

2023

Annual Teaching Plans
**AGRICULTURAL
SCIENCES**

FET Phase



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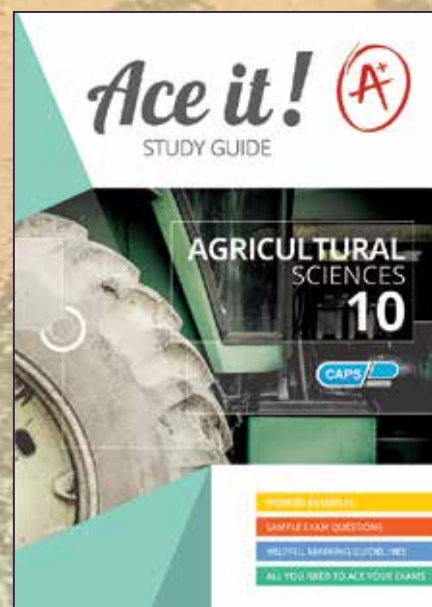
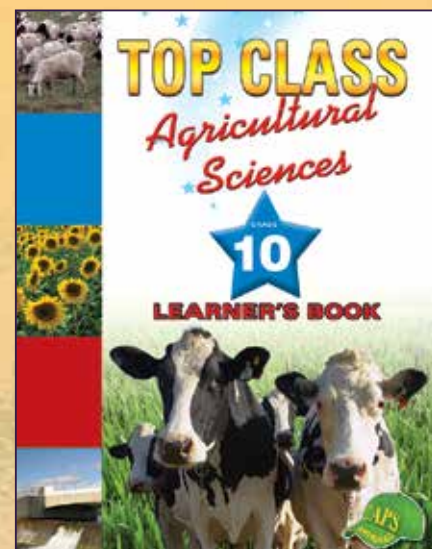
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AGRICULTURAL SCIENCES Term 1

Topic	Content	Time allocation	Where to find it in Top Class Agricultural Sciences Grade 10*	
			Unit	LB
Agro-ecology	Concepts: ecology, levels of organisation, agro-ecology, agro-ecosystems, components of ecosystems, biotic and abiotic factors	Week 1	Unit 1: Ecology and agro-ecology	1–6
Interactions in the ecosystems and ecological farming	Energy flow in ecosystems, nutrient cycling in ecosystems, interactions between organisms, ecological farming methods	Week 2	Unit 2: Interactions in ecosystems and ecological farming	7–15
Grazing ecology	Pastures, grazing ecology, optimal grazing, veld types of Southern Africa, characteristics of grazing plants, scientific approach to pasture evaluation and monitoring	Week 3	Unit 3: Grazing ecology	16–24
Pasture or veld management	Importance of pastures for the livestock industry, relationship between pasture management and pasture condition, veld management practices and systems, advantages and disadvantages of grazing systems, pasture veld management practices that lead to poor pasture conditions	Week 4	Unit 4: Veld (pasture) management	25–32
Biomes of South Africa	Main types of biomes of SA, identification of biomes on a map, human impact on biomes, importance of biomes, climate change and global warming, factors that cause global warming, impact of climate change or global warming, long and short term weather predication and cyclic pattern of rainfall in SA, adaptation measures	Week 5	Unit 5: Biomes of South Africa	33–47
Agricultural economics	Agri – industry, classification and utilisation patterns of food products in SA	Week 6	Unit 6: The importance of the agricultural industry	48–52
Population growth and economic value of plant and animal products	Impact of population growth and shift on agricultural production in SA, impact of the demand for agricultural commodities on industries, changes in the world's and SA population over the past 100 years, impact of secondary and tertiary agricultural development in SA	Week 7	Unit 7: Population growth and economic value of plant and animal products	53–55
Land redistribution	Land ownership models in SA, land reform programmes in SA, land redistribution and development after 1994, legal concepts, aims/purposes of agricultural legislation, important laws affecting agriculture	Week 8	Unit 8: Land redistribution and reform	56–59

Topic	Content	Time allocation	Where to find it in Top Class Agricultural Sciences Grade 10*	
			Unit	LB
Indigenous knowledge	Concept of IKS, comparison between indigenous and scientific knowledge, indigenous knowledge used in agriculture, constraints of using indigenous technical knowledge, advantages of using IK in agricultural production, protection and management of IKS in SA	Week 9	Unit 9: Indigenous knowledge	60–65
Agricultural organisations	Basic aims, national, provincial and local levels of agricultural organisations, roles of agricultural organisations in SA, FOUR benefits/advantages of nationally recognised agricultural organisations for individual farmers		Unit 10: Agricultural organisations	66–71
Revision/Tests Week and Assessment		Weeks 10–11		

