



Wisconsin Ag in the Classroom

Hands-On Activities

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A Slice of Soil

One of the most important natural resources that covers much of the earth's land surface is soil. All living things depend on it as a source of food, either directly or indirectly.

Our food producing land remains the same and yet the world population continues to grow. As a result, each person's food portion becomes smaller and smaller. It is the responsibility of each generation to use the soil wisely to insure the future. The following demonstration shows how little of the earth's surface is actually used for food production as compared with growing populations.

Materials:

- Large apple (softer apples work better)
- Paring knife (or heavy plastic knife)

Procedure:

1. Cut the apple into four equal parts. Three parts represent the oceans of the world. The fourth part represents the land area.
2. Cut the land section in half lengthwise. Now you have two one-eighth pieces. One section represents land such as deserts, swamps, Antarctic, arctic, and mountain regions. The other one-eighth section represents land where people can live but may or may not grow food.
3. Slice this one-eighth section crosswise into four equal parts. Three of these one thirty-second sections represent areas of the world which are too rocky, too wet, too hot, or where soils are too poor for production, as well as developed areas.
4. Carefully peel the last one thirty-second section. This small bit of peeling represents the soil of our earth upon which mankind depends for food production.

Beanie Baby

Background Information

Soybeans are sometimes called the “magic bean” because they can be used to make many things. Soy products are found in hundreds of items we buy at the grocery store. Soy milk, soy flour, textured vegetable protein, and lecithin are all ingredients that come from soybeans and are found in frozen foods, baked items, cake and cookie mixes, candies, cereals, and many other items.

Materials Needed

- Jewelry size resealable bag (found in craft stores)
- Crystal soil (found at most garden centers)
- Hole punch
- Water
- Measuring spoons
- Soybean plant (optional)
- Soybeans
- Yarn

What is Crystal Soil? Crystal soil (a.k.a. soil moist) is water absorbent polymer beads, which can absorb and hold up to 80-150 times of its volume of water for a long period of time. As a reservoir, crystal soil stores water and releases the water whenever the plant needs it. Crystal soil can be used for potted plants, both indoor and outdoor. It is non-toxic, odor free, and environmentally safe.

Activity Directions

1. Punch a hole in the top of your bag (above the seal).
2. Place ¼ teaspoon of crystal soil into the bag.
3. Add one tablespoon of water.
4. Gently push in two soybeans.
5. Seal your bag firmly.
6. Insert the yarn to make a necklace.
7. Wear your Beanie Baby around your neck and under your shirt to keep it in a warm, dark place.
8. Check your Beanie Baby each day for germination and record the growth.

****NOTE**** If crystal soil is not available, a cotton ball can be used or jelly marbles.

Biodegradable Packing Peanuts

These packing peanuts are made almost entirely of corn!
They are totally water soluble and biodegradable!

Materials Needed :

- cornstarch
- measuring spoons
- corn oil
- water
- medicine dropper
- food coloring
- microwave
- sandwich-size resealable plastic bag

Procedure:

1. Place a tablespoon of cornstarch in a resealable plastic bag.
2. Add two drops of corn oil to the corn starch.
3. Add one and a half tablespoons of water to the oil and cornstarch.
4. Stir the mixture.
5. Add two drops of food coloring to the mixture and stir well.

Scientific Observations:

- What do you notice about your biodegradable plastic?
- Is your biodegradable plastic the same as other students' plastic?
- What could you make with this biodegradable plastic if you let it harden?

Next, microwave your biodegradable plastic for 20-25 seconds on high.

- What happens to your plastic?
- Form your plastic into a ball and describe what it will do.

Circles of Earth Bracelet

Materials Needed:

- One 12"-14" brown leather strap, pipe cleaner or jute string
- Beads:

<u>Color:</u>	<u>Representing:</u>
Clear adjuster bead	People
Blue pony bead	Water
Green pony bead	Plants
Brown pony bead	Soil
Orange pony bead	Day
Black pony bead	Night
White pony bead	Air
Yellow pony bead	Sun

Procedure:

Tie a knot on one end of the leather strap at about 2". String the colored beads to represent the circles of the Earth. Take the end of the leather strap without a knot and lace it through the clear "People" bead. Tie a knot at the end. (Now your clear "people" bead is an adjuster for the bracelet. Excess leather strap below knots may be trimmed.

