AGtivities that Teach

AG-in-a-Bag

activities for the classroom and community events

Indiana Farm Bureau, Inc. • Indiana Ag in the Classroom
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AGtivity 1: Beanie Baby

Description: *Students will germinate a soybean seed in a micro greenhouse.*

Purpose: To educate students about basic needs of plants.

Grade Level: K-3

Indiana Academic Standards:
Examples of select academic standards possibly met during this activity. Additional academic standards may be achieved with added enrichment activities.

Science:
Life Science - K.3.1; K.3.3; 1.3.3; 2.3.1; 2.3.2; 3.3.1; 3.3.2;

Time: 60 minutes, plus set-up.

Materials: (per student)
Jewelry size re-sealable bag (found in craft section)
¼ tsp Crystal Soil (found in garden center or online)
1 tablespoon water
2 Soybeans or other legume seeds.
24" Yarn (if students will wear around neck) OR 6" of yarn if it will be hung in classroom.

Materials: (for class use)
1 or more single hole punch
1 or more sets of measuring spoons (1/4 teaspoon, tablespoon)
1 or more pairs of scissors

Optional Materials:
Masking Tape or labels for student names

Related Literacy Materials:
Soybean Ag Mag
Soybean Terra Nova Reader

Activity Instructions:

1. Organize materials for easy distribution. Stations or work groups are suggested.
2. Punch a hole in the top of bag, above the zipper.
3. Place a scant ¼ teaspoon of Crystal Soil in bag.
4. Add one tablespoon of water.
5. Gently add two soybeans or other legume seeds.
6. Seal your bag firmly.
7. Label with name or initials. Insert approximately 24" of yarn to make a necklace if the "beanie baby" will be worn; 6" if it will be hung in the classroom.
8. Wear your "beanie baby" around your neck and under your shirt to keep it in a warm, dark place.
9. Check your "beanie baby" several times a day for germination. Record the growth.

Go Further:

1. Ask students draw the seed and the changes it makes as it germinates and grows.
2. Use 2 or 3 different types of seeds for students to observe, compare and record the differences in their growth.
3. If Beanie Baby is left in classroom near windows, observe and chart/record sunshine coming in the classroom (K.2.1)

AGtivity 2: Feed Sack

Description: *Create a snack mix to represent what animals eat.*

Purpose: To educate students about basic needs of livestock.

Grade Level: 1, 6

Indiana Academic Standards:
Examples of select academic standards possibly met during this activity. Additional academic standards may be achieved with added enrichment activities.

Science:
Physical – K.1.1
Life – 1.3.3; 6.3.5
Mathematics: K.M.1; 2.M.4; 3.M.1

Time: 60 minutes, plus set-up.

Materials: (per student)
Plastic re-sealable bags or small paper sacks or treat bags.
Feed sack label (see next page)
Assorted Ingredients – see AGtivity for suggested recipes
8" yarn (optional)

Materials: (for class use)
1 or more single hole punch
1 or more sets of measuring cups (1/8 cup, ¼ cup, 1/3 cup, ½ cup, 1 cup)
1 or more pairs of Scissors

Optional Materials:
Masking Tape or labels for student names

Related Literacy Materials:
Swine Terra Nova Reader

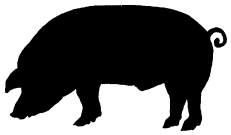
Activity Instructions:

1. Organize materials for easy distribution. Stations or work groups are suggested.
2. Add ingredients in order as you discuss what each represents and why livestock animals need a nutritious diet just like the students.
3. Seal your bag securely. If using, paper sacks fold top down two times. Gently turn or shake bag to mix ingredients.
   - Optional: punch two holes, thread yard through, and tie feed sack tag on.
4. Label with feed sack tag.
5. If time allows, enjoy feed sack snack.

