Alaska Agriculture Day

First Tuesday in May

Included in this packet are two low-cost activities you can do with students PK-12.

Carrot Seed Tape Activity

Seed Potato Planting Activity

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To hear more about Farm to School activities and lessons, sign up for the Farm to School listserv: http://list.state.ak.us/soalists/akfarmtoschool/jl.htm

Carrot Seed Tape Activity

Objective:
The objective of this activity is to teach how to make carrot seed tape for summer planting.
*A fun variation with this activity is to alternate the carrot seeds with radish seeds because they grow fast and break the soil for the carrots to break through. Ask the kids to hypothesize about why you would alternate with radish seeds!

Materials: (Estimated cost of materials per station is $10.00)

- Spray bottle (water)
- Toilet paper (double ply)
- Carrot seeds
- Ruler
- Paper bags for storage
- Instruction label
- Scotch tape or marker to write name on bag
- Marker to roll seed tape around

Lesson Topics: PK - 12

Depending on the age group the lesson can draw on a number of different topics:

- ***Counting and measurement*** – this can be as basic as 1-2-3 or as complex as the economics of utilizing seed tape. Simple activities can be about counting the number of seeds or a little more challenging and measuring the spacing of the seeds. For more complex economic activities there are a number of topics; seed tape saves money by making your own – premade seed tape is expensive, seed tape uses ALL seeds which increases the yield per seed ratio, and seed tape decreases crop maintenance (labor dollars) due to no need for 'thinning' of carrots.
- ***Science or health*** – you can discuss any number of things; nutrient balance in soil, carrot nutrition, carrot recipes, seed germination, plant growth, or plant life cycles.
- ***Critical thinking*** – this can be as simple as 'how does a carrot grow/what kind of vegetable is a carrot" and as complex as understanding the proper time to plant the seed tape and predicting how the seed tape impacts the soil compared to traditional ways of planting carrots (a bunch of seeds and then thinning). *A neat variation on this activity is to alternate the carrot seeds with radish seeds because they grow fast and break the soil for the carrots to break through. Ask the kids to hypothesize about why you would alternate with radish seeds!
- ***Art and reading*** – Have the kids draw or journal about the growth cycle over the summer!

Procedure:

Station set up

Each station should have 1-4 students with a spray bottle, a ruler for each student, and a small pile of seeds. Draw an example of the final product on the board for them to follow the steps with. Start with a class discussion; for any age group you can talk about the activity, make predictions, and why carrots are good for you.

1. Tear off 2-4 squares of toilet paper for each student.
2. Gently spray the toilet paper and line up the ruler along the toilet paper bottom or top.


3. Place a carrot seed along the middle of the toilet paper. Be sure to space the seeds based on the seed packet's recommendation. *Tip:* Alternate carrot seeds with radish seeds because when the radishes sprout, they help to mark the row and break the ground.


4. Take each top edge and fold down 1/3 followed by a gentle tap to secure.

5. Take each bottom edge and fold up 1/3 followed by a gentle tap to secure.

6. If needed, spray again to secure the seed tape and place somewhere to dry.
7. Have each student write their name on the masking tape or paper bag and put aside. (Planting instructional label should be pre-printed or written and already placed on paper bag – see example wording below)

Make sure seed tapes dry so the seeds don't germinate! When planting weather comes: -make shallow furrows in soil, around ¼ inch (ground is preferable, potters can be used if they are deep and fit the strip of seed tape) -lay the strips down -cover with soil and gently pat down

8. After the seed tape is reasonably dry, the student should roll it around a marker or pen to make a circle and then put in bag to store until planting.

Plant

Cover

Water

Seed Potato Planting Activity

Locating Seed Potatoes:

Seed potatoes are available in greenhouses and stores, for a list of certified seed potato growers and varieties see the last two pages in this packet.

Objective:

The objective of this activity is to teach how to plant and grow potatoes using certified seed potatoes. Certified seed potatoes are critical to use instead of potatoes purchased for eating, from the grocery store, to prevent the spread of potato diseases such as Late Blight, a highly contagious potato disease. Additionally, most potatoes found in the store (with the exception of seed potatoes) are treated with a sprout inhibitor making it difficult to grow.

*This activity is an opportunity to talk about:

- why it is important to use certified seed potatoes for growing,
- what healthy potato choices are,
- how to plant, grow, and harvest a potato

Materials: (Estimated cost of materials per 5 students is $3.00)

- Biodegradable plant pots (can use strawberry crates or any potting resource)
- Alaska certified seed potatoes
- Planting soil
- Masking tape & Marker for labeling

Optional materials:

- Knife (if cutting the seed potatoes in half)
- Potato product models to talk about nutrition

Lesson Topics: PK-12

Depending on the age group the lesson can draw on a number of different topics:

- ***Counting and measurement*** **-** this can be as basic as 1-2-3 or as complex as the economics of utilizing seed potatoes. Simple activities can be about counting the number of eyes on the potato. For more complex economic activities there are a number of options; 1) look at the economics of growing your own food, include labor and materials 2) experiment with yield, spacing, and potato variety
- ***Nutrition and health*** **–** you can discuss any number of things; nutrient balance in soil, the 'size of a seed', compare and contrast seeds and vegetables, potato nutrition, potato recipes, seed germination, plant growth, or plant life cycles.
- ***Agricultural science*** **–**discuss why we must use a certified seed potato and not just a potato you can buy at the grocery store. Can be as simple as product control or as complex as specific diseases within potatoes i.e. late blight, etc.
- ***Critical thinking*** **–** this can be as simple as 'how does a potato grow/what kind of vegetable is a potato' and as complex as figuring out the proper time to plant in different parts of the state or predicting how the seed impacts the soil.
- ***Art and reading*** **–** Have the kids draw or journal about the growth cycle over the summer!

Procedure

Discussion

Start with a class discussion about why you should use certified seed potato instead of table stock. The key point is to prevent spreading potato diseases that can be introduced from imported potatoes. Late Blight is a potato disease that is highly contagious.

Additionally, most potatoes found in the store (with the exception of seed potatoes) are treated with a sprout inhibitor making it difficult to grow. You can look up more information about this at:

http://dnr.alaska.gov/ag/akpmc/potato-program/index.htm

You can show students pictures of the impact of Late Blight disease using three scales:
1) on the potato, 2) on the leaf of the plant, and 3) on the crop.

Activity

Station set up:

Each station should have 1-4 students each with a planting pot, certified seed potatoes, and soil. *If you choose to use a knife and cut the potatoes then have an adult at each station or move around from station to station to 'count the eyes' and cut accordingly. Draw an example of the final product on the board for them to follow the steps with.

1. Count and be sure each student has a piece of seed potato with 2-3 eyes.
2. Fill the pot ½ way with soil.
3. Place the whole, or piece of, seed potato into the pot so it's resting on top of the soil.
4. Cover the seed with soil until the pot is almost full.
5. Have each student write their name on a piece of masking tape to put on their pot along with the product they planted and the date.

Seed potatoes look like any other potato, making sure they are certified is the key!
Certified seed will have an official seed tag attached to the store display or the package.

Discussion

End with a discussion about healthy potato choices. There are many places to go for nutrition information about potatoes, one is: http://www.potatogoodness.com/nutrition/

Show pictures of the different ways in which we eat potatoes and compare how the calories change with each potato product. Make sure you are comparing equal amounts and talk about how much that portion might be. Discuss how adding things to a potato product can increase the calories (i.e. a baked potato).

2015 Alaska Certified Seed Potato Growers (2014 Crop Year)

Mat-Su/ Anchorage Area:

Little Susitna Farm	8470 Russet Rd, Palmer, AK 99645	907-746-5496	trout@mtaonline.net
Dearborn Farm	980 S. Trunk Rd, Palmer, AK 99645	907-745-3501	Dearborn@mtaonline.net
Greg Kalal	8621 Witherspoon Cir, Anchorage, AK 99504	907-339-1966	gkalal@gci.net
Pyrah's Pioneer Peak Farm	PO Box 966, Palmer, 99645	907-745-4511	pppfarm@hotmail.com
VanderWeele Farms, LLC	PO Box 461, Palmer, AK, 99645	907-745-3597	vdweele@mtaonline.net
Jeff Smeenk	506 E. Fireweed, Palmer, 99645	907-746-2773	Jeff.smeenk@gmail.com

Fairbanks/ Nenana/ Clear/ Delta Junction Area:

Ebbesson Farms	PO Box 370, Nenana, AK, 99760	907-479-0440	soebbesson@alaska.edu
Pingo Farm	999 Maura St, Fairbanks, AK, 99709	907-479-7977	
Frank Borman	HC 60 Box 4199-1, Delta Junction, AK, 99737	907-895-4148	bormanf@yahoo.com
Smith's Micro Farm	200 A St Stop 464, Clear, AK, 99704	907-582-1012	Smiths_micro_farm@ hotmail.com

Kodiak Area:

Faith Farms	PO Box 625, Kodiak, AK, 99615	907-486-3099	

Soldotna / Homer area:

Oceanside Farms	811 Ocean Drive Loop, Homer, AK, 99603	907-235-7873	surfshack@acsalaska.net

Haines Area:

George Campbell	PO Box 458, Haines, AK, 99821	907-723-0435	

2015 Alaska Certified Seed Potato Varieties*

(Field crop 2014)

