

Agriculture Ziplocs



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Beanie Baby

Grow a soybean in a plastic bag

Materials:

- Jewelry size reseal-able bag (found in craft stores)
- Crystal Soil (order from *Flinn Scientific* at 1-800-452-1261 or online at www.flinnsci.com: catalog numbers FB0381-FB0384 for various colors)
- Hole punch
- Water
- Measuring spoons
- Soybeans
- Yarn

Directions:

1. Punch a hole in the top of your bag.
2. Place a scant $\frac{1}{4}$ 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 several times a day for germination and record the growth.

Thanks to:

Steve Connelly, Maryland Ag in the Classroom

Get FREE!

- Soybean Ag Mags for your classroom from North Dakota Farm Bureau

Bouncing Egg

Make an egg bounce by soaking it in vinegar

Materials:

- One hard cooked egg
- White vinegar
- One Ziploc® Brand EZ-Fill™ Bag

Directions:

1. Without breaking the shells, examine the hard-cooked egg carefully. Record observations.
2. Place the egg in the bag. Ziploc® Brand EZ-Fill™ Bags will stand as you fill them. Cover the egg completely with white vinegar and seal the bag. Predict what will happen in one hour, one day, and one week. Record predictions.
3. Observe the egg at the indicated times and record observations. The egg shell should have dissolved and the egg white and yolk should have become rubbery. After rinsing and drying the egg, record what happens when it is dropped. It should bounce.

Thanks to:

Kevin Daugherty, Illinois Ag in the Classroom Program

Note: Do not eat the eggs. Wash your hands after each observation.

Corncob Potpourri

Create scented corncobs with essential oils

Materials:

- 4 cups of ground corncobs
- One gallon Ziploc® bag
- Essential oil (can be found in the soap making section of craft stores)

Directions:

1. Pour the corncobs into the Ziploc® bag.
2. Add up to eight drops of the essential oil.
3. Close the bag and shake it.
4. Let the bag sit for a week while shaking it once a day. After a week you can use the potpourri around your home.

Thanks to:

Kevin Daugherty, Illinois Ag in the Classroom Program

Get FREE!

- Corn Ag Mags from North Dakota Farm Bureau
- Ideas for making a Corn Ag Bag at www.agintheclassroom.org

Corn Plastic

Make plastic using corn oil and corn starch

Materials:

- Cornstarch
- Corn oil
- Measuring spoons
- Food coloring
- Sandwich size Ziploc® bag
- Medicine dropper
- Water
- Microwave

Directions:

1. Place a tablespoon of cornstarch in a Ziploc® bag.
2. Add two drops of corn oil to the corn starch.
3. Add 1½ tablespoons of water to the oil and cornstarch.
4. Stir the mixture.
5. Add two drops of your favorite food coloring to the mixture and stir well.

Thanks to:

Kevin Daugherty, Illinois Ag in the Classroom Program

Scientific Observations...

1. What did you notice about your biodegradable plastic?
2. Is your biodegradable plastic the same as the other students' plastic?
3. What could you make with this biodegradable plastic if you let it harden?

Microwave your biodegradable plastic for 20-25 seconds on high.

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

Get FREE!

- Corn Ag Mags from North Dakota Farm Bureau
- Ideas for making a Corn Ag Bag at www.agintheclassroom.org
- A fact sheet about corn plastic from www.agintheclassroom.org

Farm Charm

Make a necklace that represents things on a farm

Materials:

- Small jewelry bag
- Yarn
- Soybeans
- Flour
- Coffee
- Peat moss
- Hole punch
- Confetti (farm animals, gold, blue, plants...)
- Corn
- Rock salt
- Blue shredded pepper

*This Farm Charm is to remind us of the importance of farms in our lives and the need to protect the environment. Drop a pinch of each of the following items into a small jewelry 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 abuse of erosion, over farming, and too many buildings. (coffee)

Organic matter (O.M.) is old plant or animal material that is being broken down by composting or decomposing in the ground. OM helps insure that the soils will absorb water and provide a habitat for soil organisms. (peat moss)

Soil organisms are present in healthy soil. These plants and animals are important in the breaking down of organic matter and excessive fertilizers. (blue shredded paper)

Plants can be trees, shrubs, grass, or other crops. Plants provide food for humans and wildlife, help prevent the soil from washing away, and add to the beauty of our habitat. They are important in producing oxygen for us to breathe. (confetti trees)

Corn is a basic crop that feeds humans and animals. Many other products are made from corn (i.e. plastic, fuel, sweeteners, oil). Fuel made from corn helps conserve the fuel (gasoline) that cannot be renewed. (corn)

Soybeans are as important as the other grains in world food production. Modern technology has developed many uses for this crop. Soybeans are now 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. (soybeans)

Animals contribute to the welfare of humans. They provide power in some countries. Food and clothing are products that are used by humans. (confetti animals)

Fertilizer is necessary to produce plants. The result is healthy plants for human and animal consumption. All plants need nutrients. Many times the soil cannot supply enough for human growth so fertilizers are applied. Farmers have learned to use fertilizers properly. (rock salt)

