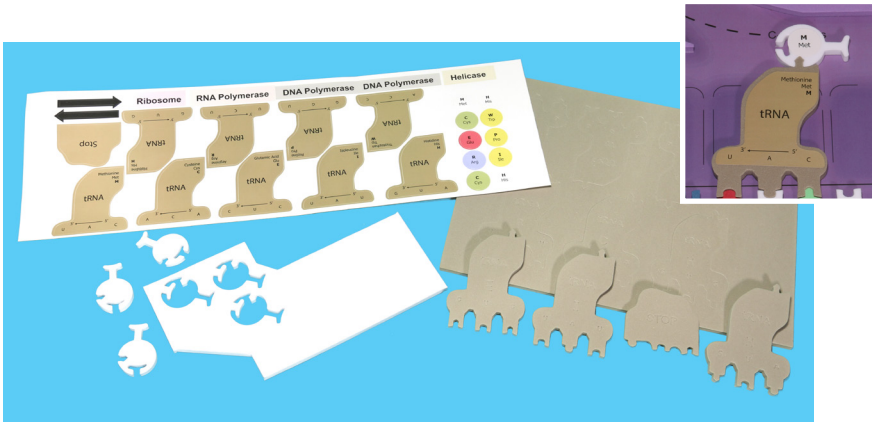
5a. Attach the upper right side first to the placemat (*see #1*), then to the edge of the bridge and finally back on the placemat at position #2.

5b. Attach the remaining piece from #3 to #4, as shown in the image above.

6. Optional:
   - Affix the RNA Polymerase label to the Transcription Placemat.
   - Refer to the image left for recommended placement.

The fully-assembled protein placemat should look like the image on the left.





Sticker Assembly

tRNA Molecules and Release Factor

Use the imprinted information on each tan foam tRNA molecule to determine which tan sticker should be affixed to each piece, as shown in the images left.

White Amino Acids

Affix the circle amino acid stickers to each of the white foam amino acids, as shown in the images left.