

Alabama

**Agriculture
in the
Classroom**

Agri-Activities for the Middle Grades

Background:

In times past, people were very aware of the role agriculture played in their lives. It meant survival! Nearly everyone worked the land.

Agriculture still means survival! That will never change. As time goes on, fewer and fewer people have close contact with the farm. They are not aware of the nation's total dependence on agriculture.

Agriculture, along with related occupations, is the nation's largest industry. One out of every five jobs depends on it in some way.

Our children must be agriculturally literate to help them make good decisions in their lifetime. Building agricultural literacy for tomorrow's leaders is what Agriculture in the Classroom is about.

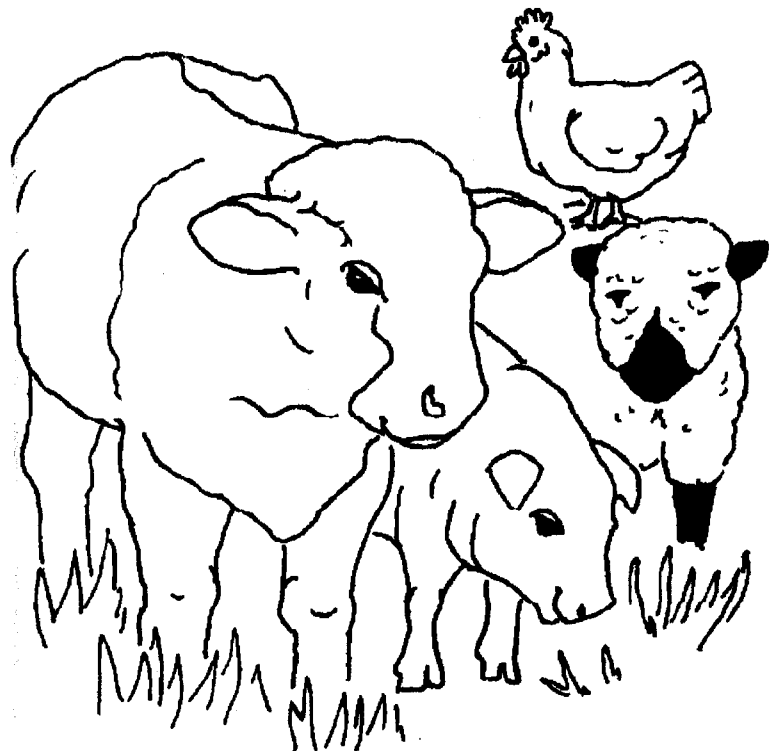
To The Teacher:

A goal of Agriculture in the Classroom is to incorporate agriculturally-related information into subjects already being taught in the Alabama schools.

Suggestions for science, social studies, math, reading and language arts activities are included in this packet. Also enclosed in this packet are activity worksheets. These are ready to be copied for each student and used in conjunction with your lessons. The answers to the problems are on the back of each worksheet.

We hope your class enjoys these!

Xris McMillin Blonk, author
Barbara J. McMillin, editor



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AL Cattlemen's Assn.	AL Crop Management Assn.
AL Dept. of Education	Coop. Extension Service
AL Farmers Federation	Council of Economic Ed.
AL Forestry Commission	Dept. of Ag. & Industries
AL Rural Electric Assn.	Auburn Univ. School of Ag.
AL Soil & Water Conservation Committee	
W.I.F.E. (Women Involved In Farm Economics)	
Natural Resources Conservation Services	
Stewards of Family Farms, Ranches and Forests	

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Series 2



Reuse, Recycle, and Build a Mini Greenhouse

With a few inexpensive materials the students in your class can easily construct miniature greenhouses that will provide an optimum environment for young plants.

You need:

clear plastic salad containers from the deli in your grocery store

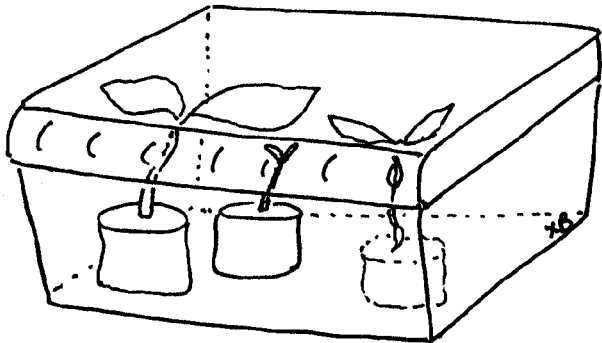
potting soil or peat "pellets"
(available at your gardening center)

seeds

Procedure:

1. Wash and dry the plastic containers (recommended for the "busiest" student in the class).
 2. Fill the container with potting soil or follow the directions on the package of peat pellets.
 3. Plant the seeds and water.
 4. Close the lid, place in indirect sunlight, and observe.
 5. When the young seedlings reach the top of the container, it's time to transplant them.
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Sh-h-h-h! Baby plants growing!



