OREL VINE SCHOOL

Course Outlines

Year 9

Cambridge Lower Secondary Science

BIOLOGY

Term I		Term II		Term III	
Topic/Subtopic	**Objectives**	***Topic/Subtopic***	**Objectives**	***Topic/Subtopic***	**Objectives**
Unit 9.2 *Plant biology* ***(12 hours)***	• **9Bp.05** Know that plants require minerals to maintain healthy growth and life processes (limited to magnesium to make chlorophyll and nitrates to make protein). • **9Bp.06** Know that photosynthesis occurs in chloroplasts and is the process by which plants make carbohydrates, using the energy from light. • **9Bp.07** Know and use the summary word equation for photosynthesis (carbon dioxide + water -> glucose + oxygen, in the presence of light and chlorophyll). • **9Bs.01** Describe the pathway of water and mineral salts from the roots to the leaves in flowering plants, including absorption in root hair cells, transport through xylem	**Unit 9.5** Human biology **(12 hours)**	• **9Bs.02** Describe the structure of the human excretory (renal) system and its function (limited to kidneys filtering blood to remove urea, which is excreted in urine). • **9Bs.03** Know that chromosomes contain genes, made of DNA, and that genes contribute to the determination of an organism's characteristics. • **9Bp.01** Describe the fusion of gametes to produce a fertilised egg with a new combination of DNA. • **9Bp.02** Describe the inheritance of sex in humans in terms of XX and XY chromosomes.	**Unit 9.8** Species and their environments **(10 hours)**	• **9Bp.03** Describe variation within a species and relate this to genetic differences between individuals. • **9Bp.04** Describe the scientific theory of natural selection and how it relates to genetic changes over time. • **9Be.01** Describe what could happen to the population of a species, including extinction, when there is an environmental change.

	and transpiration from the surface of leaves. • **9ESc.01** Describe the carbon cycle (limited to photosynthesis, respiration, feeding, decomposition and combustion).		• **9Bp.08** Discuss how fetal development is affected by the health of the mother, including the effect of diet, smoking and drugs.		• **9ESc.02** Describe the historical and predicted future impacts of climate change, including sea level change, flooding, drought and extreme weather events.

Resources

- Cambridge Lower Secondary Science Stage 9 Student's work book.
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- Cambridge Lower Secondary Science past papers
- LMS e-learning platform.

Methodology

- Discovery method
- Experimentation
- Field study
- Integration of Information technology (IT)
- Research work
- Use of primary and secondary data from various sources

Mode of assessment

- Daily exercises from the course book
- End of month tests
- End of unit tests set from Cambridge Lower Secondary Science Stage 9 past papers
- Mid - term & end of term assessments
- Quizzes and assignments on the LMS
- Weekly homework assignments