

# The e-Potato: A Multidisciplinary and Multimedia Program

## Lesson 1: History and Production of Potatoes

**Goal:** Students will learn about the history and production of potatoes.

**Objectives:** After completing this lesson, students will be able to—

- 1) Identify the continent where potatoes were first grown.
- 2) Select when potatoes were first cultivated.
- 3) Use a map to track the pathway of potatoes from South America to Europe and to the United States.
- 4) Identify the number of states in the U.S. that grow potatoes.
- 5) List the five countries with the greatest production of potatoes.
- 6) Identify counties in Idaho where potatoes are grown (Idaho students only).
- 7) Identify states in the U.S. where potatoes are grown.
- 8) List the unique environmental conditions for growing potatoes in Idaho.
- 9) Track the process of how potatoes move from the field to the table.
- 10) Describe possible career options in geography, geology, and agriculture.

**Lesson Content:** The four main components of the lesson include—

- 1) History of potatoes.
- 2) Potato production in the U.S.
- 3) Potato production worldwide.
- 4) Exploring future careers.

**Approximate Time to Teach the Lesson:** 60 minutes

**Key Concepts:**

- **History of Potatoes.** Students will learn how potatoes were first grown over 8,000 years ago in the Andes Mountains, in South America, and follow how they next traveled to Europe, eventually to North America, and finally to Idaho.
- **Potato Production.** Students will learn where potatoes are produced in the U.S. and worldwide. They will learn that potatoes are produced in 30 states in the U.S., the U.S. is number five in potato production worldwide, and what other countries produce them.
- **Potatoes in Idaho.** Students will learn where the larger potato fields are located in Idaho and the unique growing conditions that enhance the taste of potatoes.
- **From Field to Fork.** Students will also learn the steps involved with transporting potatoes from the field to the table.
- **Introduction to Careers.** Students interested in history, geography, and agriculture will learn about the types of careers that are open to them with these types of degrees.

**Evaluation Tools:** Students will answer questions on the material covered in class.

**Enrichment Activities (optional):**

- The instructor will assign students enrichment activities after they complete the lesson.
  - History
  - Geography

Sources/References: All of the sources/references are displayed in the materials that the student/learner sees.

**Lesson 1: Instructions for Using *The e-Potato Program***

Have the students turn on their devices and check that they have internet connectivity. Type in <http://www.uidaho.edu/epotato> and click on the link; <https://idahopotato.com>.

1. Click on Lesson 1: *The History and Production of Potatoes*.
2. Use the *Lecture Notes* as you go through the lesson. The *Lecture Notes* contain the information the instructor should cover in the classroom and contain a screen shot of each of the information boxes.
3. **Please note**—the *Instructor Lecture Notes are linked*.

Instructions: Have all students go to the e-Potato webpage:  
<http://www.uidaho.edu/epotato>

The e-Potato: A Multidisciplinary and Multimedia Youth Online Program

Please have students complete [this pre survey](#) before starting the e-potato lessons.

**Lesson 1: The History and Production of Potatoes**

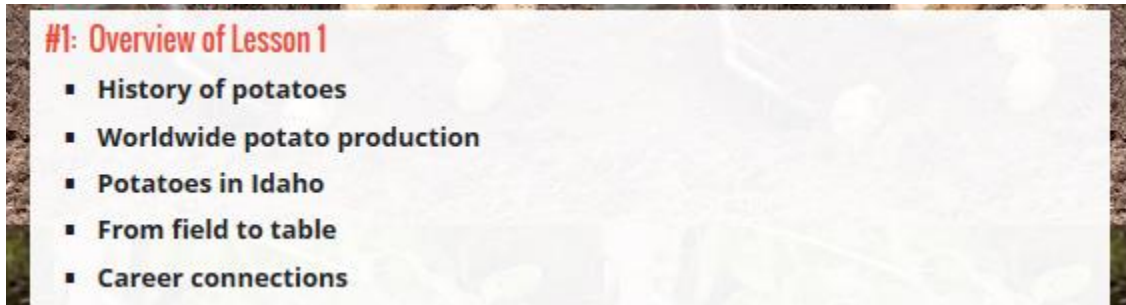
Please lead your students through this lesson and have them complete the activities throughout.