Bread Around the World

Objectives:

1. Students will apply research skills
2. Students will graph favorite breads
3. Students will write descriptive passages (i.e. - "The Perfect Sandwich")
4. Students will build vocabulary

Procedure:

1. Research the following breads with the class, locating the country of origin on a map.
2. Provide a variety of breads to taste (don't limit choices to those on the list)
3. Graph student's favorites.

Can you match the bread to the country or region if its origin? It's bread any way you say it!

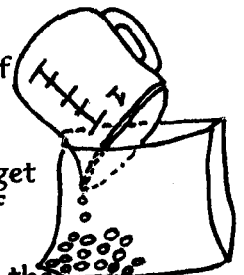
- | | |
|-----------------|------------------|
| 1. Pita | A. Germany |
| 2. Tortilla | B. Mexico |
| 3. Lefse | C. Ireland |
| 4. Soda Bread | D. Scandinavia |
| 5. Brioche | E. United States |
| 6. Bagel | F. Middle East |
| 7. Wonton | G. Scotland |
| 8. Scones | H. Poland |
| 9. Stollen | I. China |
| 10. Johnny Cake | J. France |

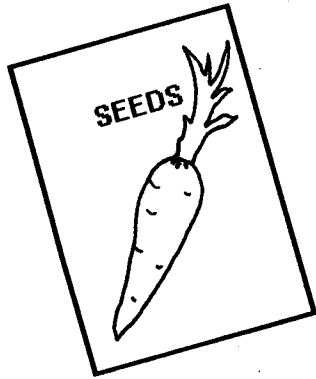
Answer Key: 1-F, 2-B, 3-D, 4-C, 5-J, 6-H, 7-I, 8-G
9-A, 10-E.

Thanks to Al Withers, Minnesota AITC

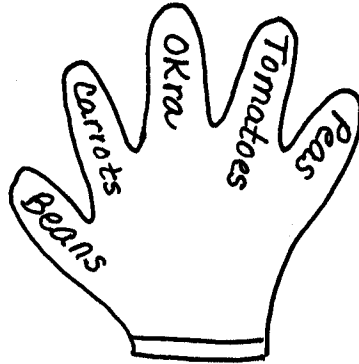
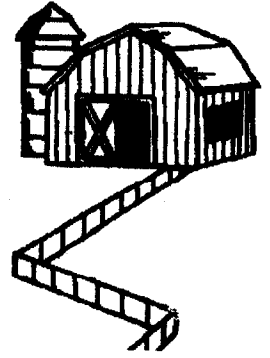
Only a Cup!

We've learned that a cup of food a day may be all someone has to eat on a starvation diet. To really get the picture, put one cup of rice or another grain in a plastic sandwich bag. Hold the bag - feel the grain - and imagine it is all you have to eat for an entire day.





Ag at Your Fingertips



Introduction:

Observation of the germination process is one of the initial experiences that students have with the world of plants. This new twist allows students to take an active role in observing, comparing, and contrasting the rates of development of five different seeds in an easily-managed format.

Objectives:

1. Students will observe the germination process.
2. Students will make predictions on rates at which different seeds will germinate.
3. Students will compare and contrast the rates of germination of different seeds.
4. Student will record data and develop a bar graph.

You need:

food handlers gloves - 1 per student (ask your cafeteria manager)
a variety of seeds (beans, peas, radishes, carrots, okra, etc.)
cotton balls (five for each student)
water
permanent marker

Procedure:

1. Give students one glove each and have them record their names on the wrists of the gloves.
2. Write the name of a different seed on each finger of the glove.
3. Dip a cotton ball in water, sprinkle with a few seeds (less than 10), and place in the appropriately labeled fingertip of the glove.
4. Repeat step three until all five fingers of the glove are filled.
5. Use clear tape to close the wrist of the glove before placing in indirect sunlight.
6. Make predictions on rate of development. Which will be first, second, third, etc.?
7. Observe daily and record changes. After all seeds have sprouted, use data collected to develop a bar graph that shows how long it took each type of seed to germinate.

Note: Seeds can be transplanted by placing entire cotton ball in soil.

Everyone Loves Ice Cream!

