

## AGRIC, F4, T1

**REFERENCES:** Longhorn Secondary Agriculture Book, Golden Tips KCSE Agriculture, Certificate Agriculture Book, KLB Top Mark Agriculture, KLB Secondary Agriculture, Teacher’s Guide

W K	LS N	TOPIC	SUB-TOPIC	OBJECTIVES	L/ACTIVITIES	L/T AIDS	REFERENCE	REMARKS
1	1	Livestock production (V) poultry	Parts of an egg	By the end of the lesson, the learner should be able to Identify the various parts of an egg Explain the functions of each part of an egg	Identifying the parts of an egg Explaining the functions of each part of an egg Note making Illustrations Asking and answering questions	Text books Labeled diagram of internal structure of an egg Boiled egg	KLB secondary Agriculture form 4 pg 1-3 Longhorn secondary Agriculture form 4 pg 1-2 Teachers guide pg 114-116 Gateway Agriculture revision paper 2 page 39 Golden tips agriculture page 303-304	
	2	Livestock production (V) poultry	Natural incubation	By the end of the lesson, the learner should be able to Describe natural incubation	Describing natural incubation Stating the advantages and disadvantages of natural	Text books A diagram illustrating natural incubation	KLB secondary Agriculture form 4 pg 1-3 Longhorn secondary	

				State the advantages and disadvantages of natural incubation	incubation Illustration Note making Asking and answering questions	An egg Realic of nesting box	Agriculture form 4 pg 1-2 Teachers guide pg 114-116 Gateway Agriculture revision paper 2 page 39 Golden tips agriculture page 303-304	
	<b>3-4</b>	Livestock production (V) Poultry	Artificial incubation	By the end of the lesson, the learner should be able to Outline the conditions necessary for artificial incubation Describe the management of an incubator State the advantages and disadvantages of artificial incubation	Outline the conditions necessary for artificial incubation Description Stating the advantages and disadvantages of artificial incubation Illustration Note making Asking and answering questions	Text books Diagrams illustrating the structure of an artificial incubator Realic of an artificial incubator An egg	KLB secondary Agriculture form 4 pg 7-9 Longhorn secondary Agriculture form 4 pg 5-6 Teachers guide pg 114-116 Gateway Agriculture revision paper 2 page 411 Golden tips agriculture page 305	
<b>2</b>	<b>1</b>	Livestock Production (V) poultry	Natural Brooding	By the end of the lesson, the learner should be able to Define the term brooding Describe natural brooding	Defining and describing natural brooding Note making Asking and answering questions illustration	text books diagram of broody hen Realia of a broody hen samples of chicken variety	KLB secondary Agriculture form 4 pg 9 Longhorn secondary Agriculture form 4 pg 7 Teachers guide pg 114-116 Gateway Agriculture revision paper 2 page 41-42 Golden tips agriculture page 305-306	
	<b>2</b>	Livestock Production (V) Poultry	Artificial Brooding	By the end of the lesson, the learner should be able to Explain artificial brooding Identify the requirements in an artificial brooder	Explanation of artificial brooding Identification of the artificial brooding requirements Note making Illustration Asking and answering questions	Text books Diagrams of a brooder Realia of a brooder in a chicken	KLB secondary Agriculture form 4 pg 10-13 Longhorn secondary Agriculture form 4 pg 8-10 Gateway Agriculture revision paper 2 page 42 Golden tips agriculture page 306	

	<b>3 and 4</b>	Livestock Production (V) Poultry	Rearing systems Free range Fold system	By the end of the lesson, the learner should be able to Describe free range on fold system Outline the requirements of free range systems State the disadvantages and advantages of free range and fold system	Describing free range and fold system Outline the requirements of free range Stating the advantages and disadvantages of free range and fold Asking and answering questions	Text books Poultry Farm Sample of chicken feed Photographs	KLB secondary Agriculture form 4 pg 14-15 Longhorn secondary Agriculture form 4 pg 11-13 Gateway Agriculture revision paper 2 page 43 Golden tips agriculture page 306	
<b>3</b>	<b>1</b>	Livestock Production (V) poultry	Rearing systems Free range fold system	By the end of the lesson, the learner should be able to Describe free range on fold system Outline the requirements of free range systems State the disadvantages and advantages of free range and fold system	Describing free range and fold system Outline the requirements of free range Stating the advantage and disadvantages of free range and fold system Illustration Asking and answering questions	Text books Poultry farm Sample of chicken feed photographs	KLB secondary Agriculture form 4 pg 16-18 Longhorn secondary Agriculture form 4 pg 12-13 Gateway Agriculture revision paper 2 page 43 Golden tips agriculture page 307	
	<b>2</b>	Livestock Production (V) Poultry	Rearing systems Deep litter system Battery cage system	By the end of the lesson, the learner should be able to Outline the requirements in deep litter system State the advantages and disadvantages of the deep litter and battery cage system	Outlining the requirements of deep litter Stating the advantages and disadvantages of deep litter on battery cage system Note making Illustration Asking and answering questions	Text books School poultry farm Sample of chicken feed photographs	KLB secondary Agriculture form 4 pg 18-21 Longhorn secondary Agriculture form 4 pg 12-13 Gateway Agriculture revision paper 2 page 45	
	<b>3</b>	Livestock production (V) poultry	Stress in chicken	By the end of the lesson, the learner should be able to Define the term stress Identify the causes of stress in chicken State the control measures of stress in chicken	Identifying the causes of stress in chicken Stating the control measures of stress in chicken Illustration Note making Asking and answering questions	Text books Poultry farm photographs	KLB secondary Agriculture form 4 pg 16-18 Longhorn secondary Agriculture form 4 pg 12-13 Gateway Agriculture revision paper 2 page 45 Golden tips K.C.S.E agriculture page 307	
	<b>4</b>	Livestock Production (V)	Vices in chicken	By the end of the lesson, the learner should be able to	Identifying the vices in chicken	Text books Poultry farm	KLB secondary Agriculture form 4 pg 23-24	