Pesticides are used to control insects, weeds, and diseases. Farmers are using less pesticides than ever before in modern agriculture history. Most farmers are using Integrated Pest Management (IPM) practices. These practices require much less chemicals than previously used. IPM uses many predators, insects, disease resistant variants and genetically engineered plants. (flour)

Water is necessary for plant and animal life. It must be conserved in order to have what we need. (blue confetti)

Sunlight is important in the process of photosynthesis that helps provide the oxygen that the animals need. Plant growth depends on sunlight. (gold confetti)

Thanks to:

Steve Connelly, Maryland Ag in the Classroom

Feed Sacks

Make a bag of goodies to represent what animals eat

Pigs

Materials:

- One sandwich size Ziploc®
- Yarn
- Blue, white, or silver candy
- Toasted Oat Cereal
- Peanuts
- Raisins
- Multi-colored candy
- Peanut Butter Candy

Directions:

1. Copy the pig feed sack chart below and insert the paper into your Ziploc® bag.
2. Add the blue/white/silver candy, toasted oat cereal, peanuts, raisins, multi-colored candy, and peanut butter candy to the bag.
3. Tell a friend what pigs eat and how the things in your Ziploc® bag represent what pigs eat.
4. Enjoy your feed sack snack!



Pig Feed Sack Chart	
Pigs Need:	Represented by:
Water	Blue, white, or silver candy
Carbohydrates	Toasted Oat Cereal
Protein	Peanuts
Minerals	Raisins
Vitamins	Multi-colored candy
Fat	Peanut butter candy

Horses

Materials:

- One sandwich size Ziploc®
- Yarn
- Blue, white, or silver candy
- Candy corn
- Granola
- Shredded wheat
- Multi-colored candy
- Toasted Oat Cereal

Directions:

1. Copy the horse feed sack chart below and insert the paper into your Ziploc® bag.
2. Add the blue/white/silver candy, candy corn, granola, shredded wheat, multi-colored candy, and toasted oat cereal to the bag.
3. Tell a friend what horses eat and how the things in your Ziploc® bag represent what pigs eat.
4. Enjoy your feed sack snack!



Horse Feed Sack Chart		
Horses Eat/Drink:	Represented by:	Nutrient Needed:
Water	Blue, white, or silver candy	Water
Corn	Candy corn	Protein/Carbohydrates
Oats	Granola	Protein/Vitamin B
Hay	Shredded wheat	Protein/Minerals/Vitamins
Sugar - Beet - Pulp	Multi-colored candy	Carbohydrates
Bran	Toasted Oat Cereal	Protein/Carbohydrates

Beef

Materials:

- One sandwich size Ziploc®
- Yarn
- Blue, white, or silver candy
- Candy corn
- Ground Peanuts
- Multi-colored candy
- Raisins
- Shredded wheat
- Green coconut

Directions:

1. Copy the beef feed sack chart below and insert the paper into your Ziploc® bag.
2. Add the blue/white/silver candy, candy corn, ground peanuts, multi-colored candy, raisins, shredded wheat, and green coconut.
3. Tell a friend what cattle eat and how the things in your Ziploc® bag represent what pigs eat.
4. Enjoy your feed sack snack!



Beef Cattle Feed Sack Chart		
Beef-Cattle Eat/Drink:	Represented by:	Nutrient Needed:
Water	Blue, white, or silver candy	Water
Corn	Candy corn	Energy
Soybean Meat	Ground peanuts	Protein
Hay	Shredded wheat	Roughage/Fiber
Vitamins	Multi-colored candy	Vitamins
Minerals	Raisins	Minerals
Grass	Green Coconut	Roughage/Fiber

Thanks to:

Kevin Daugherty, Illinois Ag in the Classroom Program

Get FREE!

- Ideas for making Pig and Horse Ag Bags from www.agintheclassroom.org
- Beef Teaching Materials at <http://www.school-wellness.org/>

Ice Cream in a Bag

Use bags to make a dairy treat

Ice cream freezes at -6°C (21°F). Ice cream can be made in the classroom with the understanding that the freezing point of water is actually lowered by adding salt to the ice between the bag walls. Heat energy is transferred easily from the milk through the plastic bag to the salty ice water causing the ice to melt. As it does so, the water in the milk freezes, resulting in ice cream.

Materials:

- $\frac{1}{4}$ cup sugar
- $\frac{1}{2}$ teaspoon vanilla extract
- 1 cup of milk
- 1 cup whipping cream, half & half or Milnot
- Crushed ice (1 bag of ice will freeze 3 bags of ice cream)
- 1 cup rock salt (approximately 8 cups per 5 lbs)
- 1 quart and 1 gallon size Ziploc® freezer bags
- Duct tape
- Bath towel

Directions:

1. Put the milk, whipping cream, sugar, and vanilla in a 1 quart freezer bag and seal. For security, fold a piece of duct tape over the seal.
2. Place the bag with the ingredients inside a gallon freezer bag.
3. Pack the larger bag with crushed ice around the smaller bag. Pour $\frac{3}{4}$ to 1 cup of salt evenly over the ice.
4. Wrap in a bath towel and shake for 10 minutes. Open the outer bag and remove the inner bag with the ingredients. Wipe off the bag to be sure salt water doesn't get into the ice cream.
5. Cut the top off and spoon into cups.
6. Makes about 3 cups. (1 bag will serve 4 students)
7. Serve plain or top with nuts, coconut or fruit. ENJOY!

