

## Agricultural Structures 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 Agricultural Structures Crosswalk lists a sequence of content, organized into distinct units of instruction.

	Common Core Standards	National Standards (AFNR)	Activities	Enhancements
<b>A. Building</b>				
1. Describe safety practices associated with building construction.	RST.11-12.9 L.11-12.6 SL.11-12.4			
2. Identify types and designs of buildings and their methods of construction.	N-Q.1 G-CO.1 G-GPE.5 SL.11-12.1.a RST.11-12.4 RST.11-12.9 L.11-12.6			
3. Identify and select building materials.	SL.11-12.1.a RST.11-12.9 L.11-12.6			
4. Identify the uses of different fasteners and fastening systems.	N-Q.1 G-CO.1 G-GPE.5 SL.11-12.1.a RST.11-12.9 L.11-12.6			
5. Describe how to construct a floor and subfloor.	N-Q.1 G-CO.1 G-GPE.5 RST.11-12.9 L.11-12.6 SL.11-12.4			
6. Describe the purpose of walls, types of	N-Q.1			

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walls, supports, and siding used in agricultural buildings.	G-CO.1 G-GPE.5 RST.11-12.9 L.11-12.6 SL.11-12.4			
7. Select a roof support system.	N-Q.1 G-CO.1 G-GPE.5 RST.11-12.9			
8. Select roofing materials.	RST.11-12.9			
9. Identify factors affecting the heating, cooling, and ventilation of agricultural structures.	N-Q.1 G-CO.1 G-GPE.5 RST.11-12.9			
10. Demonstrate an understanding of correct building construction procedures by laying out joists and rafters, applying roofing skills, and answering questions about roofing materials.	N-Q.1 G-CO.1 G-GPE.5 RST.11-12.9 L.11-12.6 WHST.11-12.2			
<b>B. Concrete</b>				
1. Investigate safety in working with concrete.	RST.11-12.7 SL.11-12.1.a SL.11-12.1.c			
2. Identify factors that affect the quality of fresh concrete.	8.G.9 N-Q.1 N-Q.3 G-MGD.3 RST.11-12.9 SL.11-12.1.a SL.11-12.1.c			
3. Identify site preparation requirements.	8.G.9 N-Q.1 N-Q.3 G-MGD.3 RST.11-12.7			

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	RST.11-12.9 SL.11-12.1.a SL.11-12.1.c			
4. Describe the procedure for preparing to pour a concrete slab.	8.G.9 N-Q.1 N-Q.3 G-MGD.3 SL.11-12.1.a SL.11-12.1.c SL.11-12.4			
5. Explain the procedure for ordering, pouring, and finishing concrete.	8.G.9 N-Q.1 N-Q.3 G-MGD.3 SL.11-12.1.a SL.11-12.1.c SL.11-12.4			
6. Identify factors affecting the quality of cured concrete.	8.G.9 N-Q.1 N-Q.3 G-MGD.3 RST.11-12.9 SL.11-12.1.a SL.11-12.1.c			
7. Describe the procedure for pouring a concrete wall.	8.G.9 N-Q.1 N-Q.3 G-MGD.3 RST.11-12.9 SL.11-12.1.a SL.11-12.1.c SL.11-12.4			
8. Apply principles of correct concrete construction procedures by making a concrete patio block.	8.G.9 N-Q.1 N-Q.3 G-MGD.3			

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	RST.11-12.9 SL.11-12.1.a SL.11-12.1.c			
<b>C. Electricity</b>				
1. Identify the dangers and safety practices associated with electrical work.	A-CED.4 L.11-12.6 RST.11-12.9			
2. Identify the terms associated with electrical work.	A-CED.4 RST.11-12.4 RST.11-12.9 L.11-12.6			
3. Match types and sizes of wire and their uses.	A-CED.4 L.11-12.6 RST.11-12.3 RST.11-12.9			
4. Identify the importance of grounding and GFCI protection.	A-CED.4 RST.11-12.9 L.11-12.6			
5. Locate lights, outlets, and switches, and identify circuit protection needs.	A-CED.4 RST.11-12.3 RST.11-12.9 L.11-12.6			
6. Identify the symbols used in agricultural wiring plans.	A-CED.4 L.11-12.6 RST.11-12.9			
7. Describe practices for running wire to an agricultural structure and wiring within the building safely.	A-CED.4 RST.11-12.9 L.11-12.6 SL.11-12.4			
8. Identify procedures for connecting the drop wires and branch circuit wires to the SEP.	A-CED.4 RST.11-12.9 L.11-12.6			
9. Describe how to run wiring from the SEP to a junction box, lights, and receptacles.	A-CED.4 RST.11-12.9 L.11-12.6 SL.11-12.4			

