



**DEPARTMENT OF EDUCATION  
ARTS AND SCIENCES SECTION  
AGRICULTURAL SCIENCE UNIT**

**NATIONAL PACING GUIDE  
AGRICULTURAL SCIENCE  
JUNIOR HIGH SCHOOL**

**GRADES 7-9**

**ACADEMIC YEAR 2023 – 2024**

**DEPARTMENT OF EDUCATION  
ARTS AND SCIENCE SECTION  
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GRADE 7**

<b>WEEK</b>	<b>TOPIC/CONCEPT</b>	<b>OBJECTIVE(S)</b>	<b>CURRICULUM LINK</b>	<b>TIME SPAN</b>	<b>ASSESSMENT</b>
<b>Week 1</b>	<b>WHAT IS AGRICULTURE?</b>	1. Define the term Agriculture.  State the origin of Agriculture and trace briefly the history of its development.	Agriculture Science for The Caribbean Ralph Persad bk.1  Junior Secondary Agriculture for The Caribbean. Bk1 Mohammed and L. Ferdinand.	2 Hours	Look around your home or school and collect three samples of food products obtained from (a) crops and (b) animals.  List some agro-based industries found in The Bahamas.
<b>Week 2</b>	<b>WHAT IS AGRICULTURE?</b>	2. List the branches of Agriculture.  List some careers in Agriculture.  Describe some major careers in agriculture.	Agricultural Science Bk 1. Longman  Agricultural Science Bk 3. Longman	2 Hours	Presentation - Name different careers in Agriculture and describe the type of work they do.
<b>Week 3</b>	<b>AGRICULTURE IN THE BAHAMAS</b>	Identify the main Agricultural producing Islands of The Bahamas.	Department of Agriculture	2 Hours	On a map of The Bahamas locate the main agricultural producing islands.

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<b>Week 3</b>	<b>AGRICULTURE IN THE BAHAMAS</b>	3. List the main crops grown and animals reared in each of the agricultural producing islands.	Department of Agriculture  The Bahamas Today-Neil Sealy  Making of The Bahamas-Cash , Maples and Packer	2 Hours	Draw a bar graph to compare the level of production of various crops and animals grown in the country.  Name some agricultural raw materials and list the manufactured products obtained from them
<b>Week 4</b>	<b>AGRICULTURE IN THE BAHAMAS</b>	State and explain the types of farming practiced in The Bahamas.	Department of Agriculture, BAMSII, Bahamas Agriculture Industrial Corporation.	2 Hour	Research the types of farming practiced in The Bahamas. Prepare a written, audio or visual presentation.
<b>Week 5</b>	<b>AGRICULTURE IN THE BAHAMAS</b>	4. Identify the economic importance of Agriculture to the economy of The Bahamas.	Department of Agriculture, BAMSII, Bahamas Agriculture Industrial Corporation.	1 Hour	List some Agriculture Industries in The Bahamas. Explain what they produce. State how they contribute to the GDP.
<b>Week 5</b>	<b>AGRICULTURE IN THE BAHAMAS</b>	<b>Unit Test</b>		1 Hour	

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<b>Week 6</b>	<b>TOOLS.</b>	1. Identify, select and use common carpentry tools.  2. Identify, select and use common garden tools.  3. Identify equipment used on small scale farms.	Agricultural Science for The Caribbean bk. 1	2 Hours	Perform simple tasks to demonstrate proper use tools.  Select tools for the appropriate task.
<b>Week 7</b>	<b>TOOLS</b>	4. Select equipment used on large scale farms.  5. Demonstrate care and safe use of farm tools	Agricultural Science for The Caribbean bk. 1	2 Hours	Perform simple tasks to demonstrate safe use and care of tools.
<b>Week 7</b>	<b>TOOLS</b>	<b>Unit Test</b>		1 Hour	

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<b>Week 8</b>	<b>SOIL SCIENCE</b>	1. Define "soil"  2. Describe the composition of soil  3. Describe the process of soil formation.	Junior Secondary Agriculture for The Caribbean bk. 1  Junior Tropical Agriculture bk. 2 Agricultural Science bk. 1  Caribbean Agriculture Science for The Caribbean bk. 1	2 Hours	Observe soil at various locations on schools compound.  Perform mechanical analysis of soil sample.  Observe an open trench. Record observations.
<b>Week 9</b>	<b>SOIL SCIENCE</b>	4. Define the term weathering  5. Differentiate between mechanical, chemical and biological weathering.	Junior Secondary Agriculture for the Caribbean bk. 1  Agricultural Science bk. 1	2 Hours	View a video that shows the different types of weathering. Create a chart to distinguish between the different types of weathering.
<b>Week 10 – Week 11</b>	<b>SOIL SCIENCE</b>	6.. Identify soil type to include sandy, clay, silt, loam  7. Define soil profile  8. Identify the characteristics of soil horizons.	Caribbean Agriculture Science for The Caribbean bk. 1	3 Hours	Project – Examine two soil profiles – one from a hilly area, the other from the plain. Make two diagrams to compare and contrast them. Present findings
<b>Week 11</b>	<b>SOIL SCIENCE</b>	<b>Unit Test</b>		1 Hour	

