



BUSHELS OR BUST?

A lesson on making decisions, risk, and economics.

Main Ideas

- Farming and producing food is a risky **BUSINESS**.
- Under the **MIXED ECONOMIC SYSTEM** in the U.S., farmers choose the crops they want to grow and the systems used to grow those crops in hopes of maximum **PROFIT**.
- Farmers make informed **DECISIONS** that may positively or negatively impact their business and **INCOME**.
- **RISK**: Farmers have no control over weather, pests, and the prices they receive on the open **MARKET**.
- **SUPPLY** and **DEMAND** affect **PRICE**.

Concepts

1. Farmers have **LIMITED RESOURCES**, and they must decide how to use them at a cost:
NATURAL – land (space and soil), water (rainfall or irrigation)
CAPITAL – equipment, seed, fertilizer, crop protection products, fuel
HUMAN – labor (self and hired)
2. Farmers make decisions regarding what crops to grow based on how they perform under geographic and climatological conditions, as well as anticipated **PROFIT** for those crops. Corn has been developed over many years to grow well under a variety of conditions. Farmers have many choices when it comes to seed varieties and will choose based on the performance history of those seeds or characteristics that reduce **RISK**, such as insect resistance, improved weed management, and drought or water tolerance.
3. Farmers make decisions regarding how to help their crops grow. Farmers will make sure that their crops have the correct amount of nutrients for optimum growth. They also decide to protect their crops by adding pesticides (natural and/or synthetic) and/or using manual techniques such as physical weed and pest removal. These **INPUTS**, however, come at a **COST**, and may reduce the **NET PROFIT** a farmer receives.
4. **SUPPLY** and **DEMAND** affects the price a farmer receives for his/her crop. Farmers will typically adjust the amount of a crop they grow based on demand and price. Once the crop has been planted, however, there are several factors that may affect the **PRICE** a farmer receives at harvest:

Kentucky Core Content for Assessment:

Social Studies - Economics

2.18 Students understand economic principles and are able to make economic decisions that have consequences in daily living.

Vocational Studies - Consumer Decisions and Career

Awareness

5.4 Students use a decision-making process to make informed decisions among options.

Math – Grade 5

5.OA.1, 5.NBT.7, 5.MD.2, 5.G.1, 5.G.2

- a. Weather – Farmers are not only concerned about the weather in their region. Weather in other areas of the country or world, where large amounts of corn are grown, will affect price. A drought in South America decreases world supply and will increase the price an American farmer will receive. Excellent weather conditions across the Midwest will typically reduce prices because a large supply of corn is predicted.
- b. Pests – Crops are susceptible to damage from weeds (plants that are stealing soil nutrients), insects, fungus, and disease. Some pests cannot be controlled well with current products or methods, so supply may be reduced if the pests affect a large area. In this case, the price will go up.
- c. Market Changes – Supply, demand, and price may be affected locally and globally. If a new feed mill is constructed in a farmer’s town, it will increase local demand, and farmers should expect to see a higher price. Since China purchases a lot of US corn to feed their livestock, how would a devastating livestock disease affect feed demand? The global price of corn would likely decrease due to the loss of a significant customer and increased supply.
- d. Policy – Government policies may affect the price of crops. If an agency mandates the use of a crop, demand increases and so does price. Should the mandate be removed, that would likely cause the price to drop if there are no other markets available to consume the extra supply.
- e. Premiums and Discounts – Once the crop is delivered to the buyer, the price could change based on buyer specifications. Corn in better quality than expected may receive a premium price above the open market price. Corn in poor quality may be discounted, or rejected all together.

Using the Game

Have students play the Bushels or Bust game (see instructions). If you have younger students or want to give older students a demonstration of how the game works, you may download our Microsoft Excel spreadsheet and project it in front of the class. You will be able to enter the changes in YIELD, PRICE, and COST, and the spreadsheet will calculate the PROFIT as you progress. It also generates a line graph of the changing PROFIT. Download the spreadsheet at www.farmscholar.com/bushels-or-bust.html.

Students may also be asked to make their own line or bar graphs, tracking YIELD, PRICE, COST, and PROFIT individually over time as the game progresses. To see how the game relates to a real-world situation, go to www.farmscholar.com/bushels-or-bust.html and look at the historical average yield and average price data for corn. Compare these graphs with the graphs created during the game.

Digging Deeper: Ask a grain farmer to come to your classroom to share his/her personal experience with YIELD, PRICE, COST and PROFIT and how it affects his/her business decisions.

For updates and additional information, visit <http://www.teachkyag.org/bushels-or-bust.html>.