

Translation Activity



1. Cut out the amino acid & tRNA pieces.
2. Match the amino acids with the correct tRNA (**Careful** the tRNA have the anti-codons, amino acids correspond with the codons) and tape them together.
3. Pick the tRNA with the anticodon that matches the first codon on the mRNA.
4. Place the mRNA in the ribosome so the first codon is in the P site.
5. Match the anticodon to the codon on the mRNA that is in the P site.
6. Pick the tRNA with the anticodon & corresponding amino acid that matches the second codon that sits in the A site.
7. Bring this tRNA into the A site of the ribosome.
8. Represent the peptide bonding of the amino acids by taping the amino acids together. (*disconnect the amino acid from the tRNA in the P site but leave the one in the A site connected to its tRNA*)
9. Slide the mRNA along in the ribosome so that the mRNA & tRNA molecules now occupy the E and P sites.
10. Remove the tRNA from the E site

Take a picture

11. Pick the tRNA with the anticodon & corresponding amino acid that matches the codon in the A site.
12. Bring this tRNA into the A site
13. Peptide bond (tape) the amino acids together continuing to build a polypeptide. (*un-tape the amino acid from the tRNA in the P site, tape it to the new amino acid*)
14. Once again, slide the mRNA so that the remaining tRNA molecules occupy the E and P sites.

Take a picture

15. Remove the tRNA from the E site
16. Continue this process until the entire mRNA molecules has been transcribed.
17. You have made a polypeptide.

18. Use the protein folding rules to create the 3-D protein. 😊

Fold based on interactions between the 1st & 4th aa, 2nd & 5th aa, 3rd & 6th aa.....

- **Hydrophobic sidechains** will be buried on the **inside** of the globular protein, where they are hidden from polar water molecules.
- **Charged sidechains** will be on the **surface** of proteins where they often neutralize each other (acids bond to bases) and form salt bridges.
- **Polar sidechains** will be on the **surface** of the protein where they can hydrogen bond with water.

Take a picture

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