		poultry		Identify the kinds of vices in chicken Identify the causes of such vices in chicken State the control measures of vices in chicken	Identifying the causes of vices in chicken State the control measures of vices in chicken	Photos illustrating example of such vices	Longhorn secondary Agriculture form 4 pg 20-21 Gateway Agriculture revision paper 2 page 45 Golden tips K.C.S.E agriculture page 307	
4	1	Livestock Production V Poultry	Marketing of poultry products eggs	By the end of the lesson, the learner should be able to Describe the marketing of eggs	Describing the marketing of eggs Note making Illustration Asking and answering question	Text books Eggs Poultry farm store	KLB secondary Agriculture form 4 pg 24-25 Longhorn secondary Agriculture form 4 pg 22-23 Gateway Agriculture revision paper 2 page 46 Golden tips K.C.S.E agriculture page 307	
	2	Livestock production Poultry	Marketing of poultry production Chicken meat	By the of the lesson, the learner should be able to Describe the marketing of chicken meat	Describing the marketing of chicken meat Note making Illustration Asking and answering questions	Text books Poultry farm photos	KLB secondary Agriculture form 4 pg 23-24 Longhorn secondary Agriculture form 4 pg 20-21 Gateway Agriculture revision paper 2 page 46 Golden tips K.C.S.E agriculture page 307	
	3 and 4	Livestock production VI (Cattle)	Raising of the young stock	By the end of the lesson, the learner should be able to Describe the feeding of a new born calf Describe the preparation of artificial colostrums State the importance of colostrums	Describing the feeding of a new calf Describe the preparation of artificial colostrums State the importance of colostrums Illustrations Note making Asking and answering of questions	Text books Dairy farm Calf Sample of artificial colostrums	KLB secondary Agriculture form 4 pg 23-24 Longhorn secondary Agriculture form 4 pg 20-21 Gateway Agriculture revision paper 2 page 45 Golden tips K.C.S.E agriculture page 307	
5	1	Livestock Production VI (Cattle)	Methods of calf rearing	By the end of the lesson, the learner should be able to Describe the natural and	Describing the methods of rearing Stating the advantages and	Text books Dairy farm Calf	KLB secondary Agriculture form 4 pg 29-30 Longhorn secondary	

				artificial methods of feeding a calf State the advantages and disadvantages of both natural and artificial rearing	disadvantages of the methods of rearing Illustrations Note making Asking and answering of questions	Sample of artificial colostrum	Agriculture form 4 pg 26-28 Gateway Agriculture revision paper 2 page 48 Golden tips K.C.S.E agriculture page 308	
	<b>2</b>	Livestock Production (Cattle)	Weaning of calves	By the end of the lesson, the learner should be able to discuss late weaning and early weaning programmes	Discussing both weaning and late weaning Illustrating Note making Asking and answering questions	Text books Dairy farm Calf Sample of colostrums	KLB secondary Agriculture form 4 pg 30-32 Longhorn secondary Agriculture form 4 pg 30-32 Gateway Agriculture revision paper 2 page 48 Golden tips K.C.S.E agriculture page 308	
	<b>3 and 4</b>	Livestock production VI (Cattle)	Calf housing	By the end of the lesson, the learner should be able to Identify the types of calf pens Outline the requirements of calf pens	Identifying the types of calf pens Outlining the requirements of calf pens Illustration Note making Asking and answering questions	Text books Dairy farm Calf pen Diagrams and photos of calf pens	KLB secondary Agriculture form 4 pg 32-34 Longhorn secondary Agriculture form 4 pg 30-32 Gateway Agriculture revision paper 2 page 48 Golden tips K.C.S.E agriculture page 308-309 Top mark series Revision Agriculture pg 124	
<b>6</b>	<b>1</b>	Livestock production VI (Cattle)	Routine management practices	By the end of the lesson, the learner should be able to Describe the various routine practices in managing a calf © Education Plus Agencies	Describing the routine management practices Illustration Note making Asking and answering questions	Text books Dairy farm Realize on some tools for calf managements	KLB secondary Agriculture form 4 pg 34-36 Longhorn secondary Agriculture form 4 pg 30-32 Gateway Agriculture revision paper 2 page 49 Golden tips K.C.S.E agriculture page 308-309	
	<b>2</b>	Livestock Production VI	Milk and milking Factors affecting milk	By the end of the lesson, the learner should be able to	Explaining factors that affect milk composition	Text books Milk sample	KLB secondary Agriculture form 4 pg 36-40	

		(Poultry)	composition Milk secreting and let down	explain the factors that affect milk composition Illustrate milk secretion and milk let down	Illustrate milk secretion and milk let down	Diagram illustrating the udder Milking equipment	Longhorn secondary Agriculture form 4 pg 32-38 Golden tips K.C.S.E agriculture page 309-310 Top mark series Revision Agriculture page 124-126	
	<b>3 and 4</b>	Livestock production VI (Poultry)	Milk and milking Clear milk production Dry cow therapy	By the end of the lesson, the learner should be able to Describe clean milk production Describe the milking procedure Explain dry low therapy	Describing clean milk production Describing the milking procedure Explaining dry low therapy Illustration Note making Asking and answering question	Text books Milking equipment Dairy farm cow	KLB secondary Agriculture form 4 pg 40-46 Longhorn secondary Agriculture form 4 pg 32-38 Top mark series Agriculture Revision Pg 120	
<b>7</b>	<b>1</b>	Livestock production VI (Cattle)	Marketing of milk and beef cattle	By the end of the lesson, the learner should be able to Discuss the marketing of milk Discuss the marketing of Beef	Discussing the marketing of milk and beef Illustration Note making Asking and answering questions	Students text book Milk products Photographs	KLB secondary Agriculture form 4 pg 47-48 Longhorn secondary Agriculture form 4 pg 38-41 Golden tips K.C.S.E agriculture page 310	

