

## Greenhouse Operation and Management Crosswalk

A crosswalk provides educators with a list of benchmark statements aligned to Common Core and national content area standards for a given course or program. The Missouri Greenhouse Operation and Management Crosswalk lists a sequence of content, organized into distinct units of instruction.

	Common Core Standards	National Standards (AFNR)	Activities	Enhancements
<b>A. Greenhouse Business Management</b>				
1. Plan a commercial crop.	RI.11-12.7 RH.11-12.7 RST.11-12.3 RST.11-12.9 A-SSE.3 Modeling			
2. Develop a basic marketing plan.	RI.11-12.7 RH.11-12.7 RST.11-12.9 WHST.11-12.2 A-SSE.3 Modeling			
3. Unit: Apply principles of greenhouse business management by generating a cost analysis and marketing plan for a greenhouse.	RI.11-12.7 RH.11-12.7 RST.11-12.9 WHST.11-12.2 A-SSE.3 Modeling			
<b>B. Growing Structures</b>				
1. Distinguish types of greenhouses by materials, structures, and layout.	RI.11-12.7 RH.11-12.7 RST.11-12.9 RI.11-12.3 A-SSE.3 Modeling			
2. Describe how environmental factors in a	RI.11-12.7			

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greenhouse are controlled.	RH.11-12.7 RST.11-12.9 RI.11-12.3 SL.11-12.4 A-SSE.3 Modeling			
3. Identify energy and cost-saving factors in greenhouse structures.	RI.11-12.7 RH.11-12.7 RST.11-12.9 RI.11-12.3 A-SSE.3 Modeling			
4. Unit: Demonstrate an understanding of greenhouse structures by making a scale model greenhouse and providing specifics on the materials and costs involved.	RI.11-12.7 RH.11-12.7 RST.11-12.9 RI.11-12.3 SL.11-12.4 A-SSE.3 Modeling			
<b>C. Plant Growth</b>				
1. Describe environment necessary for optimal plant growth.	SL.11-12.1 SL.11-12.4			
2. Distinguish components of growing media, their uses, and basic types and sizes of containers.	RI.11-12.7 RH.11-12.7 RST.11-12.9			
3. Explain factors involved in proper greenhouse irrigation.	SL.11-12.4			
4. Identify nutrients essential for plant growth and development and signs of deficiency or toxicity.	RI.11-12.7 RH.11-12.7 RST.11-12.9			
5. Identify the need for fertilizer.	SL.11-12.1 RH.11-12.7 RST.11-12.9			
6. Unit: Demonstrate an understanding of the basic plant processes of germination and photosynthesis by conducting a seed	RI.11-12.7 RH.11-12.7 RST.11-12.9			

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germination experiment and writing a summary of their findings.	RST.11-12.2 W.11-12.7 8.SP.1 A-REI.4			
<b>D. Plant Health</b>				
1. Identify pests and diseases in the greenhouse and factors that contribute to their presence.	RST.11-12.9			
2. Differentiate between various pest management methods.	RST.11-12.1 RST.11-12.4 RST.11-12.7			
3. Explain safe usage and application of pesticides.	RST.11-12.1 RST.11-12.4 RST.11-12.7 SL.11-12.4 A-REI.4 G-MG.2			
4. Unit: Demonstrate an understanding of a plant pest and disease by writing a report on each that describes the pest and disease and identifies the control method.	RST.11-12.1 RST.11-12.4 RST.11-12.7 SL.11-12.4 W.11-12.2			
<b>E. Plant Propagation</b>				
1. Demonstrate the correct method for sexual propagation in the greenhouse environment.	SL.11-12.4			
2. Differentiate between various types of asexual propagation procedures.	RST.11-12.9			
3. Unit: Apply principles of plant propagation by properly propagating a plant and describing the process in written form.	W.11-12.2 RST.11-12.3 RST.11-12.9			
<b>F. Plant Science Basics</b>				
1. Distinguish plant parts, structures, and functions.	SL.11-12.2			
2. Identify the growth processes of a plant.	SL.11-12.2			

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3. Distinguish plants by characteristics and purpose.	SL.11-12.2			
4. Unit: Demonstrate an understanding of plant science by creating a plant collection in which plants will be identified and labeled as to the type of root, leaf shape, leaf margin, leaf attachment, and venation.	SL.11-12.1.d SL.11-12.2 SL.11-12.4 SL.11-12.6 RST.11-12.9			
<b>G. The Greenhouse Industry</b>				
1. Identify the scope and development of the greenhouse industry.	RI.11-12.1 RI.11-12.2 RI.11-12.3			
2. Outline career paths and SAE (Supervised Agricultural Experience) opportunities available in the greenhouse industry.	RI.11-12.7 RH.11-12.7			
3. Unit: Demonstrate an understanding of the requirements of a position in the greenhouse industry by researching the position and presenting their findings on a presentation that will be given in class.	RI.11-12.7 RH.11-12.7 SL.11-12.4 SL.11-12.5			

**Codes for Common Core Mathematics are:**

- N = Number and Quantity
- A = Algebra
- F = Functions
- G = Geometry
- S = Statistics and Probability

**Codes for Common Core English Language Arts and Literacy are:**

- RL = Reading for Literature
- RI = Reading for Informational Text
- RST = Reading for Literacy in Science and Technical Subjects

- RH = Reading for Literacy in History/Social Studies
- W = Writing
- WHST = Writing for Literacy in History/Social Studies, Science, and Technical Subjects
- SL = Speaking and Listening
- L = Language