

**Winslow Township School District  
Greenhouse Curriculum - Grade 7  
Unit 1**

Overview	Next Generation Science Standards	Unit Focus	Engineer and Design Process
<b>Unit 1</b> Introduction to Greenhouse Crop Production	<ul style="list-style-type: none"> <li>MS-LS1-4</li> <li>MS-LS1-6</li> <li>MS-LS1-7</li> <li>MS-PS1-2</li> </ul>	<ul style="list-style-type: none"> <li>Investigate the historical and cultural significance of greenhouses.</li> <li>Understand specific safety procedures for student conduct, laboratory equipment and chemicals.</li> <li>Recognize and use appropriate tools and equipment when working in the greenhouse.</li> <li>Differentiate between the four main categories of greenhouse structure.</li> <li>Compare and contrast the structure and function of each part of the plant.</li> <li>Convert, measure, calculate, record and analyze data to monitor the conditions of the greenhouse.</li> </ul>	<ul style="list-style-type: none"> <li>MS-ETS1-1</li> <li>MS-ETS1-2</li> <li>MS-ETS1-3</li> <li>MS-ETS1-4</li> </ul>
<b>Unit 1:</b> Suggested Open Educational Resources	<b>NJSLA Mathematics Standards</b> <ul style="list-style-type: none"> <li>7.SP.1</li> <li>7.SP.2</li> <li>7.G.1</li> <li>7.G.6</li> </ul>	<b>NJSLA English Language Arts Standards</b> <ul style="list-style-type: none"> <li>R.7.1</li> <li>W.7.2</li> <li>W.7.4</li> <li>W.7.6</li> <li>SL.7.1</li> <li>SL.7.2</li> <li>SL.7.5</li> </ul>	

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Unit 1	Standards		Pacing	
			Days	Unit Days
<b>Unit 1</b> Introduction to Greenhouse Crop Production	MS-LS1-4	Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.	13	45
	MS-LS1-6	Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.	13	
	MS-LS1-7	Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.	7	
	MS-PS1-2	Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.	6	
	Assessment, Re-teach and Extension		6	

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Content Standards	Suggested Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<b>MS-LS1-4</b> <i>Use <u>argument</u> based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful.</i>	Engaging in Argument from Evidence	<ul style="list-style-type: none"> <li>LS1.B: Growth and Development of Organisms</li> <li>LS1.C: Organization for Matter and Energy Flow in Organisms</li> </ul>	<ul style="list-style-type: none"> <li>Cause and effect</li> <li>Patterns</li> <li>Energy and Matter</li> </ul>
<b>MS-LS1-6</b> <i>Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.</i>	Analyzing and Interpreting Data	<ul style="list-style-type: none"> <li>LS1.B: Growth and Development of Organisms</li> <li>LS1.C: Organization for Matter and Energy Flow in Organisms</li> </ul>	<ul style="list-style-type: none"> <li>Cause and effect</li> <li>Patterns</li> <li>Energy and Matter</li> </ul>
<b>MS-LS1-7</b> <i>Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an</i>	Constructing Explanations and Designing Solutions	<ul style="list-style-type: none"> <li>LS1.B: Growth and Development of Organisms</li> <li>LS1.C: Organization for Matter and Energy Flow in Organisms</li> </ul>	<ul style="list-style-type: none"> <li>Cause and effect</li> <li>Patterns</li> <li>Energy and Matter</li> </ul>

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<b>MS-PS1-2</b> <i>Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.</i>	Developing and Using Models	<ul style="list-style-type: none"> <li>PS1.B: Chemical Reactions</li> </ul>	<ul style="list-style-type: none"> <li>Cause and effect</li> <li>Patterns</li> <li>Energy and Matter</li> </ul>
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Unit 1 Grade 7	
School/District Formative Assessment Plan	School/District Summative Assessment Plan
Pre-Assessment Quizzes Daily Monitoring Performance Tasks Blogging Rubrics	Unit Benchmark End of Year Project
Instructional Best Practices and Exemplars	Technology Integration
1. Identifying similarities and differences 2. Summarizing and note taking 3. Reinforcing effort and providing recognition 4. Nonlinguistic representations 5. Reflection 6. Cooperative learning 7. Setting objectives and providing feedback 8. Generating and testing hypotheses 9. Cues, questions, and advance organizers 10. Rubric evaluation based on performance	<a href="#">Greenhouse Equipment</a> <a href="#">Greenhouse Equipment (2)</a> <a href="#">Introduction to Tech Integration</a>

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Vocabulary		21 <sup>st</sup> Century Life and Careers Standards	
Agriculture	Respiration	<b>Career Ready Practices:</b>	<input type="checkbox"/> CRP7: Employ valid and reliable research strategies.
Horticulture	Absorption	<input type="checkbox"/> CRP1: Act as a responsible and contributing citizen and employee.	<input type="checkbox"/> CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.
Floriculture	Translocation	<input type="checkbox"/> CRP2: Apply appropriate academic and technical skills.	<input type="checkbox"/> CRP9: Model integrity, ethical leadership and effective management.
Geoponics	Transpiration	<input type="checkbox"/> CRP3: <u>Attend to personal</u> health and financial well-being.	<input type="checkbox"/> CRP10: Plan education and career paths aligned to personal goals.
Greenhouse Types	Phototropism	<input type="checkbox"/> CRP4: Communicate clearly and effectively and with reason.	<input type="checkbox"/> CRP11: Use technology to enhance productivity.
Temperature Control Systems	Pollination	<input type="checkbox"/> CRP5: Consider the environmental, social and economic impacts of decisions.	<input type="checkbox"/> CRP12: Work productively in teams while using cultural global competence.
Relative Humidity	Plant Parts	<input type="checkbox"/> CRP6: Demonstrate creativity and innovation.	
Nursery	Chlorophyll		
Landscape	Foliage		
Material Safety Data Sheet (MSDS/SDS)	Ornamental		
Fertilizer	Hardiness		
Aquaponics	Germination		
Metric System	Dormancy		
Standard System	Transplanting		
Lighting	Perennials		
Irrigation	Annuals		
Ventilation	Engineering Design Process (EDP)		
Humidity	Thumbnail Sketch		
Photosynthesis	Orthographic Sketch		
<b>9.1 Personal Financial Literacy - Income And Careers &amp; 9.2 Career Awareness, Exploration, And Preparation - Career Awareness</b>			
9.1.8.A.4 Relate earning power to quality of life across cultures.			
9.1.8.B.6 Evaluate the relationship of cultural traditions and historical influences on financial practice.			
The implementation of the 21st Century skills and standards for students of the Winslow Township District is infused in an interdisciplinary format in a variety of curriculum areas that include, English Language Arts, Mathematics, School Guidance, Social Studies, Technology, Visual and Performing Arts, Science, Physical Education and Health, and World Language.			

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Suggested Modifications for Special Education	Suggested Modifications for At-Risk Students
<input type="checkbox"/> Modify activities/assignments/projects/assessments <input type="checkbox"/> Breakdown activities/assignments/projects/assessments into manageable units <input type="checkbox"/> Additional time to complete activities/assignments/projects/assessments <input type="checkbox"/> Provide an option for alternative activities/assignments/projects/assessments <input type="checkbox"/> Modify Content <input type="checkbox"/> Modify Amount <input type="checkbox"/> Small Group Intervention/Remediation <input type="checkbox"/> Individual Intervention/Remediation <input type="checkbox"/> Additional Support Materials <input type="checkbox"/> Guided Notes <input type="checkbox"/> Graphic Organizers <input type="checkbox"/> Adjust Pacing of Content	<input type="checkbox"/> Modify activities/assignments/projects/assessments <input type="checkbox"/> Breakdown activities/assignments/projects/assessments into manageable units <input type="checkbox"/> Additional time to complete activities/assignments/projects/assessments <input type="checkbox"/> Provide an option for alternative activities/assignments/projects/assessments <input type="checkbox"/> Modify Content <input type="checkbox"/> Modify Amount <input type="checkbox"/> Adjust Pacing of Content <input type="checkbox"/> Small Group Intervention/Remediation <input type="checkbox"/> Individual Intervention/Remediation <input type="checkbox"/> Additional Support Materials <input type="checkbox"/> Guided Notes <input type="checkbox"/> Graphic Organizers
English Language Learners	Suggested Modifications for Gifted Students
All WIDA Can Do Descriptors can be found at this link: <a href="https://www.wida.us/standards/CAN_DOs/">https://www.wida.us/standards/CAN_DOs/</a> <input type="checkbox"/> Grades 6-8 WIDA Can Do Descriptors: <input type="checkbox"/> Listening <input type="checkbox"/> Speaking <input type="checkbox"/> Reading <input type="checkbox"/> Writing <input type="checkbox"/> Oral Language	<input type="checkbox"/> Modify activities/assignments/projects/assessments <input type="checkbox"/> Provide an option for alternative activities/assignments/projects/assessments <input type="checkbox"/> Modify Content <input type="checkbox"/> Adjust Pacing of Content <input type="checkbox"/> Small Group Enrichment <input type="checkbox"/> Individual Enrichment <input type="checkbox"/> Higher-Level Text
Suggested Activities	Interdisciplinary Connections
<input type="checkbox"/> Whole Group <input type="checkbox"/> Small Groups <input type="checkbox"/> Guided Practice	<a href="#">Sustainability</a> <a href="#">Health and Nutrition</a>

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| <input type="checkbox"/> Work Stations<br><input type="checkbox"/> Intervention/Remediation<br><input type="checkbox"/> Projects |  |
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