Changes in the New Lower Secondary School Biology Syllabus (2020)

As presented on the *Association of Biology Educators' (A.B.E)* workshop in February 2020 courtesy of NCDC

Class	Biology Syllabus 2008	Biology Syllabus 2020	Remarks in relation to the new syllabus
S1	Introduction to Biology Classification Hand lenses and microscopes Animal and plant cells External features and internal structures of flowering plants. External features, life cycles and economic importance of insects.	Introduction to biology Cells Classification Insects Flowering plants	Hand lenses and microscopes have been **removed.** (They are just tools to aid learning). Internal structures of flowering plants and life cycles of insects has been **moved** to transport in plants (S2) and growth and development (S4) respectively. (The content was being repeated in those classes) The scope in Classification has been **reduced** to cover only key groups of organisms and their observable characteristics
S2	Soil formation, composition and profile. Physical and chemical properties of soil. Soil erosion, fertility and conservation. Living components of soil, carbon, nitrogen and water cycles.	Physical and chemical properties of soil Soil erosion and conservation; causes, effects and prevention.	Soil formation, profile, weathering and water cycle have been **removed**. (The content is taught in other subjects like geography and chemistry) The carbon cycle has been **moved** to inter-relationships (S4) where it is more applicable
	Nutrient compounds Nutrition in animals Nutrition in a mould Nutrition in green plants	Nutrition types and nutrient compounds Nutrition in green plants Nutrition in mammals	Feeding methods in amoeba, insects, frog/toad, and birds, nutrition in a mould have been **removed.** (The content is not applicable to lower secondary school) Health conditions associated with nutrition in humans like overweight, underweight and self-esteem have been **included.** (These are cross cutting issues)
	Transport in animals Transport in plants	Transport in plants Transport in animals	Diseases associated with the heart like stroke and high blood pressure **included.** (These are cross cutting issues)
S3	Gaseous exchange Tissue respiration Aerobic respiration Anaerobic respiration	Gaseous exchange Aerobic respiration and anaerobic respiration	Effects of smoking and diseases associated with the respiratory system like tuberculosis **included.** (These are cross cutting issues)
	Excretion in lower organisms. Excretion in plants.	Excretion in animals	Excretion in lower organisms, excretion in plants and structure of skin **removed.** (Not applicable to lower secondary school)

	Excretion in animals.		Human waste disposal and diseases associated with kidney failure **included.** (These are cross cutting issues)
	Reception & response in plants. Reception, response and behavior in animals. Chemical co-ordination in vertebrates. Nervous co-ordination in a mammal. Receptor organs in mammals.	Chemical coordination in humans Nervous coordination in humans Receptor organs in man	Reception and response in plants, reception, response and behavior in animals, details of plant hormones have been **removed.** (Not applicable to lower secondary school) Scope has been **reduced** from mammals/vertebrates to humans. Drug and substance abuse **included.** (This is a cross cutting issue) Tongue and nose as sense organs have been **removed.** (Not applicable to lower secondary school)
	Locomotion in a mammal. Locomotion in an insect, bony fish and birds.	Locomotion in a mammal	Locomotion in insect, bony fish and birds have been removed. (Not applicable to lower secondary school)
S4	Growth in plants and animals Development in plants and animals.	Growth in plants and animals Development in plants and animals	Changes associated with adolescence and puberty **included.** (These are cross cutting issues)
	Asexual reproduction in lower organisms Vegetative reproduction in plts. Sexual reproduction in lower organisms Sexual reproduction in animals. Sexual reproduction in plants.	Asexual reproduction in plants (vegetative reproduction) Sexual reproduction in plants Sexual reproduction in humans	Asexual reproduction in lower organisms, sexual reproduction in bony fish, amphibians and insects has been **removed** (Not applicable to lower secondary school) Early/teenage pregnancy, sexually transmitted infections and people living with HIV have been **included.** (These are cross cutting issues)
	Mitosis and meiosis and their importance. Genetics and monohybrid inheritance. Sex determination and hereditary diseases. Mutation and evolution	Inheritance Variation and Selection	Explanation of Mendel's laws and test cross have been **removed** (Not applicable to lower secondary school) Theories and evidence of evolution have been **removed** (Not applicable to lower secondary school)
	Food chains and food webs Changes population Associations in organisms Humans and natural environment	Concept of ecology Food chains and food webs Associations in biological communities Humans and natural environment	Changes in population, pyramids of biomass and energy have been **removed** (Not applicable to lower secondary school) Ecological succession has been **removed** (Not applicable to lower secondary school) Life cycles of parasites has been **removed** (Not applicable to lower secondary school)