

**2013 Wyoming State FFA CDE
Agricultural Technology and Mechanical Systems
Electrical Systems – Wiring Skill**

You're an electrician working for the Bethea Family Feed processing plant in Sundance WY. Part of your duties includes the maintenance of the processing equipment in use at the plant. One work area in the operation produces an unhealthy level of dust to the employees through the process of grinding hay, corn and silage into feed products. The amount of dust that accumulates can cause respiratory health problems requiring the plant to purchase photoelectric switches that when activated will turn on a fan, blowing the dust out of the work area. Your job is to install the photoelectric switch and to complete the connections in the junction boxes of the circuit.

Referencing the electrical diagram to the right, respond to the following questions with the conductors A, B, C. (More than one answer may apply).	Answer		
Which of the conductors would serve as a secondary ground because of its lower resistance and ability to provide electricity a path of least resistance?			1. <u>C</u>
Which of the conductors serves as the primary ground for the circuit?			2. <u>B</u>
Which combination of conductors in the diagram would represent a completed circuit?			3. <u>A&B</u>
Which of the conductors would serve as the "hot" lead in the diagram?			4. <u>A</u>

5. When working with polarized receptacles, the narrower prong in the receptacle is used for which leg of the electrical circuit?

Hot

6. When designing an electrical circuit system, dividing the load requirements into multiple circuits can help prevent what?

The overloading of any single circuit

Criterion	Points Possible	Points Earned
Wiring skill	15	
Questions	12 (2 points ea.)	
Safety	3	