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<b>Week 12</b>	<b>INTRODUCTION TO PLANT SCIENCE</b>	<ol style="list-style-type: none"> <li>1. Draw and label the parts of a flowering plant.</li> <li>2. Describe the parts of a typical flowering plant.</li> <li>3. Differentiate between the shoot and root system.</li> </ol>	Agricultural Science for The Caribbean bk. 1 Ralph Persad	2 Hour	Observe flowering plants at school and at home. Create a chart to compare and contrast between plants.
<b>Week 13</b>	<b>INTRODUCTION TO PLANT SCIENCE</b>	<ol style="list-style-type: none"> <li>4. Identify the types of root systems and describe the structure and state the functions of roots.</li> </ol>	Junior Secondary Agriculture for The Caribbean I. Mohammed and I. Ferdinand.	2 Hours	<p>Collect root system of various plants (including grasses) and group them in a table.</p> <p>Germinate some bean or corn seeds between damp blotting paper in a dish. Look at the end of the root hairs. Draw a diagram of this section of the root and label it. Draw diagrams of the types of root systems.</p>

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<b>Week 14</b>	<b>INTRODUCTION TO PLANT SCIENCE</b>	5. Describe the structure and state the functions of stems.	Ralph Persad bk. 1	2 Hours	Make a fresh horizontal cut of a celery stick and allow the cut end to stand in a mixture of colored ink for 24 hours. Now cut along the stem and state your observations. Relate these to the functions of stems. Report findings.
<b>Week 15</b>	<b>INTRODUCTION TO PLANT SCIENCE</b>	6. Identify simple and compound leaves.  7. Describe the arrangement of leaves on a stem.	Agricultural Science Bk.1 Longman	2 Hours	Collect a variety of simple and compound leaves, press and mount them. Label those that are simple and those that are compound.

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<b>Week 16</b>	<b>INTRODUCTION TO PLANT SCIENCE (CONTINUE)</b>	8. Describe the structure and state the functions of leaves to include photosynthesis, transpiration, and gaseous exchange.	Agriculture Science for The Caribbean bk. 1 Ralph Persad  Junior Secondary Agriculture bk. 1	2 Hours	Perform an experiment to demonstrate transpiration. Complete a lab report.
<b>Week 17</b>	.	9. Describe the structure and state the functions of the flower.  10. Compare and contrast complete/perfect and unisexual flowers.	Agriculture Science for The Caribbean bk. 1  Junior Secondary Agriculture bk. 1	2 Hours	Collect a hibiscus or an okra flower. Observe it carefully and locate the sepals, the petals, the stamens and the carpels  Collect and observe unisexual flower.
<b>Week 18</b>		11. Describe the structure and state the importance of the fruit.  12. Identify the different types of fruits to include dehiscent, indehiscent, legumes, multiple fruit, dry fruit, fleshy fruit	Agriculture Science for The Caribbean bk. 1	2 Hours	Take a walk through your home or school garden and collect three specimens of each of the following. a. Dry fruits b. Juicy fruits c. Dehiscent fruits



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<b>Week 20</b>	<b>INTRODUCTION TO PLANT SCIENCE</b>	13. Describe the structure and state the functions of seeds.	Junior Secondary Agriculture for The Caribbean I. Mohammed and L. Ferdinand. Bk. 1  Junior Secondary Agriculture for The Caribbean bk. 1	2 Hour	Observation of parts of a bean seed. Soak some lima bean seeds in water for 12-15 hours. Remove their testa, split them open gently and observe.
<b>Week 21</b>	<b>INTRODUCTION TO PLANT SCIENCE</b>	14. Define germination.  15. Differentiate between hypogeal and epigeal germination  16. State the conditions necessary for germination.	Junior Secondary Agriculture for The Caribbean bk. 1	2 Hours	Perform experiment to show the conditions necessary for germination.
<b>Week 22</b>	<b>INTRODUCTION TO PLANT SCIENCE</b>	17. Identify the essential differences between monocots and dicots.	Junior Secondary Agriculture for The Caribbean bk. 1	1 Hour	In the form of a table list the differences between monocots and dicots.
<b>Week 23</b>	<b>INTRODUCTION TO PLANT SCIENCE</b>	<b>Unit Test</b>		1 Hour	

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<b>Week 24</b>	<b>ANIMAL SCIENCE</b>	<p>1. Identify the major groups of farm animals and the purposes for which they are reared.</p> <p>2. Name the type of farm animals within the major groups.</p>	Agricultural Science for The Caribbean bk. 1	2 Hours	<p>Visit a nearby livestock farm and make a list of animals reared on the farm.</p> <p>Prepare a presentation showing different breeds of cattle, pig, goat, sheep, poultry and rabbit,</p> <p>Visit a local supermarket and observe animal products. Document observation. Present findings</p>
<b>Week 25</b>	<b>ANIMAL SCIENCE</b>	<p>3. Identify the external parts of a rabbit.</p> <p>4. Identify the external parts of a chicken.</p>	Agricultural Science for The Caribbean bk. 1	2 Hours	Observe, draw and label a rabbit and chicken
<b>Week 26</b>	<b>ANIMAL SCIENCE</b>	5. State the function of the external part of the rabbit and chicken.	Agricultural Science for The Caribbean bk. 1	2 Hours	Observe a rabbit and a chicken and determine the function of four external parts.
<b>Week 26</b>	<b>ANIMAL SCIENCE</b>	<b>Unit Test</b>		1 Hour	

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<b>Week 27</b>	<b>CULTIVATION AND HARVESTING OF A FIELD CROP</b>	1. Describe how to prepare seed boxes and seed beds	Agricultural Science for The Caribbean bk. 1  <a href="https://youtu.be/YIYYkspARXs">https://youtu.be/YIYYkspARXs</a>  <a href="https://youtu.be/-8TgRilpXh4">https://youtu.be/-8TgRilpXh4</a>  <a href="https://youtu.be/aVmFR4iUVoY">https://youtu.be/aVmFR4iUVoY</a>	2 Hours	Construct and prepare a seed box for 20 seedlings. Give the inner dimensions of the box.  Prepare a seed bed
<b>Week 28</b>	<b>CULTIVATION AND HARVESTING OF A FIELD CROP</b>	1. Outline the operation and practices involved in field crop production.	Agricultural Science for The Caribbean bk. 1	2 Hours	Prepare a plot for reception of seedlings.  Give details of spacing and depth of sowing.

