

INSTRUCTIONS

Farmer GAME

Thanks for playing our challenge. Please read the following in order to understand the gameplay.

MONSANTO



OBJECTIVE

The objective is to use agricultural technologies to overcome farming challenges and generate the most value from growing crops on your land at the end of the season.

PURPOSE

Farming is a rewarding profession, but it also comes with various challenges. This game shows the types of decisions farmers make in a growing season. During this game, students will experience what it is like to farm in different parts of the world, the differences and similarities in each region, and the decisions farmers make.

GRADE LEVEL

6-12th

SUBJECT AREAS

Agriculture, Business, Economics, Science, and Math

AVERAGE TIME TO COMPLETE

30 - 50 Minutes

MATERIALS

- Scenario Information/ Technology Marketplace Chart
- Chance Cards (Place face down)
- Dice*
- Calculator*
- Pencil or pen*
- Instruction packet

* You will need to provide these items

PRE - GAME QUESTIONS

1. Can you give a few examples of the decisions farmers have to make in a growing season?
2. What are some of the different things that affect a growing season?

SET UP

- 1 Place your Scenario Information/Technology Marketplace Chart, Chance Cards (face down), and dice on the table.
 - 2 Read your Scenario Information/Technology Marketplace Chart as a group.
-

HOW TO PLAY

- 1 Follow these instructions to help you move through each phase of the growing season.
- 2 Using agricultural technologies to help overcome farming challenges, you will make decisions on how to spend your farm's budget to minimize risk and maximize production/yield/profit.

PLANTING PHASE

Plan your season by purchasing technologies that should help secure your profits.

First, review your Scenario Information to learn about your farm. The size, budget, and climate challenges in your Scenario Information will impact the challenges you face and decisions you make as you play the game.

Second, open your Scenario Information to view your Technology Marketplace Chart.

- Your purchases will protect you from some of the unforeseen events you will face during the Crop Management Phase (represented on each Chance Card).
- Discuss with your teammates to plan how best to spend your budget in the Technology Marketplace.
- Students may not agree on purchased technologies. Use this as a discussion point later in the activity.
- Chance Cards will represent a simplified reality of some of the variables that farmers must account for each year.
- The costs of technologies are determined as proportions of your budget listed on your Scenario Information. Spend no more than 100% of your budget. NOTE: It is not a requirement to spend all your money in the Technology Marketplace.

Third, mark your technology purchases and their associated costs in the grid on the next page.

	TECHNOLOGY MARKETPLACE ITEM	YIELD BOOST	BUDGET	
			Beginning Budget =	100
	Example 1: Hybrid Seeds (Midwestern U.S.)	0		-12
	Example 2: Planting Equipment (West Africa)	+10		-17
PLANTING				
CROP MANAGEMENT				
HARVEST				
		Total Yield Boost =	A.	Ending Budget (%) = B.

- Copy Total Yield Boost (box A) in the scorecard sheet in the next section.

CROP MANAGEMENT PHASE

*Did you buy the right technologies
to get your crop to harvest?*

Shuffle Chance Cards thoroughly with Chance Card scenario face down and Chance Card title face up.

During the Crop Management Phase, draw seven cards from the stack of Chance Cards.

The drawing of each Chance Card represents a round, which will impact your yield.

- Read each card and indicate the percent change to your yield in the score sheet on the next page.
- You may choose the same card more than once in the 7 rounds.

After all 7 rounds, add the remaining percent of your yield to your Total Yield Boost (Box A) from the Technology Marketplace Chart to find your Total Percent Yield (Box C). You will compute this percentage into bushels during the Harvest Phase on the next page.

ROUND	CHANCE CARD DESCRIPTION	TECHNOLOGY NEEDED	SUBTRACT/ ADD	PERCENT YIELD
				100
Example 1	Drought Conditions	GMO/ Traited Corn Seed	-30	70
Example 2	Great Weather	None	0	70
ROUND 1				
ROUND 2				
ROUND 3				
ROUND 4				
ROUND 5				
ROUND 6				
ROUND 7				
Add final percent yield to the yield boost total from your purchases during Planting Phase.			Yield Boost From Marketplace:	A.
			Total Percent Yield:	C.

HARVEST PHASE

Time to see how your decisions impacted your productivity, profit and livelihood.

First, roll the dice to determine the commodity price per bushel for your corn.

- The number on the dice will correspond with a commodity price in the grid below. (Based on actual market value per bushel in 2008-2013)

NUMBER	COMMODITY PRICE
1	\$3.55
2	\$4.06
3	\$4.46
4	\$5.18
5	\$6.22
6	\$6.89

CALCULATE HARVEST EARNINGS

Determining the return on investment will help understand how your decisions may affect your business and future farming decisions.

- 1 **MULTIPLY** [Percent of Yield] X [Target Average Yield (on Scenario Overview)] = Produced Bushels per Acre
- 2 **MULTIPLY** [Bushels per Acre] X [Farm Acreage (included in Scenario Overview)] = Total Farm Production in Bushels
- 3 **MULTIPLY** [Total Production] X [Commodity Price] = Total Earnings from Corn Crop

		FUNCTION	TOTAL
1	# BUSHELS/ACRE	MULTIPLY [% of Yield] X [Target Average Yield (on Scenario Overview)] = Produced Bushels per Acre (Bu/Ac)	Bushels/Acre
2	# BUSHELS/FARM	MULTIPLY [bu/Ac] X [Farm Acreage (on Scenario Overview)] = Total Farm Production in Bushels (Bu)	Bushels
3	HARVEST EARNINGS	MULTIPLY [Total Production] X [Commodity Price] = Total Harvest Earnings in Dollars	\$

CALCULATE FARM PROFIT

		FUNCTION	TOTAL
4	# INITIAL BUDGET FOR SEASON	MULTIPLY [Budget (on Scenario Overview)] X [Percent Budget used before planting (aka Box B)] = Original Budget in Dollars	\$ _____
5	# CALCULATE FARM PROFIT	[Total Harvest Earnings] - [Original budget] = Farm Profit	\$ _____

- Farm Profit is the earnings a farmer takes away after harvest. This is their yearly salary, and they may use part of it to reinvest in equipment or new technology for future seasons.
- Did you make money this year, or did you lose money? (Consider talking about how farming is a gamble, and each year, you will have to try and figure out the right tools to mitigate risk and end the season with a profit.)

GROUP DISCUSSION: QUESTIONS TO CONSIDER

If 100% yield is an average, how does your season compare?

What did you learn about risk management?

Flip over all the challenge cards and discuss the positives and challenges of weather and insect pressure with your group. Do any of these challenge cards surprise you? Do you disagree with any of the discussions made, and why?

GROUP DISCUSSION: MORE QUESTIONS TO CONSIDER

What other variables might affect a growing season?

What was the hardest decision you made?

Did your group agree on techniques to purchase or did this step prompt negotiating? If so, why?

OPTIONAL EXTENSION ACTIVITY

- Switch regions and play again until everyone has experienced West Africa, Brazil, and the Mid Western U.S.
- At the end, discuss the differences and similarities of the regions. Were students surprised by any of the scenarios and challenges in those regions?
- Which region was the largest? Smallest? Most challenging to farm? Why?
- Do students view farming differently after playing the game?



MONSANTO