***Not on the national catalogue**

Topic	Content	Time allocation	Where to find it in Top Class Agricultural Sciences Grade 10*	
			Unit	LB
Sustainable natural resource utilisation	Concepts: Natural and agricultural resources, different types of agricultural resources and their importance in Agriculture, pressure exerted on natural resources by growing population, sustainable utilisation of natural resources	Week 1	Unit 11: Agricultural resources	72–82
Soil conservation and management	<i>The concept:</i> soil degradation, the types (physical, biological and chemical degradations) and processes of soil degradation (focus on causes, adverse effects and control), The impact of soil degradation on agricultural productivity	Week 2	Unit 12: Soil conservation and management	83–87
Water management	The criteria to define water quality, <i>the concepts:</i> water source and water supply (scarcity of water), the different sources of water utilized in Agriculture/farming industry, the different forms/ways in which water is used specifically in Agriculture, factors that affect the supply of water in Agriculture, the basic agricultural practices/activities that contribute to the pollution of soil water, subsoil or ground water and surface water (water quality), the appropriate management practices/strategies which can be adopted to prevent and control water pollution including the National Water Act of 1998	Weeks 3–5	Unit 13: Water management	88–95
Agricultural pollution	<i>The concept:</i> agricultural pollution and different types of pollution, the major kinds/types of soil pollutants (causes, effects and control measures), the economic impact of soil pollutants on natural resource sustainability for agricultural production, waste management in Agriculture		Unit 14: Agricultural pollution	96–105
Soil Science	<i>The concept:</i> soil, the main functions/importance of soil in an ecosystem, <i>the following major components of soil:</i> organic matter, soil air, soil water and mineral particles		Unit 15: Basic soil components	106–108
Minerals	<i>The concept:</i> minerals, the main differences between primary and secondary minerals, examples of primary minerals, examples of secondary minerals, the main characteristics used in mineral identification	Weeks 6–8	Unit 16: Primary and secondary minerals	109–113

Topic	Content	Time allocation	Where to find it in Top Class Agricultural Sciences Grade 10*	
			Unit	LB
Rocks and their formation	<i>The concept:</i> rocks/mother rock, the main types of rocks based on their origin (formation) that are important in soil formation processes (igneous rocks, sedimentary and metamorphic), the cultivation properties/suitability of soil that originate from different types of rocks	Week 9	Unit 17: Rocks and their formation	114–120
Revision and remedial Controlled Test		Weeks 10–11		

***Not on the national catalogue**

Topic	Content	Time allocation	Where to find it in Top Class Agricultural Sciences Grade 10*	
			Unit	LB
Weathering of rocks	<i>The concept:</i> weathering of rocks, the importance of the weathering factors important in soil formation	Week 1	Unit 18: Weathering of rocks	121–123
Soil forming factors	The description of the following main soil forming factors: - geographical/topographical factors, <i>climatic factors</i> ; organisms / biological factors that influence soil formation, the human activities that can have a direct impact on soil formation; parent material and time.	Week 2	Unit 19: Soil forming factors	124–127
Soil forming processes	Soil forming processes that are active in soils: mineralization, humification, leaching, illuviation, plinthite formation, inversion and bioturbation.	Week 3	Unit 20: Soil forming processes	128–132
Animal studies	Development and domestication of farm animals, the general economic importance of the livestock industry in SA, The basic differences between ruminants and non-ruminants, cattle – beef cattle breeds	Week 4	Unit 21: General importance, economic value and classification of farm animals	133–144
Cattle breeds	Dairy cattle breeds, dual purpose cattle breeds (2 examples of each)	Week 5	Unit 22: Cattle breeds	145–149
Sheep breeds	The main groups of sheep breeds on their utilization, general characteristics of a functional ram and ewe, wool breed, dual purpose sheep breeds, mutton breeds, pelt breeds	Week 6	Unit 23: Sheep breeds	150–156
Goat breeds	Classification of the following main goat breeds based on their utilisation: milk/dairy breeds, meat breeds, mohair breeds		Unit 24: Goat breeds	157–162
Pig breeds	Classification of the main group of pig breeds based on their production, the differences between indigenous and improved breeds, pork breeds, bacon breeds	Week 7	Unit 25: Pig breeds	163–166
Poultry breeds	Classification of the main types of poultry and differentiate between the main chicken/fowl breeds (SA indigenous breeds, dual purpose breeds or heavy breeds, light breeds and ornamental/pedigree breeds) according to the following types of production: Broiler production; and egg production. Basic requirements for successful production	Week 8	Unit 26: Poultry breeds	167–174

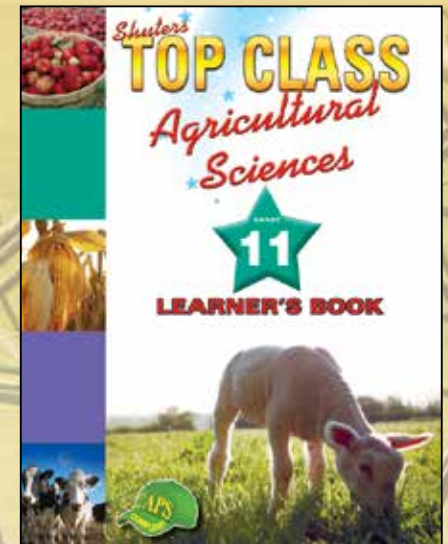
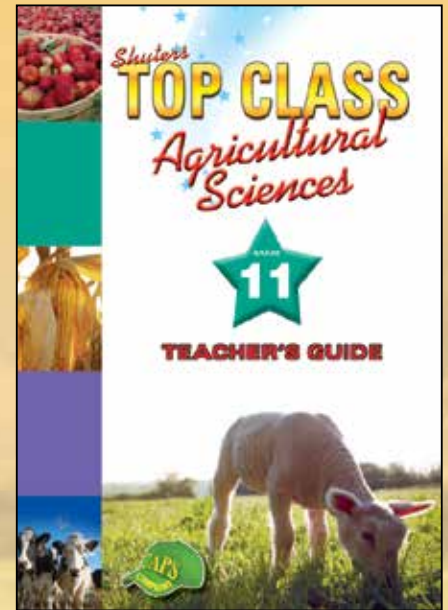
Topic	Content	Time allocation	Where to find it in <i>Top Class Agricultural Sciences Grade 10*</i>	
			Unit	LB
Horse breeds	Classification of the main horse breeds based on their purposes, warm-blooded and cold-blooded horses, riding/light horse breeds, draught horse breeds	Week 9	Unit 27: Horse breeds	175–179
Game animals	Classification of the main game animals based on their purposes, importance of game farming		Unit 28: Game animals	180–185
Revision and Tests		Weeks 10–11		