Discuss the resources that each colored bead represents:

1. People move in circles. The Earth provides us with everything we need to survive. We must take great care of our valuable resources!
2. Water is a circle. Water rains down on the land. Water collects in oceans, rivers, lakes, and streams. It evaporates back up into the sky and collects in clouds. The clouds become heavy, and rain falls down to land again.
3. Plants and soil are circles. Plants grow from soil. Plants provide food for animals. Animals provide food for other animals. Animals die and decompose. New soil is made. New plants grow.
4. Earth is a circle. Earth is spinning through space, rotating on its axis, revolving around the Sun. The Earth and Sun give us the circle of seasons and the circle of night and day.
5. Air is a circle. Animals breathe in oxygen and exhale carbon dioxide. Plants take in carbon dioxide, use it to make food, and give off oxygen. Animals breathe it in again.
6. The Sun is a circle. The Sun provides warmth and light for all of the Earth's circles. Without the Sun, plants and animals would not survive. The Sun binds us together.

Corn Baby

Background Information:

Grain corn is used for feed for cows, pigs and poultry, ethanol, corn oil and corn starch and other non-food uses. Corn silage is chopped and fed directly to cows. Sweet corn is what you buy at the stores fresh, canned or frozen, or corn on the cob from farmer's markets.

Materials Needed:

- Jewelry size resealable bag (found in craft stores)
- Crystal soil (found at most garden centers), a moistened cotton ball or jelly marbles
- Hole punch
- Water
- Measuring spoons
- Corn plant
- Seeds of corn- (packaged)
- Yarn or string

Activity Directions:

1. Punch a hole in the top of your bag (above the seal).
2. Place ¼ teaspoon of crystal soil into the bag.
3. Add one tablespoon of water.
4. Gently push in two seeds of corn.
5. Seal your bag firmly.
6. Insert the yarn to make a necklace.
7. Wear your Corn Baby around your neck and under your shirt to keep it in a warm, dark place.
8. Check your Corn Baby each day for germination and record the growth.

Corn Plastic

Corn is an important renewable resource. There are thousands of uses for this valuable crop, not only as food for humans and livestock, but for many other products as well. These uses include:

1. **Ethanol** - an environmentally-friendly fuel that, when blended with gasoline, reduces carbon-monoxide emissions from vehicles by 25-30%. Using ethanol-blend fuels helps reduce our dependence on foreign oil imports.
2. **Printing Ink** - Corn-based ink can be used in place of regular printer's ink, which is made from petroleum products - another way to reduce dependence on imported oil!
3. **Corn Starch** - Corn starch is a key ingredient in thousands of corn products. It is found in camera film, candles, shoestrings, charcoal briquettes, crayons, detergents, wood products, adhesives, fireworks, medicines, paper, cardboard, and biodegradable plastics.

Materials Needed :

- cornstarch
- measuring spoons
- corn oil
- water
- medicine dropper
- food coloring
- microwave
- sandwich-size resealable plastic bag

Procedure:

6. Place a tablespoon of cornstarch in a resealable plastic bag.
7. Add two drops of corn oil to the corn starch.
8. Add one and a half tablespoons of water to the oil and cornstarch.
9. Stir the mixture.
10. Add two drops of food coloring to the mixture and stir well.

Scientific Observations:

- What do you notice about your biodegradable plastic?
- Is your biodegradable plastic the same as other students' plastic?
- What could you make with this biodegradable plastic if you let it harden?

Next, microwave your biodegradable plastic for 20-25 seconds on high.

- What happens to your plastic?
- Form your plastic into a ball and describe what it will do.

