FUN FACES OF WISCONSIN AGRICULTURE
SPUD'S POTATO FAST FACTS

Production Information

Potatoes belong to the nightshade family – Solanaceae - and are related to tomatoes, pepper and egg plant. Potatoes prefer nutrient rich soil, ample rainfall or irrigation, and warm days with cool nights. Most potatoes are planted in the spring and harvested in the fall except for about 10% of the U.S. crop that fills special market needs.

Seed potatoes, grown especially for reproductive purposes, are used to plant a potato crop. The seed potato is cut so that each one has 1-2 eyes. They are planted 12" apart, 4-6" deep, and in rows that are 2 ½ - 3' apart. Potatoes are 80% water so adequate moisture is important.

There are different types of potatoes- including red, white and russet. The skin color is the obvious difference. Potatoes with red skins are generally used for boiling and mashing because the tuber flesh does not break down when boiling. Round, white potatoes are usually used for chips because of the high percentage of dry mater. Russets are used for all purposes except for making chips.

When harvested, about 34% of the U.S. crop is used for frozen potato products, 28% for fresh market, 12% for potato chips, 10% for dehydrated potatoes, and 16% for livestock feed, potato seed or farm consumption.

Wisconsin Production

In 2006, there were 66,000 acres of potatoes planted and harvested. Potatoes in Wisconsin averaged 435 cwt (hundredweight) per acre. Production totaled 28,710,000 cwt. Counties with the most potatoes include Portage, Langlade, Waushara, and Adams County. Potatoes are popular in the Central Sands of Wisconsin which is the central part of the state. The sandy soil allows for good drainage but also requires that there is adequate moisture. Irrigation is used on many farms to insure adequate moisture.

Career Information

Farmers grow and harvest the crop. Crop consultants help farmers with fertilizer, pest and weed control. Careers in transportation and storage must move the crop from the farm to the processors. Food processors and researchers develop better ways to use potatoes in new food products. Plant breeders develop new types of potatoes. Retailers, advertisers and restaurants bring the final product to the consumer.

Trivia

- Potatoes were the first vegetable grown in space.
- French fries come from the culinary term "frenching" or to cut into narrow strips or rounds.
- The average American eats 46 pounds of potatoes a year.
- America grows about 46 billion pounds of potatoes on 1.31 million acres.

Other Information

Potatoes and sweet potatoes are not related at all. Sweet potatoes belong to the Convolvulaceae family (morning glory) and require warm growing conditions. The edible part is the storage root, they are sweet in flavor, and usually grown in North Carolina, Louisiana and Mississippi.

We eat the specialized stem of the potato which is called a tuber. We do not eat the root. Tubers that have been exposed to sunlight will turn green because photosynthesis has occurred. Green potatoes have a higher amount of solanine which will taste bitter. In large quantities, solanine can be harmful so it is best not to eat green potatoes. To prevent them from turning green, keep the potatoes stored where they're not exposed to sunlight or artificial light.

FUN FACES OF WISCONSIN AGRICULTURE
MATH – POTATO AND VEGETABLE LESSON PLAN

STUDENT'S NAME:

1. Your family celebrates its German heritage by eating brats and sauerkraut. If one cup of sauerkraut is enough for six brats, how many brats would you be able to eat with one quart? One gallon?

2. You want to make dinner for your little brother and sister but you need to make sure that they each get exactly 24 peas. If peas come four in a pod, how many pods should you pick? What if peas come only three in a pod?

3. If a hill of potatoes has 6 potatoes and you plant 24 hills, how many potatoes will you get?

4. If each person in your family eats one potato a week and there are 4 members in your family, how many potatoes do you eat in a year? How many more potatoes do you need than what was grown in Question #3?

5. You help your neighbor pick sweet corn, and he pays you 5¢ for every four ears you pick, how many ears should you pick to make $5.00?

6. If you can pick 500 ears in one hour, how long will it take you to make $5.00?

7. This summer you will be in charge of your family's garden. You will be planting four different crops that need to be six feet apart from each other, how many feet should your garden be? How many yards?