*Please contact individual grower for their variety list and availability

A	Chieftain	Jemseg	Ramblin Rose
Aggeblum	Classic	Jogeva Estonian	Ratte
AK Red	Crème de Mountain	K	Red Beauty
AK Sweetheart	Cupid	Katadhin	Red Gold
AK Russet	D	Keith Moore Red	Red Pontiac
Alasclear	Daisy Gold	Kennebec	Ritchers Jubel
Alaska Frostless	Daku	Kerrs Pink	Robinta
Alaska Redeye	Delta Reds (22-1 exp)	Kueka Gold	Rosa
Alaska 114	Denali	Kilfi	Rose Finn Apple
Allagash	Desiree	King Edward	Rose Gold
All Blue	E	Krantz	Royal Kidney
All Red	Eerstling	L	Russet Norkotah
Atlantic	Epicure	Lemhi Russet	Russian Banana
B	Eramosa	M	S
BakeKing	F	Magic Molly	Sangre Sel 11
Beauty of Hebron	Favorite Red	Magic Myrna (8-3 exp)	Saginaw Gold
Belle De Fontenay	Fiesta (29-6 exp)	Maine Stay	Shepody
Bintje	French Fingerling	Mark Warshaw	Slovenian Crescent
Blue Shetland	Frontier Russet	Mrs Moehlers Yellow	Snowchip
Bushes Peanut	G	N	Spunta
C	German Butterball	Nicola	Superior
Caines Irish Rocks	Goldrush	Nipigon	U
Cal White	Granola	Norland, “Dark Red”	Urgenta
Cal Rus	H	NorDonna	W
Caribe	Haida	O	White Rose BC
Cascade	Hilat Russet	Okeefe Superior	White Rural New Yorker
Castile	Hilite Russet	P	Y
Catriona	Huckleberry	Peanut	Yam
Century Russet	I	Pike	Yellow Finn
Chaleur	Iditared	Pimpernel	Yukon Gold
Cherry Red	J	Purple Viking	
		R	

Stay up to date about resources, events, and funding opportunities by signing up for the Alaska Farm to School Listserv:
http://list.state.ak.us/soalists/akfarmtoschool/jl.htm

Alaska Agriculture Idea Sheet

Here are some quick and easy ideas to celebrate and educate on Alaska Ag Day:

Elementary Classes

1. Read a book that depicts American agriculture. Avoid books that have stereotypes about farming. If you chose a book about farming in the past centuries, be sure to explain how farmers use technology today.
2. Using pieces of rope 4 to 10 feet long, have students, in groups, make letters of the alphabet by holding the rope above the ground, working together to form the letter shapes. Ropes are important tools for ranches.

Elementary and Middle School Classes

1. Discuss agriculture in your area --Are there farms around your community? What is grown there? --If there are no farms around your community, why not? --Are there gardens? Do your students have gardens? --Do students gather berries, go hunting, or participate at fish camp with their families?
2. Talk about what grows in Alaska
    a. Quiz students about what is raised in Alaska and what isn't. Discuss why some foods cannot be grown here.
3. What's on the school's menu for Alaska Ag Day? Have students figure out where the ingredients for those foods may have been grown.

Middle and High School Classes

1. **Math** — Use acres of crops in math problems — there are 43,560 square feet in an acre.
2. **Science** — Agriculture has connections to many of the sciences. Tie the unit you are teaching to one of the many ag-related sciences.
3. **Art** — Try painting with dirt. For instructions, see Alaska's Awesome Soils, Page 10, which can be downloaded at http://www.alaskaswcds.org/-Edprograms.html. Some of the world's most famous pieces of art are agrarian in subject. Discuss some of the works, and their inspiration.
4. **Social studies** — Agriculture is directly tied to the movement of populations throughout history. Geography and agriculture are integrally related. On a state, national or world level, look at social studies with agriculture as a theme.
5. **Technology** — New technology has drastically changed the face of agriculture: from remote sensing to GPS locating to robotic farm equipment. Discuss what may be next.
6. **Literatur**e — From Little House on the Prairie to Grapes of Wrath to modern books, authors have portrayed the gritty reality of farming. Poems like those by Robert Frost are also great introductions to discussions of literary realism regarding agriculture.
7. **Languages** — What are the names of crops and livestock in the language(s) your students are studying? Do ESL students understand words that apply to agriculture and food production?
8. **Economics** — Farmers operate on a small profit margin in a high-risk business. How much does a farmer get for a bushel of corn compared to the cost for a box of Kellogg's Corn Flakes?
9. **Government** — Many of America's founding fathers were farmers. How may have these agrarian roots have influenced their stand on issues?
10. **Life Sciences** — Fit Alaska's food production into http://www.myplatematerials.com/. Look at a Big Mac meal: how does it stack up for nutrition; where do the foods in it come from; how much does it cost and how much goes back to the farmer; how does it compare to serving size recommendations; what if you super-size it?
11. **Career Exploration** — Agriculture is a fast-changing science with many careers available to students in a wide variety of specialties. Students can research options.