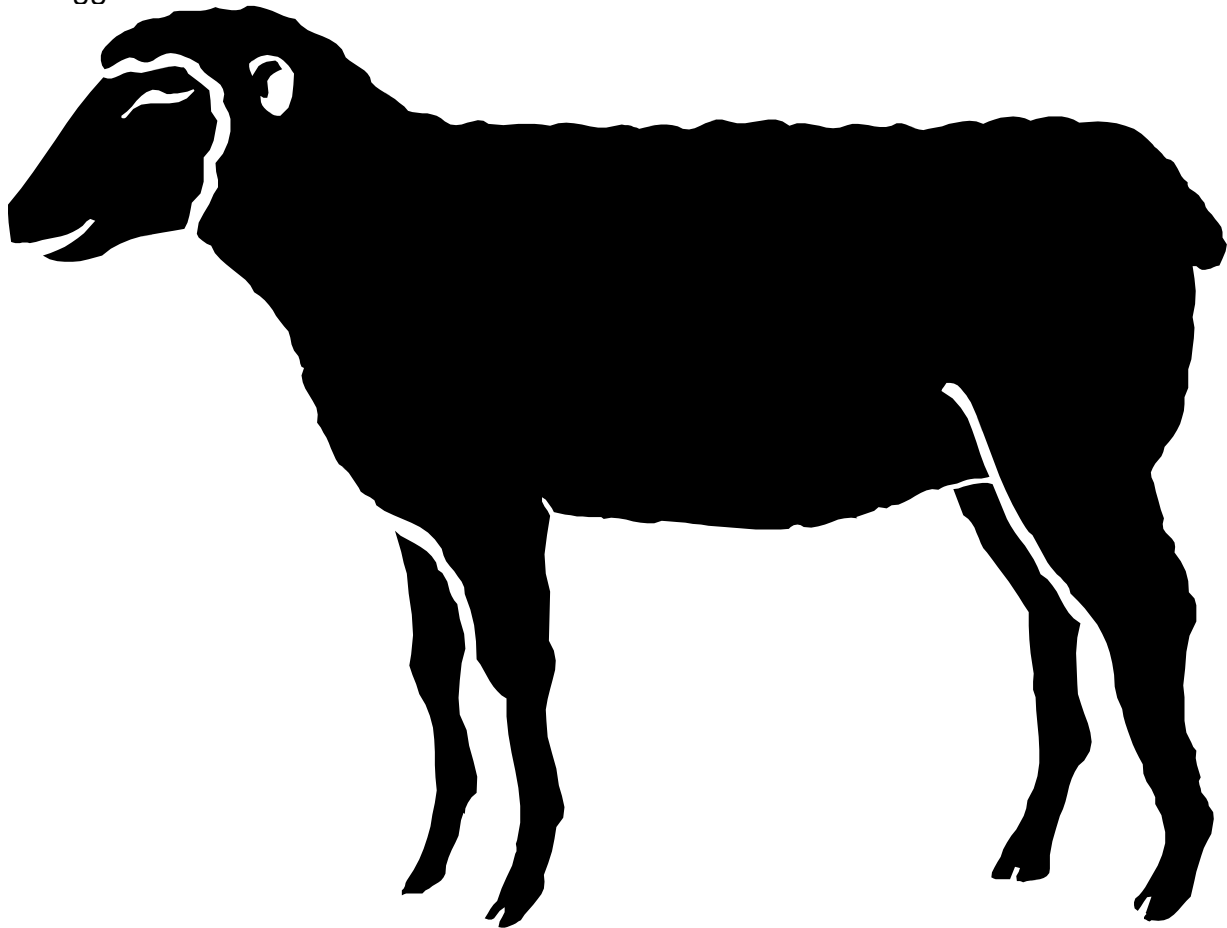
Dyeing Wool

Items needed:

- ✱ A gallon jar or large glass mixing bowl that will hold 1/2 gallon of water
- ✱ Boiling water
- ✱ Light-colored, carded wool (found at woolen mills, sheep producers, craft stores, knitting shops)
- ✱ Flavored drink powder packets of various colors

Procedure:

1. Bring the water to boiling. For safety precautions: An adult should handle the water!
2. Show the students the raw wool and explain the shearing and carding processes
3. Have the students pick out a color of drink mix to use
4. Dissolve one or two packets of flavored drink mix and ½ gallon of boiling water in the jar
5. Add the wool to the colored water
6. After one hour or less, the wool will have absorbed the dye and the water should be clear
7. Let the wool dry by laying it on a tray or paper plates (spread it out in thin layers to speed drying time)
8. Students can use the wool to glue on the sheep below or send wool home in plastic baggies



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. Use a clear plastic drinking glass or another clear container so you can see the 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.