Introduction:

Most children enjoy eating ice cream. This lesson actively involves students in a series of math and language arts activities designed to appeal to even the most finicky of palates.

Objectives:

1. Students will follow a recipe to create individual servings of ice cream.
2. Students will develop line and/or bar graphs.
3. Students will write a descriptive passages. "The Perfect Ice Cream Sundae"

Procedure:

Freezer Bag Ice Cream
(yields one serving)
You need: quart ZIPLOC bag
gallon ZIPLOC bag
rock salt
crushed ice

Ingredients: 1/2 cup half & half
1 tablespoon of sugar
1/4 teaspoon of vanilla

Directions:

1. Mix half & half, sugar and vanilla in the small bag.
2. Seal the bag, removing as much air as possible.
3. Mix rock salt & 2-3 cups of crushed ice in the large bag.
4. Insert the small bag into the large bag and seal.
5. Knead for 3-5 minutes.

Have students wear gloves or mittens to do this activity.

Graphing Ideas

1. Our Favorite Ways to Eat Ice Cream
(Ex. cone, sundae, milkshake, bar)
2. Our Favorite Flavors of Ice Cream
3. Flavors of Ice Cream Preferred by Teachers at Our School

The Writing Connection

1. Brainstorm with the class to develop a web of ice cream ideas (Ex. flavors, textures, smells, tastes, toppings)
2. Ask students do a "fast write" to get their ideas on paper.
3. Pair students for peer-editing.
4. Have students rewrite their passages, making corrections, additions, and/or deletions on the sundae template provided at right.
5. Share with the class and display student work.

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How Big Is a Cow?

The most popular cow in the United States is the black and white Holstein. One Holstein cow weighs about 1500 pounds! How big is that?

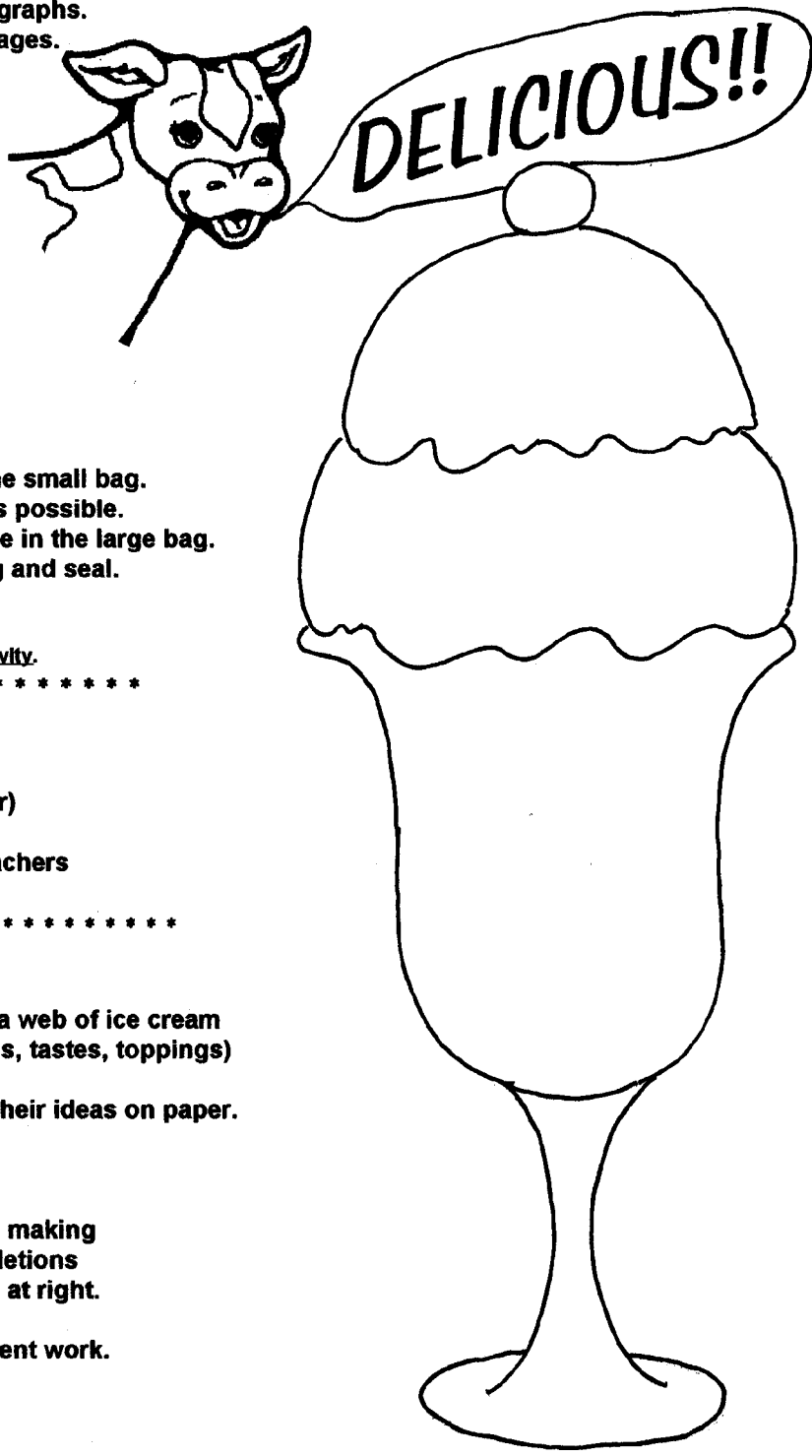
Try this to get an idea:

