

## **Teacher's Guide for Protein Construction Lesson**

### **Lesson Objectives:**

- Introduce interesting and unconventional teaching methods to teachers.
- Use the appropriate activities in teaching protein synthesis.

### **Prior Knowledge:**

- Animal cell structure.
- Proteins and their importance

### **Overview of the topic discussions and classroom activities for this lesson:**

It is recommended to provide cubes or plastic pieces or educational games in the activities and if not possible, they can be replaced by the blackboard and worksheets.

The first activity: Forming a DNA molecule and matching nitrogen bases using plastic magnetic pieces.

The second activity: Making a genetic code for a DNA molecule using plastic magnetic pieces.

Third activity: The process of transferring the genetic code from the nucleus to the cytoplasm and the genetic code description using plastic magnetic pieces.

Fourth activity: The process of linking the nucleic acid tRNA to the genetic code on the mRNA using the plastic magnetic pieces.

The fifth activity: Ordering the amino acids to form protein on the genetic code using the plastic magnetic pieces.

### **Challenging activities and discussions for distinguished students:**

Challenging discussions for distinguished students may include providing certain genetic code and asking the students to determine the corresponding amino acids, for example (if the genetic code of RNA has the sequence: AAG GCA AGC. Which amino acids are involved in making this code for protein synthesis?)

### **Equipment and requirements for the lesson:**

Laboratory - playground - Restaurant – P. E. teacher – two students - a meal consisting of beans and meat - a model of the animal cell - a model of DNA – a display using flash for protein synthesis - plastic magnetic pieces.

Finally, I hope that I have achieved the objectives of the lesson, and please accept my sincere greetings & appreciation.

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