This lesson includes:

- History of Potatoes
- Worldwide Potato Production
- Potatoes in Idaho
- From Field to Table
- Career Connections

*Welcome to the first of four lessons from The e-Potato: A Multi-disciplinary and Multimedia Program. We will use the potato as a way to cover nine disciplines: science, technology, engineering, math, nutrition, health, history, geography, and agriculture.*

Instructions: Have them complete the pre-survey, once everyone is done, have them click on Lesson 1.



*These are the main topics we will be covering in today's lesson:*

- *History of potatoes;*
- *Worldwide potato production;*
- *Potatoes in Idaho;*
- *From field to table;*
- *Career connections.*

**#2: Where on Earth were potatoes first grown?**

*This is our beautiful planet Earth, as seen from outer space.  
Does anyone want to guess where potatoes were first grown?*



**#3: How did potatoes arrive in America?**

### #3: How did potatoes arrive in America?

#### Directions:

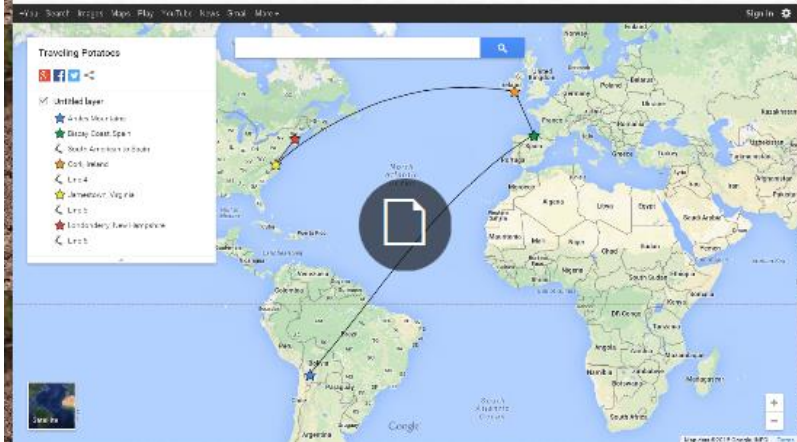
Click the map photo to follow the path potatoes traveled to get to the American Colonies.

Then click on the "View Original" button in the top right corner to interact with the map.

**BEGINNING IN SOUTH AMERICA, CLICK ON EACH STARRED LOCATION AND CAREFULLY READ THE INFORMATION INCLUDED.**

**\*\*As you read through the information on the map, think about the following questions:**

- 1 When were potatoes first grown in the Andes Mountains?
- 2 In which state in the US were potatoes first grown?



Instructions: Click on the map photo to follow the path potatoes traveled to get to the American Colonies. Then click on "View Original" tab in the upper right corner to see the large map and interact with it.

**\*\*As you read through the information on the map, think about the following questions:**

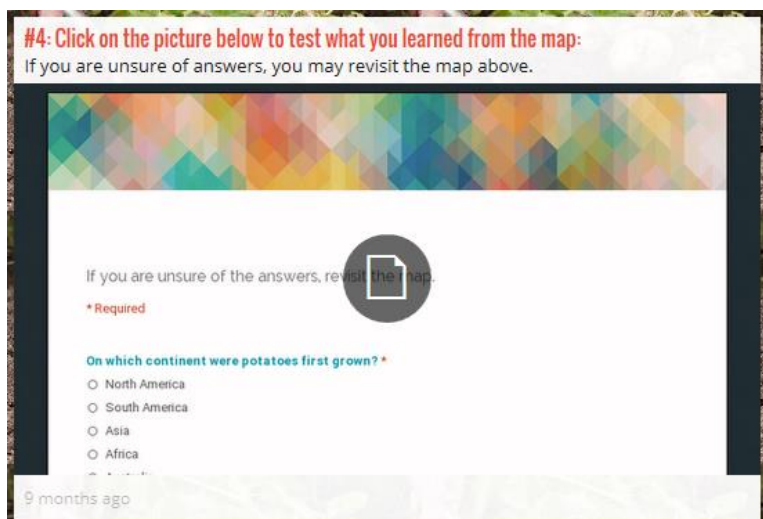
1. When were potatoes first grown in the Andes Mountains?
2. In which state in the U.S. were potatoes first grown?

