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Chapter- 8

Heredity

Biology:-

Heredity:-

The transfer of characters from parents to offspring is known as heredity.

Inheritance:-

The process through which characters pass from one generation to another is called inheritance.

Traits:-

Traits are characteristic features of an organism, present in a physical form that is visible ~~or in a physical form that is visible~~ or in a physiological aspect of the organism.

	Acquired traits	Inherited Traits
1)	Those traits that are developed by the individual during his lifetime.	1) Those traits which are present in an individual since birth.
2)	They are result of changes in non-reproductive issues.	2) They are a result of changes in the DNA.
3)	They can't be passed on the progeny, e.g. pierced ear, large muscle size.	3) They are transmitted in the progeny, e.g. Colour of eyes, skin or hair.

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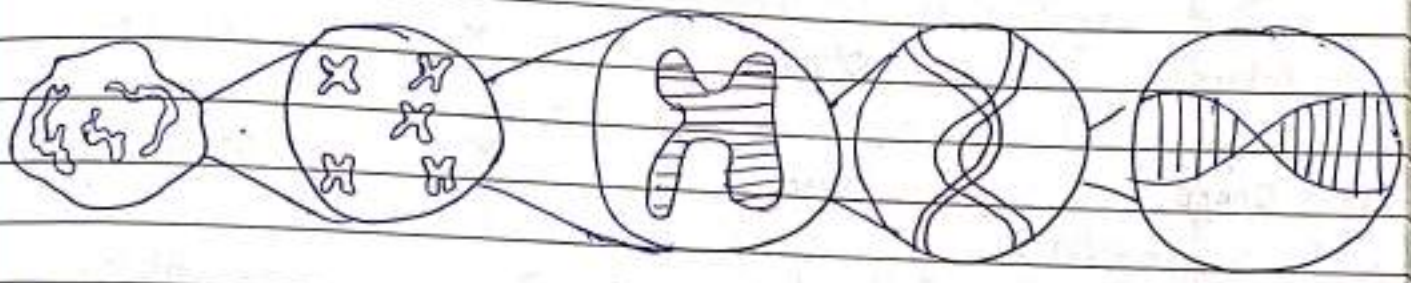
Genes:-

- Genes are the units of heredity which transfer characteristics from parents to their offsprings during reproduction.
- Due to the differences in genetic makeup, human population show a great deal of variations.
- It has been observes that attached and free earlobes are two variations found in human population.



Cell Nucleus Chromose DNA Gene
{Segment of DNA}

Father of Genetics :- Mendel

→ Why did Mendel choose pea plant:-

↓

Because they have easily identifiable traits.

For e.g. pea plants are are either tall or short, which is an easy trait to observe.

- Furthermore, pea plants grow quickly so he could complete many experiments in a short period of time.

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• Mendel also used pea plant because they can do either self-pollinate or be cross-pollinated.

→ 7 Characters of Pea Plant [redacted]

Character	Dominant Trait	×	Recessive Trait
Flower Colour	Violet	×	White
Flower position	Axial	×	Terminal
Seed Colour	Yellow	×	Green
Seed Shape	Round	×	Wrinkled
Pod Shape	Inflated	×	Constricted
Pod Colour	Green	×	Yellow
Stem length	Tall	×	Dwarf

© Important Terms:-

→ Chromosome:- A thread-like structure in the nucleus of the cell. It appears during cell division and it carries genes.

→ Allele:- Different form of given gene
e.g.- T- Allele responsible for tallness,
t- Allele responsible for dwarfness.

Capital letter - Dominant, Small letters Recessive.

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→ Phenotype:- It refers to observable physical appearance of a given organisms.

e.g.- Tall Plant, Dwarf Plant, Round seeds.

→ Genotype:- It refers to a genetic code responsible for any given phenotype.

e.g.- TT — Tall plant
tt — Small Plant
Tt — Due to Dominant trait 'T' it will be tall Plant.

→ Homozygous:- Refers to the condition - Allele is same, eg. TT

→ Heterozygous:- Refers to the condition - Allele is Different, e.g. Tt

→ F_1 generation:- Generation produced by cross fertilisation.

→ F_2 generation:- Generation Produced by self fertilisation of F_1 generation to another F_1 generation.

→ Haploid Cells - Single Chromosomes.

→ Diploid cells - Pair of Chromosomes.

(@) What did Mendel do:-

Mendel used a no.