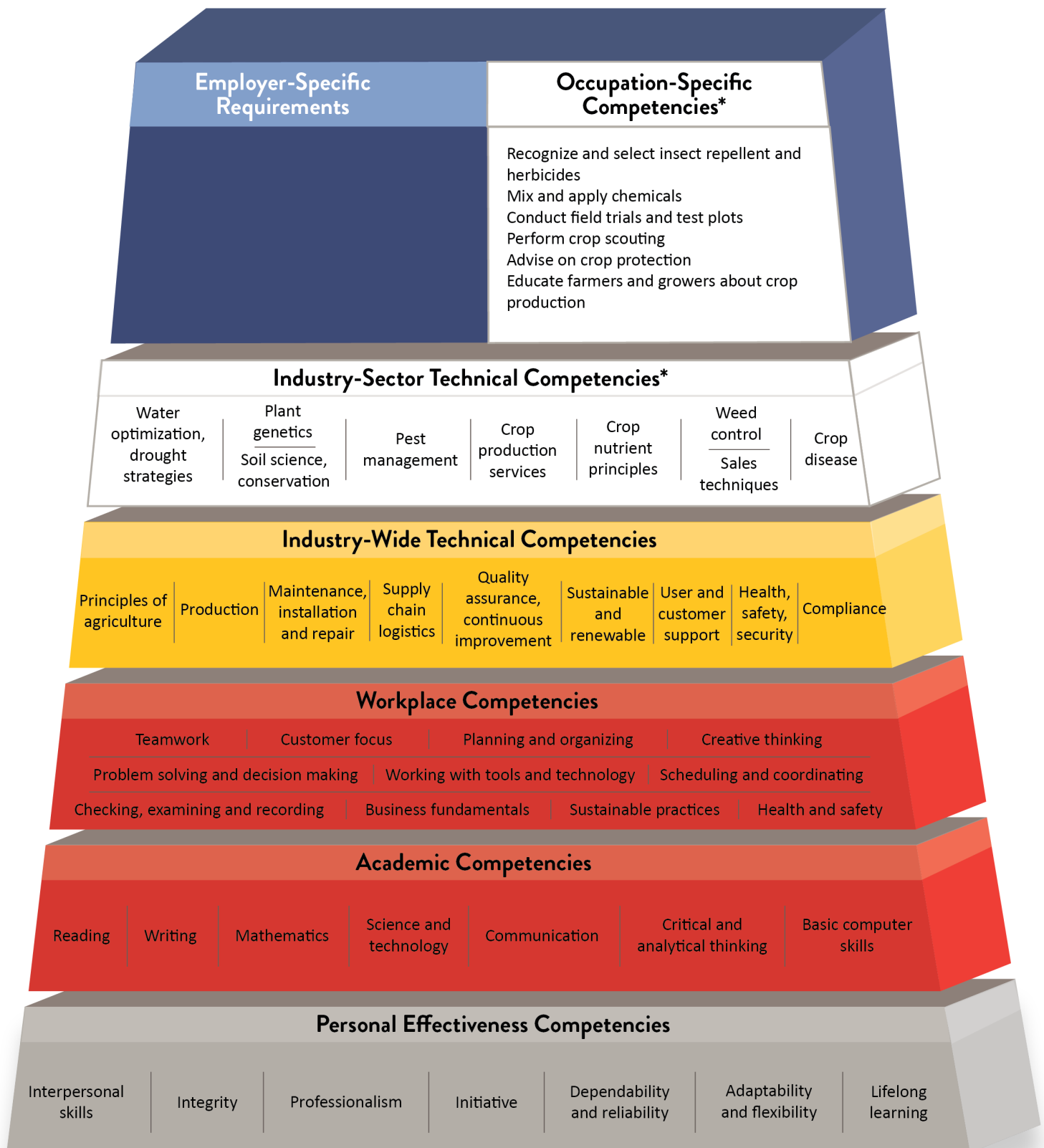


Minnesota Dual-Training Pipeline

Competency Model for Agriculture

Occupation: Agronomist



Based on: Building Blocks for Competency Models – Foundational Competencies, Employment and Training Administration, United States Department of Labor, February 2025. For more detailed information about competency model creation and sources, visit dli.mn.gov/business/workforce/agriculture.

Competency Model for Agronomist

Agronomist – An individual trained in the science of agronomy, who works in the agricultural sector by giving advice on the cultivation of crops to foster plant growth. This person typically works with agricultural product companies and cooperatives to promote crop production, improve soil health, and increase profitability while also ensuring sustainability.

*Pipeline recommends the Industry-Sector Technical Competencies as formal training opportunities (provided through related instruction) and the Occupation-Specific Competencies as on-the-job (OJT) training opportunities.

Industry-Sector Technical Competencies

Related Instruction for dual training means the organized and systematic form of education resulting in the enhancement of skills and competencies related to the dual trainee's current or intended occupation.

- **Water optimization, drought strategies** – Understand maximizing water usage and conservation methods in drought situations.
- **Plant genetics** – Knowledge of the fundamental processes controlling production, quality, and enhanced use for crops.
- **Soil science, conservation** – Training in soil as a natural resource and principles of resource conservation management.
- **Pest management** – Understand principles of crop protection and pest control.
- **Crop production services** – Training to assist farmers/growers with crop production.
- **Crop nutrient principles** – Knowledge of nutrients required for healthy, productive crops.
- **Weed control** – Understanding of the tools available for weed control.
- **Sales techniques** – Fundamentals of sales focused on the agricultural industry.
- **Crop disease** – Training to reduce the economic and aesthetic damage caused by plant diseases.

Occupation-Specific Competencies

On-the-Job Training is hands-on instruction completed at work to learn the core competencies necessary to succeed in an occupation. Common types of OJT include job shadowing, mentorship, cohort-based training, assignment-based project evaluation and discussion-based training.

- **Recognize and select insect repellent and herbicides** – Recognize and select proper application methods for insect repellents and herbicides.
- **Mix and apply chemicals** – Know how to safely mix and apply chemicals to crops.
- **Conduct field trials and test plots** – Use scientific methodology when conducting field trials and evaluating test plots.
- **Perform crop scouting** – Assess crop performance and pest pressure to evaluate economic risk from pest infestations and disease, as well as to determine the potential effectiveness of pest and disease control interventions.
- **Advise on crop protection** – Use crop protection knowledge to advise farmers/growers on how to use seeds, fertilizers, herbicides, insecticides, fungicides, and other products for maximum results.
- **Educate farmers and growers about crop production** – Serve as an educator and advisor for the farmer/ grower community on crops, hybrids, varieties, resource management and other factors affecting crop production.

Updated October 2025