8. Draw a diagram of a vegetable garden in the space provided below:
Include the following crops: Snap Beans, Beets, Cabbage, Peas, Sweet Corn, Carrots and Potatoes.

All crops that grow underground should be parallel with each other.
The remaining crops should be perpendicular with the underground crops.
Cabbage and Sweet Corn should be between Snap Beans and Peas.

9. What is the perimeter of your garden if it is 25 feet long and 12 feet wide? What is the area?

10. You harvested 300 pounds of snap beans from your field this year and 250 pounds of beets. If you are paid $2 for a pound of beans and $4 for a pound of beets, how much money did you make? But you had to pay two additional people $5.50 per hour to pick for 10 hours for you. How much did you pay your pickers? How much money does that leave you with?

ANSWER KEY

1. Your family celebrates its German heritage by eating brats and sauerkraut. If one cup of sauerkraut is enough for six brats, how many brats would you be able to eat with one quart? One gallon?

4 cups X 6 brats = 24 brats with one quart of sauerkraut
4 quarts X 24 brats = 96 brats with one gallon of sauerkraut
16 cups X 6 brats = 96 brats with one gallon of sauerkraut

One quart = 4 cups
One gallon = 4 quarts (16 cups)

2. You want to make dinner for your little brother and sister but you need to make sure that they each get exactly 24 peas. If peas come four in a pod, how many pods should you pick? What if peas come only three in a pod?

Four in a pod: six pods for each sibling=12 pods
Three in a pod: eight pods for each sibling=16 pods

3. If a hill of potatoes has 6 potatoes and you plant 24 hills, how many potatoes will you get?

144 potatoes

4. If each person in your family eats one potato a week and there are 4 members in your family, how many potatoes do you eat in a year? How many more potatoes do you need than what was grown in Question #3?

Your family will eat 208 potatoes in a week
208 – 144 = 64
You will need 64 more potatoes than what you grew

5. You help your neighbor pick sweet corn, and he pays you 5¢ for every 4 ears you pick, how many ears should you pick to make $5.00?

$5.00/$.05 = 100 units of 4 needed
If paid $.05 per unit for 100 units of 4 ears (100 x 4) = 400 ears of corn

6. If you can pick 500 ears in one hour, how long will it take you to make $5.00?

Refer to your answer in #5 (400 ears = $5)
400 is 80% of 500.
80% of an hour (60 minutes) = 48 minutes to pick 400 ears of corn which would help you earn $5.

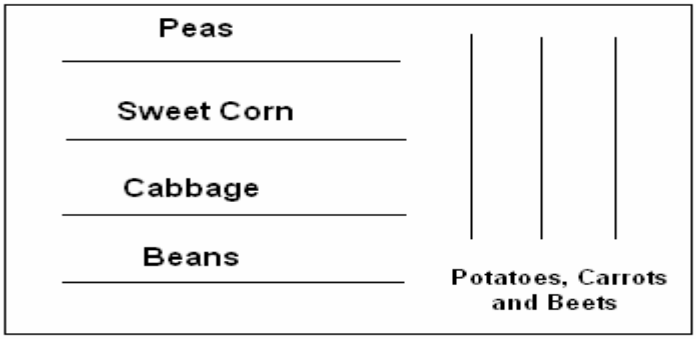
7. This summer you will be in charge of your family's garden. You will be planting four different crops that need to be six feet apart from each other, how many feet should your garden be? How many yards?

18 feet, 6 yards (because the crops on the end don't need six feet on either end—just between other crops)

8. Draw a diagram of a vegetable garden in the space provided below:
Include the following crops: Snap Beans, Beets, Cabbage, Peas, Sweet Corn, Carrots and Potatoes.

All crops that grow underground should be parallel with each other.
The remaining crops should be perpendicular with the underground crops.
Cabbage and Sweet Corn should be between Snap Beans and Peas.

