

The Orchard Challenge

Name: _____

SCENARIO: Your company (give yourselves a name!) develops automation technology to improve production efficiency for your clients. Sweet Apple Agricultural Suppliers, Inc., is interested in finding out whether automation technology can improve the effectiveness of its pesticide-sprayer vehicle fleet.

TASK: Present a cost-benefit analysis for an automated robotic ground-based vehicle for pesticide application. The vehicle will be designed to navigate between rows of trees in an orchard and spray pesticides. A single operator, working from a remote location, could oversee the operation of the vehicle, or even multiple vehicles. Your analysis must weigh the pros and cons of this approach and make them clear to the client. Be sure to consider environmental, financial, and social factors.

TIME FRAME: A draft of your proposal will be due one week from today, when you will present it in class. Two weeks from today, you will present your team's final proposal to an executive from your client company.

WRITE: Use the Organizing Research reproducible to organize your research and outline your ideas.

STRUCTURE: You will select one partner from your company to work with you on your presentation. You may use any combination of the following formats:

 PowerPoint  Poster  Video

RESOURCES: Use a variety of resources to research content for your proposal. Remember to cite all sources on a separate sheet of paper.

Check Yourself:

A successful presentation will include the following elements:

- ☐ Explanation of the problem
- ☐ Benefits to society and the company
- ☐ Drawbacks to society and the company
- ☐ Specific functions and tasks the robot would accomplish
- ☐ Cost and labor force impact
- ☐ Proposed solution
- ☐ Initial set of plans
- ☐ Timeline for proposed work
- ☐ Citations for all sources

Did you know?

- 1** Automation of agricultural labor has far-reaching societal and economic effects, because it changes the nature of the work that needs to be done, thus impacting the workforce. As a consequence, there is significant social pressure built up on both sides of the debate.
- 2** There are environmental and economic benefits to applying pesticides through automated ground spraying versus airborne crop dusting or manual application.
- 3** These issues must be clearly presented to those in management or leadership positions in order to justify and advance work done to improve the process. Modern communication technology should be used to make this presentation as organized and effective as possible.