Instructions: Have each student click on every star in the map and read the information:

- 1) **South America:** Potatoes were first grown in the Andes Mountains 8,000 years ago. This picture shows farmers in the Andes Mountains in South America harvesting their potatoes.
- 2) **South America to Spain:** In 1536 Spanish Conquistadors conquered Peru, discovered the flavors of the potato, and carried them to Europe.

- 3) **Spain Biscay Coast.** The **Bay of Biscay** is located off the north coast of **Spain** and the west coast of France in the Atlantic Ocean, south of the Celtic Sea. Before the end of the sixteenth century, families of Basque sailors began to cultivate potatoes along the Biscay coast of northern Spain.
- 4) **Ireland:** Sir Walter Raleigh introduced potatoes to Ireland in 1589 on the 40,000 acres of land near Cork. This is a picture of a potato farm in Cork, Ireland. From 1780 to 1845, the potato helped double the Irish population from 4 to 8 million. It took nearly four decades for the potato to spread to the rest of Europe,
- 5) **Jamestown, Virginia:** Potatoes arrived in the Colonies in 1621 when the Governor of Bermuda, Nathaniel Butler, sent two large cedar chests containing potatoes and other vegetables to Governor Francis Wyatt of Virginia at Jamestown.
- 6) **Londonderry, New Hampshire:** The first permanent potato patches in North America were established in 1719, most likely near Londonderry (Derry), New Hampshire, by Scotch-Irish immigrants. From there, the crop spread across the country.
- 7) **Idaho:** The present-day largest producer of potatoes, actually did not begin growing potatoes until 1836, when missionaries moved west, bringing Christianity and important skills, including teaching the native tribes to grow crops instead of relying upon hunting and gathering methods.

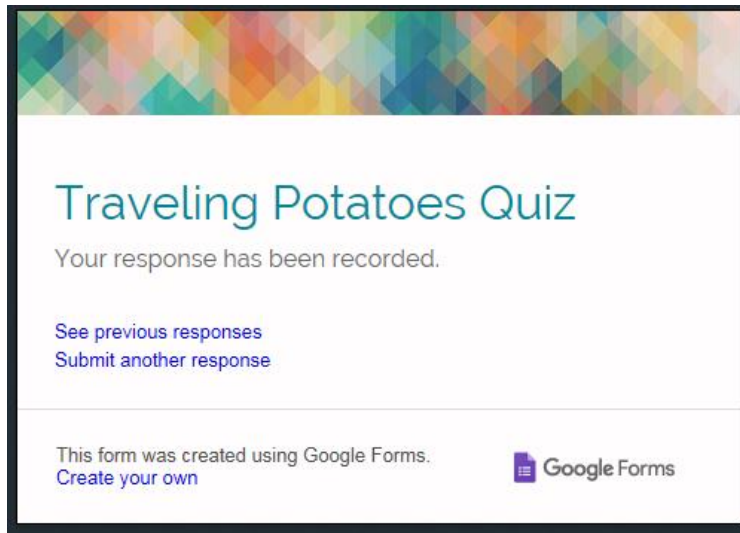
**#4 Click on the picture below, “Traveling Potato”, to answer three questions based on information in the map activity.**



Instructions: After students click on the picture, have them click on “View Original” to get to the survey.

Have students answer the three questions and click on “submit”.

This will bring you to the following screen:



Click on “previous responses” to see how the class answered the questions.

**This will bring you to another screen showing the entire classes’ responses to the question. This is when you will tell students what the correct answers are.**

*The correct answers to the three questions are:*

- 1) The continent on which potatoes were first grown is South America.*
- 2) Potatoes were first grown in the Andes Mountains 8,000 years ago.*
- 3) The state where potatoes were first grown is Virginia.*

Instructions: close this tab to get back to the previous box. Then click on the X (upper right corner) to get back to the “wall”.

## **#5 Career Connection**

*Check out the following careers that utilize GPS technology, geology, geography, and history.*

**#5: Career Connection**

Did you find this information interesting? Check out the following careers that utilize GPS technology:

Geology: <http://www.uidaho.edu/degree-finder/geology/bs-geology>

Supplemental Article:  
Mapping the Wilderness  
<http://www.uidaho.edu/research/featuredresearch/featured-stories/fs-mapping>

Geography: <http://www.uidaho.edu/degree-finder/geography/bs-geography>

History: <http://www.uidaho.edu/degree-finder/history/ba-history>

## #6 Potato Production in the U.S.

**Instructions:** First, read the article linked below to find answers to the following questions:

1. How many states grow potatoes commercially?
2. Which five states are the leading producers of potatoes?

**Instructor:** Bonus question—In the article have students determine how many pounds of potatoes are grown on one acre. NOTE: This will be used later on with a video clip.

**Hint:** Under the heading “Production” in the article is the following information—in 2012 a total of 1.13 million acres of potatoes were harvested in the United States, up 5 percent from 2011. The average yield increased to 409 cwt per acre, up 10 cwt from 2011. 1 cwt (centum or hundred weight) = 100 pounds;  $409 \text{ cwt/acre} \times 100 \text{ pounds/cwt} = 40,900$  pounds of potatoes in 1 acre.

[http://www.agmrc.org/commodities\\_products/vegetables/potato-profile/#](http://www.agmrc.org/commodities_products/vegetables/potato-profile/#)

**#6: Potato Production in the US**

First, read the article linked below to find answers to the following questions:

1. How many states grow potatoes commercially?
2. Which five states are the leading producers of potatoes?

ARTICLE: [http://www.agmrc.org/commodities\\_products/vegetables/potato-profile/#](http://www.agmrc.org/commodities_products/vegetables/potato-profile/#)

Then, click the image below to take the quiz:

**Potato Production in the US**

\* Required

How many states grow potatoes commercially? \*

15  
 20  
 25  
 30

Which five states are the leading producers of potatoes? \*

Idaho, Nebraska, Wisconsin, California and North Dakota  
 Idaho, Washington, Wisconsin, Colorado and North Dakota  
 Idaho, Massachusetts, North Carolina, Colorado and South Dakota

8 months ago

Instructions: After students submit answers to the questions, share the correct responses.

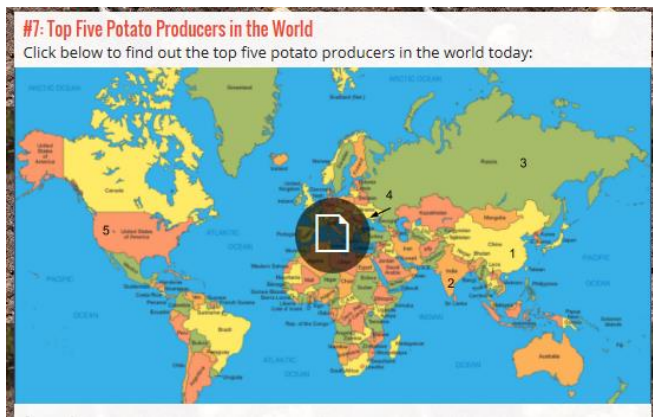
**Correct answers:** The answer is 30 states in the U.S. grow potatoes commercially.

The five states leading potato production are: Idaho, Washington, Wisconsin, Colorado, and North Dakota.

### #7 Top Five Potato Producers in the World:

Instructions: This is a class discussion activity.

Click below to find the top five potato producers in the world today:



China is now the world's top potato producer, followed by India, Russia, and Ukraine. The United States is the fifth largest producer of potatoes in the world (FAO).

Instructions: You can read the number of tons of potatoes each country produces.

**Here are the top 5 potato producing countries:**

Year: 2012, Source: FAOSTAT, 2014

Rank	Country	Potato Production (metric tonnes)
1	China	85,920,000
2	India	45,000,000
3	Russian Federation	29,532,530
4	Ukraine	23,250,200
5	United States	19,165,865

### #8 Potatoes in Idaho and Beyond

Instructions: Read the fun facts.



## Fun Facts

Potatoes on Mars??? Watch this:

<https://edpuzzle.com/media/560c4abea8547919732d04b4>

**Instructor:** Play this video clip and tell the students to watch what is being grown (yes it's a potato) on Mars. It saves Matt Damon's life.

This is when you remind them that one acre of land can grow almost 41,000 pounds of potatoes. That is why potatoes were chosen to be grown on Mars.

Potatoes are Idaho's state vegetable.

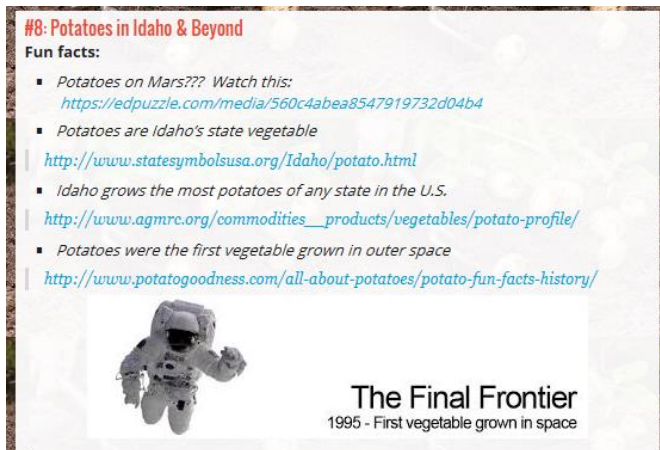
Source: <http://www.statesymbolsusa.org/Idaho/potato.html>

Idaho grows the most potatoes of any state in the U.S.

Source: [http://www.agmrc.org/commodities\\_products/vegetables/potato-profile/](http://www.agmrc.org/commodities_products/vegetables/potato-profile/)

Potatoes were the first vegetable grown in outer space. Source:

<http://www.potatogoodness.com/all-about-potatoes/potato-fun-facts-history/>



## #9 Potato Activity #1 (for students who live in Idaho)

**Instructions:** This map shows the 44 counties in Idaho. The shaded areas are those counties where potato production is more than 500 acres. Use the map to answer these two questions.

(1) In which county do you live?

Click here to share your answer: <http://padlet.com/idahopotato/county>

**Instructions:** Each student will double click on a box and type in their name and county, e.g. Martha, Ada.

Then, they should close that tab and go back to the padlet wall.

(2) Which county or counties that grow potatoes are closest to you?

Click here to share your answers: [https://docs.google.com/forms/d/1IDW-fF3H2mqIsrAdOsWAC5sOJbZ8A2ecsDh043vNri0/viewform?usp=send\\_form](https://docs.google.com/forms/d/1IDW-fF3H2mqIsrAdOsWAC5sOJbZ8A2ecsDh043vNri0/viewform?usp=send_form)

#9: Potato Activity #1 (for students who live in Idaho)