Go Further:

1. Use all senses as appropriate to observe, sort and describe objects according to their composition and physical properties, such as size, color and shape. Explain these choices to others and generate questions about the objects. (K.1.1)
2. Discuss the basic needs of animals for growth and survival (animals need to take in water and food and have a way to dispose of waste) (1.3.3).
3. Discuss the differences in livestock digestive systems and the importance of a healthy diet. (6.3.5)

Food Allergy & Food Safety Warning:
If this activity will be conducted in a classroom please discuss the school's food safety policy with the teacher as well as possible student allergies. If this activity will be conducted as part of a community activity such as an Ag Day or county fair activity, check with local health department guidelines. Clearly post signage that include ingredients and allergy warning; have original packaging on hand for parents to inspect ingredient lists. Allow for recipe modification in the event of an allergy so students can still participate. Food allergy reactions can be extremely serious please practice caution.
Common allergens: Peanuts, nuts, soy, milk, wheat, gluten.



Go Hog Wild!

Recipe represents important nutrients found in a pigs diet.

Pig Feed Sack Chart			
Pigs need:	**Represented by:**	**Per student**	**Per 10 students**
Water	Blue/White/or Silver Candy (jellybeans), marshmallows, dried blueberries	1/3 cup marshmallows or jellybeans **OR** 1/8 cup dried blueberries	3 1/3 cup marshmallows or jellybeans **OR** 1 ¼ cup dried blueberries
Carbohydrates	Cereals such as Cheerios®; Corn Chex®, Golden Grahams®, Corn Pops®, Bugles®, popped popcorn, pretzel sticks or twists	1 cup	10 cups
Protein	Peanuts, almonds, roasted soybeans, cheese crackers (Cheez-Its®)	¼ cup (nuts) **OR** ½ cup cheese crackers	2 ½ cups (nuts) OR 5 cups cheese crackers
Minerals	Raisins or other dried fruit	¼ cup	2 ½ cups
Vitamins	Candy-coated chocolate (M&Ms®), Fruit Loops®	1/3 cup	3 1/3 cups
Fat	Peanut butter candy (Reese Pieces®), chocolate chips	1/4 cup	2 ½ cups

Horsin' Around!

Recipe represents important nutrients found in a horse's diet.

Pig Feed Sack Chart			
Horses need:	**Represented by:**	**Per student**	**Per 10 students**
Water	Blue/White/or Silver Candy (jellybeans), marshmallows, dried blueberries	1/3 cup marshmallows or jellybeans **OR** 1/8 cup dried blueberries	3 1/3 cup marshmallows or jellybeans **OR** 1 ¼ cup dried blueberries
Corn	Candy corn, popcorn, Corn Pops®, Corn Chex®,	½ cup	2 ½ cups
Oats	Toasted Oat Cereal (Cheerios®), Granola,	½ cup	2 ½ cups
Hay	Shredded Wheat (mini), Wheat Chex®, puffed wheat cereal	¼ cup	2 ½ cups
Sugar – Beet - Pulp	Multi-colored candy (M&Ms®), or multi-colored cereal (Fruit Loops®)	1/3 cup	3 1/3 cups
Bran	Cracklin' Oat Bran®	1/4 cup	2 ½ cups

Go Hog Wild!

Pigs need a healthy, nutritious diet each day.

Need	**Represented by**
Water	Marshmallows
Carbohydrates	Toasted oat cereal
Protein	Nuts or cheese crackers
Minerals	Dried fruit
Vitamins	Candy-coated chocolate
Fat	Peanut butter candy

Go Hog Wild!

Pigs need a healthy, nutritious diet each day.

Need	**Represented by**
Water	Marshmallows
Carbohydrates	Toasted oat cereal
Protein	Nuts or cheese crackers
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Vitamins	Candy-coated chocolate
Fat	Peanut butter candy

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Need	**Represented by**
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Fat	Peanut butter candy

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Vitamins	Candy-coated chocolate
Fat	Peanut butter candy

Horsin' Around

Horses need a healthy, nutritious diet each day.

Need	**Represented by**
Water	Marshmallows
Corn	Popcorn
Oats	Toasted Oat Cereal
Hay	Shredded wheat
Sugar	Multi-colored candy
Bran	Cracklin' Oat Bran ®

Horsin' Around

Horses need a healthy, nutritious diet each day.

