

Protein Synthesis & Words

Biology

Name: _____

1. Start a group data sheet by writing the following: _____

DNA template # _____

DNA code: _____

mRNA code: _____

tRNA code: _____

message: _____

2. First partner: obtain a DNA template card at the teacher's desk and TRANSCRIBE it (onto your data sheet) into mRNA code at the teacher's desk. (Be sure to write the template card number on your data sheet!)
3. Take the mRNA code back to your desk, and the Second partner will write out the correct tRNA anti-codon sequence.
4. After getting the tRNA anti-codon sequence, the First partner will search out the correct anti-codon card on the wall and read out the word on the back to the Second partner, back at the desk.
5. Continue finding tRNA cards and works until the sentence is complete.
6. When the sentence is complete, the Second partner will tell the teacher his/her group's sentence. If correct, the partners switch roles and begin the process again until they have done all 20 sentences. If NOT correct, they will go back and fix the mistakes until it is correct.
7. After you have completed two or three translations, look for and use shortcuts in the process.
8. When you are finished TRANSLATING the 20 DNA codes, answer the questions below and turn in this sheet and the group's data sheets.

Questions:

1. Like what molecule is the First partner acting when s/he carries the code from the teacher's desk to the Second partner? Why? (2 points)
2. Why can't the DNA template card leave the teacher's desk? (2 points)
3. What does the teacher's desk represent in this activity? Why? (2 points)
4. What does the group's desk represent in this activity? Why? (2 points)
5. What do the walls of the classroom represent in this activity? Why? (2 points)
6. On the back of this sheet: Name 2 ways that the words on the back of the tRNA cards are similar to amino acids in the cell. Then name 2 ways that they are different from amino acids in the cell. (4 points)