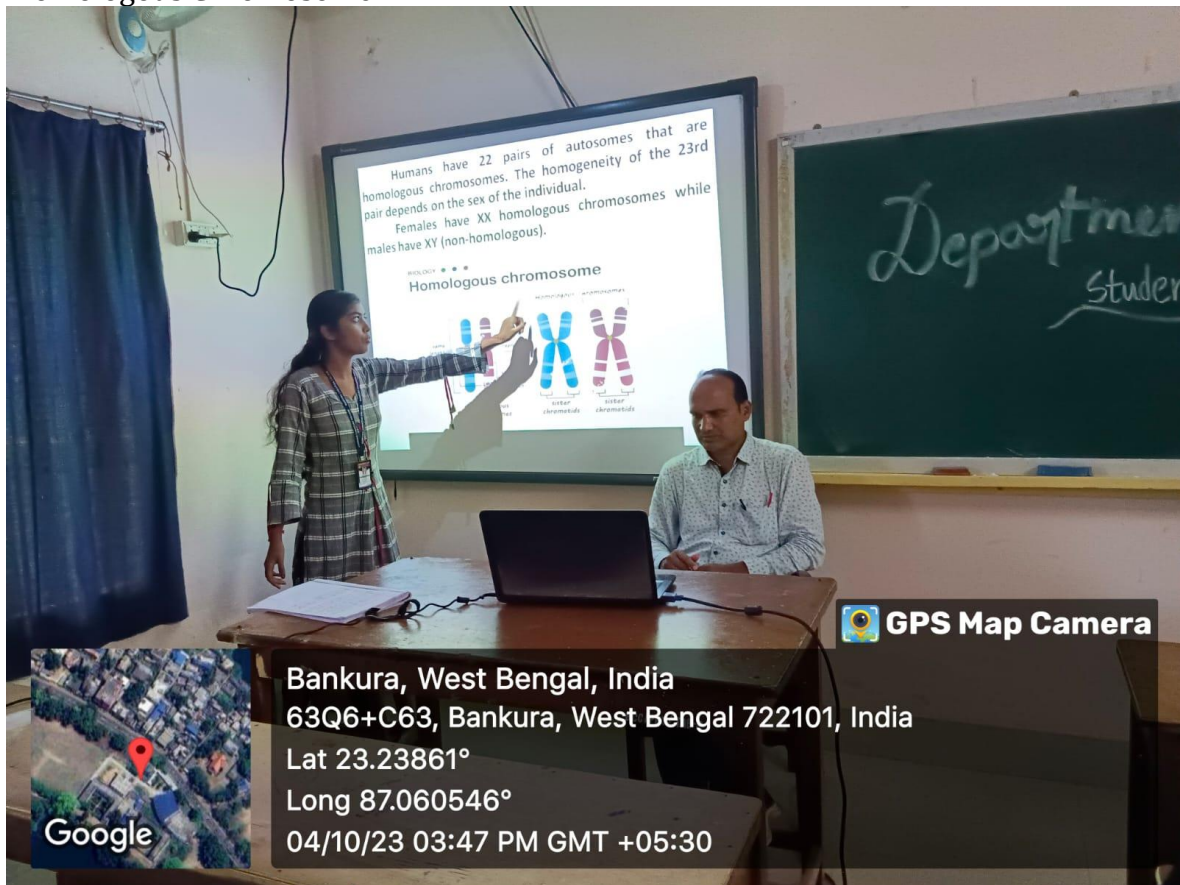


Extempore Activity

Department of Physiology

Date: 04.10.2023

Topic 3: Homologous Chromosome



Humans have 22 pairs of autosomes that are homologous chromosomes. The homogeneity of the 23rd pair depends on the sex of the individual.
Females have XX homologous chromosomes while males have XY (non-homologous).

