

DNA Building Assignment

Learning Objectives

- Students will be able to describe the structure of the DNA molecule.
- Students will be able to explain the rules of base pairing.
- Students will understand that information is stored within the DNA molecule in the form of a sequence of chemical bases, each referred to by the first letter of its name (A, T, C and G).

Your assignment is to:

- Design and build an interactive sequence of DNA with at least 6 base pairs. You may build your structure out of any materials you wish.
- All the components will need to be either labelled or have a corresponding legend that explains each part of the sequence and should be easily distinguished between each other.
- Your structure must be accompanied with a description of why you chose to build the sequence the way you did. (material used, organization of material, etc)
- What each component of your structure is and how it is organised? (hint: use your notes or internet)
- What is the process that a DNA molecule goes through in order to replicate itself? Write a brief description (Hint: notes or use the internet)
- How would you expand/alter your design in order to incorporate DNA replication?

The more creative the better, try and not just settle for coloured paper and tape.

You may choose to work in partners of no more than 3 or one you own.

DNA Rubric

CRITERIA	LEVEL 4	LEVEL 3	LEVEL 2	LEVEL 1
Information Content (K and U) /15	Covers topic in-depth with details answering all questions. Subject knowledge is excellent.	Includes essential knowledge about the topic. Subject knowledge appears to be good.	Includes essential information about the topic but there are 1-2 factual errors.	Content is minimal OR there are several factual errors.
DNA sequence construction (T and I) /20	Appropriate materials were selected and creatively modified in ways that made them even better. Student went above and beyond criteria for project.	Appropriate materials were selected and there was an attempt at creative modification to make them even better.	Appropriate materials were selected and modified to create a model.	Some appropriate materials were selected but minimal modification was attempted to create structure.
Organisation (comm.) /5	Very good overall plan & well connected text.	Adequate overall plan	Weak overall plan. Gaps in sequence of ideas	Minimal overall planning and ideas out of order.
Mechanics (comm.) /5	No spelling/grammar errors at all!	1 to 2 spelling/grammar errors	3 to 4 spelling/grammar errors	More than 4 spelling/grammar errors
Quality of work (app) /10	Great care taken in construction process so that the structure is neat, attractive and follows plans accurately.	Construction was careful and accurate for the most part, but 1-2 details could have been refined for a more attractive product.	Construction accurately followed the plans, but 3-4 details could have been refined for a more attractive product.	Construction appears careless or haphazard. Many details need refinement for a strong or attractive product

Comments:

Final Mark /55