**DO NOW:**

*Design a controlled experiment to determine the effects of methane gas on glucose production in plants.*

Hypothesis:

Independent variable:

Data to be collected:

Control group:

**DNA:**

* A coded\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_molecule passed from generation to generation.
* In **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**reproduction, or mitosis, an **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** copy of the DNA is made.
* In sexual reproduction, half the DNA from **\_\_\_\_\_\_\_** parents is combined (**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**) to form a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**offspring.

**Genes:**

* DNA is organized into thousands of genes. Genes are segments of **\_\_\_\_\_\_\_\_\_\_** that code for a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
* DNA has the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** all of the proteins that make your body.
* Genes are represented as stripes or **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
* Genes code for characteristics and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
* Genes may be “turned on” or “turned off.”
* If a gene is coding for a protein, the gene is “on,” or **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
* If the gene is not coding for a protein, the gene is “**\_\_\_\_\_\_\_\_\_**,” or not expressed.
* Gene expression may ONLY be altered by the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** !!!!!!!!!!(temperature, weather, sunlight, etc.)

|  |  |  |
| --- | --- | --- |
| DNA | DNA | mRNA |
| **G** |  |  |
| **C** |  |  |
| **A** |  |  |
| **T** |  |  |

**DNA:**

* DNA is also called the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** or the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* The entire DNA is stored in the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of every cell.
* Different cells use different **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** to do their specific jobs

**Protein Synthesis:**

* In order to build a protein, DNA instructions must first be turned into a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.

**DNA-** GCA TAC GAT

**mRNA-**

* The mRNA is then sent to the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, where it is read 3 bases at a time.
* Every 3 bases codes for an **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, the building blocks of proteins
* Each protein has a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of amino acids.
* The sequence of amino acids determines the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of the protein
* If you change the amino acid sequence, the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of the protein might change.

**Mutations:**

* A mutation is any change in the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** sequence of a gene.
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

