



# GLOBAL FARMING

## Educator Lesson Plan

### BACKGROUND

When we enter a grocery store, we are surrounded by a wide variety of food. Our food ranges from processed prepared meals to fresh produce, meat, and dairy products. Why do American grocery stores have such a large variety of food?

America is a large country that includes many climates, various types of soil, varying degrees of annual precipitation, as well as access to machines and other technologies which maximize a farmer's ability to produce our food.

**Climate** plays a huge role in the production of global food. Citrus fruits such as oranges, grapefruit, lemons, and limes require a tropical or subtropical climate. In the United States citrus fruits are grown primarily in Florida and Southern California. Tropical fruits such as pineapple, mangos, passionfruit, and papaya can be grown in Hawaii. Other berries and fruits such as strawberries, raspberries, peaches, and melons can be grown in more temperate climates as long as the length of the growing season is sufficient for the plants to produce their fruit. Other crops prefer cooler climates such as wheat, potatoes, sugar beets, and many vegetables such as broccoli, onions, lettuce, carrots, and spinach. **After finding the ideal climate for plant growth, there must also be the appropriate type of soil and an adequate water supply for a successful harvest.** The livestock that produce our meat, eggs, and milk are slightly more adaptable to various climates, especially with the use of modern animal husbandry practices which provide temperature controlled buildings and shelters in unsuitable weather. **Open space is another important factor to consider in evaluating a country's capability to produce their own food.** In some areas, residential populations or businesses are too dense for a farm which requires a lot of space for plant growth or the rearing of animals. Other countries, such as islands, are simply just too small and isolated. Another factor determining a country's ability to provide their own food is their **access to technology and tools.**

**To summarize, these factors affect global agriculture and the types of food that can be grown across the globe:**

**Climate:** Climate plays a large part in a farmer's ability to grow crops and raise the livestock that provide our food. Climate refers to the weather and seasons in a given area. Factors such as the length of a growing season and temperature are critical to successful crop growth and harvest.

**Open space + Land Use patterns:** Whether growing crops or raising livestock, farmers need open space to farm. Some countries have ample open space and others have little open space with high populations creating difficulty to provide food for their own population.

**Soil Quality:** Not all land has **arable** soil, or soil that is suitable for crop growth.



Some soils are too sandy or contain too much clay and don't hold adequate nutrients or proper water drainage or absorption. Other soils may not be suitable to grow crops such as fruits, vegetables, and grains, but they are suitable to grow grasses which provide feed for livestock.

**Water availability:** Water is a limited natural resource that is necessary to farming. Too much or too little water can be detrimental to a farm. Water requirements vary by crop.

**Available Technology:** Farming requires a great deal of physical labor. Technology and machinery help to ease this burden and allow a farmer to produce more food. However, in some countries, they may not have access to these advancements or may not be able to afford them.

**Economics and Government:** Forms of government such as capitalism and socialism impact farming. Government policies may encourage or discourage farm production. Market pricing of agricultural crops, government subsidies, and regulations applied to farming practices may all impact farming in a positive or negative way.

**Culture:** Culture is defined as the customs, arts, social institutions, and achievements of a particular nation, people, or other social group. Culture largely impacts food choices of a particular region.

(Adapted from AgClassroom)

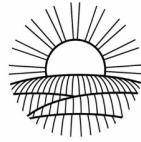
#### **Standards Addressed:**

- Kansas History, Government, and Social Studies Standards
  - Standard 1: Human choice is affected by culture, geography, politics, economics, social emotional attachments, and other factors including other people.
  - Standard 5: Relationships among people, places, ideas, and environments are dynamic.
- NGSS: LS2.C: Ecosystem Dynamics, Functioning, and Resilience
- NGSS: ESS1-6: Earth & Human Activity & Sustainability
- CTE: Plant Science Systems Career Pathway Content Standards

### **ENGAGE**

#### **Option 1: How would you describe your culture?**

1. Distribute copies of the following questions or read them aloud and give every student the opportunity to share:
  - a. What language do you speak at home?
  - b. How many people live in your home?
  - c. What role does extended family play in your life?
  - d. What manners have you been taught? OR what manners are most important to you?
  - e. What holidays do you celebrate?



- f. How do you feel about personal space?
- g. What food or meal is the most important to your family?
- 2. Discuss as a group:
  - a. How are our answers similar?
  - b. How are our answers different?
  - c. How can we be so different even though we live in the same area?
- 3. Tie the discussion back to how culture is embedded in all aspects of our lives, from the food we eat to the way we interact with and perceive the world- Our culture is there. MAIN POINT- Culture affects agriculture and food system practices around the world too!