Need	**Represented by**
Water	Marshmallows
Corn	Popcorn
Oats	Toasted Oat Cereal
Hay	Shredded wheat
Sugar	Multi-colored candy
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Horsin' Around

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Horsin' Around

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Horsin' Around

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Horsin' Around

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Horsin' Around

Horses need a healthy, nutritious diet each day.

Need	**Represented by**
Water	Marshmallows
Corn	Popcorn
Oats	Toasted Oat Cereal
Hay	Shredded wheat
Sugar	Multi-colored candy
Bran	Cracklin' Oat Bran ®

AGtivity 3: Ice Cream in a Bag

Description: *When science and food meet, you might get a tasty dairy treat.*

Purpose: Food science activity that connects everyday foods to the farm.

Grade Level: 1, 2, 3, 5

Indiana Academic Standards:
Examples of select academic standards possibly met during this activity. Additional academic standards may be achieved with added enrichment activities.

Science:
Physical – 1.1.2; 2.1.1; 2.1.2; 5.1.1; 5.1.3; 5.1.4
SET - 3.4.1
Mathematics: 1.DA.1; 2.M.4, 2.DA.1; 3.M.1; 3.DA.1; 4.DA.1

Time: 60 minutes, plus set-up.

Materials: (per student)
1-quart size freezer bag (Do not purchase off-brand or generic bags!)
1-gallon size freezer bag.
½ cup whole milk
1 ½ tbsp. sugar
½ tsp. vanilla extract
4 cups ice
4-6 tbsp. rock salt
spoons

Optional Materials:
Kitchen towels, oven mitts, or gloves to protect hands from cold

Related Literacy Materials:
The Milk Makers by Gail Gibbons
Dairy Ag Mag
Dairy Terra Nova Reader

Activity:
Ingredients:
½ cup whole milk
1 ½ tbsp. sugar
½ tsp. vanilla extract
4 cups ice
4-6 tbsp. rock salt
Directions:

1. In quart-size freezer bag place ½ cup whole milk, 1 ½ tbsp. sugar, ½ tsp. vanilla extract. Securely seal.
2. In gallon-size freezer bag place 4 cups ice and 4-6 tbsp. rock salt (coarse kosher salt will work).
3. Place quart bag in gallon bag. Seal gallon bag securely. Position quart bag so the top of the bags are parallel and hold securely.
4. Shake bags until milk begins to freeze and ice cream begins to form, approximately 5 minutes.
5. Enjoy!

Information:

Salt lowers the temperature of ice while melting it at the same time, allowing the milk to freeze and turn into ice cream.

Freezing a liquid creates ice crystals. The more you shake and break the ice crystals, the smoother the ice cream

Go Further:

1. Have students record the temperature of the ice without salt and after their milk mixture has formed ice cream. Do the same for the temperature of the milk mixture and once it becomes ice cream. Record.
2. Describe and measure the volume and weight of the ingredients individually and collectively. (5.1.1; 5.1.3; 5.1.4)
3. Survey students on their favorite flavors of ice cream. Chart. (1.DA.1, 2.DA.1)

AGtivity 4: Pumpkin Pie in a Bag

Description: *An easy to make, no bake interactive recipe.*

Purpose: Food science activity that connects everyday foods to the farm.

Activity:

Ingredients:

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
OR 1 ½ tsp. pumpkin pie spice in place of cinnamon and ginger
Graham cracker crumbs
1 can whipped topping

Directions:

1. Combine the milk and instant pudding in gallon size freezer bag. Remove air and securely seal.
2. Squeeze and kneed with hands until blended for 1 minute.
3. Add pumpkin and spices. Remove air and securely seal.
4. Squeeze and knead with hands until blended, about 3-5 minutes. If doing with a class, have students take turns kneading ingredients in bags.
5. Place ½ tablespoon of graham crackers crumbs in bottom of small cups. (A good task for students)
6. Can crush/crumble whole graham crackers in a freezer bag or purchase graham cracker crumbs in the baking aisle.
7. Cut corner of gallon freezer bag and squeeze pie filling into cups.
8. Garnish with whipped topping (optional). Serve.
9. Discuss pumpkin production while students are eating.

