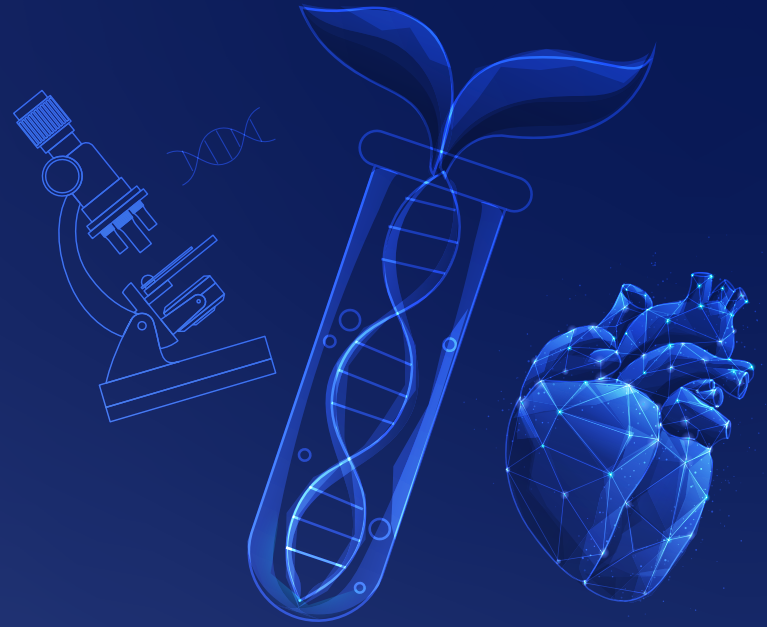




SIMULAB

True to Life Lab Experience



List of Experiments

Biology

 Activities are also included



Experiments

1. To study the different parts of a simple (dissecting) microscope
2. To study the different parts of a compound microscope
3. To prepare a temporary mount of human cheek epithelial cells, and to study its characteristics
4. To study plasmolysis in leaf epidermal peels of Rhoeo
5. To test the presence of starch in a given food sample and metanil yellow in pigeon pea
6. To study parenchyma and sclerenchyma tissues in plants by preparing temporary slides
7. To study the characteristics of Spirogyra, Agaricus, Moss, Fern, Pinus and an Angiosperm plant
8. To study the life cycle of malarial parasite
9. To study the life cycle of a mosquito
10. To compare the external features of monocot and dicot plants
11. To study the features and draw diagrams of earthworm, cockroach, bony fish and bird
12. To prepare herbarium sheet of a flowering plant
13. To prepare a stained, temporary mount of onion peel and to study its cells
14. To study the phenomenon of osmosis
15. To identify and study striated muscle fibre and nerve fibre in animals
16. To collect and study symptoms of diseases in locally available crop plants

Activities

1. Demonstration of activity of meristematic tissue in onion roots
2. To identify different cells, simple & complex plant tissue
3. Preparation of stained onion peels slides

Experiments

1. Preparation of stained onion peels slides
2. Osmosis in potato / raisin
3. Demonstration of activity of meristematic tissue in onion roots
4. To identify different cell, simple & complex plant tissue
5. Permanent slides of WBC & RBC
6. Permanent slides of ts of bone & muscle fibres, nerve tissue
7. Models of animal & plant cells, mitochondria, chloroplasts, DNA, RNA
8. Observation of charts of different layer of atmosphere
9. Collection of pictures of extinct, endangered, vulnerable, rare & insufficiency known species
10. Collection of dry seed
11. Collection of scientific names of plants & animal with photos
12. Study of museum specimen of plantae & animallia
13. Charts on disease observed in agricultural fields
14. Charts of disease causing microbes (hepatitis, hiv & corona)
15. Model of soil profile showing layer of soil
16. Model/chart of green house effect
17. Demonstration of function of the lactometer

Experiments

1. To prepare temporary mounts of leaf peels to observe stomata and to differentiate between dicot and monocot stomata
2. To show that light is essential for photosynthesis
3. To study binary fission in Amoeba or Paramecium and budding in yeast or Hydra
4. To study the liberation of carbon dioxide gas during aerobic respiration
5. To study the action of salivary amylase on starch solution
6. To study the phenomenon of phototropism and geotropism in plants
7. To study vegetative propagation in Bryophyllum
8. To study the parts of a flower and their role in sexual reproduction
9. To show that carbon dioxide is essential for photosynthesis
10. To study the liberation of carbon dioxide gas during fermentation
11. To determine the mass percentage of water imbibed by raisins

Activities

1. Need of chlorophyll in photosynthesis
2. To show the effect of saliva on starch
3. Release of carbon dioxide in the human breathing process
4. Phototropism in plants
5. Mendel's monohybrid cross