Thanks to:

Kevin Daugherty, Illinois Ag in the Classroom Program

Get FREE!

- Dairy Ag Mags from North Dakota Farm Bureau

Pumpkin Patch Pie

An easy-to-make, easy-to-clean-up fall recipe

Materials:

- 1 gallon Ziploc® freezer bag
- 2 $\frac{2}{3}$ cups cold milk
- 2 packages (4 serving size) instant vanilla pudding mix
- 1 can (15 ounces) solid-pack pumpkin
- 1 teaspoon ground cinnamon
- $\frac{1}{2}$ teaspoon ground ginger
- Graham cracker crumbs
- 1 can whipped topping
- Scissors
- 25 small cups
- 25 spoons

(Pumpkin Patch Pie Continued) Directions:

1. Combine the milk and instant pudding in the Ziploc bag.
2. Remove the air and Ziploc shut
3. Squeeze and kneed with hands until blended for 1 minute.
4. Add the pumpkin, cinnamon, and ginger.
5. Remove the air and Ziploc shut.
6. Squeeze and kneed with hands until blended for 2 minutes.
7. Place $\frac{1}{2}$ tablespoon of graham cracker crumbs in the bottom of small cups.
8. Cut corner of gallon freezer bag and squeeze pie filling into cups.
9. Garnish with 1 container (8 ounces) whipped topping.
10. Add a spoon. Serve & enjoy.
11. Discuss pumpkin production while students are eating.

Yield - 25 students & 1 teacher.

Ingredients can be divided by 4 or 5 for students to work in small groups.

Thanks to:

Kevin Daugherty, Illinois Ag in the Classroom Program

Bread in a Bag

Youth will love making their own loaf of Bread

Materials:

- One gallon heavy duty freezer bag for each student
- Masking tape and felt-tip pen
- White banquet paper for covering tables
- Soapy sponges and water for cleaning

Ingredients for Bread in a Bag: *This will make two large loaves or four small loaves*

- 1 c. all-purpose flour
- 2 pkgs of yeast
- 1 c. warm water
- 2 T. sugar

Combine all into a one-gallon heavy duty freezer bag and squeeze upper part of bag to force out air. Close top of bag tightly and mix well by working bag with fingers until ingredients are completely blended. Allow mixture to rest 15 minutes.

- Add:
- 1 $\frac{1}{4}$ c. warm milk
 - 1 T salt
 - 2 T shortening, softened

Mix well by working bag with fingers.

Gradually add:

- 5-6 cups all-purpose flour

Add enough flour to make a stiff dough or until dough pulls away from bag. Turn dough onto floured surface. Divide dough in half. Knead each half five minutes or until dough is smooth and elastic. Add more flour if dough is too sticky. Cover with plastic bag and let rise for 10 minutes. Flatten dough into a 12x7" rectangle. Starting from a narrow end, roll dough toward you. Pinch edges to seal. Tuck ends under. Press each end to seal. Place seam side down in greased 9x5x3" pan. Repeat for other loaf. Cover loosely with plastic bag and let rise in warm place until doubled (about 45-60 minutes). Uncover and Bake at 400 degrees for 35-45 minutes. Remove from pans and cool on wire racks. If preferred, this amount of dough can be flattened into four 7 $\frac{1}{2}$ x 5" rectangles and placed in four baby size loaf pans. Baking time will be slightly shorter.

Tortilla in a Bag

Use this kid-friendly recipe for tortillas

Materials:

- 1 gallon Ziploc® bag
- 1½ cups all-purpose flour
- 1 teaspoon salt
- ½ teaspoon baking powder
- 3 tablespoons shortening
- ½ cup hot water (125-130°F)

Directions:

1. In the Ziploc® bag, combine flour, salt, and baking powder. Close bag and shake to mix.
2. Add shortening to the bag. Close the bag and work the mixture with fingers until it's crumbly and there are no large pieces of shortening visible.
3. ADULTS ONLY: Add the hot water to the bag. Close the bag and mix with fingers until the ingredients form a soft dough that pulls away from the sides of the bag.
4. Turn the dough out onto a lightly floured surface. Divide dough into 4 equal pieces and shape into balls. Each child receives 2 balls. Cover them with plastic bag and let rest for 15 minutes.
5. Roll or pat the dough into 8 or 10-inch circles.
6. ADULTS ONLY: Place each circle on a griddle or frying pan heated to medium high. Cook until dark brown spots appear. Turn tortilla and cook on the other side until brown.

Makes 4-6 tortillas

Want a quick meal? Roll up a tortilla with cheese, salsa, and fat-free refried beans. OR...make a fun dessert, sprinkle cinnamon and sugar on top, roll up and eat, OR...Add pie filling for a tasty treat!

Thanks to:

Rick and Dorita Waitley, Idaho Ag in the Classroom