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<b>Week 29</b>	<b>CULTIVATION AND HARVESTING OF A FIELD CROP</b>	3. Select planting materials for propagating plants.	Agricultural Science bk. 1 Longman	2 Hours	Collect seeds of corn, bean, okra and cucumber from the school garden plot or from a nearby farmer. From the seeds collected.  <b>a.</b> select a dozen seeds from each type for use as propagating material  <b>b.</b> state the factors you considered in selecting the seeds  Visit a garden shop/plant nursery and list the names of three commercial types of fertilizers, insecticides and herbicides. Describe its components and use.
<b>Week 30 – Week 39</b>		4.Cultivate one of the following crops: corn, bean, okra, cucumber		Beans – 55-65 days Cucumbers 50 – 70 days Okra – 60 days Corn – 56 days	Outline and follow the steps to cultivate corn, bean, okra or cucumber crops. Journal each day.
<b>Week 30</b>	<b>CULTIVATION AND HARVESTING OF A FIELD CROP</b>	<b>Unit Test</b>		1 Hour	

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<b>Week 1</b>	<b>AGRICULTURE AS A BUSINESS</b>	1. Define the term business.  2. Describe the resources needed by all businesses to include land, materials, capital (inputs, capital, credit), labour, management, knowledge and skill	Agriculture Science for The Caribbean bk. 1 Ralph Persad	2 Hours	Record the factors of production for a school farm project. Choose a project. Record the following. <ul style="list-style-type: none"> <li>• Natural resources were used.</li> <li>• What types of skills did the workers need?</li> <li>• List the types of tools, equipment, crops, animals, and housing used.</li> <li>• What other inputs were used, if any?</li> <li>• Prepare a report.</li> </ul>
<b>Week 2</b>	<b>AGRICULTURE AS A BUSINESS</b>	3. Identify various agricultural business enterprises in the community.  4. Describe the different types of agricultural business to include primary production, marketing and manufacturing.	Agriculture Science for The Caribbean bk. 1 Ralph Persad	2 Hours	Make a list of agriculture enterprises in your community. Describe their primary production or product.

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<b>Week 3</b>	<b>AGRICULTURE AS A BUSINESS</b>	1. Describe the structure of an agricultural business.  2. Determine when a business is operating successfully.	Agriculture Science for The Caribbean bk. 1 Ralph Persad	2 Hours	Visit an agriculture business in your community. Describe <ul style="list-style-type: none"> <li>• What work is being done</li> <li>• What resources are needed to run it</li> <li>• What is the end product?</li> <li>• Who buys the end product?</li> </ul>
<b>Week 3</b>	<b>AGRICULTURE AS A BUSINESS</b>	Unit Test		1 Hour	

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<b>Week 4</b>	<b>SOIL SCIENCE</b>	1. List the agents of soil formation and explain their role.  2. Explain and list common soil types.	Agriculture Science for The Caribbean Ralph Persad bk. 1 and 2  Junior Secondary Agriculture for The Caribbean bk. 2 Mohammed and Ferdinand	3 Hours	Perform experiment to show action of acid on limestone. Observe and report findings  Identify soil types on the farm and the school compound. Report findings
<b>Week 5</b>	<b>SOIL SCIENCE</b>	3. Explain soil texture and soil structure.  4. Relate soil texture and soil type.  5. Relate soil porosity and permeability to soil texture and soil type.	Agriculture Science for The Caribbean Ralph Persad bk. 1 and 2  Junior Secondary Agriculture for The Caribbean bk. 2 Mohammed and Ferdinand	2 Hours	Feel different types of soil and identify soil based on size and feel of particles.  Perform an experiment to show soil permeability. Observe and report findings. Ralph Persad bk.2

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Week 6	<b>SOIL SCIENCE (CONTINUE)</b>	6. Perform an experiment to show particle size distribution in a soil.  7. State constituents of a garden soil sample (organic matter, humus, silt, clay, sand, inorganic)	Agriculture Science for The Caribbean bks. 1 and 2 Ralph Persad page 100  Junior Tropical Agriculture bk. 2  Junior Secondary Agriculture for The Caribbean bk. 1	2 Hours	Perform a mechanical analysis of soil samples. Record observation.  Observation of soil in school garden, home and community. Create a chart and record similarities and differences.
Week 7	<b>SOIL SCIENCE (CONTINUE)</b>	8. Identify various organisms found in the soil and state their importance.	Agricultural Science for The Caribbean bk. 1 page 99	2 Hours	Examine the living organisms in a shovel full of soil taken from an outdoor area that is damp, moist and high in organic matter. Record all organisms found.
Week 8	<b>SOIL SCIENCE (CONTINUE)</b>	9. Differentiate between macro and microorganisms.  10. Evaluate the importance of air and water as they relate to plant life to include respiration and germination.	Agricultural Science A course for secondary schools in the Caribbean bk. 3	2 Hours	Using the internet, Research micro and microorganisms. Explain and state the importance of each.
Week 8	<b>SOIL SCIENCE</b>	<b>Unit Test</b>		1 Hour	



