

Title: Making Sentences of DNA

Introduction: The instructions coded in DNA must be read and turned into protein molecules for the cell to carry out the instructions. In this activity you will model this process using sentences for DNA and RNA and words for amino acids. The words must line up in the correct order for the protein to form properly, just like words in a sentence must line up. Good luck!

Instructions:

1. Send one student to the teachers' desk with a piece of paper. This student must write down the DNA template card number, and transcribe it into mRNA.
2. With the mRNA sequence, s/he will go back to the group's desk and the ribosomal student (rRNA) will write out the tRNA anti-codon sequence.
3. The tRNA student will search out the correct anti-codon card on the wall and flip the card over revealing the word. S/he will write down the words in the sequence specified on the mRNA.
4. After completing the sentence, send a student in the group to check with your teacher to see if his/her group sentence is correct. If not correct, have the group go over the same DNA template. If correct, pick another card and build another "protein". Complete at least 5 sentences and continue if you have time.

Data:

Sentence number	Sentence

Analysis:

1. Where was it easiest to make a mistake?
2. What is a mistake a model of? (they do happen in nature)

3. Describe the role of:

DNA

mRNA

rRNA

tRNA

4. How do proteins “tell” a cell what to do?

Conclusion: