

Greenhouse Curriculum – Grade 7 Overview

Overview	Next Generation Science Standards	Unit Focus	Engineer and Design Process
Unit 1 Introduction to Greenhouse Crop Production	<ul style="list-style-type: none"> MS-LS1-4 MS-LS1-6 MS-LS1-7 MS-PS1-2 	<ul style="list-style-type: none"> Investigate the historical and cultural significance of greenhouses. Understand specific safety procedures for student conduct, laboratory equipment and chemicals. Recognize and use appropriate tools and equipment when working in the greenhouse. Differentiate between the four main categories of greenhouse structure. Compare and contrast the structure and function of each part of the plant. 	<ul style="list-style-type: none"> Define the problem. Do Background Research Specify Requirements Brainstorm, evaluate and choose solution Develop and Prototype solutions Test Solution Communicate Results <pre> graph TD A[Define the Problem] --> B[Do Background Research] B --> C[Specify Requirements] C --> D[Brainstorm, Evaluate, and Choose Solution] D --> E[Develop and Prototype Solution] E --> F[Test Solution] F --> G[Solution Meets Requirements] F --> H[Solution Meets Requirements Partially or Not at All] H --> I[Communicate Results] F --> J["Based on results and data, make design changes, prototype, test again, and review new data."] J --> D </pre>
Unit 1: Suggested Open Educational Resources			
Overview	Next Generation Science Standards	Unit Focus	
Unit 2 Biodiversity	<ul style="list-style-type: none"> MS-LS1-4 MS-LS2-2 MS-LS2-3 MS-LS2-5 	<ul style="list-style-type: none"> Connect biodiversity and its role in the overall health of the planet. Investigate the native biodiversity of the school and surrounding community. Classify key aspects of local habitats and the local ecosystem that promote biodiversity. Connect human actions and the level of biological diversity found within a habitat and/ or ecosystems. Assess and <u>improve</u> the biodiversity on school grounds. Cite evidence to provide information regarding the benefits of a biologically diverse ecosystem and 	

		communicate this information to students, families and the community.	
Unit 2: Suggested Open Educational Resources			
Overview	Next Generation Science Standards	Unit Focus	Engineer and Design Process
Unit 3: Growing Medium and Environment	<ul style="list-style-type: none"> MS-PS1-2 MS-LS1-4 MS-LS1-7 MS-LS2-5 	<ul style="list-style-type: none"> Create a soil mixture that promotes growth of a specific species of plant. Categorize the micro and macro nutrients in various types of soil. Compare and Contrast the various non traditional; methods of growing and determine which plants do better in certain environments. Construct a container suitable for vermicomposting. 	<ol style="list-style-type: none"> 1) Define the problem. 2) Do Background Research 3) Specify Requirements 4) Brainstorm, evaluate and choose solution 5) Develop and Prototype solutions 6) Test Solution
Unit 3: Suggested Open Educational Resources			
Overview	Next Generation Science Standards	Unit Focus	
Unit 4: Greenhouse Management	<ul style="list-style-type: none"> MS-LS1-4 MS-LS1-6 MS-LS2-3 MS-LS2-4 MS-LS4-5 	<ul style="list-style-type: none"> Apply concepts learned to harvest various plant species for greenhouse crop production. Research and identify a soil mixture that is suitable for growing. Measure and determine appropriate amounts of fertilizer to use with various plants. 	

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Overview

Header

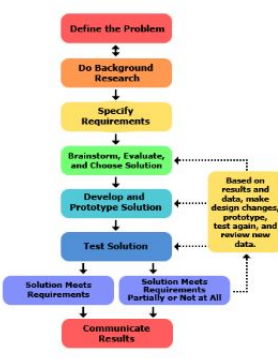
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Unit 1 Introduction to Greenhouse Crop Production	<ul style="list-style-type: none"> MS-LS1-4 MS-LS1-6 MS-LS1-7 MS-PS1-2 MS-ETS1-1 MS-ETS1-2 MS-ETS1-3 MS-ETS1-4 	<ul style="list-style-type: none"> Investigate the historical and cultural significance of greenhouses. Understand specific safety procedures for student conduct, laboratory equipment and chemicals. Recognize and use appropriate tools and equipment when working in the greenhouse. Differentiate between the four main categories of greenhouse structure. Compare and contrast the structure and function of each part of the plant. 	<ul style="list-style-type: none"> Define the problem. Do Background Research Specify Requirements Brainstorm, evaluate and choose solution Develop and Prototype solutions Test Solution Communicate Results
Unit 1: Suggested Open Educational Resources			
Overview	Next Generation Science Standards	Unit Focus	
Unit 2 Floral Design/ Business Practice	<ul style="list-style-type: none"> MS-LS1-4 MS-LS2-2 MS-LS2-3 MS-LS2-5 	<ul style="list-style-type: none"> Design a floral arrangement that is both aesthetically pleasing and practical. Apply mathematical concepts to model a successful business. Explain the cultural and historical significance of floral design. Identify equipment used for floral design and explain its function. Determine appropriate pricing for various floral arrangements. Utilize various plants from the greenhouse to advertise a design. 	<pre> graph TD A[Define the Problem] --> B[Do Background Research] B --> C[Specify Requirements] C --> D[Brainstorm, Evaluate, and Choose Solution] D --> E[Develop and Prototype Solution] E --> F[Test Solution] F --> G[Solution Meets Requirements] F --> H[Solution Meets Requirements Partially or Not at All] H --> I[Communicate Results] F -- "Based on results and data, make design changes, prototype, test again, and review new data." --> E </pre>

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Unit 2: Suggested Open Educational Resources			
Overview	Next Generation Science Standards	Unit Focus	Engineer and Design Process
Unit 3: Business Practice	<ul style="list-style-type: none"> MS-PS1-2 MS-LS1-4 MS-LS1-7 MS-LS2-5 	<ul style="list-style-type: none"> Apply concepts learned to clone various plant species. Create a soil mixture that is suitable for growing. Measure and determine appropriate amounts of fertilizer to use with various plants. Complete an application for employment in an agricultural career. Analyze various components of landscape design to be utilized for end of year project. . 	<ol style="list-style-type: none"> 1) Define the problem. 2) Do Background Research 3) Specify Requirements 4) Brainstorm, evaluate and choose solution 5) Develop and Prototype solutions 6) Test Solution 7) Communicate Results
Unit 3: Suggested Open Educational Resources			
Overview	Next Generation Science Standards	Unit Focus	
Unit 4 STEAM Tank/Innovative Project	<ul style="list-style-type: none"> MS-LS1-4 MS-LS1-6 MS-LS2-3 MS-LS2-4 MS-LS4-5 	<ul style="list-style-type: none"> Create a project design that is effective and convincing. Design a project that is innovative and can explain all parts of the process from start to finish. Apply concepts learned to demonstrate an understanding of course material. 	
Unit 4:			

Suggested Open Educational Resources		 <pre> graph TD A[Define the Problem] --> B[Do Background Research] B --> C[Specify Requirements] C --> D[Brainstorm, Evaluate, and Choose Solution] D --> E[Develop and Prototype Solution] E --> F[Test Solution] F --> G[Solution Meets Requirements] F --> H[Solution Meets Requirements Partially or Not at All] H --> I[Communicate Results] H -.-> D H -.-> F J[Based on results and data, make design changes, prototype, test again, and review new data.] -.-> E J -.-> F </pre> <p>7) Communicate Results</p>
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