Alaska Agriculture in the Classroom

Regional Agriculture U.S.A

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Standards:

All standards align to the Fairbanks North Star Borough School District Social Studies Curriculum; adopted in 2013

- Developing knowledge of the locations of the continents, oceans, the fifty U.S. states and their capitals and major U.S. landforms and water bodies as a foundation for asking geographic questions. (EQ.4.1-6; GY.A.1)
- Studying factors such as weather, population distribution, land use, natural resources, climate and transportation to identify regional differences and similarities in the United States. (EQ.4.1-3, 5; GY.C.1-3)
- Explaining how climate, physical features and natural resources impact the ways of life in different regions of the United States. (EQ.4.3, 5; GY.C.2-3)
- Recognizing patterns in settlement, migration and land use in the United States and connecting them to the geographic features and environment. (EQ.4.2; GY.D.1, 3)
- Identifying how location influences cultural traits across the various regions of the U.S. (e.g., comparing clothing, food, architecture, art in relation to location). (EQ.4.3; GY.B.7-8)

Objectives:

- Students will use a map to locate and label where agricultural products are produced throughout the U.S.A. region by region in small groups.
- Students will graph the percentage of land used for agricultural purpose in each state in the region they are studying, will compare and contrast the amount of land used for different purposes, or will otherwise interpret the data presented using the data table given to them.
- Students will identify features of the environment that promote or limit agricultural development – i.e. Rocky Mountains, desert climate, protected wetlands, etc.
- Students will participate in preparing a meal using a recipe that reflects the edible agricultural products and culture found in each region that they are studying.

Materials:

- 6 large maps of each region or very large U.S.A. maps– Pacific, Rocky Mountain, Southwest, Northeast, Southeast, Midwest, Alaska, and Hawaii (1 per each group). Maps must contain state names, capitals, and a compass rose.
- 6 packets that contain the student agricultural icons and a regional list of agricultural resources. Please see attached.
- Tape/sticky tack for each group
- Scissors for each student
- State information pages from agriculture in the classroom. Print six copies and organize by region. Each group needs a regional packet. http://www.agclassroom.org/teacher/stats/all.pdf
- Regional Recipes – see attached. Students and families must be organized to bring ingredients and food preparation supplies.
- Manila envelopes labeled “Quarter 1 Agricultural Icons”
- Recipes for each group, ingredients, food preparation materials (as needed)

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Background Knowledge:

The Fairbanks North Star Borough School District social studies curriculum adoption for fourth grade encourages a year long study of the United States emphasizing regional resources, culture, and physical geography. Students will learn through their regular social studies program about each state, region, landforms, climate, and environment. This unit plan is really a collection of lessons that will compliment what is already being taught in the classroom. There are 3 activities to be taught at the end of each regional study. The first focuses on students identifying the agricultural products produced in each state. The second lesson asks students to compare the agricultural products that they have identified as being produced in the region to other factors of the region, like climate and culture, to see if they can make any inferences about the produce. They confirm or reject their inferences using online resources or the information pages attached. The third lesson is to work as a class to complete a recipe that reflects the region studied and the culture within it.

- Information on State Agriculture can be found here: http://www.agclassroom.org/teacher/stats/all.pdf
- Regional Map, please see below

