



You are the leader of an imaginary country. The world is facing rising food prices, inequality, and climate change and you must feed all the people in your country.
Are you up for the challenge?

The Card Game

Ages 14 and up.
Best with 4 players; works with 3-6 players.



Objective

Each Round, produce enough food to feed your country, avoiding starvation. Score the most victory points after 4 Rounds.

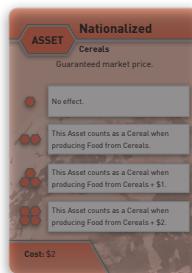
Contents

90 Total Cards: 18 Asset Cards, 6 Event Cards, 4 Round Cards, and 62 Resource Cards, consisting of:

8 Cereal	6 Fruit	4 Farm (1)
8 Fat & Oil	3 Vegetables	7 Farms (2)
8 Protein	4 Luxury Products	5 Farms (3)
3 Dairy	2 Extra Labour	4 Food Processing Plants

Other Components

In addition to the cards provided, you will also need a pen or pencil to keep track of your score on the sheets provided.



Resource Cards simulate a country's ability to produce food by making decisions on how to deploy labour, build facilities, or harvest crops. These actions provide food or money. Some Resource Cards have no effect unless you possess 2 or 3 of them. For example, you must have 3 Protein cards to produce food from Protein.

Setup: Shuffle the Resource Card deck and deal each player 10 Resource Cards. At the end of each round all the cards are gathered together, re-shuffled and re-dealt.

Event Cards illustrate big global problems such as climate change, trade wars, or high energy prices. Events occur in Rounds 2, 3, and 4. The severity of the Event increases as the game progresses and is determined by looking at the Round Card.

Setup: Shuffle the Event Card deck and place it in the centre of the play area. At the start of each round (except for Round 1) the dealer flips over one card.

Asset Cards represent things like technology, farming methods, and policies that you can invest in or adopt to increase your country's productivity. There are three broad types:
Corporate: large-scale, industrial farming approach (Blue).

Agro-Ecology: small-scale, ecological farming approach (Green).

Nationalized: strong governmental regulation approach (Red).

Any Asset Cards purchased by a player at the end of a round will apply in each round that follows, and are held by that player for the rest of the game.

Players earn the greatest benefits by combining assets of the same type/colour. This is because each Asset Card has four levels, indicated by the hexagons on the left side of each card. The more Asset Cards of a particular type that a player collects, the greater the benefit from each asset. For example, if a player has one Agro-Ecology asset, then only the first level benefit (one hexagon) applies. If, however, a player has three Agro-Ecology assets then they unlock the third level (three hexagon) benefit on each Agro-Ecology card they hold.

Note: The benefits do not stack, so if a player has three Agro-Ecology cards, they obtain the level three benefit only.

Setup: Shuffle the Asset Card deck and place it in the centre of the play area. At the end of each round, the dealer flips over 5 cards face up. The players may choose from these five assets, starting with the player with the most money and working clockwise. Once an asset has been purchased, the dealer flips another asset card so that there are always 5 cards face up.

Card Overview



Round Cards show how much food each player must produce to feed their population. The amount increases each round because of population growth. These cards also correspond with the Event Cards: Round 2 Events (Green), Round 3 Events (Yellow), Round 4 Events (Red).

Setup: Place the Round Cards in order (Round 1 on top, followed by Round 2, etc.) and place the pile in the centre of the play area. At the end of each round, remove the card on the top of the pile so that the next Round Card is visible.

How to Play

Starting a Round:

1. The game is played in four rounds. Look at the Round Card to determine how much food each player must produce to avoid starvation.
2. For Round 1, there are no events. For Rounds 2, 3, and 4, flip over one Event Card at the start (unless playing "Sudden Events" variation – see below).
3. Choose one player to be the dealer and deal each player 10 Resource Cards.
4. Each player chooses 1 of their 10 Resource Cards to keep. All players place this card in front of them, face up, simultaneously. Once played, these cards remain in front of each player until they are scored at the end of the round.
5. Each player passes their remaining 9 Resource Cards clockwise.
6. From the cards they have now received, each player then plays a new card face up in front of them next to their first card. The remaining 8 cards are passed clockwise.
7. Repeat steps 5 and 6 (play a card, pass the remaining cards clockwise, play a card, pass the remaining cards...) until no cards remain in the hand and each player has 10 cards played in front of them. This marks the end of a round.

At the End of a Round:

1. Count how much food and money each player produced for their country, according to the instructions on the Resource Cards (and Event Card) played that round.
 - **Food:** The amount of food each player produced minus the amount needed for that round is a country's surplus or deficit. Write this number in the "Food" column for each player on the score sheet. A player achieves food security for their country if they produce the amount of food that is needed for that round.
 - **Money:** Add up the money each player earned that round and write this in the "\$" column on the score sheet. **Note: Each player begins with \$2 (this is reflected on the score sheet).**
2. Players may now choose to trade or donate food.
 - **Trading Food:** If a player doesn't have enough food, she/he can use money to purchase Resource Cards from players with surplus food. Players must negotiate a price. The player with the least amount of food gets to buy first. Players may also trade their Resource Cards in order to achieve food security. For example, one player could trade a Protein for another player's Cereal.
 - **Donating Food:** Players may donate food to other players for free if they would like. This represents food aid that some countries provide for others.

3. Players may also now choose to purchase assets:

The dealer flips over 5 Asset Cards face up, and if any players have surplus food or money, they may buy assets. The player who produced the most food in that round chooses first. If she/he purchases any Asset Cards, the dealer should replace those with new ones from the deck before the next player to the left chooses. (See Asset Cards above for instructions on how to use these cards.)