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<b>Week 9</b>	<b>MANURES AND FERTILIZERS</b>	1. Define the term nutrient  2. Describe how the nutrient cycle works.  3. List macro and micro nutrients.  4. State the importance of macro nutrients.	Agriculture Science for The Caribbean bk. 2  Junior Secondary Agriculture for The Caribbean bk. 2	2 Hours	Draw and label the nutrient cycle
<b>Week 10</b>	<b>MANURES AND FERTILIZERS</b>	5. Differentiate between the terms organic and inorganic manures.  6. List the source of organic manure and state their importance to the soil	Junior Secondary Agriculture for The Caribbean bk. 2	3 Hours	Discussion. Complete worksheet.  Field trip to an animal husbandry farm. Compare sources of organic manure. Record findings.

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<b>Week 11 – Week 12</b>	<b>MANURES AND FERTILIZERS</b>	6. Describe types of organic manures.  7. Describe the process of composting.	Junior Secondary Agriculture for The Caribbean bk. 2  Mohammed and Ferdinand.  Agriculture Science for The Caribbean bk. 1	3 Hours  Composting Process – 6-8 weeks or more	Set up a compost heap. Collect compost material and run the three phase composting process. Explain how the compost manure different from the original materials that were composted.
<b>Week 13</b>	<b>MANURES AND FERTILIZERS</b>	8. Explain how protein compounds are broken down into nitrates.  9. Explain the importance of carbon and nitrogen cycles in nature.	Agriculture Science for The Caribbean bk. 2	2 Hours	Draw and label: • nitrogen cycle • carbon cycle
<b>Week 13</b>	<b>MANURES AND FERTILIZERS</b>	<b>Unit Test</b>		1 Hour	

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<b>Week 14</b>	<b>POULTRY</b>	<p>1. State the purposes for raising poultry (meat, eggs, fertilizer, and bio fuels).</p> <p>2. Identify some breeds of poultry.</p>	<p>Agriculture Science for The Caribbean bk. 1 page 79</p> <p>Junior Secondary Agriculture for The Caribbean bk. 1</p>	2 Hours	Use the internet to find coloured pictures of at least six breeds of chicken reared in the Caribbean. Download photos. Create a report on each breed including, name of breed, origin of breed, the purpose for which it is reared and the characteristics.
<b>Week 15</b>	<b>POULTRY</b>	<p>3. Identify signs of health and ill health in poultry.</p> <p>4. Explain how poultry should be managed and cared for.</p>		2 Hours	Watch a YouTube video on signs of poultry health and ill health. Document signs of health and ill health. Compare a healthy bird with an unhealthy bird.
<b>Week 16</b>	<b>POULTRY</b>	<p>5. Identify the alimentary canal of a chicken.</p> <p>6. Identify the simple structure of the reproductive system of a hen.</p>	<p>Caribbean Agricultural Science bk. 1 A.I. Henry</p> <p>Junior Secondary Agriculture for The Caribbean bk. 1</p>	3 Hours	<p>Draw and label the</p> <ul style="list-style-type: none"> <li>• Alimentary canal of a chicken.</li> <li>• Simple structure of the reproductive system of a hen.</li> </ul>

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<b>Week 17</b>	<b>POULTRY</b>	7. Identify the structure of an egg.  8. Select eggs for incubation . 9. Describe the process of candling eggs	Junior Secondary Agriculture for The Caribbean bk. 1  Agricultural Science for the Caribbean bk. 1  <a href="https://youtu.be/jxxATzmcGnI">https://youtu.be/jxxATzmcGnI</a>	3 Hours	Draw and label an egg  Perform experiment to show what happens to fertilized and unfertilized eggs during incubation.  Construct a candler
<b>Week 18</b>	<b>POULTRY</b>	10. Describe three different systems of poultry management (Intensive, semi intensive, extensive).  11. List the equipment required for rearing laying or broiler birds in a deep litter house.	Agricultural Science for the Caribbean bk. 1  Agricultural Science bk. 1	3 Hours	Draw diagram showing the different systems.
<b>Week 19</b>	<b>POULTRY</b>	12. Describe the process of artificial brooding of chicks.	<a href="https://www.livestocking.net/brooding-in-poultry-production">https://www.livestocking.net/brooding-in-poultry-production</a>  <a href="https://thepoultrypunch.com/2021/04/brooding-management-in-poultry/">https://thepoultrypunch.com/2021/04/brooding-management-in-poultry/</a>	2 Hours	Research and explain how to prepare a brooder for day-old chicks

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Week 20	<b>POULTRY</b>	13. Give the names of rations for chicks, broilers and layers and describe the composition of each (Ration, Starter, grower, finisher, protein, carbohydrates).	Agricultural Science for The Caribbean bk. 1  Junior Secondary Agriculture for The Caribbean bk. 1	2 Hours	Have students examine the different rations for further identification and differentiation. Record observations by using tables.
Week 21	<b>POULTRY</b>	14. Name common diseases and parasites of poultry.  15. List methods of controlling diseases and parasites in poultry.	Junior Secondary Agriculture for The Caribbean bk. 1	2 Hours	Create a table and identify 6 common diseases which affect poultry state the causative organism, symptom, how it is spread and how it is controlled.
Week 22	<b>POULTRY</b>	16. Raise a batch of layer or broiler birds using an intensive or extensive management system.	Junior Secondary Agriculture for The Caribbean bk. 1	Broilers – 6 weeks Layers – 6-20 weeks	Carry out a project rearing layers or broilers.
Week 22	<b>POULTRY</b>	<b>Unit Test</b>		1 Hour	