Teacher Background Information and Summary

Alabama	Hay, timber, cotton, peanuts, sweet potatoes, sod, catfish, chicken, cattle, eggs,
Alaska	Barley, grain, hay, cattle, pigs, sheep, reindeer, milk, wool, antlers, bison, yak, elk
Arizona	Cattle, sheep, lettuce, cotton, hay, cantaloupe, honeydew melons, spinach, broccoli, cauliflower, lemons, alfalfa, dairy products, milk, hogs, eggs,
Arkansas	rice, soybeans, corn, beef, chickens, cotton, catfish, turkeys, grain, eggs, pecans
California	Lemons, artichokes, avocados, broccoli, cabbage, carrots, cauliflower, celery, lettuce, mushrooms, potatoes, spinach, squash, almonds, dates, figs, grapes, raisins, kiwis, olives, peaches, pistachios, plums, pomegranates, rice, clover seed, walnuts, milk and cream, beef, chickens, eggs, honey, strawberries, lettuce, tomatoes, hay
Colorado	Sunflowers, pinto beans, potatoes, cabbage, onions, peaches, apples, cantaloupe, cattle, sheep, lamb, wool, milk, eggs, fish (aquaculture), honey
Connecticut	Corn, apples, peaches, vegetables, tobacco, forage, hay, cows,chickens, beef, sheep, goats, hogs, hard clams, oysters AC, milk, cheese, eggs, honey, turkey, buffalo, maple syrup, eggs,
Delaware	Corn, soybeans, apples, chickens, pigs, wheat, dairy?
Florida	Orange, beef, seafood, tomatoes, dairy, sugarcane, vegetables
Georgia	Peanuts, cotton, peach, onions, watermelon, tomatoes, corn, bell peppers, eggs, chicken, beef cattle, timber, dairy, pecans, rye, eggs, broilers
Hawaii 27% farms	Tree nuts, cattle, sugarcane, macadamia nuts, coffee, eggs, pineapple, hogs, cattle,

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Idaho	Alfalfa, beans, caroot, onion, turnip, lettuce, grapes, wine, potatoes, milk, trout, hay, sugarbeets, mint, prunes, plums,
Illinois	Corn, soybeans, pumpkins, horseradish, cattle, pigs, sheep, milk, eggs,
Indiana	Corn, soybeans, wheat, hay, tomatoes, peppermint, spearmint, chickens, eggs, ducks,
Iowa	Corn, soybeans, hogs, egg, cheese, chickens, eggs, sheep, milk, beef, wool, turkeys,
Kansas	Sorghum, wheat, cattle, sunflowers, hay, corn, soybean, milk, hogs,
Kentucky	Corn, grain, soybeans, tobacco, hay, tobacco, hay, chickens, cattle,
Louisiana	Chickens, eggs, crawfish, shrimp, oysters, timber, rice, corn, sugarcane, soybeans, cattle, pepper,
Maine	Blueberries, maple syrup, potatoes, dairy, eggs, sheep, goats, hogs, equine, chickens, elk, deer, (aquaculture) salmon, trout, baitfish, halibut, oyster, scallops, mussels, clams, kelp,
Maryland	Chickens, eggs, turf, seafood, dairy, corn, soybeans, wool,
Massachusetts	Cranberries, produce, aquaculture, dairy, oysters, quahogs, grapes,
Michigan	Timber, cherries, cucumbers, geraniums, petunias, blueberries, squash, apples, beans, carrots, celery, grapes, asparagus, milk, eggs, cattle, sheep, goats,
Minnesota	Corn, soybeans, sugarbeets, turkeys, oats, rice, hogs, peas, beans, wheat, canola, milk, bison, elk, ostriches,
Mississippi	Chickens, soybeans, cotton, cattle, rice, eggs, aquaculture,
Missouri	Milk, cattle, cheep, turkeys, corn, soybeans, hay, cotton, rice, fruits, vegetables, grains,
Montana	Lentils, peas, barley, wheat, cattle, sheep, wool, hay, honey,
Nebraska	Cattle, corn, soybeans, beans, wheat, eggs, milk
Nevada	Hay, potatoes, barley, wheat, rye, oats, mint, garlic, onions, cattle, sheep, hogs, horses, chickens
New Hampshire	Corn, apples, Christmas trees, hay, maple syrup, milk, cattle, hogs, sheep, chicken, eggs
New Jersey	Apples, blueberries, cranberries, peaches, strawberries, bell peppers, spinach, blueberries, horses,
New Mexico	Milk, cattle, pecans, hay, sheep, onions, chile, cotton, corn, wheat, poulty, eggs, squash, beans, milk, cheese,
New York	Apples, grapes, cabbage, corn, onions, corn, oats, wheat, soybeans, grain, milk, cattle, cheese, hogs, sheep, ducks, eggs, chickens, maple syrup,
North Carolina	Tobacco, sweet potatoes, Christmas trees, cucumbers, strawberries, cotton, tomatoes, tobacco, peanuts, bell peppers, squash, hogs, turkeys, broilers, cattle, turkeys, trout, chicken
North Dakota	Wheat, durum, barley, sunflowers, beans, flaxseed,canola, honey, sugar beets, potatoes, oats, canola, lentils, peas, buckwheat, milk, cattle, hogs, sheep, turkeys
Ohio	Corn, soybeans, cheese, bees, wheat, tomatoes, apples, grapes, corn, mushrooms, maple syrup, timber, cattle, hogs, sheep, milk, eggs,