Go Further:

1. Describe and measure the volume and weight of the ingredients individually and collectively. (5.1.1; 5.1.3; 5.1.4)

Grade Level: 2, 3, 5

Indiana Academic Standards:
Examples of select academic standards possibly met during this activity. Additional academic standards may be achieved with added enrichment activities.

Science:
Physical - 5.1.1; 5.1.3; 5.1.4
SET: 2.4.1;
Mathematics: 2.M.4; 3.M.1

Time: 60 minutes, plus set-up.

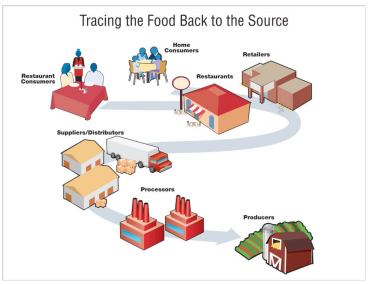
Materials: (per student)
Small condiment cup
Spoon
Napkins

Materials: (for class use)
1 Gallon freezer bag

Related Literacy Materials:
Pumpkin Pumpkin by Jeanne Titherington
Pumpkin Book by Gail Gibbons

AGtivity 5: Cornbread in a Bag

Description: *An easy activity to teach children about that there is a direct link between the food they eat and farming.*



Purpose: Food science activity that connects everyday foods to the farm.

Grade Level: 2, 3, 5

Indiana Academic Standards:
Examples of select academic standards possibly met during this activity. Additional academic standards may be achieved with added enrichment activities.

Science:
Physical - 5.1.1; 5.1.3; 5.1.4
Mathematics: 2.M.4; 3.M.1

Time: 60 minutes, plus set-up.

Materials:
1 cup cornmeal
1 cup all-purpose flour
4 tsp. baking powder
½ tsp. salt
2 eggs
1 cup milk
¼ cup oil
1 – gallon freezer bag

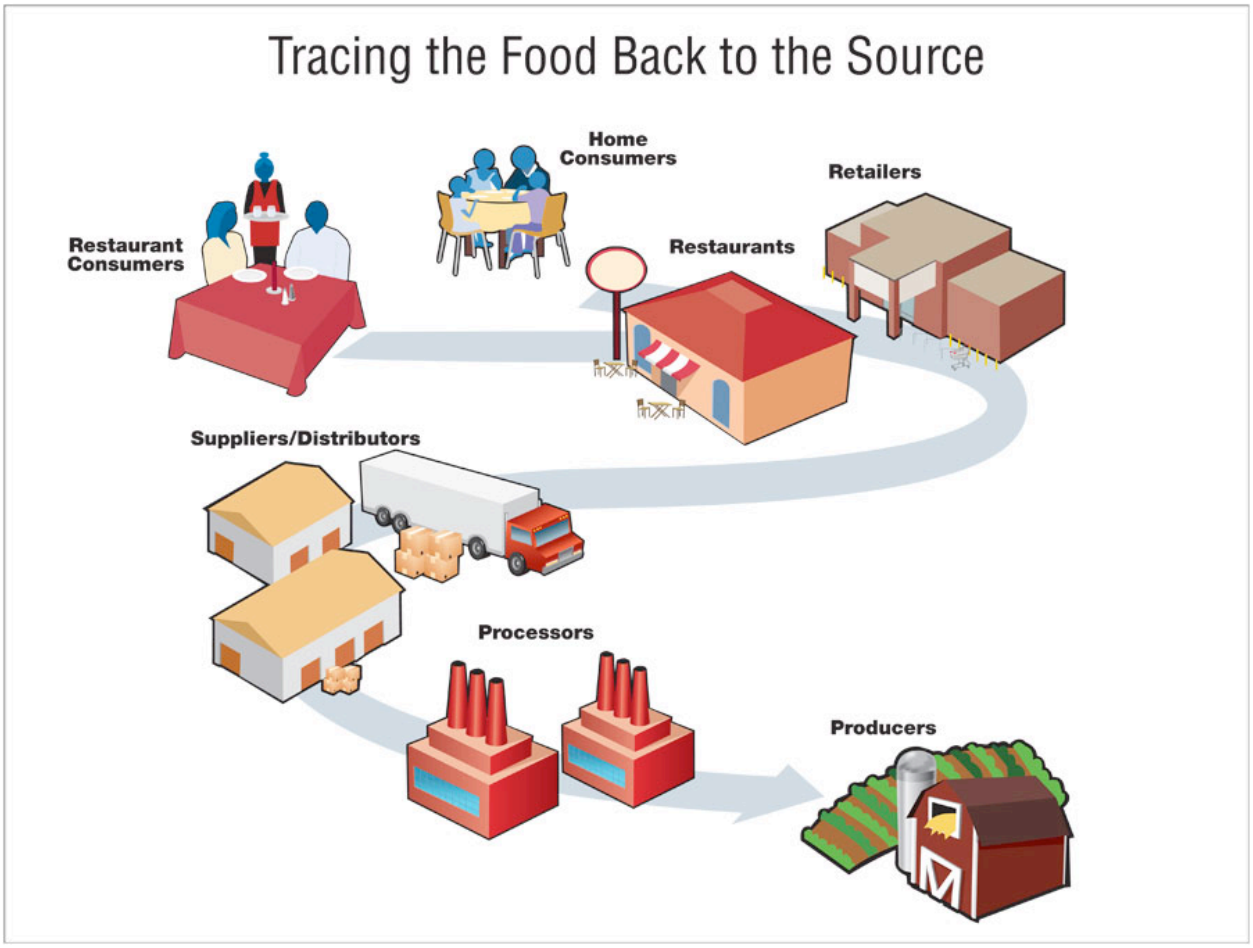
Optional Materials:
9x9 baking pan or muffin pan; oven mitts

Related Literacy Materials:
How Did That Get in My Lunchbox

Activity:
Ingredients:
1 cup cornmeal
1 cup all-purpose flour
4 tsp. baking powder
½ tsp. salt
2 eggs
1 cup milk
¼ cup oil

Directions:
1. Preheat oven to 400 degrees.
2. Combine cornmeal, flour, baking powder and salt in gallon freezer bag. Securely close.
3. Mix well by kneading with hands.
4. Add eggs, milk and oil.
5. Continue to mix well by kneading with hands.
6. Once thoroughly mixed, pour mixture into a 9 x 9-inch pan or 12-muffin pan.
7. Bake at 400 degrees for 25 minutes in 9 x 9 pan or 15 minutes in muffin pan or until cornbread is done.

Go Further:
1. Try making your own butter to accompany the bread.
2. Working with younger children? Try using a cornbread muffin mix.
3. Use the CDC's diagram showing the food production chain.


Tracing the Food Back to the Source
Home Consumers
Retailers
Restaurant Consumers
Restaurants
Suppliers/Distributors
Processors
Producers

AGtivity 6: Bag Butterflies

Description: *Simple craft activity to make a butterfly .*

Purpose: To share the importance of butterflies and other pollinators in the environment for plant growth.

Activity:

1. Cut or tear colored construction paper, cellophane or tissue paper into small pieces to resemble confetti.
2. Place the confetti into the bag. Leave about an inch of the bag unfilled.
3. Seal the bag and fold in half like a book. Wrap a chenille stick (pipe cleaner) around the middle of the bag and twist at the top.
4. Shape the chenille stick to make it look like an antennae.

Go Further:

1. Have students explore www.kidsbutterfly.org for photos, links to helpful websites, coloring pages thematic units and more.

Grade Level: K, 2, 6

Indiana Academic Standards:
Examples of select academic standards possibly met during this activity. Additional academic standards may be achieved with added enrichment activities.

Science:
Life Science – K.3.1; 1.3.4; 1.3.5; 2.3.2; 6.3.2; 6.3.3;

Time: 30 minutes, plus set-up.

