**Life Begets Life ( life creates life) : Reproduction and Genetics**

You began life as a single cell, when a **sperm cell** from your dad met an **egg cell** from your mom. Your parents made these reproductive cells through a special type of cell division called **meiosis**. When their reproductive cells combined, your dad and mom each donated half of your **genetic information** — **23 chromosomes** from mom and **23** from dad — for a total of 46 chromosomes in each of your cells. The genes on those 46 chromosomes determined your **characteristics**, from your physical appearance to much of your behavior. The science of genetics tracks the **inheritance** of genes and studies how they determine traits. Through genetics, you can understand why your skin is a certain color or why some traits seem to run in your family. Your **genes** are found in your **DNA**, which is in turn found in your **chromosomes**. Each chromosome consists of hundreds of different blueprints that contain the instructions for your cells’ worker molecules (which are mostly **proteins**). Each type of cell in your body uses the blueprints found in your genes to build the proteins it needs to do its particular job. So what exactly does all that mean? Here it is, plain and simple : DNA determines your traits because it contains the instructions for the worker molecules (**proteins**) that make your traits happen.

Scientists are discovering more and more about DNA; they’re also developing **tools** to read and alter the DNA in cells. Chances are you’re already experiencing the impacts of scientists’ work with DNA, even if you don’t know it. Why? Because scientists use ***recombinant DNA technology***to alter organisms used in food and medicines. This technology allows them to take genes from one organism and place them into the **cells** of another, changing the characteristics of the receiving organism. For example, scientists alter the cells of bacteria with human genes, turning them into **tiny living factories** that produce human proteins needed to treat diseases.

**Definition :**

**sperm cells :** are gametes (sex cells) that are produced in the testicular organ (gonad) of male humain beings and animals.

**egg cells or ova,** are gemetes female reproducive cell

**meiosis**: is a process of double cell division which give gametes

**chromosome :**is an organized package of DNA found in the nucleus of the cell.

**proteins :** are large complex molecules that play many roles in the body, are made up of aminoacids

**recombinant DNA technology :** is a dexoxyribonucleic acid molecule created in the laboratory composed of nucleotide sequenes from several sources thus creating sequences that don’t exist in living organisms

**Tiny living factories :** are very small organelles made by scientists using the recombinant DNA technology  which produce human proteins needed to treat diseases.

**Ribosome :** is a complex molecular machine found inside the living cells tha make proteins which perform all sorts of functions for the cell’s operation.