***Not on the national catalogue**

Topic	Content	Time allocation	Where to find it in Top Class Agricultural Sciences Grade 10*	LB
Plant studies	The average volumes of production of economically important crops/plants, the main production areas of crops in South Africa, the general economic importance and utilization of crops, criteria for successful crop production, Field crops, grain crops, oil seed crops, industrial crops	Week 1	Unit 29: General classification, importance and economic value of plants in agriculture	186–192
Horticulture crops	Horticulture crops, vegetables, fruit	Week 2	Unit 30: Horticultural crops – vegetables and fruits	193–199
Fodder crops and forests	Flower crops, shrubs and indigenous crops	Week 3	Unit 31: Horticultural crops – flowers and shrubs	200–202
	Legume fodder crops, grass fodder crops – climate and soil requirements, <i>The concept</i> : forests, the classification of the main groups of forests crops/trees, the distinction between indigenous and exotic forests, reasons for promoting and growing protected trees/plant and eradicating invasive tree/plant		Unit 32: Fodder crops	203–208
			Unit 33: Forests (wood production)	209–214
Biological concepts and cell division	<i>The basic concept</i> : cell, tissue and organs in living organism (organisational levels of a multi-cellular organism), plant and animal cells including the labelled diagrams of plant and animal cells, identification of the main cell structures and organelles and their functions in both plant and animal cells, differences between an animal cell and a plant cell, The cell division process and its application, <i>the concept</i> : cell division, the types of cell division in plants and animals (mitosis and meiosis), the description of process of both mitosis and meiosis cell division, the identification/ description of the phases of mitosis and meiosis, how cell division (mitosis and meiosis) takes place, the differences between mitosis and meiosis	Weeks 4–5	Unit 34: Plant and animal cells	215–226
			Unit 35: Cell division	227–244
Revision and end-of-the-year examination		Weeks 6–10		

***Not on the national catalogue**

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AGRICULTURAL SCIENCES Term 1

Topic	Content	Time allocation	Where to find it in Top Class Agricultural Sciences Grade 11		
			Unit	LB	TG
Basic agricultural chemistry	<i>The following terminology:</i> matter, atom, molecules, periodic table and isotopes, the differences between elements, compounds and mixtures, the basic interpretation of the periodic table of elements, the difference between acids and bases, the general structure of an atom, the main types of particles of an atom and their respective charges, the relation between atomic numbers and number of particles in the nucleus, the formation of ions, the arrangement of electrons around the nucleus and valency	Week 1	Unit 1: Introduction to basic chemistry	1–9	1–3
Chemical bonding	A basic chemical bonding as it occurs to form a molecule, the following chemical bonding with their respective structural formulae: - covalent bonding (hydrogen gas, water, etc.); and - ionic bonding (copper chloride, sodium chloride, etc.).	Week 2	Unit 2: Chemical bonding	10–17	4–9
Inorganic and organic compounds	The distinction between inorganic and organic compounds (with examples), the chemical formulae, structural formulae, Lewis structures, importance and functions of the following inorganic compounds: water; Carbon dioxide; Mineral salts, for example sodium chloride/table salt; and ammonia. The characteristics of the carbon atom (bonding on the carbon atom) and organic substances, the basic grouping of organic compounds	Week 3	Unit 3: Inorganic and organic compounds	18–21	10–11
Alkanes and alcohols	The basic types of alkanes (not more than 5 carbon atoms), their chemical and structural formulae, their importance in plants and animal metabolism, the concept: isomers as illustrated by simple alkane structures, the basic types of alcohols (their structures and importance) with reference to methanol and ethanol, comparison between alcohols and alkanes based on their general structural formulae	Week 4	Unit 4: Alkanes and bio-molecules	22–27	12–13
Fatty acids and bio-molecules	The chemical structure of a simple fatty acid, differentiation between saturated and unsaturated fatty acids (their structures and importance), the differences between fatty acids and alcohols based on their structural formulae, Bio-molecules, basic composition of a simple lipid/fat; the differences between fats and oils, saturated and unsaturated fats; and the main functions/importance of lipids/fats in living organisms.	Week 5	Unit 5: Fatty acids and bio-molecules	28–30	14