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<b>WEEK</b>	<b>TOPIC/CONCEPT</b>	<b>OBJECTIVES</b>	<b>CURRICULUM LINK</b>	<b>TIME SPAN</b>	<b>ASSESSMENT</b>
<b>Week 23</b>	<b>CROP PRODUCTION</b>	1. Outline the farm operation and practices involved in vegetable crop production.	Agriculture Science for The Caribbean bk. 2 Ralph Persad page 42  Agricultural Science bk. 2 Ian Elliott and Orville Wolsey.	3 Hours	Diagram a plan of a garden plot to scale. <ul style="list-style-type: none"> <li>• Draw types of vegetables you are growing on your plan.</li> <li>• Show correct spacing of the rows and in between rows.</li> <li>• Label the plan to show the names of the vegetables and spacing between.</li> </ul>
<b>Week 24</b>	<b>CROP PRODUCTION</b>	2. Explain and demonstrate land clearing and preparation.	Agricultural Science bk.1	2 Hours	Demonstrate the process of land clearing and preparation.  Create rows or prepare grow boxes for planting.
<b>Week 25</b>	<b>CROP PRODUCTION</b>	3. Describe the steps in planting a crop 4. Demonstrate direct planting, transplanting and planting of vegetative materials.	Agricultural Science bk.1	3 Hours	Plant various plant material using the steps in planting crops.

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<b>Week 26 – Week 34</b>	<b>CROP PRODUCTION</b>	5. Select planting materials for propagating.	Agricultural Science bk. 2 Ian Elliott and Orville Wolsey.	2 Hours	Select and prepare planting materials for sowing.
		6. Cultivate a vegetable crop.		30 – 70 days	Demonstrate steps to cultivate a vegetable crop.
<b>Week 26</b>	<b>CROP PRODUCTION</b>	<b>Unit Test</b>		1 Hour	

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<b>WEEK</b>	<b>TOPIC/CONCEPT</b>	<b>OBJECTIVES</b>	<b>CURRICULUM LINK</b>	<b>TIME SPAN</b>	<b>ASSESSMENT</b>
<b>Week 1</b>	<b>MANURE AND FERTILIZERS</b>	<p>1. Name the macro and micro elements essential for healthy plant growth and state their importance.</p> <p>2. Identify mineral deficiencies in plant growth according to the appearance of the plant and apply the appropriate minerals needed.</p>	<p>Agriculture Science for The Caribbean bk. 2 Ralph Persad page 84</p> <p>Caribbean Agricultural Science bk. 1 A. I. Henry</p>	3 Hours	<p>Set up experiment to show effects of various nutrient deficiencies in plants.</p> <p>Select two tomato plants. Feed one plant with clear water. Feed the other with sulphate of ammonia. Observe plants and record observations.</p>
<b>Week 2</b>	<b>MANURE AND FERTILIZERS</b>	<p>3. Define inorganic fertilizer.</p> <p>4. Name the types of inorganic fertilizer and identify the components.</p> <p>5. Give simple description of inorganic fertilizer</p>	Caribbean Agricultural Science bk. 1 A. I. Henry	2 Hours	<p>Complete a table and include:</p> <ul style="list-style-type: none"> <li>• Fertilizer</li> <li>• Examples</li> <li>• Sources of origin</li> <li>• How applied</li> <li>• Effects on soil or on plant growth.</li> </ul>



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<b>Week 3</b>	<b>MANURES AND FERTILIZERS</b>	<p>6. Describe the methods of fertilizer application in the soil.</p> <p>7. Explain how the applications of fertilizer in very strong concentration affect plants.</p>	Agriculture Science for the Caribbean bk. 2 Ralph Persad page 80-82	3 Hours	<p>Use sand where possible and demonstrate the different methods of fertilizer application</p> <p>Set up experiment using different amounts and kinds of fertilizer with a crop of your choice.</p>
<b>Week 4</b>	<b>MANURES AND FERTILIZERS</b>	<p>8. Trace the cycle of nitrogen in nature and state the importance of this element to healthy plant growth.</p> <p>9. Explain the importance of the nitrogen cycle to agriculture.</p>	<p>Caribbean Agricultural Science Bk.1 A.I. Henry</p> <p>Agriculture Science for the Caribbean bk. 2 Ralph Persad page 77-79</p> <p>Agriculture Science bk. 2</p>	2 Hours	<p>Draw and label the nitrogen cycle.</p> <p>Make a model of the nitrogen cycle in nature.</p>
<b>Week 4</b>	<b>MANURES AND FERTILIZERS</b>	<b>Unit Test</b>		1 Hour	