	<b>2</b>	Farm power and machinery	Sources of power in the farm Human power Animal power	By the end of the lesson, the learner should be able to Describe animal power Describe human power Stating the advantages and disadvantages of animal power	Describing human and animal power Illustration Note making Asking and answering questions Stating the advantages and disadvantages of animal power	Text books Photo of farm workers An agricultural farm	KLB secondary Agriculture form 4 pg 50-51 Longhorn secondary Agriculture form 4 pg 42-45 Gateway Agriculture revision paper 2 page 48 Top Mark Series Agriculture Revision pg 139	
	<b>3 and 4</b>	Farm power and machinery	Sources of power in the farm Wing power Water power	By the end of the lesson, the learner should be able to Describe wind power Describe water power	Describing wind and water power Illustration Note making Asking and answering questions	Text books Diagrams of wind mill	KLB secondary Agriculture form 4 pg 50-51 Longhorn secondary Agriculture form 4 pg 42-45 Gateway Agriculture revision paper 2 page 77 Top Mark Series Agriculture Revision pg 139 Golden tips K.C.S.E agriculture page 308	
<b>8</b>	<b>1</b>	Farm power and machinery	Sources of power in the farm biogas	By the end of the lesson, the learner should be able to describe biogas wood and charcoal fuel state the advantages of biogas charcoal and wood fuel	describing biogas wood and fuel stating the advantages of biogas, charcoal and wood fuel	text books wood and charcoal biogas plant photos diagram of biogas digester	KLB secondary Agriculture form 4 pg 52-54 Longhorn secondary Agriculture form 4 pg 46-48 Golden tips K.C.S.E agriculture page 234-235	
	<b>2</b>	Farm power and machinery	Sources if power in the farm Fossil fuels Hydro-power Geothermal power	By the end of the lesson, the learner should be able to Describe fossils fuels Describe fossil fuels Describe hydro-power Describe geothermal power	Describing fossils fuels and hydro-electric power Illustrations Note making Asking and answering questions	Text books Photos of a geothermal station	Longhorn secondary Agriculture form 4 pg 46-48 Gateway Agriculture revision paper 2 page 71 Top Mark Series Agriculture Revision pg 139	
	<b>3</b>	Farm power and	Sources of power in	By the end of the lesson, the learner should be able to	Describing nuclear storage	Text books	KLB secondary Agriculture form 4 pg 54-55	

	<b>and 4</b>	machinery	the Nuclear power Storage battery Electrical power	Describe nuclear power Describe storage battery Describe solar power/radiation Describe electrical power	battery and solar power Illustration Note making Asking and answering questions	Storage battery Photos of solar panels	Longhorn secondary Agriculture form 4 pg 51-52  Top Mark Series Agriculture Revision pg 401	
<b>9</b>	<b>1</b>	Farm power and machinery	Tractor engine	By the end of the lesson, the learner should be able to Describe a four stroke cycle engine Differentiate between a petrol engine and a diesel engine	Describing a four structure engine Differentiating between dsel and petrol engine Illustration Note making Asking and answering questions	Text books Models of engines A tractor photographs	KLB secondary Agriculture form 4 pg 56-61  Longhorn secondary Agriculture form 4 pg 53-56  Top Mark Series Agriculture Revision pg 140-141  Golden tips K.C.S.E agriculture page 308	
	<b>2</b>	Farm power and machine	Tractor engine	By the end of the lesson, the learner should be able to Describe a two stroke cycle engine	Describing a two stroke engine Illustration Note making Asking and answering questions	Text books Models of engines A tractor photographs	KLB secondary Agriculture form 4 pg 61-63  Longhorn secondary Agriculture form 4 pg 57-58  Top Mark Series Agriculture Revision pg 141	
	<b>3 and 4</b>	Farm power and machinery	Systems of a tractor Fuel system Electrical system	By the end of the lesson, the learner should be able to Describe the fuel system Describe the electrical system Describe the maintenance of the fuel and electrical systems	Describing the fuel and electrical systems Illustrations Note making Asking and answering questions Describing the maintenance of the fuel and electrical systems	Text books Models of engines A tractor photographs	KLB secondary Agriculture form 4 pg 63-69  Longhorn secondary Agriculture form 4 pg 60-62  Top Mark Series Agriculture Revision pg 141-142	
<b>10</b>	<b>1</b>	Farm power and machinery	Systems of a tractor Cooling systems Lubricating system	By the end of the lesson, the learner should be able to Describe the coding and its maintenance Describe the lubricating system and its maintenance	Describing the coolong and lubricating systems and their maintenance Illustration Note making Asking and answering questions	Text books Models of engines photographs	KLB secondary Agriculture form 4 pg 69-72  Longhorn secondary Agriculture form 4 pg 63-64  Top Mark Series Agriculture Revision pg 143-144	
	<b>2</b>	Farm power and	Systems of a tractor	By the end of the lesson, the	Describing the power	Text books	KLB secondary Agriculture form 4 pg 72-76	