Materials:
Assorted colors and sizes: construction paper, confetti, cellophane, OR tissue paper
Sandwich size re-closable bags. (30-50 pieces each)
Chenille sticks (pipe cleaners), black

Optional Materials:
For an edible craft use multi-colored cereal like Fruit Loops®

Related Literacy Materials:
Monarch Butterfly by Gail Gibbons
Butterfly House by Eve Bunting
Butterfly (Life Cycle of…) by Angela Royston

AGtivity 7: Mud in a Bag

Description: *Edible activity to round out a lesson on planting seeds and/or soil.*

Purpose: To demonstrate how to plant a seed and the role earthworms play in soil health.

Grade Level: 1, 2, 3

Indiana Academic Standards:
Examples of select academic standards possibly met during this activity. Additional academic standards may be achieved with added enrichment activities.

Science:
ES – 1.2.4
Life Science – 1.3.4; 1.3.5
Mathematics: 2.M.4; 3.M.1

Time: 30 minutes, plus set-up.

Materials: for 6 servings
1 (6 oz.) pkg Instant Chocolate Pudding Mix
3 cups cold milk
6 whole chocolate graham crackers
24 Seeds (peanuts, M&Ms, sunflower seeds, raisins, etc.)
6 gummy worms
2 1-gallon re-sealable plastic bags
6 small plastic cups (ex. punch cups)

Optional Materials:
Rolling pin

Related Literacy Materials:
Carrot Seed by Ruth Krauss
Oh Say Can You Seed? By Bonnie Worth
The Tiny Seed by Eric Carle

Activity:
Ingredients: for 6 servings
1 (6 oz.) pkg Instant Chocolate Pudding Mix
3 cups cold milk
6 whole chocolate graham crackers
24 Seeds (peanuts, M&Ms, sunflower seeds, raisins, etc.)
6 gummy worms

Materials:
2 1-gallon re-sealable plastic bags
6 small plastic cups (ex. punch cups)

Instructions:
1. Crush graham crackers in re-sealable plastic bag using hands or rolling with rolling pin.
2. Combine pudding and milk in 1-gallon re-sealable plastic bag. Remove air and seal securely.
3. Squeeze and knead with hands until well blended about 5 minutes.
4. Place 1 gummy worm in each cup.
5. Cut corner of bag and pour into small cups
6. Using spoon, dig holes for 4 seeds. Plant seeds and top with graham crackers.

Go Further:
1. Discuss earthworms and the import role they play in the formation of soil and soil health. (1.2.4)

AGtivity 8: Chicken Feed

Description: *Edible activity to round out a lesson on poultry.*

Purpose: To demonstrate that chickens and other poultry need a well-balanced, nutritious diet each day.

Grade Level: K-3

Indiana Academic Standards:
Examples of select academic standards possibly met during this activity. Additional academic standards may be achieved with added enrichment activities.

Mathematics: K.M.1; 2.M.4; 3.M.1
Science: Life Science – 1.3.4; 1.3.5

Time: 30 minutes, plus set-up.

Materials: for 6 servings
1-gallon re-sealable plastic bag
2 cups toasted oat cereal (ex. Cheerios®)
1 cup peanuts or almonds
½ cup sunflower seeds
½ cup raisins
1 cup candy-coated chocolate (ex. M&Ms)
6 small bowls or cups

Optional Materials:

Related Literacy Materials:
Poultry Terra Nova Reader
Rosie's Walk by Pat Hutchins Macmillan
Chicken or the Egg? By Alan Fowler
Chickens by Peter Brady

Activity:
Ingredients: for 6 servings
2 cups toasted oat cereal (ex. Cheerios®)
1 cup peanuts or almonds
½ cup sunflower seeds
½ cup raisins
1 cup candy-coated chocolate (ex. M&Ms)

Other materials:
6 small bowls or cups
1-gallon re-sealable plastic bag

Instructions:
1. Pour all ingredients in 1-gallon re-sealable plastic bag.
2. Shake gently.
3. Serve in small bowls or cups

Go Further:
In place of nuts you may substitute in another dry cereal such as Chex®, puffed wheat, etc. In place of sunflower seeds lightly crush pretzel sticks or twists.

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Common allergens: Peanuts, nuts, soy, milk, wheat, gluten.