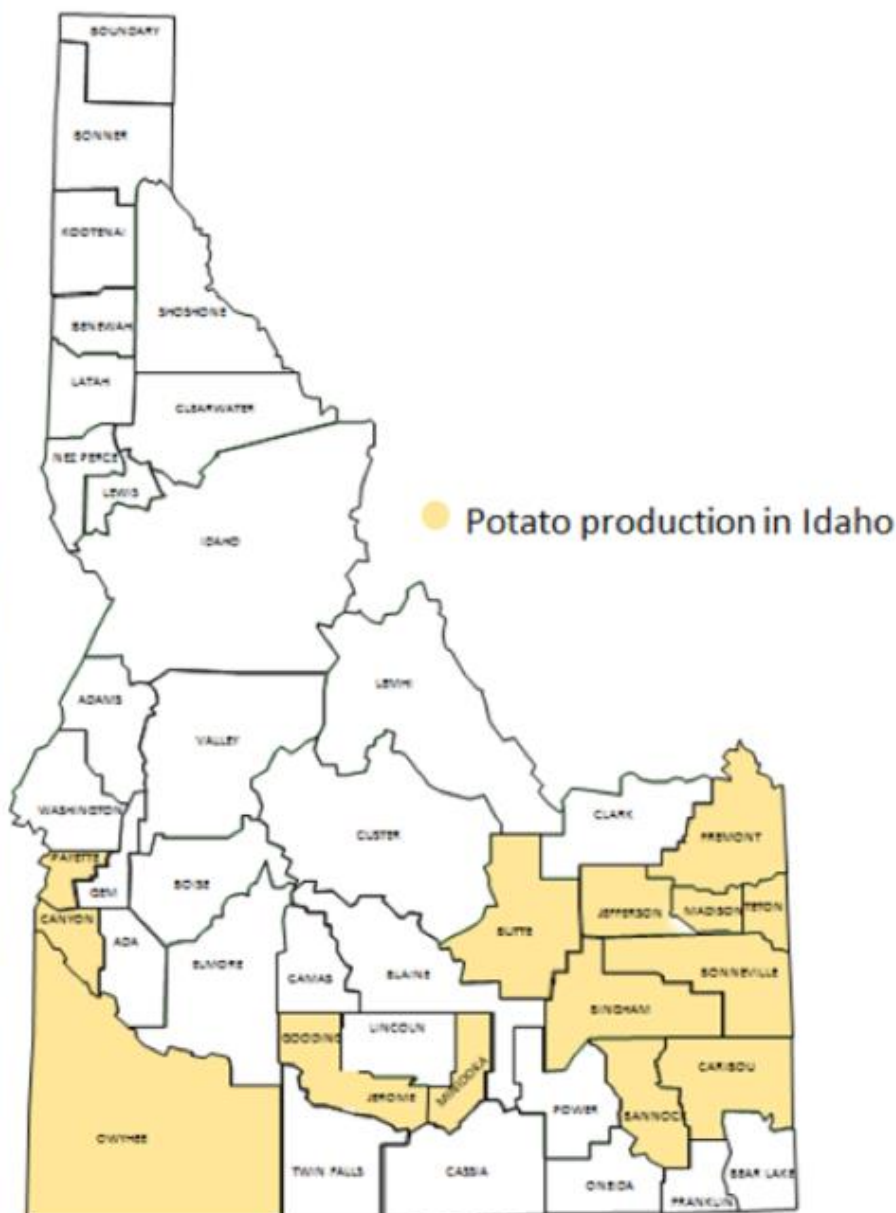
The map below shows the 44 counties in Idaho. The shaded areas are those counties where potato production is more than 500 acres.

Use the map to answer the following two questions:

(1) Which county do you live in? Click here to share your answer:

<http://padlet.com/idahopotato/county>

(2) Which county or counties that grow potatoes are closest to you? Click here to share your answers: [https://docs.google.com/forms/d/1IDW-fF3H2mqIsrAdOsWAC5sOJbZ8A2ecsDh043vNjr0/viewform?usp=send\\_form](https://docs.google.com/forms/d/1IDW-fF3H2mqIsrAdOsWAC5sOJbZ8A2ecsDh043vNjr0/viewform?usp=send_form)



Instructions: Each student will select two counties and put a check mark in the boxes next to the name of the county and click on the submit button.

This will take them to another page where they will click on “See Previous Response;” this will show them the class responses to the question.

Source:

[http://www.agcensus.usda.gov/Publications/2012/Full\\_Report/Volume\\_1,\\_Chapter\\_2\\_County\\_Level/Idaho/st16\\_2\\_029\\_029.pdf](http://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_2_County_Level/Idaho/st16_2_029_029.pdf)

### **#10 Potato Activity #1**

Instructions: for students who do not live in Idaho.

1) *In which state do you live? Click here to share your answer:*

<http://padlet.com/idahopotato/fb3kkwsy77eb>

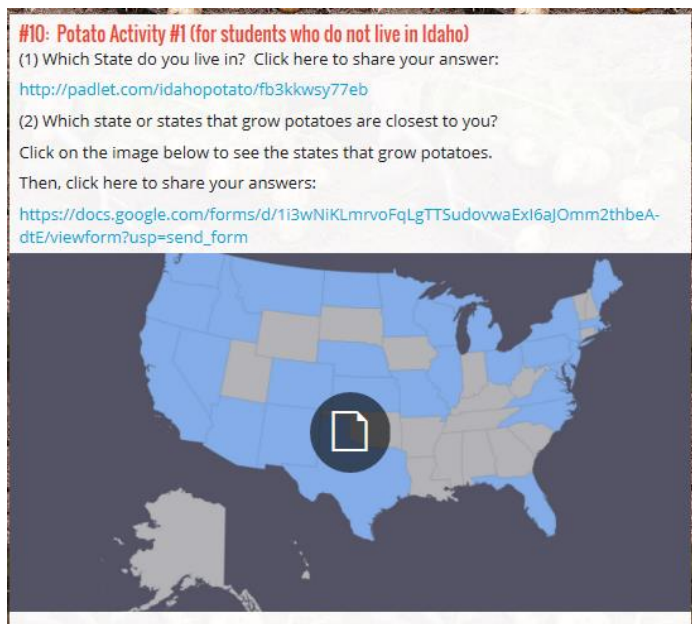
Instructions: Each student will double click on a box and type in their name and state. Then, they should close that tab and go back to the padlet wall.