		machinery	Transmission system	learner should be able to Describe the power transmission system	transmission system Note making Illustration Asking and answering questions	Models of engine photographs	Longhorn secondary Agriculture form 4 pg 64-65 Top Mark Series Agriculture Revision pg 144	
	<b>3 and 4</b>	Farm power and machinery	Tractor servicing Short term services Long term services	By the end of the lesson, the learner should be able to Discuss the various practices on tractor maintenance, both short term services and long term services	Discussion the tractor maintenance Practices Illustrations Asking and answering questions Note making	Text books Models of engines A tractor photographs	KLB secondary Agriculture form 4 pg 76-77 Longhorn secondary Agriculture form 4 pg 65-66 Top Mark Series Agriculture Revision pg 144-145	
<b>11</b>	<b>1</b>	Farm power and Machinery	Farm implements Tractor drawn implements Disc plough trailer	By the end of the lesson, the learner should be able to Outline the various methods of attachment Describe a trailer and its maintenance	Outline the methods of attachment Describing the trailer and its maintenance Illustration Note making Asking and answering of questions	Text books Photos illustrating the various implements Agricultural farm	KLB secondary Agriculture form 4 pg 77-79 Longhorn secondary Agriculture form 4 pg 66-70 Gateway Agriculture revision paper 2 page 81 Top Mark Series Agriculture Revision pg 145	
	<b>2</b>	Farm Power and Machinery	Tractor drawn implements Disc plough Mould board plough	By the end of the lesson, the learner should be able to Identify the various parts of a disc plough and mould board plough State the maintenance practices of a disc plough and mould board plough State the differences between a disc plough and a mould board plough	Identification of the parts of a disc and mould board plough Stating the maintenance practices of disc and mould board plough Stating the differences between a disc and mould board plough Illustration Note making Asking and answering questions	Text books Photos illustrating a disc and mould board plough An agricultural farm	KLB secondary Agriculture form 4 pg 79-82 Longhorn secondary Agriculture form 4 pg 73-77 Gateway Agriculture revision paper 2 page 81-82 Top Mark Series Agriculture Revision pg 145-148	
	<b>3&amp; 4</b>	Farm power and machinery	Tractor drawn implements Harrows Disc harrows Spring time harrows Spike tooth harrow Sub soilers	By the end of the lesson, the learner should be able to Describe the various types of harrows and sub-soilers State the maintenance practices of the various types of harrows and sub-	Description of the various types of harrows and sub-soilers Stating the maintenance of practices of the harrows and sub-soilers Illustration Asking and answering	Text books Photos illustrating the harrows and sub-soiler An agricultural farm	KLB secondary Agriculture form 4 pg 82-84 Longhorn secondary Agriculture form 4 pg 73-77 Gateway Agriculture revision paper 2 page 82	

				soilers	questions Note making		Top Mark Series Agriculture Revision pg 147-148	
<b>12</b>	<b>1</b>	Farm power and machinery	Tractor drawn Implements Ridges rotary tillers	By the end of the lesson, the learner should be able to Describe the ridges and rotary tillers State the maintenance practices of the ridges and rotary tillers	Description of the ridgers and rotary tillers Stating the maintenance practices of the ridges and rotary tiller Illustrations Not making Asking and answering questions	Text books Photos illustrating the ridges and rotary tillers An agricultural farm	KLB secondary Agriculture form 4 pg 85  Longhorn secondary Agriculture form 4 pg 77-79  Gateway Agriculture revision paper 2 page 82  Top Mark Series Agriculture Revision pg 148-149	
	<b>2</b>	Farm power and machinery	Tractor drawn Implements Mowers Planters and seeders	By the end of the lesson, the learner should be able to Describe the various types of mowers and the planters and seeders State the maintenance practices of the various types of mowers and the planters and seeder	Description of the various types of mowers and planters and seeders Stating the maintenance of practices of mowers and planters and seeders Illustration Note making Asking and answering questions	Text books Photos Illustrating the mowers and planters and seeders An agricultural farm	KLB secondary Agriculture form 4 pg 85-88  Longhorn secondary Agriculture form 4 pg 79-81  Gateway Agriculture revision paper 2 page 83  Top Mark Series Agriculture Revision pg 149-151	
	<b>3 and 4</b>	Farm power and machinery	Tractor drawn implements Cultivators and seeders Sprayers Harvesting machines	By the end of the lesson, the learner should be able to Describe the cultivators/seeders, sprayers and various types of harvesting machine State the maintenance practices of the cultivators/seeders, sprayers and harvesting machines	Describing the cultivators/seeders, sprayers and harvesting machines Stating the maintenance practices of the cultivators seeders, sprayers and harvesting machines Illustrations Note making Asking and answering questions	Text books Photos illustrating the Cultivators/seeder Sprayers Harvesting machines An agricultural farm	KLB secondary Agriculture form 4 pg 88-90  Longhorn secondary Agriculture form 4 pg 81-82  Gateway Agriculture revision paper 2 page 84  Top Mark Series Agriculture Revision pg 149-151	
<b>13</b>	<b>1</b>	Farm power and machinery	Animal drawn implements Ox-drawn plough Ox-line harrow Ox-carts Ox-ridger	By the end of the lesson, the learner should be able to Describe the ox-drawn plough, ox-time harrow, ox-carts and ox-ridger State the maintenance practices of animal drawn	Describing the animal drawn implements Stating the maintenance of the animal drawn implements Identifying the parts of an ox-drawn plough Illustration	Text books Photos illustrating the animal drawn implements An agricultural farm	KLB secondary Agriculture form 4 pg 91-95  Longhorn secondary Agriculture form 4 pg 82-85  Gateway Agriculture revision paper 2 page 84-85	