Topic	Content	Time allocation	Where to find it in Top Class Agricultural Sciences Grade 11		
			Unit	LB	TG
Proteins	General structure of the monomers of proteins (amino-acids), the differences between simple and complex proteins (also refer to essential amino acids and non-essential amino acids), the general structure of polypeptides/simple proteins, the synthesis and hydrolysis of proteins, the main functions/importance of proteins in living organisms	Week 6	Unit 6: Proteins	31–35	14
Carbohydrates	The basic chemical composition of carbohydrates, the general formulae of carbohydrates, Structural and chemical formulae of simple sugars (monosaccharides), the main classifications of carbohydrates - monosaccharide, disaccharides and polysaccharide (with relevant examples), the main functions of carbohydrates in living organisms	Week 7	Unit 7: Carbohydrates	36–42	15
Soil Science	Soil texture, the main groupings of soil particles (clay, silt and sand) that determine the soil textures and their respective diameters, scientific method to determine the quantity of sand, silt and clay in a soil sample, determination of the textural classes of soil and interpretation of textural triangle, the influences of sand and clay particle size/texture on soil characteristics/behaviour, the two field methods to determine the soil texture class: Sausage method/feeling method; and the most important reasons for a farmer to know the textural class of his/her farmland	Week 8	Unit 8: Soil texture	43–47	17–18
Soil structure	The concept: soil structure, the classification/types of soil structures (shape and size), the factors influencing the development and stability of soil structure, the factors or malpractices that cause the destruction/decline in soil structure, the different methods which farmers can apply to improve a poor soil structure, the advantages of good soil structure	Week 9	Unit 9: Soil structure	48–55	19–20
Soil colour and soil pores	Differences between a homogeneous and non-homogeneous soil colour, the main factors that determine the colour of soil, the interpretation of the following soil colours: Dark; Red; Light; Yellow; Greyish coloured; and Mottled appearance. The effect of soil texture, soil structure, soil depth and soil cultivation on the total pore space in a soil, the differences between macro pores and micro pores and their functions in a soil, the bulk density and porosity, the definitions of soil bulk density and porosity, ways to determine, calculate and interpret the bulk density of a soil, factors that influence the bulk density	Week 10	Unit 10: Soil colour and soil pores	56–65	21–24
Revision and Test		Week 11			

AGRICULTURAL SCIENCES Term 2

Topic	Content	Time allocation	Where to find it in Top Class Agricultural Sciences Grade 11		
			Unit	LB	TG
Soil air	The factors that affect/influence storage and movement of soil air, comparison between atmospheric and soil air (based on the nitrogen, oxygen and carbon dioxide content), the importance/necessity of the following soil gases: oxygen, carbon dioxide and nitrogen	Week 1	Unit 11: Soil air	66–69	25
Soil moisture	The basic types of soil water and their characteristics, a description of soil water losses and ways to limit these losses, the forces of nature that have an effect on soil water, (the different movements of water through the soil, the availability of soil water to a plant at the following limits of soil water content: Saturation point; Field water capacity; Temporary wilting point; and Permanent wilting point. Scientific methods to illustrate the following aspects that are related to soil water: capillary; and Gravitational movement of water, effective soil water management	Week 2	Unit 12: Soil moisture	70–77	26–27
Soil temperature	The main factors influencing soil temperature, the scientific approach to measure the effect of these factors that influence soil temperature, the effects of soil temperature on physical, chemical and biological processes that take place in the soil, the ways/methods to manipulate soil temperature for better production (cultivation methods and controlled environment)	Week 3	Unit 13: Soil temperature	78–81	28–30
Soil morphology	<i>The terminology:</i> soil profile, soil horizon and profile hole, the development and description of the following master horizons: O-horizon; A-horizon; E-horizon; B-horizon, G-horizon; C-horizon; and R-horizon (a schematic representation of a soil profile), the soil profiles of the following: Adult soil; Young soil; Wet/waterlogged soils; and Eroded soils, a practical identification of topsoil and subsoil horizons	Week 4	Unit 14: Soil morphology	82–88	31
Soil classification	Description of soil classification and the use of a binomial soil classification systems in South Africa, the procedures to be followed when identifying and classifying soil by the binomial system, the reasons/purposes/value of the classification of soils in agriculture, the description of diagnostic horizons of the topsoil and subsoil horizons	Week 5	Unit 15: Soil classification	89–95	32–33