Experiments

1. Model demonstration of human neuron
2. Model & chart of human kidney
3. Model of different stages of meiosis
4. Model of different stages of mitosis
5. Model of human heart in smart class
6. Model/chart of human brain in smart class
7. Capillary rise of water in plant
8. Mendel's monohybrid cross
9. Observation of characteristics & importance of food chain, chart
10. Solar cooker
11. Heredity and evolution
12. Positive & negative geotropism
13. Model demonstration of human eye
14. Vegetative propagation in bryophyllum
15. To dissect & identify the reproductive parts of flower
16. Release of carbon dioxide in the human breathing process
17. To show the effect of saliva on starch
18. Phototropism in plants
19. Need of chlorophyll in photosynthesis

Experiments

1. To study the parts of a compound microscope
2. To identify and study the morphology of representative types of bacteria, fungi and different plant groups
3. To study some selected animals on the basis of their external features
4. Study of tissues and diversity in shapes and sizes of plant cells
5. Preparation of temporary slide of animal tissues and their study
6. To study and identify different types of inflorescence
7. Study of mitosis
8. To study modifications of root
9. To study modifications of stem
10. To study modifications of leaf
11. Study and describe flowering plants of families Solanaceae, Fabaceae and Liliaceae
12. To study the anatomy of the stem and root of monocots and dicots
13. Preparation of herbarium sheets of flowering plants
14. Study of the external morphology of animals through models
15. To demonstrate osmosis by potato osmometer
16. Study of plasmolysis in the epidermal peel of leaf
17. Study of imbibition in raisins or seeds
18. To study the distribution of stomata on the upper and lower surfaces of leaves

Experiments

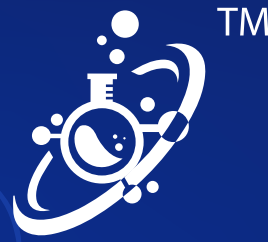
19. To demonstrate the difference in rate of transpiration between two surfaces of the leaf
20. To detect the presence of carbohydrates like glucose, sucrose and starch
21. To detect the presence of proteins
22. To detect the presence of fats (lipids) in different plants and animal materials
23. Separation of plant pigments (chloroplast pigments) by paper chromatography
24. To study the rate of respiration in flower buds/germinating seeds
25. Observation and comment on the setup A. Anaerobic Respiration B. Phototropism C. Apical bud removal (Apical dominance)
26. To study the enzymatic action of salivary amylase on starch
27. To study the effect of temperature on the activity of salivary amylase
28. To study the effect of pH on the action of salivary amylase
29. To detect the presence of urea in the given sample of urine
30. To test the presence of sugar in the given sample of urine
31. To detect the presence of albumin in the given sample of urine
32. To detect the presence of bile salts in the given sample of urine
33. To study the human skeleton
34. Journey into anatomy of the cockroach
35. To study different types of joints in human skeleton

Experiments

1. To study the reproductive parts of commonly available flowers
2. Study of Pollen Germination
3. To study the discrete stages of gametogenesis in mamallian testis and ovary
4. To study and identify various stages of female gametophyte development in the ovary of the flower
5. Study Mitosis in Onion Root Tip
6. Study of stages of meiosis using permanent slides
7. To study the blastula stage of embryonic development in mammals, with the help of permanent slide, chart, model or photograph
8. To verify Mendel's Law of Segregation
9. To verify the Mendels Law of Independent Assortment
10. Preparation and analysis of pedigree charts
11. To perform emasculation, bagging and tagging for controlled pollination
12. Staining of nucleic acid by acetocarmine
13. Study of Physical Properties of Soil (Texture, Moisture, Water holding, Ph)
14. To study the ecological adaptations in plants living in xeric and hydric conditions
15. To study the adaptations in animals living in xeric and hydric conditions
16. Studies on Turbidity, pH and Microbial Presence in Water
17. Study of pollutants in Air
18. Study of plant population density by quadrat method

Experiments

19. Study of plant population frequency by quadrat method
20. Study of homologous and analogous organs in plants
21. Study of homologous and analogous organs in animals
22. Digestive System
23. Circulatory System
24. Respiratory System
25. Excretory System
26. Endocrine System
27. Nervous System
28. Muscular System
29. Skeletal System
30. Cockroach Dissection
31. Earthworm Dissection
32. Frog Dissection
33. Detection of commonly used adulterant to the milk
34. To identify common disease causing organisms like Plasmodium, Entamoeba, Ascaris and Ringworm with the help of permanent slides and or specimens. Comment on symptoms of disease.



SIMULAB

True to Life Lab Experience



303-306 (3rd floor), Xion Mall, (Next to Taj Vivanta),
Hinjewadi – Wakad Rd, Hinjewadi, Pune, 411057