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Oklahoma	Wheat, hay, corn, peanuts, pecans, hay, alfalfa, pecans, peanuts, peaches, watermelons, cattle, sheep, chickens, hogs, horses, hogs, sheep, chickens, eggs,
Oregon	Hay, grass, wheat, potatoes, hazelnuts, pears, grapes, blackberries, loganberries, raspberries, ryegrass seed, clover, boysen and youngberries, sugarbeets, Christmas trees, onions,peppermint, cherries, hops, beef, milk, cheese, goats, llamas
Pennsylvania	Mushrooms, wheat, potatoes, oats, rye, barley, apples, cherries, peaches, grapes, cattle, milk, eggs, chickens
Rhode Island	Milk, Cheese, cattle, corn, aquaculture seafood, apples, potatoes,
South Carolina	Chickens, tea,grains, seeds, beans, peas, timber, cucumbers, beans, tomatoes, melons, potatoes, sweet potatoes, mushrooms, gingko, pecans, cattle, hogs, chickens, turkeys, quail,
South Dakota	What, corn, soybeans, sunflowers, oats, barley, rye, flaxseed, sorghum, alfalfa, cattle, pigs
Tennessee	Soybeans, corn, tobacco, cotton, cattle, chickens, goats, horses, milk, eggs,
Texas	Cotton, corn, wheat, hay, cattle, sheep,
Utah	Barley, wheat, beans, potatoes, onions, corn, tomatoes, cherries, apricots, peaches, beef, pigs, sheep, wool, eggs, milk, mink, trout (aquaculture)
Vermont	Hay, apples, honey, corn, Christmas trees, maple syrup, fruits & vegetables, milk, cheese, eggs, sheep, llamas, alpacas, goats, chickens, turkeys, emus, horse
Virginia	Soybeans, corn, tobacco, tomatoes, chickens, cattle, milk, turkey, horses, pigs,
Washington	Apples, milk, wheat, potatoes, cattle, raspberries, hops, spearmint, cherries, grapes, pears, peppermint, prunes/plums, barley, alfalfa, corn, lentils, onions, grapes, apricots, peaches, canola, garbanzo beans, blueberries, aquaculture, forest products, seeds, oysters, mussels, clams, geoducks, and trout
West Virginia	Apple, trout (aquaculture), turkeys, peaches, hay, soybeans, tobacco, wheat, chickens, beef, eggs, milk, sheep, hogs, honey, fish (aquaculture), wool
Wisconsin	Alfalfa, beans, cranberries, ginseng, Christmas trees, milk, cherries, eggs, cheese, mink fur, goat milk, fish (aquaculture)
Wyoming	Hay, barley, wheat, beans, sugarbeets, corn, cattle, sheep/wool, hogs, pigs, horses, bee colonies

<u>Potential Fourth Grade Regional Study Sequence:</u>

Quarter 1:

Pacific Region: *Washington, Oregon, California*

Rocky Mountain Region: *Montana, Idaho, Wyoming, Nevada, Utah, Colorado*

Quarter 2:

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Midwest Region: *North Dakota, South Dakota, Nebraska, Iowa, Minnesota, Wisconsin, Illinois, Michigan, Indiana, Ohio, Missouri, Kansas*