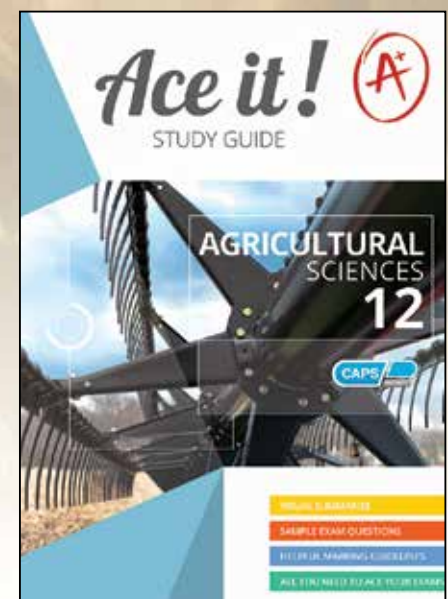
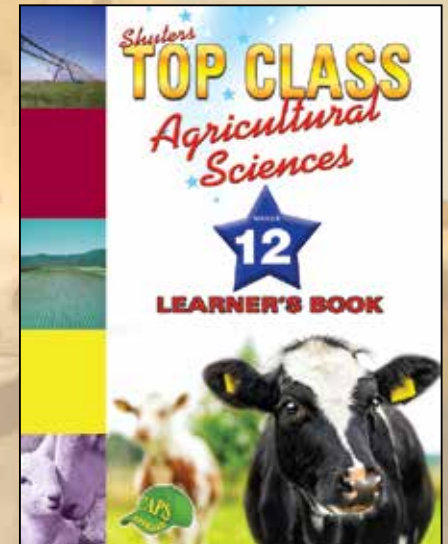
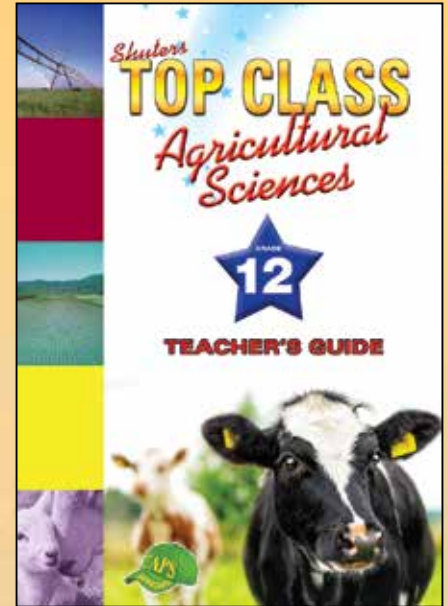
Topic	Content	Time allocation	Where to find it in Top Class Agricultural Sciences Grade 11		
			Unit	LB	TG
Soil colloids and acidity	The description and characteristics of inorganic soil colloids, the differences between inorganic and organic colloids, cation adsorption and cation exchange in soil, manipulation of the cations and cation exchange in the soil, the pH scale and hydrogen ions concentration, <i>the concepts</i> : soil acidity (predominant cations), the distinction between active acidity and reserve acidity, the factors influencing/causing the soil acidification process, the effects of soil acidity on crop production, the methods of preventing/controlling soil acidification, the exchange reaction in the soil that occurs during the reclamation process	Weeks 6–8	Unit 16: Soil colloids and soil acidity	96–101	34–35
Soil alkalinity and salinity	<i>The concept</i> : soil alkalinity (predominant cations), the differences between saline soils and sodic soils, the characteristics of saline soils/white brack soils, the factors influencing/causing brackishness/soil alkalinity/salinity, the effects of alkaline/brack on crop productivity, the methods of preventing/controlling soil alkalinity, the procedures to be followed on the reclamation of alkaline/brackish soils		Unit 17: Soil alkalinity and salinity	102–107	36–39
Soil organic matter: living and non-living organic matter	The differences between soil micro-organisms and macro-organisms (with examples), the main groups of soil micro-organisms (with examples), the importance and roles of soil micro- and macro-organisms, the requirements for soil micro- and macro-organisms, the carbon cycle/conversion by micro-organisms, the nitrogen cycle/conversion by micro-organisms, the process of symbiosis based on the following: mycorrhiza (fungus) and <i>Rhizobium</i> bacteria, ammonification, nitrification, denitrification, nitrogen assimilation, solubilization, immobilization and mineralization	Weeks 9–10	Unit 18: Living organic matter	108–118	40–43
	<i>Definitions of the following concepts</i> : fresh organic matter and humus, the physical, chemical and biological effects of organic matter on soils, the factors affecting the balance between gains and losses of organic matter in soils, the effects of the decline in organic matter content on soil degradation		Unit 19: Non-living organic matter	119–126	43–46
Revision and catch-up		Week 11			
Test					

Topic	Content	Time allocation	Where to find it in Top Class Agricultural Sciences Grade 11		
			Unit	LB	TG
Plant nutrition	The importance of photosynthesis, the storage of food and various organs utilized for food storage in plants, the factors influencing the rate of photosynthesis, the manipulation of plants to increase the photosynthetic rate	Week 1	Unit 20: Photosynthesis	127–136	47–49
Water and nutrients	The importance/functions of water in plants, the movement of water from the soil to the roots of plants, the distinctions between osmosis and diffusion, <i>the differences between the following processes</i> : movement of water from the roots to the stems and leaves, movement of water from the leaf to the air (atmosphere), <i>the terms</i> : transpiration pull and osmotic flow, plants' adaptation features to reduce transpiration rate (how plants control transpiration), movement of the products of photosynthesis (nutrients)	Week 2	Unit 21: Water and nutrients	137–148	50–54
Mineral nutrition	The difference between micro/trace elements and macro-elements, <i>the different macro-elements</i> : Nitrogen, sulphur, phosphorus, potassium, calcium and magnesium (the importance/functions, form in which it is absorbed and the deficiency symptoms of each), <i>the different micro-elements</i> : iron, manganese, boron, zinc, copper, molybdenum and cobalt (the importance/functions, form in which it is absorbed and the deficiency symptoms of each)	Week 3	Unit 22: Macro- and micro-elements in plants	149–158	55–60
Plant nutrient uptake and analysis	The plant nutrient/mineral uptake based on the following: passive ion uptake by diffusion; and active ion uptake by transport carrier molecules, the forms in which nutrients/minerals are available to plants, the factors affecting/influencing nutrients/mineral such as phosphorus, potassium and nitrogen availability to plants, the importance of nutrient element analysis in crop production, methods utilized in crop production to determine the nutritional status of the soil (soil samples, plant/leaf samples)	Week 4	Unit 23: Plant mineral nutrient uptake and analysis	159–178	61–71
Organic and inorganic fertilisers	A definition of the term fertilizer, the difference between organic and inorganic fertilizers, the main nitrogenous, phosphorus and potassium inorganic fertilizers, the calculation of the percentages of each plant nutrient in the fertilizer mixtures/multi-fertilizer mixtures, impact of inorganic fertilizers	Weeks 5–7	Unit 24: Organic fertilisers	179–188	72–73

