

Resources for the 2020 Iowa FFA Agricultural Mechanics CDE
Iowa State University
AG 450 Farm
June 11, 2020

NOTE: This list is not exclusive to any other resources that you might find. An attempt was made to find as many resources and references as possible, especially those that are web-based. It is highly recommended that your team review the resources and information provided below.

1) Electrical Systems: Electrical Wiring - Switches

Skill:

Students will be expected to complete one of the switch diagrams posted on the Iowa FFA Agricultural Mechanics CDE webpage.

Problem-solving:

The problem-solving activities will be pulled from the following resource(s):

Hancock, J. P., Edgar, D. W., Pate, M. L., Dyer, L. A., & Hoover, W. B. (2017). *Agricultural mechanics and technology systems*. Tinley Park, IL: The Goodheart-Willcox Company, Inc.

Herren, R. V. (2015). *Agricultural mechanics: Fundamentals and applications* (7th ed.). Stamford, CT: Cengage Learning.

Koel, L., Mazur, G. A., Moniz, B. J., & Radcliff, R. B. (2013). *Agricultural technical systems and mechanics*. Orland Park, IL: American Technical Publishers.

2) Environmental and Natural Resource Systems: Land Measurement

Skill:

Students will be expected to use measurement tools and methods to lay out an area for a building.

Problem-solving:

The problem-solving activities will focus on land measurement and will be pulled from the following resource(s):

Hancock, J. P., Edgar, D. W., Pate, M. L., Dyer, L. A., & Hoover, W. B. (2017). *Agricultural mechanics and technology systems*. Tinley Park, IL: The Goodheart-Willcox Company, Inc.

Herren, R. V. (2015). *Agricultural mechanics: Fundamentals and applications* (7th ed.). Stamford, CT: Cengage Learning.

Koel, L., Mazur, G. A., Moniz, B. J., & Radcliff, R. B. (2013). *Agricultural technical systems and mechanics*. Orland Park, IL: American Technical Publishers.

3) Structural Systems: Carpentry

Skill:

Students will be expected to use measuring tools and cordless power drills. For reference, the following website may be helpful:

<http://www.doityourself.com/scat/handtools>

Problem-solving:

The problem-solving activities will be pulled from the following resource(s):

Hancock, J. P., Edgar, D. W., Pate, M. L., Dyer, L. A., & Hoover, W. B. (2017). *Agricultural mechanics and technology systems*. Tinley Park, IL: The Goodheart-Willcox Company, Inc.

Herren, R. V. (2015). *Agricultural mechanics: Fundamentals and applications* (7th ed.). Stamford, CT: Cengage Learning.

Koel, L., Mazur, G. A., Moniz, B. J., & Radcliff, R. B. (2013). *Agricultural technical systems and mechanics*. Orland Park, IL: American Technical Publishers.

4) Machinery and Equipment Systems: Sprayers

Skill:

Students will be expected to inspect and diagnose issues with sprayer equipment systems.

Problem-solving:

The problem-solving activities will be pulled from the following resource(s):

Hancock, J. P., Edgar, D. W., Pate, M. L., Dyer, L. A., & Hoover, W. B. (2017). *Agricultural mechanics and technology systems*. Tinley Park, IL: The Goodheart-Willcox Company, Inc.

Herren, R. V. (2015). *Agricultural mechanics: Fundamentals and applications* (7th ed.). Stamford, CT: Cengage Learning.

Koel, L., Mazur, G. A., Moniz, B. J., & Radcliff, R. B. (2013). *Agricultural technical systems and mechanics*. Orland Park, IL: American Technical Publishers.

5) Metals and Welding: Gas Metal Arc Welding (GMAW) / MIG Welding

Skill:

Students will be expected to lay out and perform a series of butt, lap, or tee joints in the flat, vertical, or horizontal position using .030, .035, or .045 wire.

Problem-solving:

The problem-solving activities will be pulled from the following resource(s):

Gosse, J. (2010). *Welding skills* (4th ed.). Orland Park, IL: American Technical Publishers.

Hancock, J. P., Edgar, D. W., Pate, M. L., Dyer, L. A., & Hoover, W. B. (2017). *Agricultural mechanics and technology systems*. Tinley Park, IL: The Goodheart-Willcox Company, Inc.

Herren, R. V. (2015). *Agricultural mechanics: Fundamentals and applications* (7th ed.). Stamford, CT: Cengage Learning.

Jeffus, L. (2008). *Welding principles and applications* (6th ed.). Clifton Park, NY: Thomson Delmar Learning.

Koel, L., Mazur, G. A., Moniz, B. J., & Radcliff, R. B. (2013). *Agricultural technical systems and mechanics*. Orland Park, IL: American Technical Publishers.

NOTE: Instructors can order free desk copies of ALL of the textbooks listed as resources, with the exception of the “Wiring Handbook for Rural Facilities”.