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<b>Week 5</b>	<b>SOIL pH</b>	1. Define soil pH. 2. State how the soil becomes acidic and alkaline. 3. Explain how soil acidity and alkalinity are measured.	Neutral, litmus, pH scale, effervescence, indicator, limestone  Agriculture Science for the Caribbean bk. 2 Ralph Persad page 95- 98	2 Hours	Perform experiment to test soil pH. Record observation. See Agricultural Science for The Caribbean bk. 2 page 98
<b>Week 6</b>	<b>SOIL pH</b>	4. Describe how soil acidity and soil alkalinity is corrected. 5. Explain how a high degree of soil acidity or alkalinity affect plant growth	Neutral, litmus, pH scale, effervescence, indicator, limestone  Agriculture Science for the Caribbean bk. 2 Ralph Persad page 95- 98	2 Hours	Perform experiment to correct soil acidity and soil alkalinity. Record observation. See Agricultural Science for The Caribbean bk. 2 page 98
<b>Week 6</b>	<b>SOIL pH</b>	Unit Test		1 Hour	

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<b>WEEK</b>	<b>TOPIC/CONCEPT</b>	<b>OBJECTIVES</b>	<b>CURRICULUM LINK</b>	<b>TIME SPAN</b>	<b>ASSESSMENT</b>
<b>Week 7</b>	<b>THE CONSERVATION AND MAINTENANCE OF SOIL AND SOIL WATER</b>	1. Define erosion and explain why erosion takes place more rapidly on hillsides than on low lands.  2. List the agents of erosion and the factors that contribute to erosion.  3. Name and describe types of soil erosion.	Agriculture science for The Caribbean bk. 2 Ralph Persad pg. 110  Longman Agricultural Science A course for Secondary Schools in the Caribbean bk. 3 pg. 76	2 Hours	Assess an area on the school grounds, your home or the community and record the signs of erosion listed below. Identify the area. <ul style="list-style-type: none"> <li>• Muddy water running over the ground after the rain.</li> <li>• Bare ground or sheet erosion.</li> <li>• Standing stones.</li> <li>• Uncovered roots</li> <li>• Walls splashed with mud.</li> </ul>
<b>Week 8</b>	<b>THE CONSERVATION AND MAINTENANCE OF SOIL AND SOIL WATER</b>	4. State the effects of erosion.  5. Identify techniques of conserving soil and water.  6. List the advantages of soil and water conservation.  7. Describe two soil conservation practices used on hillsides.	Longman Agricultural Science A course for Secondary Schools in the Caribbean bk. 3 pg. 76	3 Hours	Build a mound and demonstrate using water and air/wind to show how erosion occurs. Record observation.  Draw a diagram to illustrate strip cropping. Say how strip cropping helps to conserve soil and water on the hillside.  Match photos of problems caused by soil erosion to solutions.

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<b>Week 9</b>	<b>THE CONSERVATION AND MAINTENANCE OF SOIL AND SOIL WATER</b>	7. Explain the importance of water to agriculture.  8. Define irrigation.  9. List and explain methods of irrigation.	Agricultural Science bk.2  Agriculture Science for The Caribbean bk. 2 Ralph Persad	3 Hours	Build a model of an irrigation system
<b>Week 10</b>	<b>THE CONSERVATION AND MAINTENANCE OF SOIL AND SOIL WATER</b>	10. Select irrigation methods appropriate for: (a) crop type (b) soil type	Agriculture Science for The Caribbean bk. 2 Ralph Persad	2 Hours	Project - Set up a simple drip irrigation system on the school farm.
<b>Week 10</b>	<b>THE CONSERVATION AND MAINTENANCE OF SOIL AND SOIL WATER</b>	<b>Unit Test</b>		1 Hour	

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<b>Week 11</b>	<b>CLASSIFICATION</b>	1. Classify plants based on the length of time the plant takes to complete its life cycle.  2. Classify plants based on the growth habits and softness of their wood.	Caribbean Agricultural Science A. I. Henry bk. 1	2 Hours	1. Name some plants which grow on the school campus or on the schools farm and classify them under: a. trees b. shrubs c. herbs
<b>Week 12</b>	<b>CLASSIFICATION</b>	3. Classify plants based on the binomial system of nomenclature.  4. Classify plants based on monocot or dicot	Agricultural Science Bk. 1	2 Hours	Examine parts of the flowers, fruit and seeds to determine if they are dicot or monocot. Record findings
<b>Week 13</b>	<b>CLASSIFICATION</b>	3. Classify plants based on the part of the plant which is used as food.  4. Classify plants based on the nature and utility of the product.	Agricultural Science for the Caribbean bk.1	2 Hours	Collect specimens of foods in the following crop groups including cereals, pulses, starchy root crops and beverages.
<b>Week 13</b>	<b>CLASSIFICATION</b>	<b>Unit Test</b>		1 Hour	

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<b>WEEK</b>	<b>TOPIC/CONCEPT</b>	<b>OBJECTIVES</b>	<b>CURRICULUM LINK</b>	<b>TIME SPAN</b>	<b>ASSESSMENT</b>
<b>Week 14</b>	<b>CULTIVATION OF FRUIT TREES</b>	1. Identify and classify various fruit trees growing in The Bahamas.  2. Classify fruit trees as monocots and dicots.	Caribbean Agriculture Science bk. 2 A. I. Henry  Junior Secondary Agricultural for The Caribbean bk. 3 I. Mohammed L. Ferdinand	2 Hours	Group fruit trees as monocots or dicots.  Collect seeds of seasonal fruits, dry and propagate them.
<b>Week 15</b>	<b>CULTIVATION OF FRUIT TREES</b>	3. Describe various methods of propagating fruit trees including budding, grafting, air layering, stem cuttings and propagation by seed	Junior Secondary Agricultural for The Caribbean bk. 3 I. Mohammed L. Ferdinand	2 Hours	Prepare planting material for propagating a fruit tree
<b>Week 16</b>	<b>CULTIVATION OF FRUIT TREES</b>	4. Describe the methods of preparing land for the planting of fruit trees.	Junior Secondary Agricultural for The Caribbean bk. 3 I. Mohammed L. Ferdinand	2 Hours	Skill- Demonstrate the steps of preparing land for the planting of fruit trees.
<b>Week 17</b>	<b>CULTIVATION OF FRUIT TREES</b>	5. Describe the activities relating to the care of fruit trees from time of sowing to time of harvesting and marketing.	Junior Secondary Agricultural for The Caribbean bk. 3 I. Mohammed L. Ferdinand	2 Hours	Skill – Demonstrate the proper care of fruit trees on the school farm and at home.
	<b>CULTIVATION OF FRUIT TREES</b>	<b>Unit Test</b>		1 Hour	