Topic	Content	Time allocation	Where to find it in Top Class Agricultural Sciences Grade 11		
			Unit	LB	TG
Organic fertilisers and fertilisation practices	on the environment, the differences between calcitic and dolomitic lime; and the beneficial effects of liming (physical, chemical and biological effects), the use of gypsum Organic fertilizers, green manure, farm manure, compost, fertilization practices	Weeks 5–7	Unit 25: Inorganic fertilisers and fertilisation practices	189–205	74–78
Plant reproduction: Sexual reproduction and pollination	Definition of sexual reproduction in plants, the functions and structures of the following parts of a flower: Stamen; Pistil; and Non-sexual parts, for example petals (corolla); sepals (calyx), <i>The concept</i> : pollination, the differences between self-pollination and cross pollination, the description of the main agents of pollination	Week 8	Unit 26: Sexual reproduction and pollination	206–211	79–81
Fertilisation and ablactation	The structure of a matured/ripe pollen grain and a receptive stigma, the germination of a ripe pollen grain on a receptive stigma until fertilization, <i>the terminology</i> : fertilization and double fertilization, the development of a fertilized ovule to form a seed/fruit, the distinction between vegetative and stimulative parthenocarpy, <i>the concept</i> : ablactation, the factors causing/influencing ablactation	Week 9	Unit 27: Fertilisation and ablactation	212–222	82–86
Seeds and fruit setting and seed germination	<i>The concept</i> : fruit setting and seed germination, the development of seeds/fruits from a fertilized flower, the different types of fruits according to the way in which they develop, the process of seed germination, the distinction between seed dormancy and scarification, the basic requirements for seed germination	Week 10	Unit 28: Asexual reproduction	223–230	87
Test		Week 11			

Topic	Content	Time allocation	Where to find it in Top Class Agricultural Sciences Grade 11		
			Unit	LB	TG
Plant reproduction (asexual reproduction), plant improvement and biotechnology	Oculation and grafting, the advantages and disadvantages of using asexual reproduction methods to propagate plants, <i>Introduction to Biotechnology</i>	Weeks 1–2	Unit 28: Asexual reproduction	223–230	87
			Unit 29: Plant improvement and biotechnology	231–240	88–90
Plant pests	Weed management, plant diseases and their control, plant pests and their control, Integrated pest management control (IPM), Insect control in stored seeds and grass, the general role of the state in plant protection	Week 3	Unit 30: Weeds and weed management Unit 31: Plant diseases and their control	241–248 249–262	91–93 94–97
Optimal resource utilisation	Soil surveying and planning, precision farming	Weeks 4–5	Unit 32: Soil and water planning and utilisation	263–282	98–103
Soil cultivation and crop rotation	Soil Cultivation & Crop rotation		Unit 33: Soil drainage systems, soil cultivation and crop rotation	283–301	104–108
Greenhouse, hydroponics and aquaculture	Greenhouse, hydroponics and aquaculture		Unit 34: Greenhouses, hydroponics and aquaculture	302–317	109–116
Revision		Week 6			
Final Examination		Weeks 7–10			

12



Topic	Content	Time allocation	Where to find it in Top Class Agricultural Sciences Grade 12		
			Unit	LB	TG
Animal nutrition	External structure of alimentary canal of a ruminant and non-ruminant	Week 1	Unit 1: The alimentary canal	1–9	1–3
Digestion in the non-ruminant (pig/fowl) and ruminants (cow)	Digestion in ruminants and non-ruminants, digestion in the rumen	Week 2	Unit 2: Digestion in ruminants and non-ruminants	10–18	4–5
Components of feed	Functions of water, proteins, carbohydrates, fats and oils, mineral constituents	Week 3	Unit 3: Components of feed	19–29	6–8
Digestibility of feeds	Functions and deficiencies of vitamins, digestibility of feed, quality of feed, energy value of feed, nutritive ratio	Week 4	Unit 4: Digestibility, feed quality, energy value and nutritive ratio	30–43	9–12
Types of feed	Types of feed, subdivision of feeds, supplements to rations, planning a feed flow programme	Week 5	Unit 5: Types of feed and planning a feed flow programme	44–61	13–14
Animal production	Animal production systems, examples of intensive and extensive farming productions	Week 6	Unit 6: Intensive and extensive animal production systems	62–74	15–16
Animal shelter/protection/housing	Animal shelter/protection/housing, intensive animal production system, behaviour and handling of farm animals	Week 7	Unit 7: Animal shelters, behaviour and handling of farm animals	75–99	17–18
Animal reproduction	Reproductive organs of cattle, oestrus and oestrus cycle	Week 8	Unit 8: Male and female reproduction systems	100–107	19–20
Synchronisation of oestrus and mating, artificial mating	Synchronisation of oestrus, mating	Week 9	Unit 9: Synchronisation of oestrus and mating	108–116	21
Embryo transplantation, nuclear transfer	Embryo transplantation/transfer, nuclear transfer, fertilisation and pregnancy	Week 10	Unit 10: Embryo transplantation/transfer (ET) and nuclear transfer (cloning)	117–125	22
Revision and Tests		Week 11			

