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PLUS  
Online Student  
Lab Workbook

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and Virtual Toolbox

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**NEW!**

## Develop Safe Work Habits with a Comprehensive Program for Power, Structural, and Technical Systems

- **500 NEW images** detail modern agricultural technology and tools while **50 NEW Safety Notes** and a chapter on safety cultivate a safety-first mindset before students start work on projects.
- **NEW SAE for All Profiles** introduce real stories of successful projects, while **SAE Opportunities** and **Check-ins** provide additional springboards for planning and decision-making.
- **35 NEW Career Connections** features include up-to-date salaries, job descriptions, and education requirements for related opportunities.
- **NEW Analyze and Apply** activities encourage students to apply knowledge to agricultural situations.
- **NEW Hands-on Activities** provide end-of-chapter projects designed to be low cost and meet learning outcomes.

*STEM Connections and Academic activities offer cross-curricular applications.*



**Figure 18-12.** Framing for larger greenhouses can include steel trusses, I-beams, and other hardware for installed equipment, such as lighting. How are louvers or vents opened and closed in a greenhouse this large?

#### STEM Connection Water Filtration

Water must be available at any site for a greenhouse, and it also must be good quality. Some water sources have elements that could be harmful, such as excessive iron. To ensure water quality is correct and consistent, a water treatment system would be beneficial. Typically, this kind of system is the first component of a water system after a water supply enters a structure. As a result, any water treatment performed will then treat water used in the facility. Systems and components could be chosen based on specific issues detected in the water through a water sample test. A variety of components can be used to adjust pH, remove unwanted particles or elements, inject treatments, or maintain the pressure. Filtration systems can be as simple as removing particles or as complex as changing the chemical makeup of water.



This reverse osmosis filtration system is used in a large, commercial greenhouse water system.

*Figure captions ask critical-thinking questions throughout the text.*



# A Complete Package for Classroom Discussion, Hands-on Projects, and Standards-based Assessments

*Including Digital Lessons in the Online Learning Suite*



## Spark Student Success with Learning Materials

- Online Textbook
- Online Lab Workbook—including concept review and 60 hands-on labs
- AFNR Video Library—including 45 new videos, ranging from SAE student interviews to concepts such as: Hand & Power Tools, Principles of Electricity, Principles of Plumbing, and Sustainable Energies in Power Agriculture
- Drill and practice Vocabulary Activities and eFlashcards
- Virtual Toolbox visual e-flashcards for tool identification and accompanied worksheets



## Save Time with Online Instructor Resources

- Robust Reporting tracks student grades and mastery of learning objectives
- Detailed Lesson Plans
- PowerPoint® Presentations
- Answer Keys and Rubrics
- Customizable ExamView Test Banks
- Correlations to National AFNR Standards for the Power, Structural & Technical Systems Career Pathway, YouScience Agricultural Systems and Technology/Agricultural Mechanics exams, and NOCTI Agricultural Mechanics job-ready assessment



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