Farm Charm

Background: The farm is the source of most of the food that we eat. Some farms grow materials used to shelter us or make some of the clothes that we wear. Farms depend on the land - it is a non-renewable resource. Once land is gone, it is very difficult to create more. People that own and work the land are aware of the close connection between the land and the environment. By using resources wisely, they protect both for future generations.

- **Soil** is the basis for growing animals and plants. Healthy soil is important in agriculture. It needs to be protected from the abuse of erosion, over farming, and overdevelopment.
- **Organic matter** is old plant or animal material that is being broken down by composting or decomposing in the ground. Organic matter helps ensure that the soil will absorb water and provides a habitat for soil organisms.
- **Soil organisms** are present in healthy soil. These plants and animals are important in the breaking down of organic matter and excessive fertilizers.
- **Plants** can be trees, shrubs, grass, or other crops. Plants provide food for humans and wildlife, help prevent soil from washing away, and add to the beauty of our habitat. They are important in producing oxygen for us to breathe.
- **Corn** is a basic crop that feeds humans and animals. Many additional products are made from corn, like plastics, fuel, sweeteners, and oil. Fuel made from corn helps conserve the fuel that cannot be renewed.
- **Soybeans** are as important as the other grains in world food production. Modern technology has developed many uses for this crop. Soybeans are now being made into building products and used as a diesel fuel. This crop contributes to the conservation of nonrenewable resources and helps decrease pollution of the earth and atmosphere.
- **Animals** contribute to the welfare of humans. They provide power in some countries and food and clothing in most.
- **Fertilizer** is necessary to nourish plants. The result is healthy plants for human and animal consumption. All plants need nutrients. Many times the soil is nutrient deficient, so fertilizers are applied.
- **Pesticides** are used to control insects, weeds and diseases. Farmers are using less pesticide than ever before due to Integrated Pest Management (IPM) practices. IPM uses many predators, insects, disease resistant varieties and genetically engineered plants.
- **Water** is necessary for plant and animal life. It must be conserved in order to have enough.
- **Sunlight** is important in the process of photosynthesis that helps provide the oxygen that animals and humans need. Plant growth depends on sunlight.

Materials Needed:

- Jewelry size resealable bag
- Hole Punch
- Corn Kernels
- Soybeans
- Animal Crackers
- Rock Salt
- Coffee (ground)
- Dry Noodles
- Yarn
- Blue Confetti
- Gold Confetti
- Sugar
- Green Confetti
- Peat Moss

Activity Directions:

1. Punch a hole into the top of the jewelry bag.
2. Drop a pinch of each of the following into the jewelry bag.
 - a. Soil- Coffee
 - b. Organic Matter- Peat Moss
 - c. Soil Organisms- Blue Shredded Paper
 - d. Plants- Confetti Trees
 - e. Corn- Corn
 - f. Soybeans- Soybeans
 - g. Animals- Animal Cracker
 - h. Fertilizer- Rock Salt
 - i. Pesticides- Sugar
 - j. Water- Blue Confetti
 - k. Sunlight- Gold Confetti

Growing a Garden in a Bag

Materials Needed:

- ❑ Jewelry size resealable bag (found in craft stores)
- ❑ Crystal soil (found at most garden centers)), a moistened cotton ball or jelly marbles
- ❑ Hole punch
- ❑ Water
- ❑ Measuring spoons
- ❑ Various types of garden seeds
- ❑ Yarn

Just like a garden has many rows of different crops and plants, you can use our Beanie Baby and Corn Baby activities as a model for growing a garden in plastic bags. This will allow you to see what the various types of seeds look like as they germinate and begin growing. Seeds that work well include corn, bean, pumpkin, melon, peas and other larger seeds.

Activity Directions: (Using crystal growing soil)

- Punch a hole in the top of your bag (above the seal).
- Place ¼ teaspoon of crystal soil into the bag (or moistened cotton ball or jelly marbles)
- Add one tablespoon of water.
- Gently push in two seeds.
- Seal your bag firmly.
- Insert the yarn to make a necklace.
- Wear your seed necklace around your neck and under your shirt to keep it in a warm, dark place.
- Check your seeds each day for germination and record the growth.
- Do this for each type of seed you have.
- Wear your seed necklace around your neck and under your shirt to keep it in a warm, dark place.
- Check your seeds each day for germination and record the growth.
- Do this for each type of seed you have

After several days, you'll begin to see changes in your seeds. Keep watching them as they germinate and start to grow. You can chart their growth, dissect them or try planting them!

