# DNA: The Genetic Material

**Authors:** Walter P. Suza, Iowa State University

## Overview

This ALA will focus on [Chapter 2 in our textbook, “DNA: The Genetic Material.”](https://iastate.pressbooks.pub/genagbiotech/chapter/dna-the-genetic-material-2/) In this ALA, I will ask you to think about how plants work and dive into some of the details and reflect on your learning of this process.

You will be asked to query AI for the interconnectedness of specific DNA structure and functions terms. You will also be asked to evaluate the response generated by AI using what you have learned from lectures and reading assignments.

You have several attempts to complete the assignment.

## Preparation

Complete the following before starting this assignment.

* Review these Chapter on "How to be a plant" to help you to complete the assignment.
* Sign up for [ChatGPT](https://auth0.openai.com/u/signup/identifier?state=hKFo2SBnWG53TEJZYnUwYWI0bGQxZWpCeGtsR3JlTVhFY1VBUKFur3VuaXZlcnNhbC1sb2dpbqN0aWTZIEg4cVBxdlNwRzhZeklxQ2xTMjh6Qm1zRENjWFhCejhJo2NpZNkgRFJpdnNubTJNdTQyVDNLT3BxZHR3QjNOWXZpSFl6d0Q) to gain access to AI.

## Part 1:

1. In your own words, what is DNA? (1-2 sentences)
2. Reflect on what you do not understand or what content you have not mastered in the Chapter (2-3 sentences).
3. Identify and describe a strategy you can use to deepen and improve your current understanding in ways that will help you master the topic of DNA replication (2-3 sentences)

Review the two columns of terms below.  Select **a term from each column** for a total of two terms.

|  |  |
| --- | --- |
| **What are plants?** | **How to be a plant** |
| * Photosynthetic eukaryotes
* Assembled from cells
* Cell walls
* Multicellular
* Terrestrial environment
* Vascular system
* Plasmodesmata
* Majority of a plant cell is water
* Stomata
 | * Converting light energy to chemical energy
* Fixing carbon
* Preventing movement of charged molecules into the cell
* Connecting many cells
* Transporting molecules across entire plant
* Maintain homeostasis
* Control water movement
* Fixing carbon
 |

1. List the two terms you selected in your response.
	1. What are the physiological connections between the terms you have selected? Use the lecture notes to create your response. Your response should be about 100 words.

## Part 2:

1. Use the provided prompt to obtain a response from ChatGPT.
	1. Please provide a What the connection between term x and y. Limit to 100 words.
		1. Copy and paste the response from ChatGPT in the box below.
2. Evaluate every sentence from ChatGPT’s response.
	1. What terms and or statements provided by ChatGPT are unclear to you (1-2 sentences).
	2. Compare your response from above and ChatGPT response. Identify 2 similarities or differences between your response and ChatGPT.
		1. Similarities (1-2 sentences)
		2. Differences (1-2 sentences)
3. Evaluate how this assignment of comparing your response to that of ChatGPT has helped your learning process (1-2 sentences).