4. After all purchases have been made, update the amounts in the "Food" and "\$" columns of each player on the score sheet. If a player still does not have enough food to feed their population for that round, mark a 1 in the "Starvation" column.
5. Carry any surplus money over into the next round. Surplus food is NOT carried over into the next round, unless playing the "Food Storage" game variation (see below).
6. Gather all the Resource Cards back together, re-shuffle and re-deal each player 10 Resource Cards. Gather all unsold asset cards together into the Asset Deck and re-shuffle it.
7. If you have not yet played 4 Rounds, start the next round.

Final Scoring

Victory Points (VP) are awarded after the final round to each player as follows:

- **3 VP** for every round a player achieved food security.
- **1 VP** for every dollar a player possesses at the end of the game.
- **2 VP** for each Asset Card a player holds (any type/colour).
- **-5 VP** for every round a player faced starvation.

The player with the most Victory Points wins the game!

Using Food Processing Plants

Processing plants add value to perishable food items, by extending shelf life or by creating a higher value product. If you play a perishable food Resource Card (dairy, fruit or vegetables), and already have a Food Processing Plant card in front of you, then the perishable food card is placed on the Food Processing Plant. This is to show that the perishable has been processed, thus tripling its value (e.g. milk that has been turned into cheese, raw vegetables that have been canned, or fruit that has been turned into a delicious pie).

Note: You may have multiple Food Processing Plant cards, but only 1 perishable food item may be placed on each. Additionally, different assets or events that occur later in the game may affect the extent to which Food Processing Plants work.

Using Extra Labour

Extra labour gives you the ability to conduct more actions, thus extending how much you can get done to feed your country. This is how it works: Let's say you have already played an Extra Labour card as one of your regular turns. Then in a future turn, you can "use" the Extra Labour, which means you may play one extra Resource Card. When you do, however, you put the Extra Labour card back into your hand that you then pass on to the next player. This means the Extra Labour card will now be passed on, and other players may take it to use again.

In the real world, this is analogous to a country importing migrant agricultural labour for seasonal work (such as harvesting), but once that job is done, the migrant labour moves on to a different country.

Game Variants

Sudden Events Variant

In this variation, rather than flipping over the Event Card at the start of the round (which means everyone knows what event is happening and can adapt accordingly), you flip the Event Card at the end of the round, and then record scores. In this variant, players do not know what event is about to unfold and so cannot plan for it. This simulates the effect of surprises on the world economy.

Technological Advantage Variant

In this variation, hand each player an Asset Card before Round 1, and play the game normally. This simulates the fact that all countries in the real world already have an existing infrastructure.

Unfair World Variant

Randomly choose two players (do this any way you like, but you could use rock-paper-scissors to do this), hand them 2 Asset Cards each before Round 1, and play the game normally. This simulates the fact that some countries in the real world have better developed infrastructure than others.

Food Storage Variant

Normally food doesn't last very long in the real world and so in our game we don't normally let players carry surplus food over from one round to the next. However, it's possible to imagine inventing better food storage facilities. Therefore, in this variation of the game, surplus food from one round may be carried over to the next round. This illustrates the potential impact of better quality food storage facilities.

Credits

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Editing By: Lesia Kinach and Kelly Hodgins

Card Artwork By: Christine De Vuono

Graphic Design By: Josh Derksen

Ideas for Teachers

Feeding 9 Billion: The Card Game is designed to introduce students to basic concepts pertaining to food security, population growth, and climate change in a fun and engaging way.

This game, therefore, can be used in conjunction with the lesson plans and graphic novel that we have also developed.

At the very least, we suggest that if you are interested in using this game in your class you watch the following video before introducing the game:

<https://www.youtube.com/watch?v=raSHAqV8K9c>

Then you can play the game as described above. Afterwards, consider the following questions or assignment ideas:

1. Define food security. What does food security mean? Does it mean the same thing in Africa as in Canada?
2. Look up global population predictions and discuss:
 - (a) Where is the global population heading?
 - (b) Where are populations growing the fastest?
 - (c) What implications does a growing population have on food security?
3. Food waste: How much food is wasted in the world?
Does food waste happen more at the farm or by consumers?
Is food waste the same all over the world?
4. Food production: How much food is actually produced in the world? Is there enough? Is it the right kinds of food for a healthy diet?
5. Climate change: How might climate change affect food security in the future?
6. Technology: What kinds of technology are possible to improve food security? In the game, we've imagined three different "kinds" of technology or innovation (corporate, agro-ecology, and nationalized). Look up each of the different technologies on the asset cards and briefly discuss the merits or drawbacks of each.
7. Trade: At the end of each round in the game players can buy extra food from players with surplus. Is this helpful?
How much food in the world is traded?
What benefits or drawbacks does this have?

More specifically, we imagine that you could get students to work in groups on the first five questions, and then have a class debate on the best strategies to feed the future. Following this, you could assign questions 6 and 7 as short essays or get students to write blog entries on these. Also, if you have ideas, our team will be turning this material into a fully-fledged lesson plan, so we welcome suggestions, thoughts or refinements on this package. Please drop us a line at: afiadmin@uoguelph.ca



Feeding 9 Billion: The Card Game Player Score Sheet

Name:	Totals
Food Security	3 x _____ Rounds
Starvation	-5 x _____ Rounds
Money	1 x \$ _____
Asset Cards	2 x _____ Cards
Total Victory Points:	

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Feeding 9 Billion: The Card Game **Game Score Sheet**

Feeding 9 Billion: The Card Game
<https://arrellfoodinstitute.ca/card-game/>

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