Homemade Butter

Materials Needed:

- Jar (pint-sized). Can be glass or plastic. 2-ounce cups with lids also work well.
- Heavy whipping cream, preferably at room temperature.
- Salt
- Crackers

Procedure:

1. Fill jar or cup 2/3 full with whipping cream. Firmly secure lid. Be sure to leave some space in the container.
2. Shake container briskly for 5-10 minutes (the more cream in the container, the longer it will take). Continue shaking until the butter is a solid lump in the jar. Once the butter has formed, open the jar and pour off the buttermilk.
3. To make salted butter, add salt after the butter is formed.
4. Spread butter on crackers and enjoy!

Variations:

- For an experiment, try salting before shaking.
- Experiment by having students record the temperature of cream when beginning, length of time, and number of shakes it takes for butter to form.
- Instead of using heavy whipping cream (44% cream), try using light cream (18% cream), regular milk (3.5% cream), and 2% milk (2% cream). Have students compare the results
- After butter forms, you can add maple syrup for “maple butter”, honey for “honey butter” or others to use other Wisconsin commodities.

Plastic Bag Ice Cream

Materials Needed (per group of 4):

- 1/4 cup sugar
- 1/2 tsp. vanilla extract
- 1 cup rock salt
- 4 plastic spoons
- 1 gallon resealable freezer bag
- 1 quart resealable freezer bag
- large spoon
- measuring cup
- duct tape
- 4 paper sundae cups, 8 oz.
- 1 cup 2% milk
- 1 cup whipping cream or half & half
- Flavorings as desired
- Ice
- cloth towels or mitts
- water

Procedure:

1. Set up the milk, whipping cream, vanilla, and sugar in an assembly line process for students to help reduce congestion.
2. Add 1 cup milk, 1 cup whipping cream, 1/4 cup sugar (4 tablespoons), and 1/2 teaspoon vanilla to a 1 quart freezer bag for each group. Squeeze out any remaining air, seal tightly and use a strip of duct tape to double-seal the end of the bag.
3. Students will place the quart bag with the ice cream ingredients inside a 1 gallon resealable bag. Pack ice around the small bag and add the rock salt and 3/4 cup water. Squeeze out any remaining air in the 1 gallon bag, seal the bag, and then double-seal the end using the duct tape.
4. Students should carefully shake the bags between their hands while protecting their hands with cloth towels or mitts. This should be done until you can see that the ice cream is frozen.
5. The outer bag can be opened by each group and the ice and salt discarded. Rinse the outside of the bag containing the ice cream ingredients prior to dividing the ice cream into sundae cups for the students to eat. Use the large spoon to serve the ice cream.

Pumpkin Patch Pie

It is believed that pumpkins originated in North America. Seeds from related plants have been found in Mexico dating back to 7000 to 5500 B.C. Native Americans used pumpkin as a staple in their diets centuries before the pilgrims landed. The origin of pumpkin pie is thought to have occurred when the colonists sliced off the pumpkin top, removed the seeds, and then filled it with milk, spices and honey. The pumpkin was then baked in the hot ashes of a dying fire.

Materials Needed:

- 1 gallon resealable freezer bag
- 2 2/3 cups cold milk
- 2 packages (4 serving size) instant vanilla pudding mix
- 1 can (15 oz.) solid-pack pumpkin
- 1 tsp. ground cinnamon
- ½ tsp. ground ginger
- Graham cracker crumbs
- 25 small cups
- scissors
- 1 can whipped topping
- 25 plastic spoons

Procedure:

5. Combine the milk and instant pudding in the resealable bag.
6. Remove the air and seal the bag shut.
7. Squeeze and knead with hands for one minute until blended.
8. Open the bag and add the pumpkin, cinnamon and sugar.
9. Remove the air and seal the bag shut.
10. Squeeze and knead with hands for 2 minutes until blended.
11. Place ½ Tbsp. Of graham cracker crumbs in the bottom of small cups.
12. Cut the corner of the gallon freezer bag and squeeze pie filling into cups.
13. Garnish with whipped topping.
14. Add a spoon. Serve and enjoy.
15. Discuss pumpkin production while students are enjoying pumpkin pie treats.