Topic	Content	Time allocation	Where to find it in Top Class Agricultural Sciences Grade 12		
			Unit	LB	TG
Animal reproduction	Birth/parturition and dystocia, milk production/lactation	Week 1	Unit 11: Parturition and dystocia	126–136	23–24
Animal diseases and protection	Animal health, Animal diseases	Week 2	Unit 12: Introduction to animal health	137–152	25–29
Internal and external parasites	Internal/endoparasites and external/ectoparasites	Week 3	Unit 13: Internal parasites of livestock	153–162	30–35
Plant and metallic salt poisoning	Plant and metallic salt poisoning, the role of government in animal health	Week 4	Unit 14: Plant and metallic salt poisoning	163–171	36–39
Basic agricultural genetics	Genetic concepts, genetic crosses	Weeks 5–6	Unit 15: Genetic concepts	172–178	40–42
Patterns of inheritance	The pattern of inheritance that leads to different phenotypes, pre-potency and atavism with examples, variation and mutation	Weeks 7–8	Unit 16: Genetic inheritance, variations and mutations	179–194	43–46
Selection	General principles of selection, natural and artificial selection, breeding systems	Week 9	Unit 17: Selection	195–204	47–48
Basic agricultural genetics, GMO	Genetic modification/genetic engineering	Week 10	Unit 18: Genetic modification	205–214	49–50
Mid-year examination		Week 11			

Topic	Content	Time allocation	Where to find it in Top Class Agricultural Sciences Grade 12		
			Unit	LB	TG
Agric-production factors	Production factors: land, labour	Week 1	Unit 19: Land and labour	215–223	51
Capital and management	Capital, farm management	Week 2	Unit 20: Capital and management	224–234	52–53
Agricultural marketing	Agricultural marketing, price determination and demand/supply	Weeks 3–5	Unit 21: Agricultural marketing	235–243	54
Market equilibrium	Market equilibrium, development of a market, approaches to marketing		Unit 22: Market equilibrium	244–249	55
Agricultural marketing systems	Free- market, co-operative marketing, controlled marketing, marketing chain or supply/demand chain	Week 6	Unit 23: Agricultural marketing systems	250–258	56–57
Agricultural entrepreneurship	Agricultural entrepreneurship, agri-business plan	Week 7	Unit 24: Agricultural entrepreneurship and business planning	259–273	58
Trial examination		Weeks 8–11			

Topic	Content	Time allocation	Where to find it in <i>Top Class Agricultural Sciences Grade 12</i>		
			Unit	LB	TG
Revision	Animal nutrition Animal reproduction Animal protection and control	Weeks 1–2	See Terms 1–3		
	Agricultural genetics Agricultural production factors Agricultural management and marketing	Weeks 3–4	See Terms 1–3		
Final NSC Examination		Weeks 5–10			