Peas and Beans may be replaced with each other, as can sweet corn and cabbage



9. What is the perimeter of your garden if it is 25 feet long and 12 feet wide? What is the area?

Perimeter = 74 feet (25 + 25 + 12 + 12 = 74)

Area=300 square feet (25 x 12 = 300 square feet)

10. You harvested 300 pounds of snap beans from your field this year and 250 pounds of beets. If you are paid $2 for a pound of beans and $4 for a pound of beets, how much money did you make? But you had to pay two additional people $5.50 per hour to pick for 10 hours for you. How much did you pay your pickers? How much money does that leave you with?

300 lb X $2/lb = $600 for beans
250 lb X $4/lb = $1000 for beets
Total of $1600 income

(2 additional people X 10 hours) X $5.50/hour = $110
$1600 income -$110 additional worker cost = $1490 final income

FUN FACES OF WISCONSIN AGRICULTURE
POTATO GROWTH

Activity Length:
This Business Called Agriculture – 15 minutes
Why Potatoes in Wisconsin? – 60 minutes
How does your potato grow? – 45 minutes – extended lesson for growing exercise
Potato and Vegetable Math Lesson – 30 minutes

Student Objectives:
1. Become familiar with the production of potatoes
2. Discuss potato production and various food products that can be derived from potatoes
3. Using potatoes, conduct a science experiment to determine the best way to grow potatoes and chart and graph final results

Wisconsin Model Academic Standards:

English	A4.4		
Math	A.4.3	D.4.1	E.4.1
Science	A.4.5		

Introduction: Spud's Potato Fast Facts

Additional Information available at:
Wisconsin Fresh Produce (http://www.wisconsinfreshproduce.org/vegfacts/Potato.htm)
Healthy Potato Website (http://www.healthypotato.com/index.asp)
Wisconsin Potato and Vegetable Growers Association (http://www.wisconsinpotatoes.com/)
Idaho Center for Potato Research and Education
(http://www.ag.uidaho.edu/potato/questions/index.htm)
National Potato Council (http://www.nationalpotatocouncil.org/)
U.S. Potato Board (http://www.uspotatoes.com/)

Important Terms:
- Tuber: The part of the potato that is eaten and is a specialized stem that grows underground.
- Hollow heart: Dark colored hole, often inside the potato, which is caused by cold and wet soil conditions.
- Black scurf: Fungus that is not harmful to people that can be found on the outside of potatoes. It is difficult to wash off.

Materials for this activity:
- This Business Called Agriculture - page 20

- Potting soil
- Potatoes
- Water
- Growing containers (pots or jars)
- Toothpicks to grow potatoes in water
- Spud the Potato hands-on activity

Lesson Outline:

This Business Called Agriculture

1. Using pages 21-22 20 in the *This Business Called Agriculture*, give students individual time to read the information on that page and answer the questions that follow.

   Across: 1. Sodium 3. Daily 6. Grams 9. Calories 10. Mineral 11. Nutrition
   Down: 1. Serving 2. Fats 4. Calcium 5. Potassium 7. Fiber 8. Healthy

Why Potatoes in Wisconsin?

As a class, discuss why potatoes grow well in Wisconsin

1. Refer to information from the Wisconsin Potato and Vegetable Growers Association (http://www.wisconsinpotatoes.com/)

   GLACIAL SOILS AND ABUNDANT WATER
   The source of Wisconsin's quality is its diverse environmental setting. Our cool northern temperatures closely match the climate of the Peruvian Andes where the potato began. The rapid warm-up, low density and lack of organic residue of Wisconsin's glacial soil allow for less plant disease and vigorous plant growth, allowing you to purchase healthy, eye-appealing potatoes year-round. With 95% of our acres irrigated, we're able to monitor soil moisture and provide you with a more consistent product.

   EFFICIENT GROWING/PACKAGING PRACTICES
   Wisconsin potato growers and packers have adopted state-of-the-art technology into the production and packaging of their product. The latest machinery and equipment is used in planting, cultivating and harvesting, enabling Wisconsin to rank among the nation's leaders in yield per acre of U.S. No. 1 potatoes. Equally sophisticated are the modern packing sheds. Elaborate electronic sizing machines are widely used, as are the hollow heart detectors, scanning potatoes for internal defects. Automated bagging machines and computerized inventory control ensure accuracy when shipping the wide variety of Wisconsin potatoes.