1. Each person in the class writes his or her weight on a slip of paper.
2. Someone collects the slips and reads the weights out loud.
3. Everyone keeps a running total of the weights until they add up to 1500 pounds.

Thanks to A. Withers, Minnesota AITC

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The Last Crop

How do farmlands disappear when towns start growing? It happens acre by acre. Each square on this 320-acre farm represents one square acre of food-producing farmland. One acre is about the size of a football field.

Plan your own community. Choose from the list and color in an acre for every one you use. You may not want to use everything on the list, and you may use some things more than once. When you're done, look at what's happened to the farmland. Why might we say, "Buildings are the last crop" for this farm?"

- 100 houses
4 to an acre
- Apartment building
5 acres
- Roads, sidewalks, utilities
4 acres
- Grocery store
3 acres
- Hospital
10 acres
- School
10 acres
- Church
10 acres
- Shopping Mall
12 acres
- Athletic fields
14 acres
- Office Buildings
3 acres
- Park
8 acres
- Post Office
1 acre
- Fire Station
3 acres
- Your choice

Think and Discuss

What things are important to consider before people decide how and where to grow a city?

Where are the new houses, businesses and industries in your community? Who decides where they can be built? How do they make these decisions? (If you don't know, make it a point to find out. Who can you call to learn more?)

Dig Deeper!

An average of 100,000 acres of farmland are taken out of production in Alabama each year, mostly due to growth of towns and cities. The farm above is 320 acres. Land equal to how many farms this size is removed from production each year?



Thanks A.W. I

Who will feed the people?

Science and technology hold the key to feeding people in the future, but they can't do it alone. If world population continues to expand, all the science in the world won't be able to stop hunger and starvation. How can each person help?

Mrs. T's Pizza Palace

Pizza made to order and served hot

10" cheese pizza.	\$6.00	12" cheese pizza.	\$8.00
16" jumbo cheese pizza.		\$10.00	

Extra Toppings

Pepperoni.	\$1.75	Sausage.	\$1.75
Extra cheese.	\$1.00	Mushrooms.	\$1.10
Green peppers.	\$1.25	Olives.	\$.95

Open Monday - Saturday, 11a.m. - 10 p.m.
call 111-pizza

Use the menu shown above to solve the problems listed. Do not include sales tax.

1. If you order a 12" cheese pizza with sausage and mushrooms, how much will your total bill be?
2. If you order a 16" jumbo cheese pizza with extra cheese, green peppers, and sausage, how much will your bill be?
3. You have \$12. Can you order a 12" cheese pizza with pepperoni, extra cheese, and mushrooms? Why or why not?
4. You are really hungry and order a 16" jumbo pizza with pepperoni, sausage, and extra cheese. How much change will you receive if you give the cashier \$20?
5. You order a 10" pizza with pepperoni, extra cheese, and olives. Your friend orders a 12" pizza with extra cheese. Whose bill will be more? How much more will the bill be?
6. Which is the least expensive pizza on the menu? Which is most expensive? How much more does the most expensive one cost?

Write About It!

Use the menu from Mrs. T's to create your own math problems. Use them to challenge your friends math sense.

What is your idea of the "perfect" pizza? Write a descriptive passage including details about the type and size of crust and the toppings you would choose.

ANSWER KEY

Mrs. T's Pizza Palace

Pizza made to order and served hot

10" cheese pizza.	\$6.00	12" cheese pizza.	\$8.00
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Green peppers.	\$1.25	Olives.	\$.95

Open Monday - Saturday, 11a.m. - 10 p.m.
call 111-pizza

Use the menu shown above to solve the problems listed. Do not include sales tax.