Yield: pie filling for 25 students and 1 teacher. Ingredients can be divided by 4 or 5 for students to work in small groups.

Snacking Around Wisconsin

CheX Corn Mix® - made with corn meal, whole grain corn and corn starch. We produce field (dent), sweet and popcorn in Wisconsin. There were 3.30 million acres of corn planted in 2012.



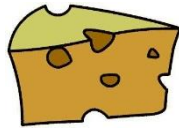
Cheerios® - made from whole grain oats, modified corn starch and oat bran. Wisconsin planted 130,000 acres of oats in 2012 and averaged 60 bushels per acre.



Pretzels - made from wheat flour and corn syrup. Wisconsin planted 245,000 acres of wheat in 2012 with an average yield of 75 bushels per acre.



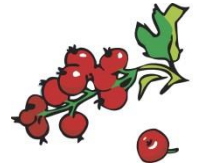
Cheese Popcorn - Contains popcorn, cheddar cheese, soybean oil and buttermilk powder. Each American eats an average of 68 quarts of popcorn each year!



Shoestring Potatoes - made from white cooked potatoes. Wisconsin harvested over 2 million potatoes in 2012 which grow best in sandy soils.



Craisins® - made with dried cranberries. Wisconsin ranks #1 in the nation in production. The cranberry was named Wisconsin's state fruit in 2004.



Dried Cherries - made from cherries. Door County cherries account for over 95% of all tart cherries produced in Wisconsin.



M & M's® - the milk chocolate contains skim milk and lactose (milk sugar). Wisconsin's dairy industry contributes \$29 billion in revenue annually. That's why we are known as America's Dairyland!



Roasted Soy Nuts - made from roasted soybeans and sunflower oil. Wisconsin planted over 7.5 million acres of soybeans in 2012. Soybeans are used for a variety of human foods, animal feeds and for bio-diesels.



Candy Corn - contains corn syrup, egg whites and honey. Wisconsin has over 68,000 bee colonies producing 5.8 million pounds of honey. We also have over 36 million broilers (chickens) in our state.



Soil Sammy

Soil is an important natural resource. Farmers must take good care of the soil so it will continue to grow food. Farmers must check the soil to make sure it has the right nutrients in the right amounts. If the soil doesn't have adequate nutrients, farmers need to adjust the balance of nutrients to grow healthy crops. Farmers may grow crops that add nutrients such as nitrogen to the soil, or they may add fertilizers containing nitrogen and other nutrients.

Materials Needed:

- Knee-high stocking
- Grass seed, 1 tablespoon each
- Potting soil
- Baby food jar
- Water
- Jiggle eyes
- Scissors and fabric
- Glue (quick drying craft glue is best)

Procedure:

1. Using knee-high hose, place some grass seeds in the toe where you want them to grow. The toe end of the hose is the head of Soil Sammy and the grass looks like hair when it grows.
2. Pack a handful of soil in the end of the hose on top of the seeds. Make sure the ball of soil is slightly larger than the opening of the baby food jar.
3. Tie a knot in the hose under the ball of soil.
4. Completely wet the head of the Soil Sammy. Place the top of the hose (which is the bottom of Soil Sammy) in baby food jar filled with water, making sure the head is above the mouth of the jar. The end of the hose will absorb water to feed the grass seed, which will germinate through the hose (you may have to cut a few small holes in the hose to help).
5. Now you can decorate! Suggestions include a round piece of fabric to fit over the mouth of the jar for a shirt, buttons glued to the shirt, jiggle eyes for the face, felt cut-out for the mouth, etc.
6. Water as needed and be sure to cut the grass "hair" and style as desired

For Discussion:

Will the grass hair grow better or faster with fertilizer? Try it and find out. Add different fertilizers to the soil and water and see which grows best.

Add to the water:

Store-bought liquid fertilizer
Soda pop (it has phosphorus)
Apple juice (it has citric acid)
Lemon scented liquid soap (it has citric acid)
Ammonia (it has nitrogen)

Add to the soil:

Store-bought fertilizer stick
Coffee grounds (caffeine has nitrogen)
Baking soda (it has nitrogen)
Epsom salt (it has magnesium sulfate)
Cream of tartar (it has potassium)

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.