				implements Identify the parts of an ox-drawn plough	Note making Asking and answering questions		Top Mark Series Agriculture Revision pg 152-154		
	<b>2</b>	Agricultural economics (III) production economics	-nation income GDP GNP Per capital income	By the end of the lesson, the learner should be able to Explain how household firms and central authority contributes to the national income Explain the terms GDP, GNP and per capital income	Explaining how household firms and central authorities contribute to national income Explaining - GDP, GNP, Per capital income Illustrations Note making Questioning and answering	Text books Chart containing formulae Newspapers Statistical abstractor	KLB secondary Agriculture form 4 pg 96-98 Longhorn secondary Agriculture form 4 pg 87-90 Gateway Agriculture revision paper 2 page 101-102 Top Mark Series Agriculture Revision pg 161		
	<b>3 and 4</b>	Agricultural Economics (III) productions economics	Factors of production Land labour	By the end of the lesson, the learner should be able to discuss land and labour and factors of production to explain how land and labour affect production	Discussing land and labour as factors of production Explanation of how land and labour affect production Illustrations Note making Questioning and answering	Text books Newspapers Statistical abstracts	KLB secondary Agriculture form 4 pg 99-102 Longhorn secondary Agriculture form 4 pg 92-94 Gateway Agriculture revision paper 2 page 102 Top Mark Series Agriculture Revision pg 161-162		
<b>14</b>		<b>END OF TERM EXAMINATIONS</b>							
<b>15</b>		<b>PREPARATION OF REPORTS AND CLOSING</b>							

## AGRIC, F4, T2

**REFERENCES:** Longhorn Secondary Agriculture Book, Golden Tips KCSE Agriculture, Certificate Agriculture Book, KLB Top Mark Agriculture, KLB Secondary Agriculture, Teacher's Guide

W K	LS N	TOPIC	SUB-TOPIC	OBJECTIVES	L/ACTIVITIES	L/T AIDS	REFERENCE	REMARKS
1	1	Agricultural Economics (III) production economics	Factors of production Capital The management	By the end of the lesson, the learner should be able to Discuss capital and management as factors of production Explain how capital and management affect production	Discussion of capital and management factors of production Explanation of how capital and management affect production Illustrations Note making Questioning and answering	Text books News papers Statistical abstracts	KLB secondary Agriculture form 4 pg 102-104 Longhorn secondary Agriculture form 4 pg 94-96 Gateway Agriculture revision paper 2 page 103 Top Mark Series Agriculture Revision pg 162	
	2	Agricultural economics (III) production economics	The production function	By the end of the lesson, the learner should be able to Define production function Identify the types of	Defining production function Identifying the types of production functions Describing the types of	Text books Graphs of various production functions Tables of various	KLB secondary Agriculture form 4 pg 104-111 Longhorn secondary Agriculture form 4 pg 96-99	

				production function Describe the types of production function	production functions Illustrating Asking and answering of questions	production functions	Gateway Agriculture revision paper 2 page 103  Top Mark Series Agriculture Revision pg 162-163
<b>3 and 4</b>	Agricultural Economics (II) production economics	Economic laws and principles Law of diminishing rations	By the end of the lesson, the learner should be able to State the law of diminishing returns Explain how it affects agricultural production	Stating the law of diminishing return Explanation of how the law affects agricultural production Illustration Questioning and answering	Text books Graphs on the three zone of a production of a function Tables on production under this law		KLB secondary Agriculture form 4 pg 111-115 Longhorn secondary Agriculture form 4 pg 100-102 Gateway Agriculture revision paper 2 page 103 Top Mark Series Agriculture Revision pg 163

2	1	Agricultural economics (II) production economics	Economic law and principles Law of substitution	By the end of the lesson, the learner should be able to State the law of substitution Explain how law of substitution affects Agricultural productions	Stating the law of substitution Explanation of how the law affects agricultural production Illustration Asking and answering questions	Text books Charts Statistical abstracts	KLB secondary Agriculture form 4 pg 115-117 Longhorn secondary Agriculture form 4 pg 102-103 Gateway Agriculture revision paper 2 page 103 Top Mark Series Agriculture Revision pg 163
	2	Agricultural economics (III) production economics	Economic law and principles Law of equimarginal returns	By the end of the lesson, the learner should be able to State the law of equimarginal returns Explain how the law of equimarginal returns affects production	Stating the law of equimarginal returns Explaining how the law affects production Illustration Questioning and answering	Text books Charts Statistical abstracts	KLB secondary Agriculture form 4 pg 117 Longhorn secondary Agriculture form 4 pg 104-105 Gateway Agriculture revision paper 2 page 104 Top Mark Series Agriculture Revision pg 164
	3 and 4	Agricultural Economics (III) production economics	Principle of profit maximization	By the end of the lesson, the learner should be able to State the principle of profit maximization Describe various types of costs Explain the concept of revenue	Stating the principle of profit maximization Describe the various types of costs Explanation of the concept of revenue Illustration Questioning and answering	Text books Tables on revenues Charts on revenue Statistical abstracts	KLB secondary Agriculture form 4 pg 117-121 Longhorn secondary Agriculture form 4 pg 105 Gateway Agriculture revision paper 2 page 104 Top Mark Series Agriculture Revision pg 164-165
3	1	Agricultural economics (II) Production economics	Farm planning	By the end of the lesson, the learner should be able to Explain the factors to consider in drawing a farm planning Outline steps in making a farm plan	Explaining the factor to consider when drawing a farm plan Outlining the steps in making a farm plan Illustration Questioning and answering	Text books Charts Statistical abstracts	KLB secondary Agriculture form 4 pg 121-123 Longhorn secondary Agriculture form 4 pg 108-109 Gateway Agriculture revision paper 2 page 104 Top Mark Series Agriculture Revision pg 165