PROGRAMME OF ASSESSMENT

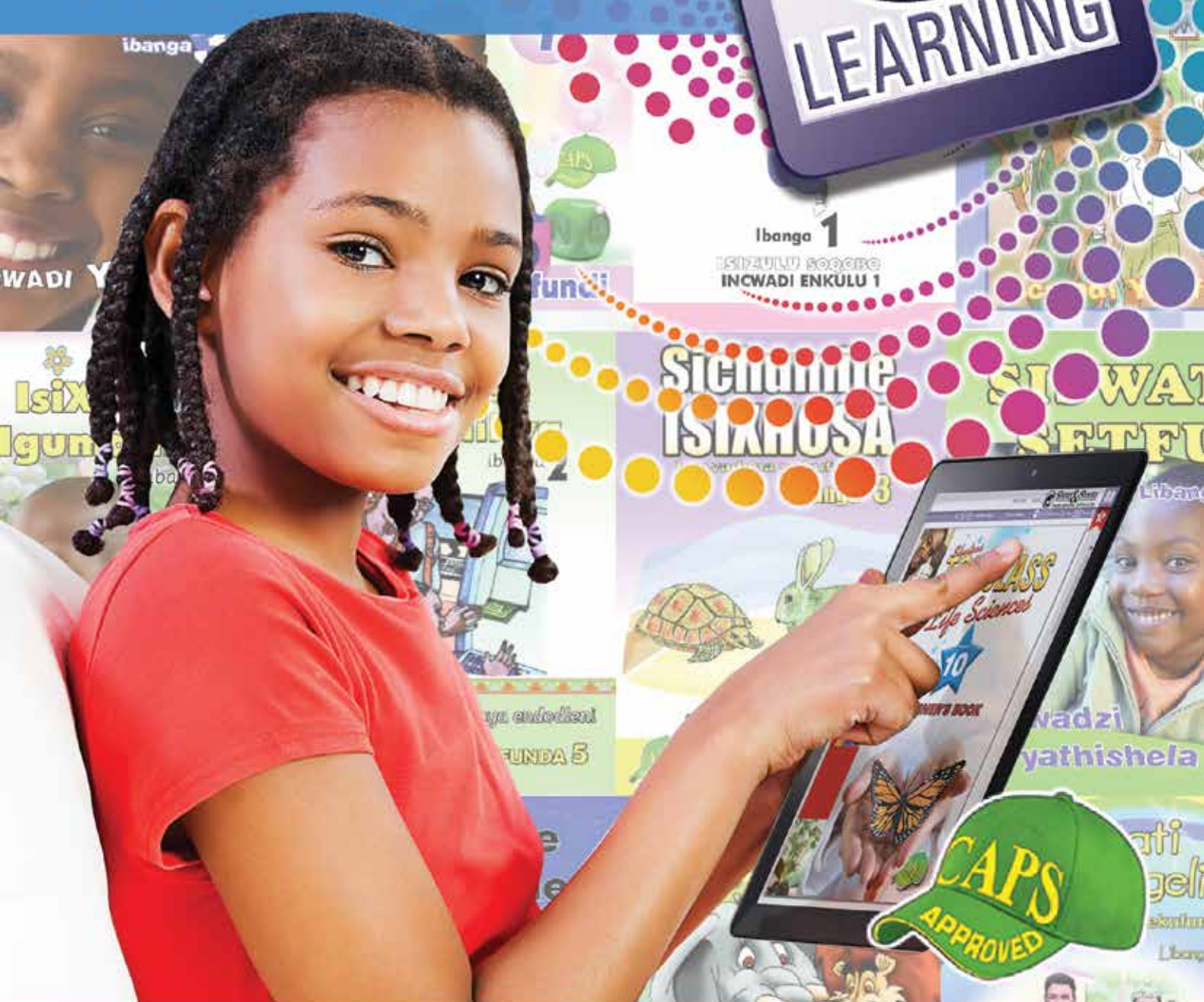
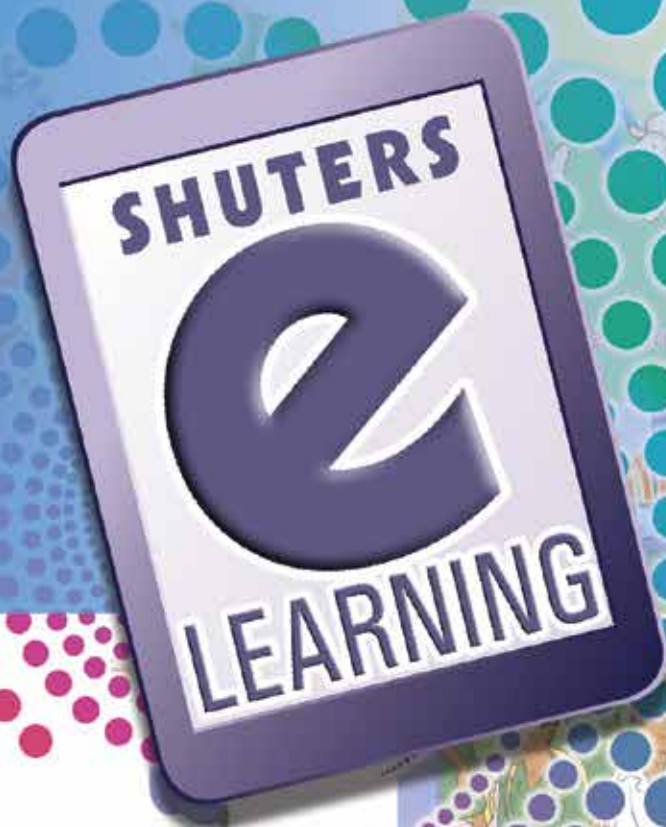
Grade 10	
Term	Assessment task
1	Practical Investigation/Assignment
	Test
2	Test
	Research or Assignment
3	Test
4	Final examination

Grade 11		
Term	Assessment task	Page reference
1	Practical Investigation/Assignment	TG page 118
	Test	TG page 119
2	June Examination	TG page 129
3	Research task/Assignment	TG page 125
	Test	TG page 135
4	Final examination	TG page 140

Grade 12		
Term	Assessment task	Page reference
1	Practical Investigation/Assignment	TG page 61
	Test	TG page 62
2	Test	
3	Practical investigation	TG page 64
	Trial examination	TG page 78
4	Final examination	



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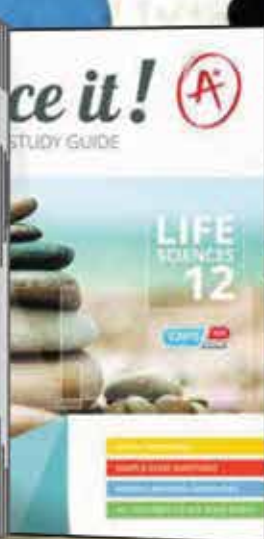
8-12

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