   STATE-OF-THE-ART STORAGE FACILITIES
   Modern storage warehouses, which carefully balance temperature, humidity and handling, go a long way toward preserving potatoes at the highest level of quality. This means Wisconsin can provide top quality potatoes all year long.

2. Refer to the Wisconsin Ag Statistics website (http://www.nass.usda.gov/wi/) and the potato information. What counties raise the most potatoes? Using a map of Wisconsin that shows counties, color in the top producing counties. What do we know about the soils in that part of the state? What makes Wisconsin ideal for potato growth?

3. Using other websites relating to production, what is different about the way a potato grows compared to a tomato? Apple? Corn? Have the students think about what part of the plant is eaten, where it grows and soil it prefers, and how it reproduces. Use this table to begin the discussion.

Comparison	**Potato**	**Tomato**	**Apple**	**Corn**
What part is eaten	Tuber	Fruit	Fruit	Seed
Soil conditions	Sandy soils- need adequate moisture. Prefer nutrient rich soil	Need more Phosphorus and Potassium	Fertile, sandy loam soils. Slightly acidic to neutral	Requires a nutrient rich soil
How it reproduces	Seed potatoes	Seed	Seeds – Grafting of new trees	Seeds
Growing season	Warm days and cool nights	Long and warm	Early spring frosts will kill blossoms	Hot, warm, frost free weather

4. Discuss growing conditions and weather's effect on plants:
    a. What would happen to potato growth if it freezes early?
    b. Weather is too hot?
    c. Too much rain?
    d. Too little rain?

5. How are potatoes harvested?
    a. Home gardens
    b. Farms and Commercial growers

    Potatoes intended for long-term storage should not be harvested until the vines have been dead for at least ten to fourteen days. This permits the proper thickening of potato skins, which increases the length of time potatoes can be stored. Potatoes harvested too early easily `skin' during the harvesting and handling period and do not store well.

    Potatoes are best dug when the soil temperature is above 45 degrees Fahrenheit and the soil is not wet. Digging when the soil is cold and wet often results in splits and cracks. Potatoes harvested from cold wet soils are also more susceptible to bruising, more difficult to cure and more prone to breakdown during storage. Potatoes should also not be harvested when the soil temperature is above 68 degrees Fahrenheit for the same reasons.

6. Discuss defects consumers might find on potatoes: hollow heart and black scurf

How does your potato grow?

This activity will allow students to select variables in their potato growth and use the scientific process to conduct an experiment.

1. Give students the following variables: grown in water, grown in soil, grown in direct light (depending on availability of windows), grown in dark, grown in average lighting…

2. Before students can begin planting, encourage them (as groups or individually-depending on space and size of class) to set a hypothesis for how they think their potato will respond to the variable they chose.

3. Be sure to tell students that their potatoes will not be growing new potatoes right away, but the vegetation that potatoes need to collect sunlight to eventually grow. If you desire to grow potatoes, be sure to plant in a large enough pot to facilitate growth below the soil (this will take six to eight weeks and is noticeable when the top of the potato plant starts to die).

4. When planting potatoes, they will grow best if already sprouting.
   - To grow in soil: place the potato eye end up into the soil and keep moistly watered.
   - To grow in water: suspend the potato with the pointed, root end of the potato facing down. The potato will grow either way, it just will take longer upside down. Pierce the potato around the center with toothpicks and balance on the top of a jar filled with water.

5. For at least two weeks chart the growth of the potatoes and monitor the number of buds, the length of leaves/vines and record the information daily. At the conclusion of the project, show students how to utilize graphs to show their results, and tables to display their information. Relating back to their hypothesis, draw a conclusion on why or why not their hypothesis was accurate.