	<b>2</b>	Agricultural Economics (III) production economics	Farm budgeting	By the end of the lesson, the learner should be able to Define farm budgeting State the importance of farm budgeting	Definition of farm budgeting Stating the importance of farm budgeting Illustration Note making Questioning and answering	Text books Farm records Ag agricultural farm	KLB secondary Agriculture form 4 pg 123-127 Longhorn secondary Agriculture form 4 pg 110-112 Gateway Agriculture revision paper 2 page 104 Top Mark Series Agriculture Revision pg 165	
	<b>3 and 4</b>	Agricultural economics (III) production economics	Farm budgeting	By the end of the lesson, the learner should be able to Describe the types of budgeting in agriculture	Description of the types of budgeting Illustration Note making Question and answering	Text books Farm records An agricultural farm	KLB secondary Agriculture form 4 pg 123-127 Longhorn secondary Agriculture form 4 pg 110-112 Gateway Agriculture revision paper 2 page 104	
<b>4</b>	<b>1</b>	Agricultural Economics (III) Production economics	Agricultural support services available to the farmer Extension and training Banking Credit services Agricultural Research marketing	By the end of the lesson, the learner should be able to explain the agricultural support services available to the farmers extension and training banking credit AI services Agricultural research marketing	Explanation of the Agricultural support services available to the farmer Illustrations Note making Questioning and answering	Text books Farm record An agricultural farm	KLB secondary Agriculture form 4 pg 112-132 Longhorn secondary Agriculture form 4 pg 112-114 Gateway Agriculture revision paper 2 page 105-106 Top Mark Series Agriculture Revision pg 165-166	
	<b>2</b>	Agricultural Economics (III) production economics	Agricultural support services available to the farmers Veterinary services Farm input supplies Tractor hive services	By the end of the lesson, the learner should be able to Explain the Agricultural support services available to a farmer Veterinary services Farm input supplies Tractor hive services	Explanation of the Agricultural support services available to a farmer Illustration Note making Asking and answering questions	Text books Farm records An agricultural farm	KLB secondary Agriculture form 4 pg 133-134 Longhorn secondary Agriculture form 4 pg 110-112 Gateway Agriculture revision paper 2 page 104 Top Mark Series Agriculture Revision pg 166-167	
	<b>3 and 4</b>	Agricultural economics (IV) farm accounts	Risks and uncertainties in farming	By the end of the lesson, the learner should be able to Identify the types of risks on	Identification of the types of risk and uncertainties Outlining the ways in which a	charts Text books Financial documents	KLB secondary Agriculture form 4 pg 134-136 Longhorn secondary	

				uncertainties of a farmer may face Outline the ways in which a farmer may adjust to uncertainty	farmer may adjust to the uncertainties Illustration Note making Questioning and answering	An agricultural farm	Agriculture form 4 pg 116-119 Gateway Agriculture revision paper 2 page 106 Top Mark Series Agriculture Revision pg 166-167	
5	1	Agricultural economics (IV) farm accounts	Importance of keeping farm accounts Type of farm accounts	By the end of the lesson, the learner should be able to State the importance of keeping farm accounts Identify the types of farm accounts	Stating the importance of keeping farm records Identification of the types of farm accounts Illustration A sample of financial documents charts	charts Text books Financial documents An agricultural farm	KLB secondary Agriculture form 4 pg 139 Longhorn secondary Agriculture form 4 pg 121 Gateway Agriculture revision paper 2 page 108 Top Mark Series Agriculture Revision pg 168	
	2	Agricultural economics (IV) farm accounts	Financial statements Invoice Statement of accounts	By the end of the lesson, the learner should be able to Describe an invoice and a statement of account Distinguish between invoice and a statement of account	Distinguishing an invoice and a statement of account Describing an invoice and a statement of accounts Note making Questioning and answering	Text books An invoice An agricultural firm A chart	KLB secondary Agriculture form 4 pg 140-141 Longhorn secondary Agriculture form 4 pg 122-124 Gateway Agriculture revision paper 2 page 108 Top Mark Series Agriculture Revision pg 168	
	3 and 4	Agricultural economics (IV) farm accounts	Receipts Delivery note Purchase order	By the end of the lesson, the learner should be able to Describe a receipt, delivery note and purchase order Distinguish between, receipts, delivery note and a purchase order	Description of a receipt delivery note and a purchase order Distinguish the three documents Illustrations Note making Questioning and answering	Text books A receipt A railway note A purchase order An agricultural farm	KLB secondary Agriculture form 4 pg 141-145 Longhorn secondary Agriculture form 4 pg 124-125 Gateway Agriculture revision paper 2 page 108 Top Mark Series Agriculture Revision pg 168-169	
6	1	Agricultural Economics (iV) Farm accounts	Books of accounts Cash book inventory	By the end of the lesson, the learner should be able to identify the cash book and the inventory	identification of the cash book and the inventory stating the uses of the cash book and the inventory	Text books A cash account An inventory Charts	KLB secondary Agriculture form 4 pg 146-150 Longhorn secondary Agriculture form 4 pg 125-127	



