SCIENCE BLUEPRINT

Science Curriculum Overview

CHAPTER 1 — GROWTH AND DEVELOPMENT

No.	Sub-Chapter	Main Topics
1.1	Growth and Development	Definition, characteristics, and differences between growth and development.
1.2	Human Growth and Development	Human life stages: infancy, childhood, adolescence, and adulthood.
1.3	Factors Affecting Growth	Internal factors such as genes and hormones; external factors such as nutrition and environment.
1.4	Animal Growth and Development	Animal life cycles and developmental changes.
1.5	Metamorphosis	Complete and incomplete metamorphosis, including examples such as butterfly, grasshopper, cockroach, and frog.
1.6	Animal Reproduction	Oviparous, viviparous, and ovoviviparous animals; characteristics and adaptive advantages.
1.7	Plant Growth and Development	Primary and secondary growth; growth regions in roots and stems.
1.8	Factors Affecting Plant Growth	Light, water, nutrients, environmental conditions, and plant hormones.

CHAPTER 2 — REPRODUCTION, COORDINATION AND HOMEOSTASIS

No.	Sub-Chapter	Main Topics
2.1	Cell Division	Mitosis, phases of mitosis, meiosis, and differences between mitosis and meiosis.
2.2	Human Reproductive System	Male and female reproductive organs and functions, sperm production, fertilisation, and reproductive hormones.
2.3	Fertilisation, Pregnancy and Embryonic Development	Zygote formation, early embryonic stages, implantation, placenta, umbilical cord, amnion, amniotic fluid, and fetal development by trimester.
2.4	Puberty and Menstrual Cycle	Menstrual cycle phases, ovulation, FSH, LH, estrogen, progesterone, hormonal changes, and changes in the uterus.
2.5	Coordination System: Nervous System	Neuron structure, impulse transmission, synapse, CNS, PNS, voluntary and involuntary movement, reflex movement, and reflex arc.
2.6	The Five Senses	Sense organs, eye and vision, ear and hearing, sensory disorders, and maintaining sense organ health.
2.7	Homeostasis	Body temperature regulation, body fluid balance, dehydration responses, blood sugar regulation, insulin, glucagon, and organs involved in homeostasis.

OVERALL STRUCTURE

CHAPTER 1: GROWTH AND DEVELOPMENT

- 1.1 Growth and Development
- 1.2 Human Growth and Development
- 1.3 Factors Affecting Growth
- 1.4 Animal Growth and Development
- 1.5 Metamorphosis
- 1.6 Animal Reproduction
- 1.7 Plant Growth and Development
- 1.8 Factors Affecting Plant Growth

CHAPTER 2: REPRODUCTION, COORDINATION AND HOMEOSTASIS

- 2.1 Cell Division
- 2.2 Human Reproductive System
- 2.3 Fertilisation, Pregnancy and Embryonic Development
- 2.4 Puberty and Menstrual Cycle
- 2.5 Coordination System: Nervous System
- 2.6 The Five Senses
- 2.7 Homeostasis