Potato and Vegetable Math Lesson

1. Distribute Potato and Vegetable Math Worksheet as a classroom activity or homework assignment

Additional Worksheets:

Careers Guide related to potatoes and vegetables
Ag Statistics Lesson Plan related to potatoes and vegetables

Related activities:

- Using half potatoes and cookie cutters, create stamps with the potatoes. Use tempra paint to dip the stamps in and create stationary or other artwork (Source: Illinois Ag in the Classroom)
- Spud the Potato activity

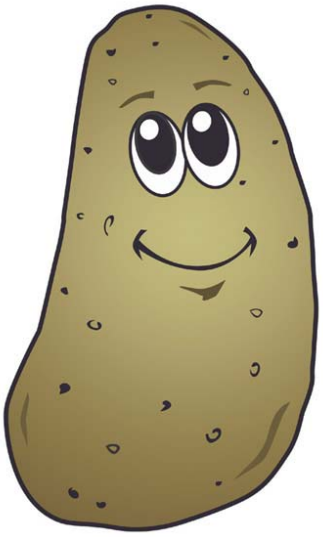
Spud the Potato

Supplies needed:

- 1 large potato
- Cotton balls, small sponges or peat moss
- Grass seed (preferably rye grass)
- Carrots, raisins, peas, corn or other vegetables
- Pieces of fabric, felt or construction paper

Directions:

1. Cut off one end of the potato so that it will stand upright
2. Cut off a small slice from the top of the potato and scoop out some of the pulp
3. Stuff the hole with a cotton ball, sponge or peat moss
4. Use carrots, raisins, peas, corn or other items for the eyes, nose, mouth and ears
5. Use the fabric, felt or construction paper to make a shirt
6. Moisten the cotton ball, sponge or peat moss and add the grass seed
7. Check the top daily so that the area remains moist
8. Students can watch as Spud's hair grows! They could measure the grass each day and create a chart or graph with the data collected.



FUN FACES OF WISCONSIN AGRICULTURE
SOIL TYPE AND VEGETABLE PRODUCTION

Activity Length:
This Business Called Agriculture – 20 minutes
Role of Resources – 20 minutes
Soil – 30 minutes
Wisconsin State Soil – 20 minutes
Potato Products – 10 minutes in class. Includes take-home assignment
Potato and Vegetable Math Lesson – 30 minutes

Student Objectives:
1. Become familiar with the diversity of vegetable crops that are grown in Wisconsin
2. Understand the resources necessary to grow crops and the response of those resources to change in weather and seasons
3. Discover the various soils found in Wisconsin and the crops that grow in them
4. Create a hands-on project to reinforce the importance of soil composition and vegetable growth
5. Become familiar with the various uses of potatoes
6. Become aware of Antigo Silt Loam as the Wisconsin State Soil

Wisconsin Model Academic Standards:

English	A4.4	D4.1		
Science	E4.8	H4.1	E4.1	E4.2
Social Studies	B4.8	A4.7		

Introduction: Spud's Potato Fast Facts

Additional Information available at:
Wisconsin Fresh Produce (http://www.wisconsinfreshproduce.org/vegfacts/Potato.htm)
Healthy Potato Website (http://www.healthypotato.com/index.asp)
Wisconsin Potato and Vegetable Grower's Association (http://www.wisconsinpotatoes.com/)

Important Terms:
- Resource: Items that are useful in creating, developing or generating something
- Light: Produced by the sun. Can be generated by electricity.
- Water: Clear, colorless, tasteless and nearly odorless liquid
- Nutrients: Substances necessary for the functioning of an organism
- Potassium: Mined as a rock and made into fertilizer. Can be leeched from the soil. Shortage of it will cause reduced growth.
- Leeching: Elements that are washed out of the soil.
- Phosphorus: Present as a rock. Not easily leeched out of the soil. Helps develop good root systems.

- Nitrogen: Present in the atmosphere as a gas. Easily leeched from the soil. Responsible for vegetative growth and green color.
- Photosynthesis: Process in which chlorophyll in green plants enables those plants to use light to manufacture sugar from carbon dioxide and water
- Soil: Top layer of the earth's surface suitable for the growth of plant life
- Erosion: Wearing away
- Loam: Granular soil containing a balance of sand, silt and clay
- Loess: Glacial dust that was deposited on top of sand and gravel
- Organic Matter: Dead plant and animal tissue that originates from living sources such as plants, animals, microbes and insects
- Silt: Intermediate soil particles, .05 - .002 mm
- Clay: Smallest of soil particles, less than .002 mm
- Sand: Largest soil particles, 1- .05 mm

Materials for this activity:

- *This Business Called Agriculture*—pages 21, 14 & 42-43
- Wisconsin Agriculture Map Worksheet
- Spuds in My Kitchen
- Materials to make resource cards (i.e. recipe or index cards)
- Edible Soil Profile activity

Activity Outline:

This Business Called Agriculture

1. Using page 21 in the *This Business Called Agriculture* publication, give students individual time to read the information on that page and answer the questions that follow.

