

Worksheet DNA 3th form – Making proteins

Write down the strands of DNA, RNA and write down the order of the amino acids.

1. Below you see an RNA strand. Read from left to right, find the start codon and add the letters of the corresponding amino acids in the correct order below the RNA-strand. This is translation from RNA to amino acids (the building blocks of a protein).

RNA: CUGAUUAGUCGAAUGAGAUCGACAGACUAGCCAGAUCAUAUCGAC

Protein:

2. Below you see one DNA-strand (which is half of a complete DNA molecule). Write the RNA strand below the DNA strand. Replace the T's by the U's. Look for the start codon and add the letters of the corresponding amino acids in the correct order below the RNA strand by translating the code found in RNA to amino acids. Go from left to right.

DNA: CATGATTAGTCGAATGAGATCGACAGACTACCCATGATCATATC

RNA:

Protein:

3. Below you see one DNA-strand (which is half of a complete DNA molecule). First write down the other DNA strand. Use this second strand (you wrote down) to create an RNA strand like you did in question 2. Find the code of the protein by searching for the start codon. Find out whether the protein is found from left to right or from right to left.

DNA: ATTAGGTATGAGATCGGACTAGCATAACAGATCTCGATATCGAC

DNA:

RNA:

Protein:

4. How many different codes (codons) are there?
5. How many amino acids do we have?
6. Draw a conclusion based on your answers of question 5 and 6.
7. What happens when you would change the third letter of the code for the amino acid T?
8. Explain what would happen when you would insert or remove one base (1 letter A T C or G) somewhere in a DNA strand which has the code for a protein?
9. Finish WB 3.2 and study and do the questions of TB 3.23.