2) *Which state or states that grow potatoes are closest to you?*

Instructions: Click on the image below to see the states that grow potatoes.

Then, click here to share your answers:

[https://docs.google.com/forms/d/1i3wNiKLMrvoFqLgTTSudovwaExI6aJOmm2thbeA-dtE/viewform?usp=send\\_form](https://docs.google.com/forms/d/1i3wNiKLMrvoFqLgTTSudovwaExI6aJOmm2thbeA-dtE/viewform?usp=send_form)



Instructions: Each student will select two states and put a check mark in the boxes next to the name of the state and click on the submit button.

This will take them to another page where they will click on *See Previous Response*; this will show them how the class responded to the question.

### #11 Grown in Idaho Seal

Instructions: Click the link below to learn why Idaho potatoes are grown mainly in Southern Idaho: [http://www.idahopotato.com/why\\_idaho](http://www.idahopotato.com/why_idaho)

Now click below to answer the question:

[https://docs.google.com/forms/d/1j1XaSG8-KCoZChdJhKHUTVgD\\_xPUD73uiPSyisNZEmc/viewform?usp=send\\_form](https://docs.google.com/forms/d/1j1XaSG8-KCoZChdJhKHUTVgD_xPUD73uiPSyisNZEmc/viewform?usp=send_form)



Instructions: After the students submit their answer, have them click on “previous response” to see how the class responded to the question.

**Correct answer:** *The correct answer is all of the above.*

*To be sure you're getting genuine, top-quality Idaho Potatoes, look for the "Grown in Idaho" seal. Idaho's growing season of warm days and cool nights, ample mountain-fed irrigation and rich volcanic soil, give Idaho Potatoes their unique texture, taste, and dependable performance.*

Source: [http://www.idahopotato.com/why\\_idaho](http://www.idahopotato.com/why_idaho)

**#12 Please watch the following *Farm to Fork* video:**

Instructions: As you are watching the video, focus on the different steps that are needed to get potatoes from the farm to the fork (ready to be eaten).



**#13 Click on the image below to answer questions about the *Farm to Fork* video:**

Instructions: After students have submitted their responses, tell them the correct answers.

*Here is the correct order of how potatoes get from field to table.*

- 1) *Growing—picture of potato rows in Glenns Ferry, Idaho,*
- 2) *Harvesting potatoes, Tetonian, Idaho,*
- 3) *Washing, sorting, sizing from a potato packing plant,*
- 4) *Buying—at a grocery store,*
- 5) *Cooking—young chefs in the kitchen,*
- 6) *Eating—baked potato with ham and broccoli.*