1. If you order a 12" cheese pizza with sausage and mushrooms, how much will your total bill be? \$10.85
2. If you order a 16" jumbo cheese pizza with extra cheese, green peppers, and sausage, how much will your bill be? \$14.00
3. You have \$12. Can you order a 12" cheese pizza with pepperoni, extra cheese, and mushrooms? Why or why not? Yes, the total will be \$11.85.
4. You are really hungry and order a 16" jumbo pizza with pepperoni, sausage, and extra cheese. How much change will you receive if you give the cashier \$20? You will receive \$5.50 change.
5. You order a 10" pizza with pepperoni, extra cheese, and olives. Your friend orders a 12" pizza with extra cheese. Whose bill will be more? How much more will the bill be? Your bill will be more than your friend's. It will be \$.70 more.
6. Which is the least expensive pizza on the menu? Which is most expensive? How much more does the most expensive one cost? The least expensive item is a 10" cheese pizza that costs \$6.00. The most expensive item is a 16" jumbo pizza with all toppings costing \$17.80. The difference between the two items is \$11.80.

Write About It!

Use the menu from Mrs. T's to create your own math problems. Use them to challenge your friends' math sense.

What is your idea of the "perfect" pizza? Write a descriptive passage including details about the type and size of crust and the toppings you would choose.



You Are the Farmer!



Your great aunt leaves you a 213-acre farm (the average size for Alabama). You have always enjoyed fresh air and sunshine, so you decide to move to the country and raise soybeans.

-1-

In April you plant soybeans. It costs \$16.00 per acre for the seeds. What is the total cost of seeds for this year?

-2-

You need to fertilize your soybeans. The cost is \$16.40 per acre. What is the total cost of fertilizing this year?

-3-

To keep pests from eating your soybean crop you decide to spray with an insecticide. It costs you \$8778.00 in all. What is the cost per acre for spraying?

-4-

The fuel to operate your tractor averages \$15.45 per acre this year. What is the total amount spent on tractor fuel?

-5-

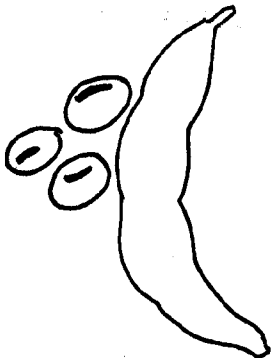
You have a great crop this year! You are able to harvest 50 bushels per acre. How many bushels do you harvest in all?

-6-

When you take your soybeans to the market you receive \$7.00 per bushel. What is your income before expenses?

-7-

An agricultural tax is due on your land. Soybeans are a row crop so you must pay \$1.50 for each acre planted. What is the total amount of your tax bill?



Soybean Search

Soybeans are found in many of the products you eat or use each day. How many labels can your class find that list a form of soybeans as an ingredient?

Hint: They aren't just found in food.



ANSWER KEY

You Are the Farmer!

You inherit a 213-acre farm (the average size for Alabama) from your great aunt. You have always enjoyed fresh air and sunshine, so you decide to move to the country and raise soybeans.

1.
In April you plant soybeans. It costs \$16.00 per acre for the seeds. What is the total cost of seeds for this year? \$3408.00 for seed this year.
2.
You need to fertilize your soybeans. The cost is \$16.40 per acre. What is the total cost of fertilizing this year? \$3493.20 for fertilizer this year.
3.
To keep pests from eating your soybean crop you decide to spray with an insecticide. It costs you \$8778.00 in all. What is the cost per acre for spraying? \$41.21 per acre.
4.
The fuel to operate your tractor averages \$15.45 per acre this year. What is the total amount spent on tractor fuel? \$3290.85 for fuel this year.
5.
You have a great crop this year! You are able to harvest 50 bushels per acre. How many bushels do you harvest in all? 10,650 bushels in all.
6.
When you take your soybeans to the market you receive \$7.00 per bushel. What is your income before expenses? \$74,550.00 before expenses.
7.
An agricultural tax is due on your land. Soybeans are a row crop so you must pay \$1.50 for each acre planted. What is the total amount of your tax bill? \$319.50 in agricultural taxes for 213 acres of soybeans.

Soybean Search

Soybeans are found in many of the products you eat or use each day. How many labels can your class find that list a form of soybeans as an ingredient?

Hint: They aren't just found in food.

Answers will vary here, but may include such products as ink, paint, soap, babyfood, candy, mayonnaise, cereal, tofu, and pancake mix. Challenge your class to find as many as they can.