				state the uses of cash book and the inventory	note making illustration questioning and answering		Gateway Agriculture revision paper 2 page 109 Top Mark Series Agriculture Revision pg 169	
	2	Agricultural Economics (IV) farm accounts	Books of Accounts Journal ledger	By the end of the lesson, the learner should be able to describe the journal and ledger state the uses of a journal and ledger	description of the ledger and journal stating the uses of the ledger and journal illustration questioning and answering	Text books A ledger account page A journal Charts	KLB secondary Agriculture form 4 pg 150-153 Longhorn secondary Agriculture form 4 pg 127-129 Gateway Agriculture revision paper 2 page 109 Top Mark Series Agriculture Revision pg 169	
	3	Agricultural Economics (IV) farm accounts	Financial statements Balance sheet	By the end of the lesson, the learner should be able to Analyse and prepare a balance sheet	Analyzing and preparing a balance sheet Illustration Questioning and answering Note taking Explanation	Text books Charts Format of balance sheet A balance sheet	KLB secondary Agriculture form 4 pg 154-157 Longhorn secondary Agriculture form 4 pg 124-125 Gateway Agriculture revision paper 2 page 109-111 Top Mark Series Agriculture Revision pg 169	
7	1	Agricultural economics (IV) farm accounts	Financial statements Profit and loss account	By the end of the lesson, the learner should be able to Analyse and prepare a profit and loss account	Analyzing and preparing profit and loss account Note making Explanation Illustration Questioning and answering	Text books Charts A format of profit and loss account A profit and loss account	KLB secondary Agriculture form 4 pg 157-159 Longhorn secondary Agriculture form 4 pg 132-133 Gateway Agriculture revision paper 2 page 109-111 Top Mark Series Agriculture Revision pg 169	
	2	Agricultural economics (IV) farm accounts	Financial statements Cash analysis	By the end of the lesson, the learner should be able to Analyse and prepare a cash analysis	Analyzing and preparing cash analysis Explanation Illustration Note making Questioning and answering	Text books Charts A cash analysis	KLB secondary Agriculture form 4 pg 159-162 Longhorn secondary Agriculture form 4 pg 133-135 Gateway Agriculture revision	

							paper 2 page 111 Top Mark Series Agriculture Revision pg 169	
<b>8</b>	<b>1</b>	Agricultural Economics (V) Agricultural marketing and organization	Market and marketing	By the end of the lesson, the learner should be able to Define marketing and market Identify the types of markets Describe the various types of markets available	Definition of market and marketing Identification of the types of markets Description of the various types Note taking Asking and answering questions Illustrations	Text books Charts Local markets	KLB secondary Agriculture form 4 pg 137-138 Longhorn secondary Agriculture form 4 pg 164-166 Gateway Agriculture revision paper 2 page 109-111 Top Mark Series Agriculture Revision pg 173	
	<b>2</b>	Agricultural Economics (V) Agricultural marketing and organization	Demand, supply and price theory demand	By the end of the lesson, the learner should be able to Define demand State the law of demand Explain the factors influencing demand for a commodity	Define demand Stating the law of demand Explaining the factors influencing demand Note taking Asking and answering questions illustration	Text books Charts A local market Tables Graphs	KLB secondary Agriculture form 4 pg 166-169 Longhorn secondary Agriculture form 4 pg 139-141 Gateway Agriculture revision paper 2 page 114 Top Mark Series Agriculture Revision pg 174	
	<b>3 and 4</b>	Agricultural Economics (V) Agricultural marketing and organization	Elasticity of Demand (ED)	By the end of the lesson, the learner should be able to Describe elasticity of demand Explain the factors influencing elasticity of demand	Description of elasticity Explanation of the factors that influencing elasticity of demand Illustration Note making Questioning and answering	Text book Local market Tables Graphs	KLB secondary Agriculture form 4 pg 170-174 Longhorn secondary Agriculture form 4 pg 140-144 Gateway Agriculture revision paper 2 page 114 Top Mark Series Agriculture Revision pg 174	
<b>9</b>	<b>1</b>	Agricultural Economics (V) Agricultural marketing and organization	Supply	By the end of the lesson, the learner should be able to Define supply State the law of supply Explain the factors influencing supply of a commodity	Definition of supply Explanation Stating the law of supply Illustration Note making Questioning and answering	Text book A local market Charts Tables Graphs	KLB secondary Agriculture form 4 pg 174-177 Longhorn secondary Agriculture form 4 pg 144-145 Gateway Agriculture revision paper 2 page 115	

							Top Mark Series Agriculture Revision pg 174-175	
	<b>2</b>	Agricultural Economics (V) Agricultural marketing and organization	Elasticity of Supply (ES)	By the end of the lesson, the learner should be able to Describe elasticity of supply	Description of elasticity of supply Explanation Illustration Note making Asking and answering questions	Text books A local market Tables Graph charts	KLB secondary Agriculture form 4 pg 177-178 Longhorn secondary Agriculture form 4 pg 145-149 Gateway Agriculture revision paper 2 page 115 Top Mark Series Agriculture Revision pg 17	
	<b>3 and 4</b>	Agricultural economics (V) Agricultural marketing and organization	Price Theory	By the end of the lesson, the learner should be able to Define the term price Discuss the determination of market prices	Definition of the term price Discussion of the market price determination Illustrations Note taking Questioning and answering	Text books A local market Tables graphs	KLB secondary Agriculture form 4 pg 178-179 Longhorn secondary Agriculture form 4 pg 149-150 Gateway Agriculture revision paper 2 page 115 Top Mark Series Agriculture Revision pg 175	
<b>10</b>	<b>1</b>	Agricultural Economics (V) Agricultural marketing and organization	Price control	By the end of the lesson, the learner should be able to Describe price control Illustrate the price control graphically	Description of price control Illustration of price control graphically Note taking Asking and answering questions	Text books A local market Tables Graphs charts	KLB secondary Agriculture form 4 pg 178-179 Longhorn secondary Agriculture form 4 pg 149-150 Gateway Agriculture revision paper 2 page 115 Top Mark Series Agriculture Revision pg 175	
	<b>2</b>	Agricultural Economics (V) Agricultural marketing and organization	Marketing Marketing functions	By the end of the lesson, the learner should be able to Define the term marketing Identify the meaning of the term marketing functions Discuss the various marketing functions	Discussion Defining marketing Explanations Illustration Note making Questioning and answering	Text books Charts A local market	KLB secondary Agriculture form 4 pg 186-189 Longhorn secondary Agriculture form 4 pg 153-156 Gateway Agriculture revision paper 2 page 116 Top Mark Series Agriculture	

