



| Lesson Title | Unit |
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| The Potato – a brief history of an incredible Tuber | Social Studies – World Geographies 1 |
| Grade Level(s) | Common Core Standard(s) |
| 6 th -7 th | 6.T5.b,c |
| Objectives | Essential Questions |
| <p>Understand the history of potato cultivation.</p> <p>Understand the significance of the potato as a food source as well as for biocultural heritage.</p> <p>Understand the potato as a product of thousands of years of cultivation by indigenous peoples.</p> | <p>What is the significance of the potato to human history?</p> <p>How are indigenous agricultural practices different from those used in industrial agriculture?</p> <p>How can we continue to rely on potatoes as a food source in the age of climate change without repeating the mistakes of the past?</p> |
| Duration | Materials Needed |
| 1 hour | <p>Potatoes – a variety (pre-boiled)</p> <p>Toaster oven</p> <p>Herbs, salt, pepper, oil</p> <p>Tin foil</p> <p>Knives for cutting</p> <p>Plates</p> <p>Related Powerpoint (see toolkit)</p> |
| Background Information | Setup Required |
| Students should have a basic understanding of the geography of South America and the ancient civilizations that are/were based there. | Pre-boil potatoes ahead of time to lower cooking time during class. |



Procedure

Introduction and Cooking Activity (20 min)

Today we will be learning about one of the most important food sources in the world. Any guesses? You can pull up the first slide to offer a hint. That's right, it's potatoes! What color are potatoes? What size and shape are they? Where are they from? Take a few suggestions from students, then move on to slide 2. All of those colorful and strangely shaped tubers are indeed potatoes, despite their difference from what you tend to see in grocery stores today..

Before moving on, we're going to set ourselves up for a taste test at the end of class. While students wash hands, set up a couple separate workstations with tin foil, knives, pre-boiled potatoes, and plates. Students quarter the potatoes and place into tin foil. Distribute salt, pepper, oil, herbs so students can dress their potatoes as they see fit. Set them in the toaster oven at 350 degrees, and have the class return to their seats.

Slideshow and Discussion (30 min)

The following is a brief overview of each slide. If you have more class time, you can delve much deeper into each of these topics.

Slide 2: What is a microclimate? The Andes Mountain range, home of the first potato, is full of microclimates, so potatoes needed to grow in all sorts of different environments. Do you think these climates might have affected the shapes and colors of the potatoes we see here? Ancient Andean peoples grew thousands of potato varieties (4000 of which are known today).

Why were they such an important food source? Briefly go over the history of cultivation – maybe from 13,000 years ago. Wild potatoes were actually poisonous, but people discovered that you could eat them by coating them in clay because animals would eat clay before munching on them! Potatoes quickly became a dependable source of nutrients, and they fill you up.

Slide 3: European contact with Conquistadores like Fransico Pizzaro – What were they searching for in South America? What happened to the Inca after Europeans made contact? The potato sailed back to Europe with the conquistadores, but people thought that it was poisonous to humans and used it mainly for animal feed. Aristocrats slowly worked to make potatoes “cool” since they were a cheap and reliable food source for poorer working classes and slaves. Potatoes are filling and take less land to grow than grains. This led to a population boom across Europe. But the Conquistadors didn't take the biocultural context with them, or the thousands of years of knowledge about growing – just the potato as a product. What could go wrong?

Slide 4: Map of potato movement across the world. Can you think of more reasons why the potato would spread around the world so quickly? They can grow in poor soils, they store and travel easily, it's easy to make them taste good...etc.



Slide 5: Compare Andean potatoes with European varieties, especially the Irish Lumper. Introduce **genetic variation**. Using the context of our discussion, what do you think the word **monoculture** means? Were indigenous farmers growing in a monoculture? Why would farmers want to grow in a monoculture? Do you think there are any risks involved?

Slide 6: There are a few things to worry about with monocultures, but one major thing brought about what we call the Potato Famine. Explain what blight is - how do you think a disease like blight would affect monoculture production? The varieties grown in Europe are less resistant than wilder varieties, and if you only grow one type of potato...disaster will ensue! Over the course of eight years of crop failures, roughly a million poor Irish people that relied on potatoes starved to death, and at least a million more fled the country as refugees.

Slide 7: Potato reproduction and genetic variation – cousins vs. clones. How do most farmers and gardeners grow potatoes today? Is there a lot of genetic variation involved in this method? Could something like potato blight affect our potatoes today? What measures do modern farmers take to reduce the risk of disease on their crops?

Slide 8: A way forward. Preface this conversation by saying that these can be heavy topics, but they're cool to think about.

Has anyone heard of **intellectual property**? Can someone own an idea? What about a design? Explain patents. Do you think the person who invented the internet made money from that idea? YES. What about the inventor of cars? Yes. What about the people that started to cultivate the potato? Can we understand the potato as a product of thousands of years of work? Who should own that intellectual property? Discuss indigenous knowledge, biocultural heritage, potato park, the NASA mission as listed on the slide. Depending on the size and maturity level of your group, you can discuss **food sovereignty** and why heritage/heirloom crops are so important to a people's identity.

Wrap Up (10 min)

Eat! Distribute the roasted potatoes to the students at their desk. While eating, talk about a way forward – how can we learn from the past and not repeat the same mistakes? Talk about the Mars Mission and play the silly video. Finish your lesson by having the students help clean up.



Extensions and Variations

Gleaning potatoes from a local farm or harvesting potatoes from the garden.
Reproduction experiment in the spring - try to cross potato varieties or start potatoes from seed
Make connections to other ancient civilization food culture lessons.
Students research the cultural significance and biocultural heritage of other staple crops.