**BUDHA DAL PUBLIC SCHOOL , SAMANA**

**LESSON PLAN**

**Subject : Biology**

**CLASS - XII**

Syllabus :

Unit 6 Reproduction

Unit 7 Genetics and Evolution

Unit 8 Biology and Human welfare

Unit 9 Biotechnology

Unit 10 Ecology

**Topic 2 : Sexual reproduction in Flowering plants**

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| Teaching Aids | Book, blackboard, Smartboard , any one bisexual flower , PPT, notes |
| P.K. Testing | Which type of reproduction is better - sexual or Asexual and why? |
| Learning Objectives | The students, will come to know that sexual reproduction is the formation of new individuals through the meiotic gamete formation and their subsequent fusion during fertilization. The process of formation of microspores from sporogenous tissue is known as microsprogenesis. Formation of megaspore from megaspore mother cell by meiosis inside the ovule is called megasporogenesis. |
| Content | Flower structure  Development of male and female gametophytes  Pollination and its types  Pollen-pistil interaction  double fertilisation  Development of endosperm and embeyo  Development of seed and formation of fruit  Apomixis, parthenocarpy, polyembeyony |
| Art- Integration Activity | Prepare a chart showing various types of pollination and various agents of pollination. |
| Web-page link used | My CBSE guide App, Vedantu study material. |
| Learning process explanation | Using various information resource to derive explanation of chosen concept. Evaluation Demonstrate an understanding of the concept. |

**Topic 3 : Human Reproduction**

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| Teaching Aids | Book, videos, Smart board, blackboard , PPT, model of male and female reproductive system |
| P.K. Testing | 1. What are gonads?  2. Name male sex organs.  3. Name female sex organs. |
| Learning Objectives | The students will come to know that  Reproductive system is a collection of internal and external organs in both males and females that work together for purpose of producing a new generation of living organisms gametes are formed in paired organs of mesodermal origin called gonads.  Primary sex organs are tests in males and ovaries in females. |
| Content | 1. The male Reproductive system.  2. The female Reproductive system.  3. Gametogenesis  4. Menstrual cycle  5. Fertilisation and Implantion  6. Pregnancy and Embryonic Development  7. Parturition and Lactation |
| Art- Integration Activity | Prepare a chart showing the process of fertilisation in human beings. |
| Web-page link used | My CBSE guide app, BYJU's study material |
| Learning process explanation | Using various informational resources to derive information of chosen concept. |
| Evaluation | Demonstrating an understanding or knowledge of the concept. |

**Topic 4 : Reproductive Health**

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| Teaching Aids | Book, videos, Smart board, blackboard |
| P.K. Testing | How can growing population be controlled?  What do you mean by Birth control? |
| Learning Objectives | Students will come to know that reproduction health means a total well being in physical, mental , emotional, behavioral and social aspects of reproduction. A reproductively healthy person is one who has physically and functionally normal reproductive organs and normal behavioral and emotional interactions with other persons in all sex related aspects.  Government of India intiated a no : of programmes at national level to attain total reproductive health as a social goal. They are popularly health as a social goal. They are popularly termed as Reproductive and child health care (RCH) programmes. |
| Content | 1. Reproductive, Health problems and strategies.  2. Population stabilization and Birth control.  3. Medical Termination of Pregnancy.  4. Sexually Transmitted infections.  5. Infertility |
| Art- Integration Activity | A debate on topic Need for sex education in schools. |
| Web-page link used | Vedantu and my CBSE guide study material |
| Learning process explanation | Using various informational resources to derive information of chosen concept. |
| Evaluation | Demonstrating an understanding or knowledge of the concept. |

**Genetics and Evolution**

**Topic 5 : Principles of Inheritance and Variation**

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| Teaching Aids | Book, blackboard, Smart board, Videos, Charts |
| P.K. Testing | What is Heredity?  Who is known as father of genetics? |
| Learning Objectives | Students will come to know that  The characters that are passed from one generation to the next are called hereditary characters. Variation may be defined as the differences in characteristics shown by individuals of a species and also by the offspring of the same parents.  Every character is controlled by a gene which occur in two alternative forms called alleles. |
| Content | 1. Mendel's laws of Inheritance.  2. Inheritance of one gene  3. Inheritance of two gene  4. Polygenic Inheritance  5. Pleiotropic  6. Sex Determination  7. Mutation  8. Genetic Disorders |
| Art- Integration Activity | Prepare a model of DNA with the help of threads and buttons. |
| Web-page link used | BYJU's vedanta study material |
| Learning process explanation | Using informational resources , group discussion to derive explanation of the concept |
| Evaluation | Answering open ended questions by using observation, evidence and previously accepted explanation. |

**Topic 6 : Molecular Basis of Inheritance**

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| Teaching Aids | Book, blackboard, Smart board, Videos, Charts |
| P.K. Testing | What is full form of DNA?  What are nucleotides? |
| Learning Objectives | Students will come to know that genetic material is the substance which not only controls the formation and expression of traits in an organism but can also replicate and pass on from a cell to its daughter cell i.e. from one generation to another. In all organisms DNA serves as the carrier of genetic information which expresses itself through RNA but in viruses either DNA or RNA can serve as genetic material. |
| Content | 1. The DNA  2. The search for genetic Material  3. RNA world  4. Replication  5. Transcription  6. Regulation of Gene expression  7. Human Genome Project  8. DNA Fingerprinting |
| Art- Integration Activity | Prepare a colourful chart showing the process of transcription. |
| Web-page link used | BYJU's vedanta study material |
| Learning process explanation | Using informational resources to derive information of concept. |
| Evaluation | Demonstrating an understanding of the concept. |

**Topic 7 : Evolution**

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| Teaching Aids | Book, blackboard, Smart board, Videos |
| P.K. Testing | 1. What do you mean by evolution?  2. What is Big - Bang theory? |
| Learning Objectives | Students will come to know that evolution is unrolling or unfolding of nature that brings about an orderly change from one form or condition to another resulting in descendants becoming different from ancestors. The large organic molecules which were synthesized abiotically on perimitive earth later came together and due to intermolecular attraction, they formed large colloidal aggregates called microspheres.  The first living organisms originated among organic molecules and in oxygen free atmosphere which were called anaerobes. |
| Content | 1. Origin of Life  2. Evolution of Life forms - A theory  3. Evidences for Evolution  4. Adaptive Radiation  5. Biological Evoluation  6. Hardy - Weinberg Principle  7. Origin and Evolution of man |
| Art- Integration Activity | Prepare a colourful chart showing emergence of Homo sapiens as a distinct species from other hominids, great apes and placental mammals. |
| Web-page link used | BYJU's vedanta study material |
| Learning process explanation | Using informational resources, group discussion to derive definition and information of the concept. |
| Evaluation | Answering open-ended questions by using observation evidence and previously accepted information. |