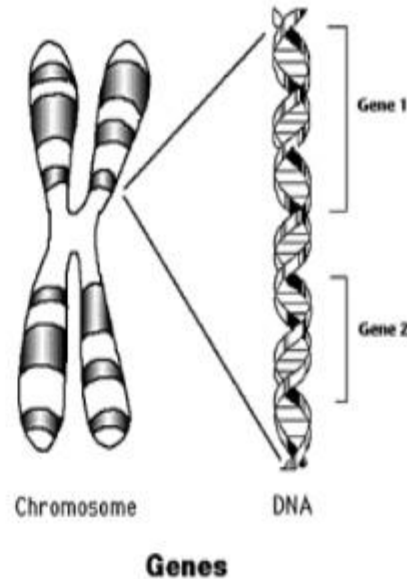# BASIC GENETICS

Anita kr

LS College
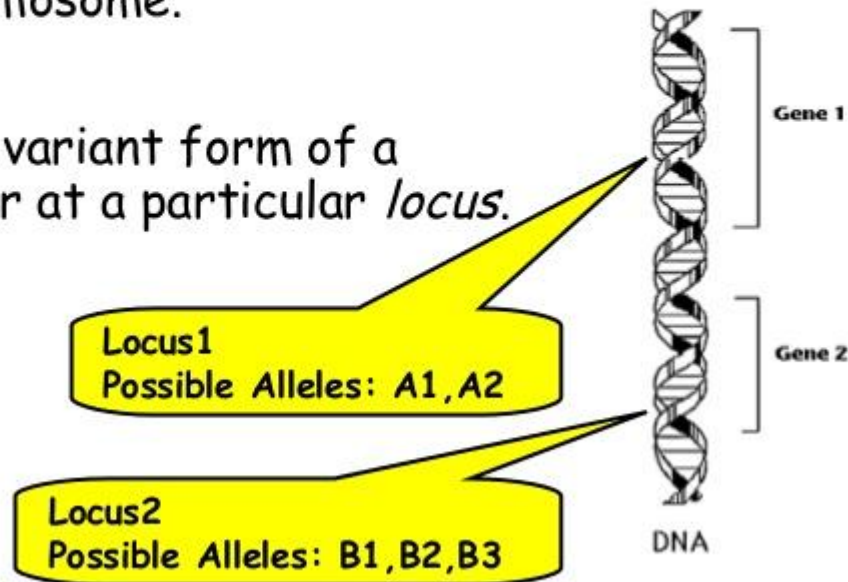
Genetic Information

- **Gene** – basic unit of genetic information. Genes determine the inherited characters.

- **Genome** – the collection of genetic information.

- **Chromosomes** – storage units of *genes*.

- **DNA** - is a nucleic acid that contains the genetic instructions specifying the biological development of all cellular forms of life.

Gene 1

Gene 2
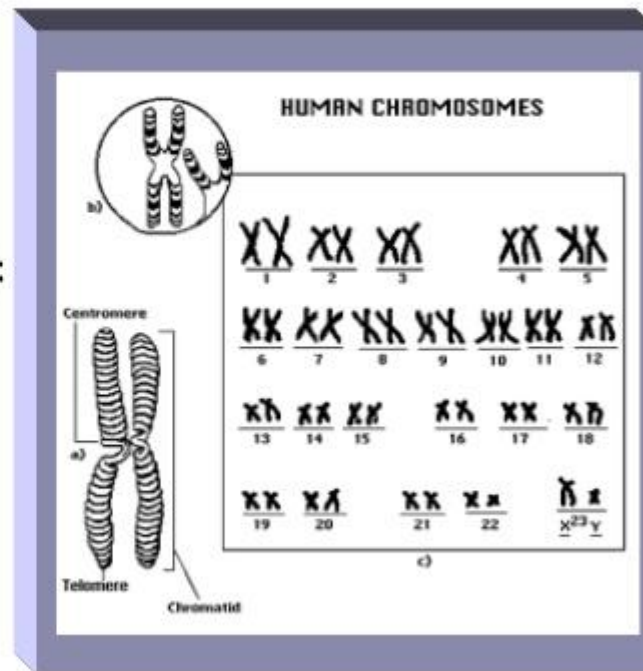
Chromosome

DNA

Genes

2

Chromosome Logical Structure

- **Locus** – location of a *gene/marker* on the chromosome.

- **Allele** – one variant form of a gene/marker at a particular *locus*.

Gene 1

Gene 2

DNA

Locus1
Possible Alleles: A1,A2

Locus2
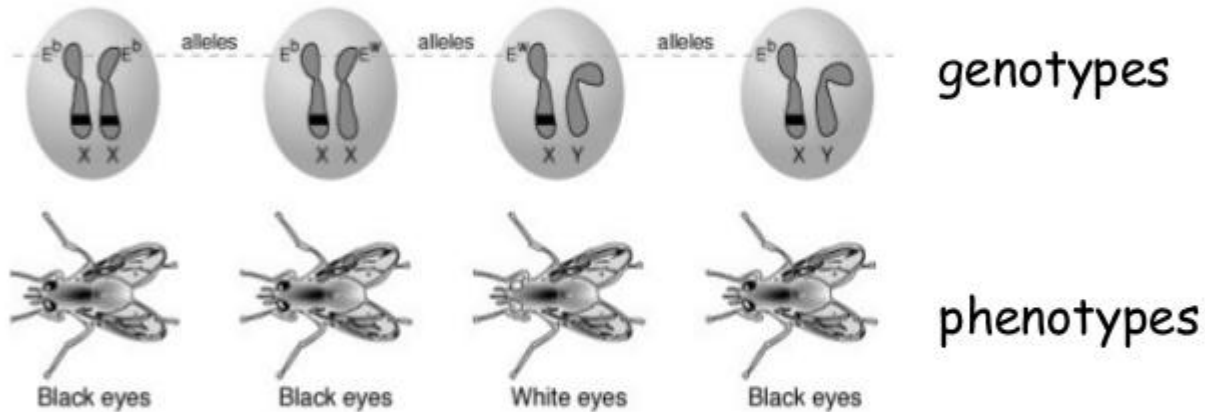**Possible Alleles: B1,B2,B3**

3

Human Genome

Most human cells
contain 46 chromosomes:

- 2 **sex chromosomes** (X,Y):
  XY – in males.
  XX – in females.

- 22 pairs of chromosomes
  named **autosomes**.

Genotypes ⟺ Phenotypes (example)

genotypes

phenotypes

- E^b- *dominant* allele.
- E^w- *recessive* allele.

6

One Locus Inheritance