							Revision pg 176	
<b>11</b>	<b>1</b>	Agricultural Economics (V) Agricultural marketing and organization	Agricultural organizations	By the end of the lesson, the learner should be able to Describe agricultural organizations List the various agricultural organizations List the functions of the various organizations	Description Listing the agricultural organization Listing functions of the organization Illustration Note taking Asking and answering questions	Text books Charts A local market	KLB secondary Agriculture form 4 pg 189-192 Longhorn secondary Agriculture form 4 pg 157-159 Gateway Agriculture revision paper 2 page 92-94 Top Mark Series Agriculture Revision pg 176	

	<b>2</b>	Agricultural Economics (V) Agricultural marketing and organization	Co-operative societies	By the end of the lesson, the learner should be able to Define a co-operative Describe the formation of a co-operative Outline the principles of co-operatives Give the types of co-operative societies State the functions of farmers co-operative societies	Defining a co-operative Description Outlining principles of a co-operative Giving types of co-operatives Stating the functions of a co-operative	Text books Local market Wall charts	KLB secondary Agriculture form 4 pg 192-195 Longhorn secondary Agriculture form 4 pg 159-162 Gateway Agriculture revision paper 2 page 117 Top Mark Series Agriculture Revision pg 176-177	
	<b>3 and 4</b>	Agricultural Economics (V) Agricultural marketing and organization	Association and unions	By the end of the lesson, the learner should be able to List the various agricultural union State the roles of agricultural unions	Listing the various unions Stating their roles Illustrations Asking and answering questions	Text books Farmers Magazines Wall charts	KLB secondary Agriculture form 4 pg 192-195 Longhorn secondary Agriculture form 4 pg 159-162 Gateway Agriculture revision paper 2 page 117 Top Mark Series Agriculture Revision pg 177	
<b>12</b>	<b>1</b>	Agroforestry	Forms of Agroforestry Importance of agroforestry	By the end of the lesson,, the learner should be able to Define agroforestry Describe the various forms of agroforestry State the importance of agroforestry	Definition of agroforestry Description Stating the importance of agroforestry Illustration Note taking Questioning and answering	Text books Specimen of fees and shrubs Charts Photos Agroforestry farm	KLB secondary Agriculture form 4 pg 200-203 Longhorn secondary Agriculture form 4 pg 166-168 Gateway Agriculture revision paper 2 page 139 Top Mark Series Agriculture Revision pg 22	
	<b>2</b>	Agroforestry	Tree nursery	By the end of the lesson, the learner should be able to List various types of tree nurseries Describe the various types of tree nurseries	Listing the types of nurseries Description Note making Illustration Asking and answering questions	Text books Nursery books Nursery beds Agroforestry farm Charts photos	KLB secondary Agriculture form 4 pg 203 Longhorn secondary Agriculture form 4 pg 168-170 Gateway Agriculture revision paper 2 page 100-101	

							Top Mark Series Agriculture Revision pg 23	
	<b>3 and 4</b>	Agroforestry	Nursery establishment and management	By the end of the lesson, the learner should be able to Discuss the establishment of tree nurseries Describe the management of tree nurseries	Discussion Description Illustration Note taking Asking and answering questions explanation	text books garden tools tree seedlings charts watering cans nursery beds	KLB secondary Agriculture form 4 pg 203  Longhorn secondary Agriculture form 4 pg 168-170  Gateway Agriculture revision paper 2 page 100-101  Top Mark Series Agriculture Revision pg 23	
<b>13</b>		<b>MID YEAR EXAMS</b>						
<b>14</b>		<b>PREPARATION OF REPORTS AND CLOSING</b>						

## AGRIC, F4, T3

**REFERENCES:** Longhorn Secondary Agriculture Book, Golden Tips KCSE Agriculture, Certificate Agriculture Book, KLB Top Mark Agriculture, KLB Secondary Agriculture, Teacher's Guide

W K	LS N	TOPIC	SUB-TOPIC	OBJECTIVES	L/ACTIVITIES	L/T AIDS	REFERENCE	REMARKS
1	1	Agroforestry	Care and management of trees Agroforestry practices	By the end of the lesson, the learner should be able to Discuss the various care and management of trees Discuss the various agroforestry practices	Discussion Explanation Illustration Asking and answering questions Note making	Text books Nursery beds Watering cans Garden tools Tree seedlings charts	KLB secondary Agriculture form 4 pg 208-212 Longhorn secondary Agriculture form 4 pg 174-175 Gateway Agriculture revision paper 2 page 143 Top Mark Series Agriculture Revision pg 25-26	

	2	Agroforestry	Sites for agroforestry trees Tree harvesting methods	By the end of the lesson, the learner should be able to Describe the sites for agroforestry trees Discuss the various tree harvesting methods	Description Discussion Note making Illustration Question and answers methods	Text books Nursery beds Watery cans Garden tools Tree seedlings Charts	KLB secondary Agriculture form 4 pg 212-217 Longhorn secondary Agriculture form 4 pg 176-179 Gateway Agriculture revision paper 2 page 144 Top Mark Series Agriculture Revision pg 26-27	
2 & 3		<b>TOPICAL EXAMS</b>						
4 & 5		<b>POST MOCK EXAMS</b>						
6 & 7		<b>REVISION AND PREPARATION FOR KCSE EXAMS</b>						
8		<b>KCSE EXAMS</b>						