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10. Calculate cost and electrical power using Ohm's Law.	A-CED.4 RST.11-12.7			
11. Describe procedures for planning and installing lighting protection.	A-CED.4 RST.11-12.9 L.11-12.6 SL.11-12.4			
12. Identify problems in electrical systems.	A-CED.4 RST.11-12.9 L.11-12.6			
13. Demonstrate an understanding of how to work with electricity and wiring by diagramming a wiring plan for an agricultural structure, identifying sources of electrical grounding in the structure, and completing a bill of materials for the project.	A-CED.4 RST.11-12.9 L.11-12.6 SL.11-12.4 WHST.11-12.2			
<b>D. Fencing</b>				
1. Discuss the terminology, dangers, and safety practices associated with building fences.	G-CO.1 G-CO.12 G-MG.2 N-Q.1 A-REI.3 RST.11-12.4 SL.11-12.1 SL.11-12.4			
2. Describe how to set and brace wood and steel posts.	G-CO.1 G-CO.12 G-MG.2 N-Q.1 A-REI.3 SL.11-12.4 RST.11-12.9 L.11-12.6			
3. Describe techniques for building barbed and woven wire fences.	G-CO.1 G-CO.12 G-MG.2			

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	N-Q.1 A-REI.3 SL.11-12.4 RST.11-12.9 L.11-12.6			
4. Describe techniques for building high tensile and electric fences.	G-CO.1 G-CO.12 G-MG.2 N-Q.1 A-REI.3 SL.11-12.4 RST.11-12.9 L.11-12.6			
5. Identify fence mending techniques.	G-CO.1 G-CO.12 G-MG.2 N-Q.1 A-REI.3 RST.11-12.9 L.11-12.6			
6. Apply principles of correct fence installation by devising a fencing plan that complies with local codes and includes the materials used, cost, and layout of the fence.	G-CO.1 G-CO.12 G-MG.2 N-Q.1 A-REI.3 RST.11-12.7 RST.11-12.3 RST.11-12.9 L.11-12.6 WHST.11-12.2			
<b>E. Home and Farmstead Planning</b>				
1. Evaluate a site for a home.	N-Q.1 N-Q.2 SL.11-12.1 SL.11-12.2 SL.11-12.3			

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	SL.11-12.4			
2. Arrange a farmstead.	N-Q.1 N-Q.2			
3. Describe characteristics of disposal systems for managing livestock manure.	SL.11-12.1 SL.11-12.4 RST.11-12.9 WHST.11-12.2 L.11-12.6			
4. Apply principles of farm and homestead planning by devising a farmstead plan and explaining design decisions in paragraph form.	N-Q.1 N-Q.2 RST.11-12.9 L.11-12.6 WHST.11-12.2			
<b>F. Plans</b>				
1. Read and create a simple construction drawing.	G-CO.1 G-CO.12 G-CO.6 RST.11-12.2 RST.11-12.3 RST.11-12.9 SL.11-12.2			
2. Develop a plan of procedure and a bill of materials for a construction project.	N-Q.2 SL.11-12.2 RST.11-12.9 WHST.11-12.2			
3. Demonstrate an understanding of the importance planning has on effective work procedure by drawing a construction plan and developing a plan of procedure, a cutting bill of materials, and a purchasing bill of materials.	N-Q.2 G-CO.1 G-CO.12 G-CO.6 SL.11-12.4 RST.11-12.9 L.11-12.6 WHST.11-12.2			
<b>G. Plumbing</b>				
1. Estimate how much water is needed for a farmstead.	8.G.9 N-Q.1			

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	N-Q.2 G-MGD.3 RST.11-12.9			
2. Investigate safety practices for plumbing.	8.G.9 N-Q.1 N-Q.2 G-MGD.3 RST.11-12.7 SL.11-12.1			
3. Identify pipe types and determine size requirements.	8.G.9 N-Q.1 N-Q.2 G-MGD.3 SL.11-12.1 RST.11-12.9 L.11-12.6			
4. Measure, cut, and connect pipes and tubing.	8.G.9 N-Q.1 N-Q.2 G-MGD.3 RST.11-12.9			
5. Investigate methods of protecting water pipes against freezing.	8.G.9 N-Q.1 N-Q.2 G-MGD.3 RST.11-12.7 SL.11-12.1			
6. Demonstrate an understanding of plumbing equipment and procedures by applying different techniques to join dissimilar types of pipe – copper, PVC, CPVC, and black iron.	8.G.9 N-Q.1 N-Q.2 G-MGD.3 SL.11-12.4 RST.11-12.9 L.11-12.6			



**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