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WEEK	TOPIC/CONCEPT	OBJECTIVES	CURRICULUM LINK	TIME SPAN	ASSESSMENT
Week 18 – Week 19	<b>ANIMAL SCIENCE</b>  <b>Rearing goat's sheep.</b> <b>(Ruminants)</b>	1. Name the products obtained from goats and sheep.  2. Identify some breeds of goats and sheep.  3. List the features associated with a few breeds of goats and sheep.  4. State the points that should be considered in selecting goats and sheep to be reared.	Junior Secondary Agriculture for The Caribbean bk. 2 I. Mohammed L. Ferdinand  Agricultural Science for The Caribbean bk. 2 Ralph Persad	4 Hours	Visit a livestock farm virtual or in person. Observe sheep and goats. Create a chart to answer the following; <ul style="list-style-type: none"> <li>• Animal</li> <li>• Breed</li> <li>• Purpose for which it is reared</li> <li>• Description of the animal.</li> </ul>

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<b>WEEK</b>	<b>TOPIC/CONCEPT</b>	<b>OBJECTIVES</b>	<b>CURRICULUM LINK</b>	<b>TIME SPAN</b>	<b>ASSESSMENT</b>
<b>Week 20</b>	<b>REARING GOATS AND SHEEP. (RUMINANTS)</b>	5. Describe the systems of management under which goats and sheep are reared.	Junior Secondary Agriculture for The Caribbean bk. 2 I. Mohammed L. Ferdinand  Agricultural Science for The Caribbean bk. 2 Ralph Persad	2 Hours	Visit various farms with a herd of goats or sheep. Observe and take notes about the management systems. Record observation.
<b>Week 21 – Week 22</b>	<b>REARING GOATS AND SHEEP. (RUMINANTS)</b>	6. Describe the care and management of breeding bucks and rams.  7. describe the care and management of the kids and lambs from birth to weaning time,	Agricultural Science for The Caribbean bk. 2 Ralph Persad	4 Hours	Small groups of students are given the responsibility of caring for animals on school farm. Each group should carry out the following care and sanitation practices.  a. feeding b. watering c. general care and grooming d. cleaning of the animals and their housing. e. keeping records



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<b>WEEK</b>	<b>TOPIC/CONCEPT</b>	<b>OBJECTIVES</b>	<b>CURRICULUM LINK</b>	<b>TIME SPAN</b>	<b>ASSESSMENT</b>
<b>Week 23</b>	<b>REARING GOATS AND SHEEP. (RUMINANTS)</b>	<p>8. Identify some fodder grasses and rations suitable as feeds for goats and sheep.</p> <p>9. State the relationship between an animal's stomach and the type of food consumed.</p>	<p>Junior Secondary Agriculture for The Caribbean bk. 2 I. Mohammed, L. Ferdinand</p>	2 Hours	<p>Identify plant material consumed by animals.</p> <p>Collection and preservation of grasses.</p>
<b>Week 24</b>		<p>10. Describe the process of digestion in the ruminant stomach.</p>	<p>Junior Secondary Agriculture for The Caribbean bk. 2 I. Mohammed, L. Ferdinand</p>	2 Hours	<p>Make a diagram of the complex stomach of a goat or sheep and label the parts.</p> <p>Field trip to the abattoir. Report observations.</p>

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<b>WEEK</b>	<b>TOPIC/CONCEPT</b>	<b>OBJECTIVES</b>	<b>CURRICULUM LINK</b>	<b>TIME SPAN</b>	<b>ASSESSMENT</b>
<b>Week 25</b>	<b>REARING GOATS AND SHEEP. (RUMINANTS)</b>	<p>11. List some common pests and diseases of goats and sheep.</p> <p>12. State some preventative and control measures of pests and diseases in goats and sheep.</p>	<p>Agricultural Science for the Caribbean Ralph Persad bk. 2</p> <p>Agricultural Science A Junior Secondary Course for the Caribbean Ian Elliot and Orville Wolsey bk. 2</p>	2 Hours	<p>Research common diseases of sheep and goat. Complete a report.</p> <p>Interview a sheep or goat farmer on preventative measures and controlling pests and diseases. Complete report.</p>
<b>Week 26 – Week 27</b>	<b>REARING GOATS AND SHEEP. (RUMINANTS)</b>	13. List steps involved in slaughtering and marketing of goat and sheep.	Junior Secondary Agriculture for The Caribbean bk. 3	4 Hours	<p>Calculate killing percentage.</p> <p>Visit the meat section of a grocery store and identify various cuts of meat. Observe the butcher cutting meat. Take photos and record observation.</p>
<b>Week 27</b>	<b>REARING GOATS AND SHEEP. (RUMINANTS)</b>	<b>Unit Test</b>		1 Hour	