2. When all students are finished, go over the correct answers as a class

Wisconsin Crops Answers (page 21)

1. Snap Beans	***5. Lettuce***
2. Onions	***6. Sweet Corn***
3. Cucumbers	***7. Carrots***
4. Peas	***8. Cabbage***

Role of Resources

As a class, discuss the variables needed to grow Wisconsin vegetables including soil types, weather conditions and precipitation.

1. Review the terms listed.

2. Cards can be created by writing 'rain', 'sun', 'nutrients', 'soil', and 'climate' on a set of cards.

3. Distribute resource cards to selected students before starting this section.

4. Call on students with cards one at a time to stand and read or show the resource that is on their card.

5. Create a list on the board of each of these resources.

6. As each student gives their resource, solicit suggestions for what role each of those resources play in growing vegetables. Also ask what happens when there is too much or too little of each resource.

    a. ***Rain-*** *is needed to provide water to the crops. Too much=seeds may drown before starting to grow. In the case of floods, whole fields of crops may be destroyed. Too little=drought and crops will shrivel up in the fields and be unable to produce vegetables.*

    b. ***Sun-*** is needed to help photosynthesis occur which helps plants to produce the food they need. Too much=Plants may be scorched or dried out when water is not present *with lots of sun. Too little=plants don't grow as fast as they should.*

    c. ***Nutrients-*** *Phosphorus, Nitrogen and Potassium are all elements of fertilizer. These nutrients are required in small, but important quantities in crops and ensure that plants are the correct color, good size, and uniform. Too much=toxicity in plants and they can get sick or not grow. Too little=vegetables are off-colored, small in size, and often produce various sized vegetables.*

    d. ***Soil-*** *Different soil types are needed for different vegetables to provide a place for them to set roots and get their nutrients. Certain soils are high in acid and can grow certain crops best. Different soils also have different abilities for holding water to produce specific crops. Soil erosion needs to be prevented to ensure that soil is left to grow crops in future years.*

    e. ***Climate-*** *Climate is important for the growing season of crops and meeting temperature needs. Certain crops grow best in a tropical climate but not at all in a moderate climate (like Wisconsin). Extreme climate conditions such as an early frost or rain and wind storms harm crop yields by damaging the growing parts of the plant and hurt the ability for it to produce.*

7. After all resources are on the board, go through the various seasons of the year and the impact that is felt by each resource here in Wisconsin. Are we able to grow vegetables in Wisconsin during the winter? Why?

Soil

This activity will explore the specific variance in the resource of soil and how it impacts the crops that can be grown. A total of three worksheets are available for this activity, some, or all of them may be used.

1. Have students complete pages 14 and 48-49 of the *This Business Called Agriculture*:

Wisconsin Agriculture Answers (page 14)

1. Soil is formed when rocks are broken apart by rain and temperature. These tiny particles mix with decaying plants to form soil.

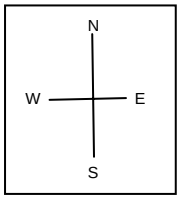
2. Forested, Prairie, Red Clay, Acid, Sand/Organic

3. Antigo Silt Loam

4. ***Your county outlined in red***
5. ***Determine by looking at the map.***
6. ***Determined by observation of area fields or use of page 43.***

Wisconsin Products (page 48)

1.