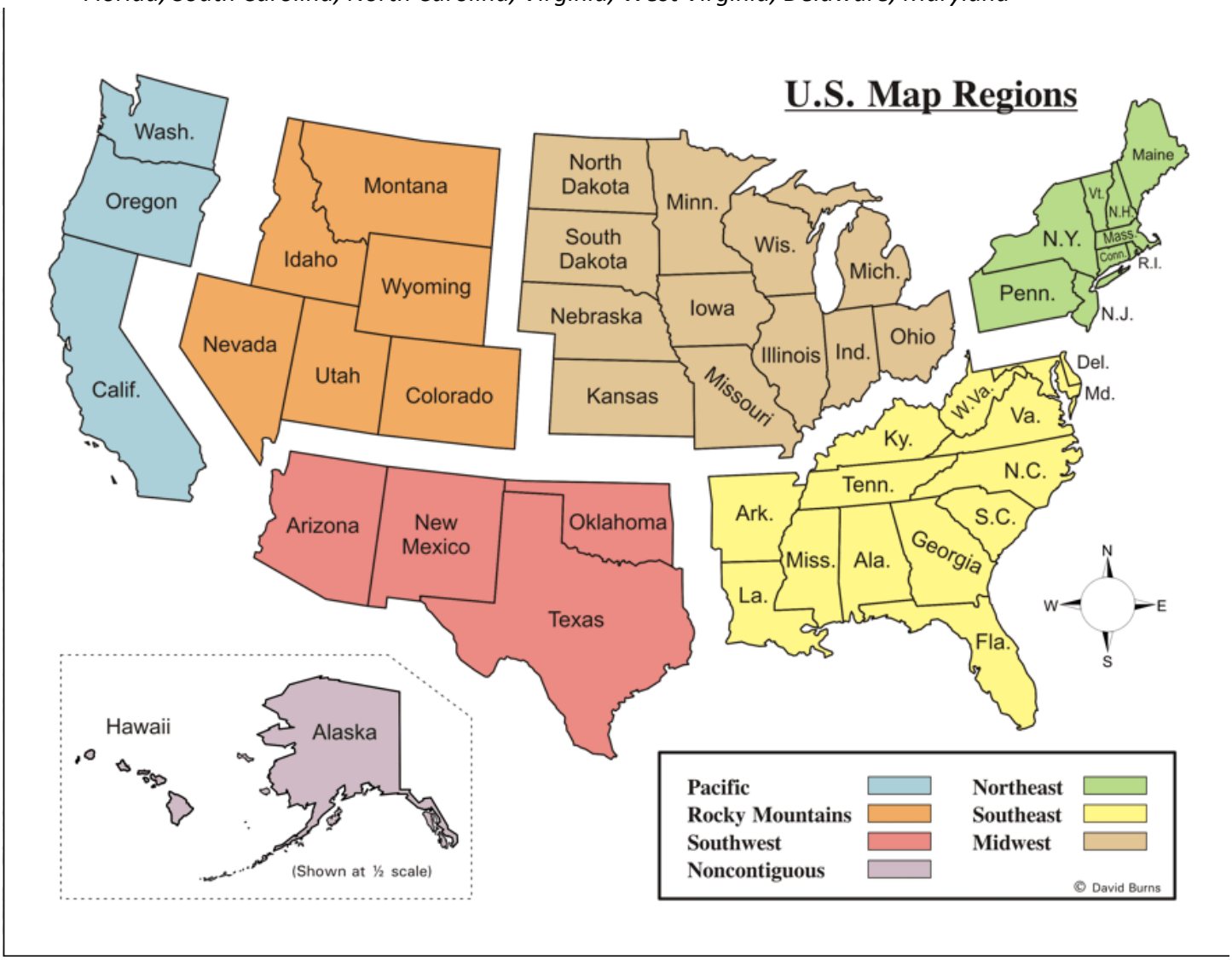
Noncontiguous States: *Alaska, Hawaii*

Quarter 3:

Northeast Region: *Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, Pennsylvania, New Jersey*

Southwest Region: *Arizona, New Mexico, Oklahoma, Texas*

Quarter 4: Southeast Region: *Arkansas, Louisiana, Mississippi, Alabama, Tennessee, Kentucky, Georgia, Florida, South Carolina, North Carolina, Virginia, West Virginia, Delaware, Maryland*



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Procedures:

Before these lessons:

1. Teach the regular social studies standards and unit.
2. Organize classroom families and other interested parties to donate food, food preparation equipment, and other resources to make the recipe!