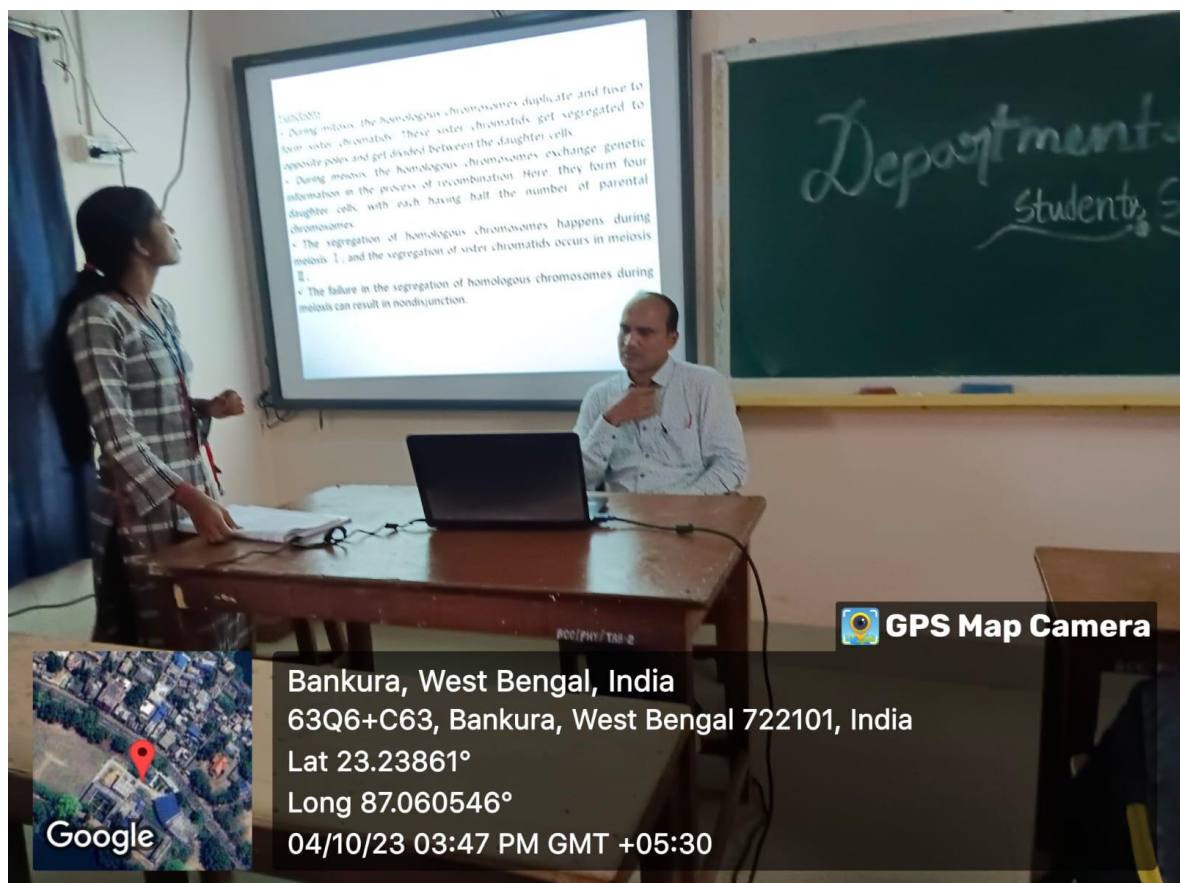
BIOLOGY ***
Homologous chromosome

Diagram illustrating homologous chromosomes (X and Y) and sister chromatids.

GPS Map Camera

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Meiosis

- During mitosis the homologous chromosomes duplicate and fuse to form sister chromatids. These sister chromatids get segregated to opposite poles and get divided between the daughter cells.
- During meiosis, the homologous chromosomes exchange genetic information in the process of recombination. Here they form four daughter cells with each having half the number of parental chromosomes.
- The segregation of homologous chromosomes happens during meiosis I, and the segregation of sister chromatids occurs in meiosis II.
- The failure in the segregation of homologous chromosomes during meiosis can result in nondisjunction.

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