**Option 2: Play the BARNGA Card Game**

*(Note: This will take approximately 45 minutes and is best suited for older youth).* Find the directions and lesson plan [here](#). To summarize, the game has 5 players and each player has a different set of rules. Gameplay must be held in silence and confusion quickly erupts as they all are trying to figure out the game! The discussion following gameplay focuses on how individuals all approach life, customs and behaviors through different perspectives based on their cultural norms.

**EXPLORE**

**CLASSROOM ACTIVITIES**

**ON-FARM ACTIVITIES**

**Option 1: Complete the digital activities found at [this site](#).**

Activities include

- 1. Exploring global staple foods
- 2. Mapping staple foods using an interactive online mapping tool

**Option 2: Global Potluck**

[\(Resource: Food Around the World YouTube playlist\)](#)

- 1. Watch a few videos from the resource linked above as a class.
- 2. Assign students (or let them choose) a region of the world.
- 3. Students research:
  - a. The staple food of that region
  - b. How it is grown
  - c. A favorite dish/ recipe of the region using that

Choose an option based on seasonal availability.

Focus on:

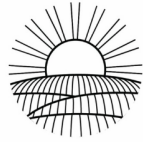
- 1. How the staple crop is grown in the Midwest vs. globally
- 2. What the staple represents culturally

**Option 1: Coffee sampling**

Gather different types of coffee to compare to Doña Fina coffee and then guide students through a comparison using the resources and information found at [this website](#).

**Option 2: Potatoes around the world**

Harvest potatoes if available and prepare a dish. Use the resources and information [found here](#) to discuss how potatoes are processed and grown in



<p>staple</p> <ol style="list-style-type: none"><li>4. Students create a product of choice (poster, digital poster, diorama or other visual representation of their research) for a public display.<ol style="list-style-type: none"><li>a. If equitable, have students prepare the dish for classroom sampling. Otherwise, the teacher may choose to source a few items for classroom sampling.</li></ol></li><li>5. Students engage in a gallery walk and identify the similarities and differences in global food staples.</li></ol>	<p>Ireland.</p> <p><b>Option 3: Can rice grow in Kansas?</b> Take students to the farm rice paddy OR have students harvest rice OR have students plant rice, because YES- rice can grow in Kansas! Use the resources and information <a href="#">found here</a> to discuss how rice is grown globally.</p> <p><b>Option 4: Greenhouse Tour</b> Take students on a tour of the diversity of plants grown in the greenhouse due to the diversity of renters we have in the greenhouse. If possible, arrange a visit with one of the GH growers in advance to discuss their heritage in ag.</p>
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**EXPLAIN**