Day 1:

1. Hand out supplies to each group – 1 large regional or USA map, student agricultural icons packet, scissors, tape/sticky tack, student regional agricultural list.
2. Ask students to predict what they think is produced in the states they have been learning about.
3. Ask students to work as a group and use the information on the regional agricultural table to correctly place agricultural products on the map. They may tape or sticky tack their icons down. Names should be left on the icons. Icons left over will go in pre-labeled envelopes.
4. Students will reflect on what they notice about their states. For example:
    a. What do you notice about the states in the Pacific Region?
    b. Is the produce grown here limited or are there many varieties?
    c. Do you think there is more land used for produce or livestock?
    d. What did you notice?
    e. Were your predictions correct? Did your ideas change?
    f. Did anything surprise you?

Day 2:

1. Review the reflections of the day before. For example, “I was surprised that there was a lot of cattle in Washington.”
2. Use those reflections to build on the reasons behind what they saw. Allow students to make predictions about why agriculture is strong in some areas and much limited in others. Choose 3 hypotheses or questions from the class. Using the agricultural fact sheets, state maps, or the Internet model how to confirm or reject the hypotheses or answer questions.
3. Allow students to come up with one idea as a small group. Approve each hypothesis.
4. Students will work as a group to confirm or reject their hypotheses or answer their question and explain why.
    a. For example: “My group was surprised there was anything growing in Arizona. We learned Arizona is a desert. We want to know how come things grow there.” The group would use resources to learn why things grow there. Answer – irrigation.
5. Teachers should be actively modeling and monitoring throughout work time. Students who finish early should be encouraged to dig deeper.

6. Student groups share with the class what they found out, what they now think, and what resources they used. The teacher will emphasize the physical features that promote or limit agriculture of different types during this sharing time.

Day 3:

1. The teacher begins by asking students to remember what they learned the day before about the states.
2. The teacher asks students to look at their visual maps again.
3. The teacher asks students to predict which state in the region has the most and least land used for crops and pasture.
4. The students use the data table to answer the questions as a group.
5. Students use greater than and less than symbols to compare the land used in each state. More able groups may graph. Some groups will choose. Students that are graphing will need particular help using graph paper, choosing a scale, and deciding how to represent their information.
6. Students share their discoveries with the class.

Day 4:

1. Students may dress like a person from the region we have been studying.
2. Before school families may drop off food and food preparation equipment for the recipe.
3. Students prepare the soup throughout the day. Students stop approximately 1.5 hours before the end of the day to prepare the fruit salad.
4. Students eat the salad and soup when the fruit salad is done.
5. Recipes below

Quarter 1: The Pacific and Rocky Mountain Regions

Pacific Region: *Washington, Oregon, California*

Washington	Apples, milk, wheat, potatoes, cattle, raspberries, hops, mint, cherries, grapes, pears, prunes/plums, barley, alfalfa, corn, lentils, onions, grapes, apricots, peaches, canola, beans, berries, fish aquaculture, timber, shellfish aquaculture
Oregon	Hay, grass, wheat, potatoes, hazelnuts, pears, grapes, berries, ryegrass, clover, sugar beets, holiday trees, onions, mint, cherries, hops, cattle, milk, cheese, goats, llamas
California	Lemons, artichokes, avocados, broccoli, cabbage, carrots, cauliflower, celery, lettuce, mushrooms, potatoes, spinach, squash, almonds, dates, figs, grapes, raisins, kiwis, olives, peaches, pistachios, plums, pomegranates, rice, clover, walnuts, milk, cattle, chickens, eggs, honey, berries, lettuce, tomatoes, hay

Rocky Mountain Region: *Montana, Idaho, Wyoming, Nevada, Utah, Colorado*

Montana	Lentils, peas, barley, wheat, cattle, sheep, hay, honey,
Idaho	Alfalfa, beans, carrot, onion, turnip, lettuce, grapes, potatoes, milk, fish aquaculture, hay, sugar beets, mint, prunes/plums,