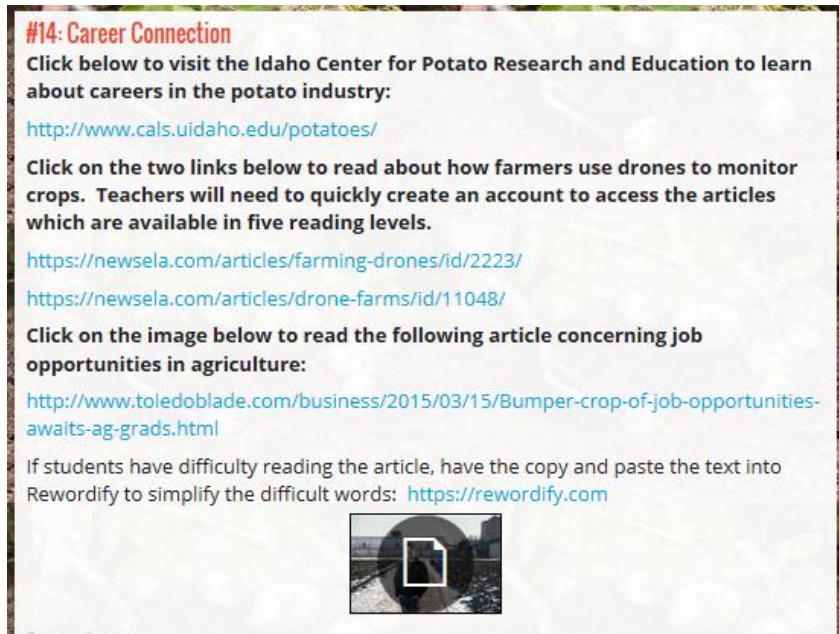


## #14 Career Connection

**Instructions:** Click below to visit the Idaho Center for Potato Research and Education to learn about careers in the potato industry:

<http://www.cals.uidaho.edu/potatoes/>

**Instructions:** Click on the image below to read the following article concerning job opportunities in agriculture:




**#14: Career Connection**  
Click below to visit the Idaho Center for Potato Research and Education to learn about careers in the potato industry:  
<http://www.cals.uidaho.edu/potatoes/>

Click on the two links below to read about how farmers use drones to monitor crops. Teachers will need to quickly create an account to access the articles which are available in five reading levels.  
<https://newsela.com/articles/farming-drones/id/2223/>  
<https://newsela.com/articles/drone-farms/id/11048/>

Click on the image below to read the following article concerning job opportunities in agriculture:  
<http://www.toledoblade.com/business/2015/03/15/Bumper-crop-of-job-opportunities-awaits-ag-grads.html>

If students have difficulty reading the article, have the copy and paste the text into Rewordify to simplify the difficult words: <https://rewordify.com>

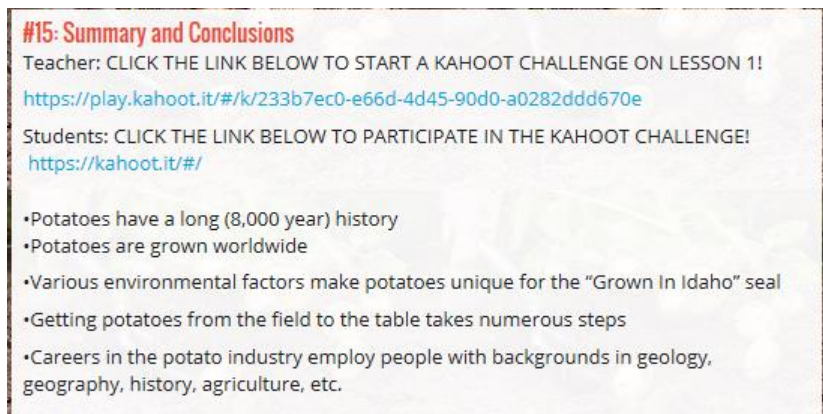


## #15 Summary and Conclusions

**Instructor:** Before you read the summary and conclusions, tell students they will be taking a “Kahoot” challenge which will test their knowledge of topics covered in Lesson 1.

The instructor should click on the “Instructor” link.

The students should click on the “Student” link.



**#15: Summary and Conclusions**  
Teacher: CLICK THE LINK BELOW TO START A KAHOOT CHALLENGE ON LESSON 1!  
<https://play.kahoot.it/#/k/233b7ec0-e66d-4d45-90d0-a0282ddd670e>

Students: CLICK THE LINK BELOW TO PARTICIPATE IN THE KAHOOT CHALLENGE!  
<https://kahoot.it/#/>

- Potatoes have a long (8,000 year) history
- Potatoes are grown worldwide
- Various environmental factors make potatoes unique for the “Grown In Idaho” seal
- Getting potatoes from the field to the table takes numerous steps
- Careers in the potato industry employ people with backgrounds in geology, geography, history, agriculture, etc.

- *Potatoes have a long (8,000 year) history;*
- *Potatoes are grown worldwide;*
- *Various environmental factors make potatoes unique for the “Grown In Idaho” seal;*
- *Getting potatoes from the field to the table takes numerous steps;*
- *Careers in the potato industry employ people with backgrounds in geology, geography, history, agriculture, etc.*