**Guiding Question: What factors affect global agriculture?**

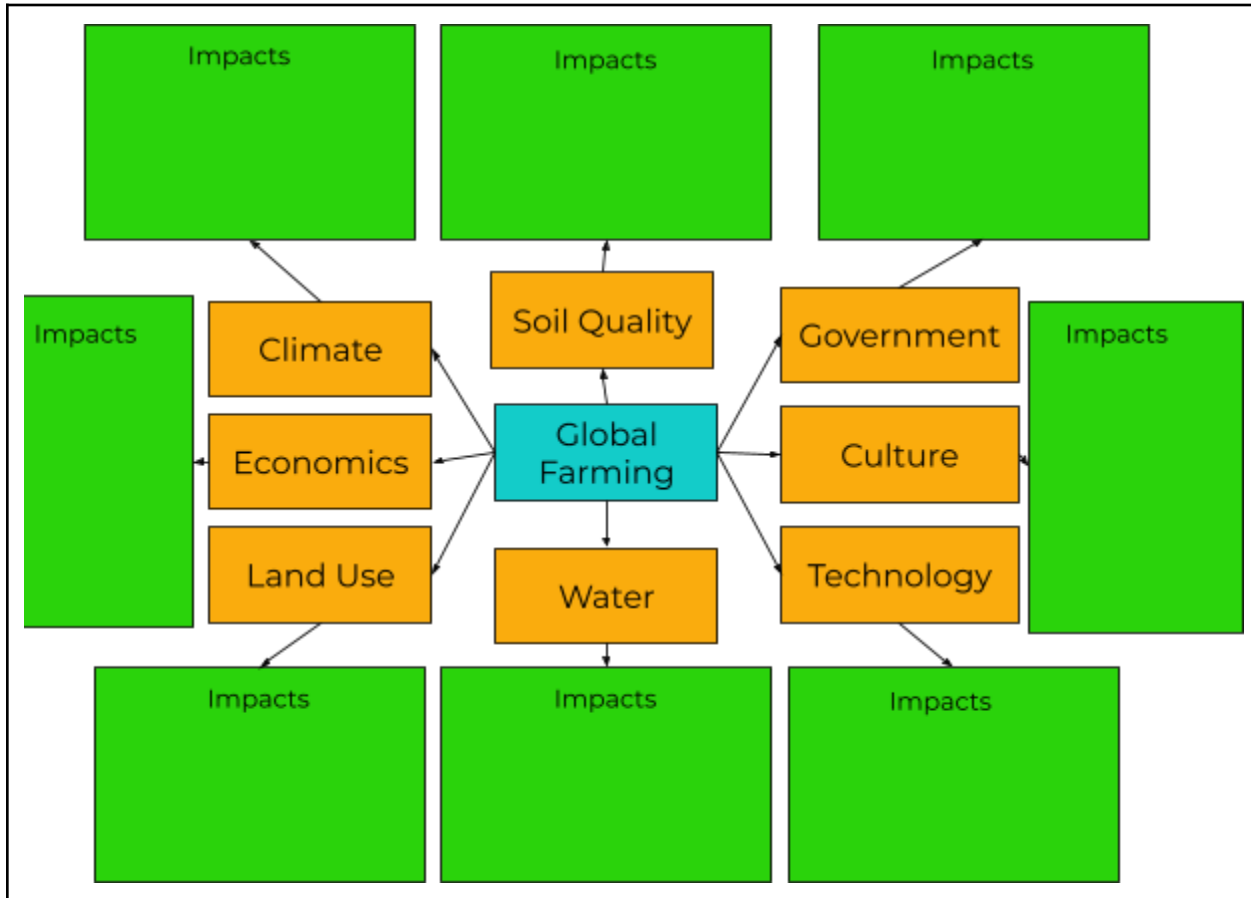
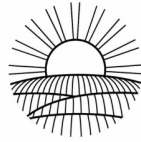
Show the video here of Erika of Doña Fina Cafe and how she helps move coffee from her family farm in Guatemala to the coffee cups of Kansas Citians:

<https://youtu.be/tX4dcRRfUgI>

Show students the following concept map and guide them through creating a description of each of the factors affecting global agriculture trends using the information found in the 'Background section'.

(See page 6 for a printable copy of the concept map.)

*On-Farm Note: this map should be replicated on the chalkboard in lieu of handouts.*



**ELABORATE**

CLASSROOM ACTIVITIES	ON-FARM ACTIVITIES
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<p><b>Option 1: Play the Journey 2050 game</b> This game takes students on a tour around the world while learning about sustainable agriculture practices, economics and the societal benefits of agriculture. Register as an educator for the game <a href="#">here</a>.</p> <p><b>Option 2: (9th-12th grade): Compete in the World Food Prize!</b> Students write a research paper about a global food issue and solutions and can win scholarships and more! Check out the website <a href="#">here</a>.</p>	<p>Engage students in one of the indigenous agricultural practices below as season and farm rhythms provide. Lead students through a conversation about how many of the regenerative practices we use on the farm were learned from indigenous peoples and how the factors affecting ag play out in the Midwest (Soil, Climate, Economics, Government, Culture, etc).</p> <p><b>Option 1: Agroforestry</b> Plant trees on Gibbs or Common Ground &amp; discuss the environmental benefits of native and edible trees.</p>
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**Option 3: Using the Land Activity**

Complete the activity from National Geographic [found here](#) to analyze how humans have altered the land through agriculture over time. The activity also sheds light on how arable land is distributed geographically.

**Option 2: Crop Rotation**

Assist the farmer with planting a new crop. Discuss the process farmers use to determine where to plant crops each year.

**Option 3: Intercropping**

Plant a 3 or 4 sisters garden and discuss the mutually beneficial symbiotic relationship the plants have.

Replace with a hands-on seasonal regenerative practice as needed.

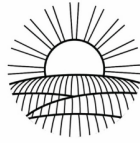
**EVALUATE**

Have students complete the Education Survey found [here](#) or via QR code



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KCFARM  
SCHOOL  
AT GIBBS ROAD

LESSONS  
TO GO

