

## INHERITANCE

### **Inheritance:**

Inheritance is the transmission of genetic information from generation to generation.

### **Chromosome:**

A thread like structure of DAN, carrying genetic information in the form of genes.

### **Gene:**

A length of DNA that codes for a protein.

### **Haploid nucleus:**

A nucleus containing a single set of unpaired chromosomes. E.g. sperm and egg cells.

### **Diploid nucleus:**

A nucleus containing two sets of chromosomes. E.g. body cells.

### **Allele:**

Alternative form of a gene, occupying the same place on homologous chromosomes and affecting the same characteristics but sometimes in different ways.

### **Somatic cell:**

Cells which are not involved in the production of gametes are called somatic cells. Mitosis takes place only in somatic cells.

### **Genetic code:**

A gene is a sequence of triplets of the four bases, which specifies an entire protein. Insulin is a small protein with only 51 amino acids. A sequence of 153 (i.e.  $3 \times 51$ ) bases in the DNA molecule would constitute the gene that makes an islets of langerhans cells in the pancreas to produce insulin. Most proteins are larger than this and most genes contain a thousand or more bases.

### **Explain how a protein is made.**

DNA is found in the nucleus. Protein synthesis happens on the ribosomes, in the cytoplasm. To carry information from the DNA to the ribosome, A messenger molecule called messenger RNA or mRNA is used. It is smaller than a DNA and made up of only one strand. Another difference is mRNA contain bases A, C, G, and U. Base U is uracil. It attaches to the DNA base A.