The Farm Charm

Materials:

- jewelry size resealable bag
- hole punch
- yarn
- coffee (ground)
- peat moss
- dry noodles
- green confetti
- corn kernels
- soybeans
- animal crackers
- rock salt
- sugar
- blue confetti
- gold confetti

- Drop a pinch of each of the items listed into a jewelry-size plastic bag with a hole punched in the top. Add a piece of yarn to make a necklace.
- Soil is the basis for growing animals and plants. Healthy soil is important in agriculture. It needs to be protected from pollution, erosion, over-farming, and too much development. (coffee)
- Organic Matter (O.M.) is old plant or animal material that is being broken down by composting or is decomposing in the ground. OM helps insure that the soil absorbs water and provides a habitat for soil organisms. (peat moss)
- Soil Organisms are present in healthy soil. These plants and animals are important in breaking down organic matter in the soil. (dry noodles)
- Corn is used to feed humans and animals. Many products are made from corn – plastic, sweeteners, fuel, vegetable oil, etc. Fuel made from corn helps conserve fuels such as gasoline that cannot be renewed. (corn)
- Soybeans are a very valuable crop. Thanks to modern technology, they are now used to make building products, newspaper ink, and diesel fuel, as well as for food. These new uses contribute to the conservation of non-renewable resources and help decrease pollution. (soybeans)
- Plants may be trees, shrubs, grass, or other crops. Plants provide food for humans and wildlife, help prevent soil erosion, & add to the beauty of our environment. They produce oxygen for us to breathe. (green confetti)
- Animals contribute to the welfare of humans. They provide power in some countries. Humans use some animals for food or to make clothing. (animal crackers)
- Fertilizer is necessary to produce healthy plants for human and animal consumption. All plants need nutrients, but often the soil cannot supply enough nutrients for proper, abundant growth, so fertilizers are applied. Farmers have learned to use fertilizers safely and effectively. (rock salt)
- Pesticides are used to control insects, weeds, and diseases. Farmers today use fewer pesticides than ever before. Many farmers now use Integrated Pest Management (IPM) practices, which reduce the number of chemicals used on their crops. IPM uses beneficial insects to control a crop's pest population, and often uses plants which have been genetically-engineered to resist disease. (sugar)
- Water is necessary for plant and animal life. The human body is 75% water! (blue confetti)
- Sunlight provides warmth and light. Both contribute to the chemical and biological processes that help plants and animals grow. (gold confetti)

The Wisconsin Tree

Supplies Needed:

- Umbrella
- Paper Leaves
- Small pieces of wood
- Yarn
- Paper bag
- Markers
- Rope
- Hat
- Artificial flowers
- Plastic fruit
- Gloves
- Paper or real seeds
- Syrup
- Tape and Velcro

Trees are an important part of Wisconsin agriculture and natural resources. An urban forest is all of the plants and animals in a city, village, or town. Trees in yards, along streets, and in parks all are part of an urban forest. The importance of urban forests is often overlooked.

There are many other commodities that are important in Wisconsin. Wisconsin is one of the most diverse agricultural production states in the nation, producing a variety of dairy, livestock, vegetables, crops, and nursery stock. Wisconsin's climate, natural resources, agribusiness infrastructure and farm heritage keep Wisconsin one of the top ten ag states in the nation.

Tree Parts- Dress a Student up as a Tree

- Leaves- an umbrella with paper leaves attached to it by tape or velcro
- Wood- a small piece of wood with a long string attached to wear as a necklace
- Bark- a vest made from a grocery bag, decorated with squiggly lines to resemble patterned bark
- Roots- rope tied together at different lengths with knots in it tied at the students feet
- Flowers – a headband decorated with various flowers (can be made from pipe cleaners, plastic flowers, or silk flowers)
- Fruit - fruit shapes cut out of construction paper or use plastic models. Tie them with string and loop them over the student's outstretched arms.
- Seeds- gloves with paper cut outs of seeds. Or use plastic type glove and glue actual seeds on it.
- Sap- have a maple syrup jug or use two jugs of water to shake