2. Michigan, Illinois, Iowa and Minnesota
3. Star over the word "Madison"
4-5. Specific to your school location.
6. Lumber, cranberries, snap beans, pulpwood, wild rise, small grains, dairy products.
7. Sweet corn, vegetables, potatoes, dairy products
8. Truck, ship, airplane

2. Using the Wisconsin Agriculture Map Worksheet, have students complete the worksheet to realize that different crops are grown in different parts of the state for the reasons of the soil types.

3. Discuss the answers to the worksheet

4. Prepare the Edible Soil Profile as a class to review the layers of soil.

Wisconsin State Soil

Students will become familiar with Antigo Silt Loam Soil, the Wisconsin State Soil.

1. Refer to the USDA Natural Resource Conservation Service (http://www.wi.nrcs.usda.gov/technical/soil/antigo.html) for information about Antigo Soils

2. Background information to introduce Antigo Soils to students:
   Antigo Silt Loam was named the official state soil of Wisconsin in 1983 by the Wisconsin State Legislature. It represents over 800 different soils in Wisconsin. Antigo Silt Loam only occurs in Wisconsin and is found in the north central part of the state. The soil occurs in about 300,000 acres. The soil is productive for corn, small grains, hay, potatoes, snap beans, pasture and timber production. Antigo Silt Loam was named after the city of Antigo in Langlade County. Antigo is also the home of the Wisconsin Potato and Vegetable Grower's home office! Antigo Silt Loam is well-drained and formed in loess and loam sediments over sandy outwashes. The average annual precipitation ranges from 28-33 inches.

3. Students can use the map of Wisconsin to indicate counties that have Antigo Silt Loam. They can also visit Wisconsin Ag Statistics (http://www.nass.usda.gov/wi/) and determine which counties raise the most potatoes. After highlighting those counties on

the map, they can understand the relationship of Antigo Silt Loam and potato production in Wisconsin.

Potato Products

This activity will help students understand the various uses of potatoes.

1. Visit Healthy Potato Website (http://www.healthypotato.com/index.asp) Under Nutrition and Information

2. Discuss the Potato Nutrition Fact Sheet to see the nutritional benefits of potatoes.

3. Brainstorm all the different ways that potatoes are used.

4. On the Healthy Potato Website (http://www.healthypotato.com/index.asp) Health Educator's tab, click open the Nutrition Label Lesson Plan and then How to Read a Nutrition Facts Label. Review the information as a class.

5. Have the students complete Spud's In My Kitchen worksheet as a take-home exercise.

Potato and Vegetable Math Lesson

1. Distribute Potato and Vegetable Math Worksheet as a classroom activity or homework assignment

Additional Worksheets:

Careers Guide related to potatoes and vegetables
Ag Statistics Lesson Plan related to potatoes and vegetables
Wisconsin Agriculture Map Worksheet
Spud's in My Kitchen

Related activities:

- Soil Sammy
- Slice of Soil
- Beanie Baby
- Have students research instances (i.e. droughts, floods, wind storms) that caused a resource to be in too short or too great of a supply and how that impacted the production of vegetables.

FUN FACES OF WISCONSIN AGRICULTURE
WISCONSIN AGRICULTURE MAP WORKSHEET

Student: _____

Using the maps on pages 14, and 49 of the *This Business Called Agriculture*, answer the following questions.

1. What type of soil is found at the tip of the Door Peninsula? What Wisconsin crop is grown only in this part of the state?

2. What type of soil is required for Cranberry growth?

3. Name two crops that can be grown on more than one soil type:

4. What type of crop can be found only in Sand/Organic soil?

5. Which crops are found only in the southern part of the state? What soil is found mostly in the southern part of the state?

6. If you wanted to raise ducks and mink, what part of the state should you live in? Maple Syrup and Dairy? Vegetables and Mint?

FUN FACES OF WISCONSIN AGRICULTURE
WI AGRICULTURE MAP WORKSHEET – ANSWER KEY

Using the maps on pages 14, and 49 of the *This Business Called Agriculture*, answer the following questions.

---

1. What type of soil is found at the tip of the Door Peninsula? What Wisconsin crop is grown only in this part of the state?

Prairie soil, Cherries

2. What type of soil is required for Cranberry growth?

Acid or Sand/Organic

3. Name two crops that can be grown on more than one soil type:

With the exception of the answers found below; most crops can grow in at least two types of soil.