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<b>WEEK</b>	<b>TOPIC/CONCEPT</b>	<b>OBJECTIVES</b>	<b>CURRICULUM LINK</b>	<b>TIME SPAN</b>	<b>ASSESSMENT</b>
Week 28	<b>(REARING PIGS)</b>	1. State the economic importance of the pork industry to The Bahamas.  2. State the comparative advantages of rearing pigs.  3. Name the products obtained from pigs.	Junior Secondary Agriculture for the Caribbean bk. 1 and 2 I. Mohammed, L. Ferdinand  Agricultural Science for the Caribbean Ralph Persad bk. 3	2 Hours	Research the economic importance of the pork industry in The Bahamas. Write a report.

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<b>WEEK</b>	<b>TOPIC/CONCEPT</b>	<b>OBJECTIVES</b>	<b>CURRICULUM LINK</b>	<b>TIME SPAN</b>	<b>ASSESSMENT</b>
<b>Week 29 – Week 30</b>	<b>(REARING PIGS)</b>	5. Identify some breeds of pigs.  6. List the features associated with a few breeds of pigs.  7. Identify the external features of pigs.  8. State the points that should be considered in selecting pigs for breeding.	Junior Secondary Agriculture for the Caribbean bk. 1 and 2 I. Mohammed, L. Ferdinand  Agricultural Science for the Caribbean Ralph Persad bk. 3	<b>4 Hours</b>	Visit a nearby farm or a virtual farm visit. Identify the different breeds on the farm. State the characteristics features of breeds of pigs identified. Report observation.  Draw and label the body parts of a pig.

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WEEK	TOPIC/CONCEPT	OBJECTIVES	CURRICULUM LINK	TIME SPAN	ASSESSMENT
Week 31 – Week 32	<b>REARING PIGS</b>	8. Describe the systems of management under which pigs are reared.  9. List further, materials and rations fed to pigs.  10. Describe the care and management of sows during pregnancy.	Junior Secondary Agriculture for the Caribbean bk. 1 and 2 I. Mohammed, L. Ferdinand  Agricultural Science for the Caribbean Ralph Persad bk. 3	4 Hours	Visit commercial enterprise to see intensive and extensive systems of pig management. Record observations. Create a report.  Collect and label specimen of succulent fodder material and rations fed to pigs.  Skill - Small groups of student are given responsibility for some pigs on school farm. This will include: a. feeding b. watering c. sanitation

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<b>WEEK</b>	<b>TOPIC/CONCEPT</b>	<b>OBJECTIVES</b>	<b>CURRICULUM LINK</b>	<b>TIME SPAN</b>	<b>ASSESSMENT</b>
<b>Week 33</b>	<b>REARING PIGS</b>	11. Describe the care and management of breeding boars.  12. Name five pests and diseases of pigs and state measures necessary to control them.	Junior Secondary Agriculture for the Caribbean bk. 1 and 2 I. Mohammed, L. Ferdinand  Agricultural Science for the Caribbean Ralph Persad bk. 3	2 Hours	Survey sheep or goat farmers on preventative measures and controlling pests and diseases. Complete report.
<b>Week 34</b>	<b>REARING PIGS</b>	13. List the steps involved in slaughtering pigs	Agricultural Science for the Caribbean Ralph Persad bk. 3	2 Hours	Calculate killing percentage and identify cuts of meat  Visit the Abattoir and observe a pig being slaughtered. Record observations.
<b>Week 34</b>	<b>REARING PIGS</b>	<b>Unit Test</b>		1 Hour	

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<b>WEEK</b>	<b>TOPIC/CONCEPT</b>	<b>OBJECTIVES</b>	<b>CURRICULUM LINK</b>	<b>TIME SPAN</b>	<b>ASSESSMENT</b>
<b>Week 35 – Week 36</b>	<b>CROP PRODUCTION</b>	Outline operations and practices involved in field crop and citrus production to include; a. land preparation b. selection of planting materials	Junior secondary Agriculture for The Caribbean bk. 3 I. Mohammed and L Ferdinand	4 Hours	Visit a local farm to observe the cultural practices involved in field crop and citrus production. Report observation.  Demonstrate steps of land preparation for citrus and field crop production.  Identify and elect suitable planting materials for citrus and field crop production.
<b>Week 37</b>	<b>CROP PRODUCTION</b>	Outline operations and practices involved in field crop and citrus production to include c. planting and spacing d. soil fertility	Junior secondary Agriculture for The Caribbean bk. 3 I. Mohammed and L Ferdinand  Agricultural Science for The Caribbean bk. 1 Ralph Persad	50 – 70 days	Propagate a citrus plant.  Propagate a field crop.

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<b>Week 38</b>	<b>CROP PRODUCTION</b>	Outline operations and practices involved in field crop and citrus production to include. e. weed control f. pests and diseases g. harvesting and marketing	Junior secondary Agriculture for The Caribbean bk. 3 I. Mohammed and L Ferdinand  Agricultural Science for The Caribbean bk. 1 Ralph Persad	2 Hours	Visit a packing house to observe sorting, grading, packaging and storing. Report observation
<b>Week 38</b>	<b>CROP PRODUCTION</b>	<b>Unit Test</b>		1 Hour	