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Wyoming	Hay, barley, wheat, beans, sugar beets, corn, cattle, sheep/wool, hogs, horses, bees
Nevada	Hay, potatoes, barley, wheat, rye, oats, mint, garlic, onions, cattle, sheep, hogs, horses, chickens
Utah	Barley, wheat, beans, potatoes, onions, corn, tomatoes, cherries, apricots, peaches, cattle, hogs/pigs, sheep, eggs, milk, mink, fish aquaculture
Colorado	Sunflowers, beans, potatoes, cabbage, onions, peaches, apples, cantaloupe, cattle, sheep, milk, eggs, fish aquaculture, honey

Extension:

- While completing the recipe portions of the lessons it would be very easy to extend into math with fractions, ratios, doubling recipes, portions, or calculating nutritional information.
- Students could compare agricultural products that are currently produced with the products that were produced by Native cultures in the area or before large scale agricultural irrigation.
- Students could find historical trade routes and compare the products in source cities.
- Students could investigate agricultural produce in another area like a country or county/borough/parish to the region they just learned about..
- Students could find out their own agricultural heritage from where their family or ancestors have lived or another interesting area of their choosing.
- Students could investigate the tradition of surnames English speaking Europe being connected to the type of industry or agriculture that one was involved in – a study in linguistics!
- There are many, many ways to enhance the math involved in this lesson. Factoring percentages of land used in different ways, comparing the percentage to actual area used across states, graphing with different scales, etc.

Reference:

http://www.agclassroom.org/teacher/stats/all.pdf

http://www.fasttrackteaching.com/burns/Geography/Geo_Unit_Regions_and_States.html

http://www.agclassroom.org/teacher/ag_facts.htm

www.ers.usda.gov/datafiles/Major_Land_Uses/Summary_tables/Summary_Table_1_major_uses_of_land_by_region_and_state_2007.xls

http://www.cookingchanneltv.com/recipes/50-state-foods.html

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First Quarter Agricultural Icons

Alfalfa 	Alfalfa 	Almonds 	Apples 	Apples 
Apricots 	Apricots 	Artichoke 	Avacado 	Barley 
Barley 	Barley 	Barley 	Barley 	Beans 
Beans 	Beans 	Beans 	Bees/Honey 	Bees/Honey 
Bees/Honey 	Bees/Honey 	Cattle/Beef 	Cattle/Beef 	Cattle/Beef 
Cattle/Beef 	Cattle/Beef 	Cattle/Beef 	Cattle/Beef 	Cattle/Beef 
Berries 	Berries 	Berries 	Berries 	Broccoli 

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Cabbage 	Cabbage 	Canola 	Cantaloupe 	Carrots 
Carrots 	Cauliflower 	Celery 	Cheese 	Cherries 
Cherries 	Cherries 	Poultry/Chicken 	Poultry/Chicken 	Holiday Tree 
Shellfish Aquaculture 	Clover 	Clover 	Corn 	Corn 
Corn 	Date 	Eggs 	Eggs 	Eggs 
Fig 	Fish (Aquaculture) 	Timber 	Beans 	Shellfish Aquaculture 

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Garlic 	Goats 	Grapes 	Grapes 	Grapes 
Grapes 	Grapes 	Grass 	Hay 	Hay 
Hay 	Hay 	Hay 	Hay 	Hazelnuts 
Hogs/Pigs 	Hogs/Pigs 	Hogs/Pigs 	Hogs/Pigs 	Hops 
Hops 	Horses 	Horses 	Kiwis 	Lemons 
Lentils 	Lentils 	Lettuce 	Lettuce 	Lettuce 

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Berries 	Llamas 	Milk 	Milk 	Milk 
Milk 	Milk 	Milk 	Mink 	Shellfish Aquaculture 
Mint 	Mint 	Mushrooms 	Shellfish Aquaculture 	Oats 
Olives 	Onion 	Onion 	Onion 	Onion 
Onion 	Onion 	Peaches 	Peaches 	Peaches 