4. What type of crop can be found only in Sand/Organic soil?

Ginseng, Bees

5. Which crops are found only in the southern part of the state? What soil is found mostly in the southern part of the state?

Crops: Tobacco, Mint, Ducks
Soil: Forested

6. If you wanted to raise ducks and mink, what part of the state should you live in? Maple Syrup and Dairy? Vegetables and Mint? What are the soil types found in these areas?

The south eastern corner of the state, forested and clay soil
The North Eastern part of the state, acid soil
Between Steven's Point and Green Bay, clay, acid and sand/organic soil

FUN FACES OF WISCONSIN AGRICULTURE
SPUDS IN MY KITCHEN!

Student: _____

Take an inventory of items in your home that are made from potatoes

Found in the freezer	Found in the refrigerator	Found in the cupboard or pantry

Select two of the items and record the following information:

Nutritional Fact	Item 1:	Item 2:
Serving Size		
Calories		
Calories from fat		
Calcium %		
Vitamin C %		
% of Daily - Total Fat		
Grams of Protein		
Grams of Potassium		
% of Daily - Potassium		

Edible Soil Profile

An **Edible Soil Profile** is something that looks like what you would find if you dug deep into the ground. But you can eat your soil profile, that's why we call it "edible". If you were to take a big machine, like an excavator, and dig a big hole in the earth, you would be able to see the different soil layers.

Bedrock (Reese's Pieces) – Bedrock is the deepest and a very hard layer of rock. It is usually very thick. If you dug many, many feet into the earth, do you think any animals or bugs could live in this layer? What kinds? There aren't any living animals or insects in this rock because it is too hard and animals can't dig through it. There isn't any sunlight or oxygen that far into the earth. Our groundwater is found in the bedrock because the rock can hold the water, like a big tank.

Shale (Organic Blue Corn Flakes or blue frosting) – It is also a type of rock, but appears more as layers on top of layers. If you lay your hand on top of your other hand, and then another hand on top of that hand, that gives you an idea of what this kind of rock looks like. Water can run through shale, but very slowly.

Clay (Crushed Nutter Butter Cookies) – Does anyone know what clay feels like? Is it hard or soft? Clay is very hard when it is dry, but if you get it wet, it feels softer and almost greasy. Clay is often used in the bottom of ponds to make the water stay in the pond because good clay will hold water. If the clay is mixed with soil or sand, it won't hold water as well. Maybe you use clay at home or school for art projects.

Coarse Sand (Roughly crushed Rice Krispies) – is made up of rock that has broken down into small pieces. If you took a handful of sand and threw it into a pond, the coarse sand would fall to the bottom faster than the fine sand because the pieces are bigger and heavier. Sand doesn't stick together like clay, so water will run through it.

Fine Sand (Graham Crackers crushed to powder) – is above the coarse sand. This kind of sand is tiny, like you would find on a shoreline. Sometimes it has tiny pieces of dirt, called silt, mixed in it. Insects and animals can move around in the fine sand, but there isn't any food there, so they move to the upper layers to find the food they need.

Subsoil (Vanilla & Chocolate Sandwich Cookies; crushed together, filling removed) – is just below the topsoil. What would you find living in the subsoil? Insects, worms, ants, groundhogs, chipmunks, ect. The subsoil is usually gray or brown.

Topsoil (Chocolate Sandwich Cookie, with filling, crushed) – is the very top layer of soil and is what you usually walk on. When farmers are working in their fields and the wind is blowing, often you will see the topsoil blowing away. The topsoil is washed away if there is a heavy rain and there isn't any grass or crops to hold the soil in place. When you play in the yard and dig with your toys, you dig in the topsoil.

Conservation Layer (Oatmeal Crisp Raisin Cereal, gummy worms, M & M's) – covers the topsoil. This layer is made up of leaves, grass, sticks, bugs, worms, ants, rocks, and anything else that might fall to the ground. When the leaves, grass, and plants die, they form a layer on top of the soil to make it rich and nice for the animals and bugs.