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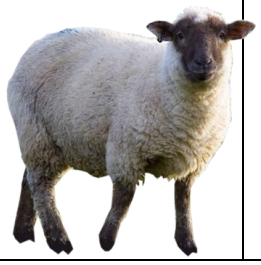
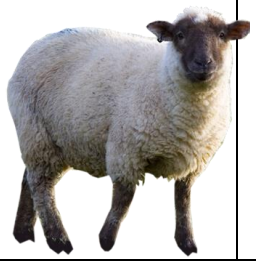
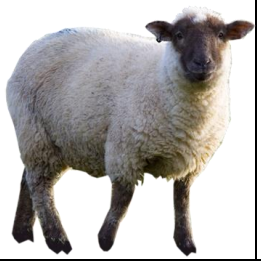
Peaches 	Pears 	Pears 	Peas 	Mint 
Mint 	Pistachios 	Prunes/Plums 	Prunes/Plums 	Pomegranates 
Potatoes 	Potatoes 	Potatoes 	Potatoes 	Potatoes 
Potatoes 	Potatoes 	Prunes/Plums 	Prunes/Plums 	Raisins 
Berries 	Berries 	Rice 	Rye 	Sheep/Wool 
Sheep/Wool 	Sheep/Wool 	Sheep/Wool 	Sheep/Wool 	Mint 

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Spinach 	Squash 	Sugar Beets 	Sugar Beets 	Sugar Beets 
Sunflowers 	Tomatoes 	Tomatoes 	Fish Aquaculture 	Fish Aquaculture 
Fish Aquaculture 	Turnip 	Walnuts 	Wheat 	Wheat 
Wheat 	Wheat 	Wheat 	Wheat 	Fish Aquaculture 

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Land Use By State:
(www.ers.usda.gov/datafiles/Major_Land_Uses/Summary_tables/Summary_Table_1_major_uses_of_land_by_region_and_state_2007.xls)

State	Total Land (acres)	Cropland (acres)	Grassland/Pasture/Range
Washington	42,588	7626.116	57,040.08
Oregon	61,438	4,933.559	22,726.398
California	99,814	9,550.335	27,524.261

State	Total Land (acres)	Cropland (acres)	Grassland/Pasture/Range
Montana	93,153	17,867.25	46,051.051
Idaho	52,958	5,980.118	18,082.374
Wyoming	62,144	2,218.486	44,653.064
Nevada	70,289	731.319	46,850.318
Utah	52,572	1,738.171	26,119.985
Colorado	66,380	11,428.094	28,870.684

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Pacific Region Recipes

Fruit Salad:
Apples, raspberries, mint, cherries, grapes, pears, plums, apricots, peaches, berries, hazelnuts, lemon juice, almonds, dates, figs, raisins, kiwi, peaches, pistachios, pomegranate, walnut, honey, whip cream

Directions:
1. Wash all fruits and vegetables.
2. Cut or dice all fruit.
3. Crush and dice hazelnuts, almonds, pistachios, and walnuts. Mix with enough honey to cover them. (Honey 50/50 with water). Add a dash of lemon juice. Mix well.
4. Mix fruit and nuts together. Garnish with whipped cream and mint.

(Fruit Salad may also be enjoyed as a fruit bar where students choose which type of fruit to add in their personal salads.)

Chicken Soup:
Rotisserie Chicken, wheat based noodles, corn, onions, potatoes, broccoli, cabbage, carrots, cauliflower, celery, mushrooms, squash, tomato, salt, bay leaves, pepper

Directions:
1. Wash all fruits and vegetables.
2. Cut a large tomato in half.
3. Put the rotisserie chicken in a crock pot and add a few inches of water. Add the tomato. Allow to simmer until meat falls off the bone. Remove bones. Remove tomato skin. (Approximately 2 hours.) Add 1 or 2 bay leaves.
4. Cut or dice all vegetables – corn, onions, potatoes, broccoli, cabbage, carrots, cauliflower, celery, mushrooms, squash. Add water.
5. Microwave the potatoes for 3-5 minutes.
6. Add all vegetables including potatoes to the crockpot. Allow to simmer for another few hours.
7. Approximately 30 minutes before eating add noodles.
8. Add salt and pepper to taste.
9. Enjoy!