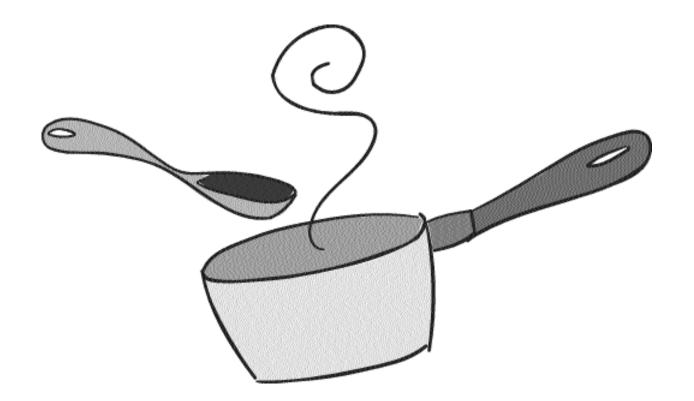
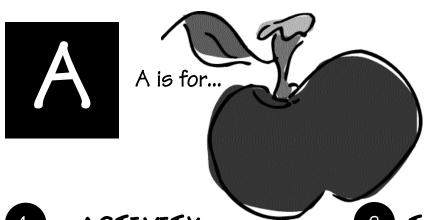
Agriculture In The Classroom



Alphabet Soup Activities



APPLE ALPHABET BINGO

1

ACTIVITY

TALKING POINTS

GRADE LEVEL: 2-4

SUBJECT AREA: Language Arts

APPLE ALPHABET BINGO

- Make copies of bingo cards (on back of page).
 Note: There are five different cards. Use them all to avoid having every student bingo at the same time.
- Copy and cut the word apples on page.
- Each student should have one card.
- \bullet Provide students with Apple Jacks $^{\text{\tiny TM}}$ or other apple-flavored cereal bits as markers.
- Select at random, one of the apples and read the word aloud.
- Students will identify the word by placing a cereal bit on the space that contains that word.
- Continue playing until one (or maybe more) student(s) yells, "BINGO!"
- Winners must have identified the words called out correctly and must have formed a complete line across, up or down or diagonal.







ACTIVITY EXTENSIONS:

- Other words that begin with the letter "A".
- Define the words just identified and relate them to agriculture.

AGRICULTURE CONNECTIONS:

- Apples are agriculture products.
- Which state grows the most apples?
- Are apples grown in Tennessee?

HEALTH AND NUTRITION:

(Food Guide Pyramid Poster available through AITC)

- To which food group does the apple belong?
- Name other foods in that food group.
- Other foods made from apples.
- Number of servings that one should eat from that food group.



RECIPES

APPLE COOKIES

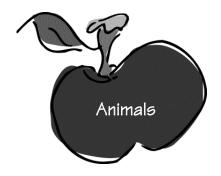
Ingredients: Apple Newtons™

White powdered sugar

Directions: Cut each Apple Newton™ into thirds. Pour some powdered sugar into a plastic zipper bag. Add a few Newton™ sections and have the children SHAKE! SHAKE! Take out of the bag and enjoy!































America







Apple Alphabet BINGO

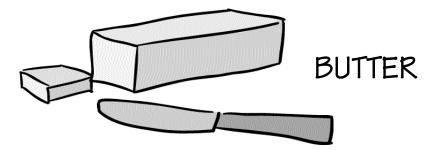
America	Application	Apple
Air	Annual	Asparagus
Acre	Agriculture	April

App	Apple Alphab BINGO	Set .	₫	Apple Alphabet BINGO	sbet
Ax	Apple	Advance	Almonds	Aquaculture	August
Acre	Air	America	Apricots	Autumn	Aid
Asparagus	Aquaculture	Apricots	Animals	Add	Alphabet

Apk	Apple Alphabe BINGO	bet	Apk	Apple Alphabet BINGO)et
Aquaculture	Asparagus	Almonds	Autumn	Aviation	Animals
¥	Apple	Aviation	Alphabet	Above	August
Addition	April	Acre	Apricots	Agriculture	Annual



B is for...



1 ACTIVITY

GRADE LEVEL: Any

SUBJECT AREA: Science/Social

Studies

MAKING BUTTER

Materials: Whipping cream (room temperature

works best)

Small glass jar, with lid (like a baby

food jar)

Directions:

- Pour whipping cream into glass jar.
- Screw lid on tightly.
- Shake contents for approximately 10 minutes or until butter forms.

Note: There are several variations to "making butter." Some demonstrations call for half and half, rather than whipping cream. It is also believed that if you place a marble in the jar with the whipping cream, it will serve as an agitator and the butter will form faster. The method described above is by far the simplest and most effective.

2

TALKING POINTS

ACTIVITY EXTENSIONS:

- Discuss the history of how butter was made before modern technology and processing.
- Explain how butter is made today.

AGRICULTURE CONNECTIONS:

- From where does butter come?
- Name other dairy products that come from cows.
- What is involved in getting milk from the farm to the grocery store?
- Discuss dairy operations in Tennessee
- List the different types of dairy cows.
- Which of these are most common in Tennessee?

HEALTH AND NUTRITION:

(Food Guide Pyramid Poster available through AITC)

- To which food group does butter belong?
- Name other foods in that group.
- Number of servings that one should eat from that group.



RECIPES

TASTE TEST

Spread the butter, just made, on crackers and have students taste it.

MORE ABOUT BUTTER ...

WHAT IS BUTTER?

- It is the concentrated fat of milk.
- It gets its creamy, yellow color from the milk's fat.
- It is rich in Vitamin A.

A DICTIONARY OF BUTTER

Sweet Butter

Sweet butter is a product made form sweet, pasteurized cream. It is unsalted.

Sweet Cream Butter

Sweet cream butter is also made from sweet, pasteurized cream. Salt is added to it.

Whipped Butter

Whipped butter is a whipped product made from sweet cream butter, with air or inert gas incorporated to improve spreadability and increase volume.

TAKING CARE OF BUTTER

To properly care for butter's delicate flavor and texture, remember the three C's:

- Keep it clean.
- Keep it cold.
- Keep it covered.

Leave it in its original protective wrapping until ready to use. If unopened and well-wrapped, butter will keep for at least two months in a refrigerator and for at least six months in the freezer at 0° F or below.

GRADES OF BUTTER

- Grade AA ... or a score of 93 ... is the very best!
- Grade A ... or a score of 92 ... is very good.



PURPLE THUMBPRINT COWS

ACTIVITY

GRADE LEVEL: Pre K-1 SUBJECT AREA: Personal Development

THUMBPRINT COWS

(example provided on page 9.)

Materials: Cow design (on page 10.)

Black ink or stamp pad

Note: You may want to preface this activity by explaining how Holstein cattle look.

- Make a copy of the cow (on page 10) for each student.
- Using the ink or stamp pad, have student put thumbprints all over the cow to make cow spots.
- Color the cow's ears, face, tail and udder.



PURPLE COWS

Ingredients: Grape soda

Vanilla ice cream

Directions: Put one scoop of ice cream

in each glass of grape soda.

TALKING POINTS

ACTIVITY EXTENSIONS:

- Discuss that like the thumbprints of humans, each cows spots are unique. There are no two exactly alike.
- Explain the meaning of individuality.
- Explain the milking process (Daisy, the Milking Cow, is a milking display available through AITC)

AGRICULTURE CONNECTIONS:

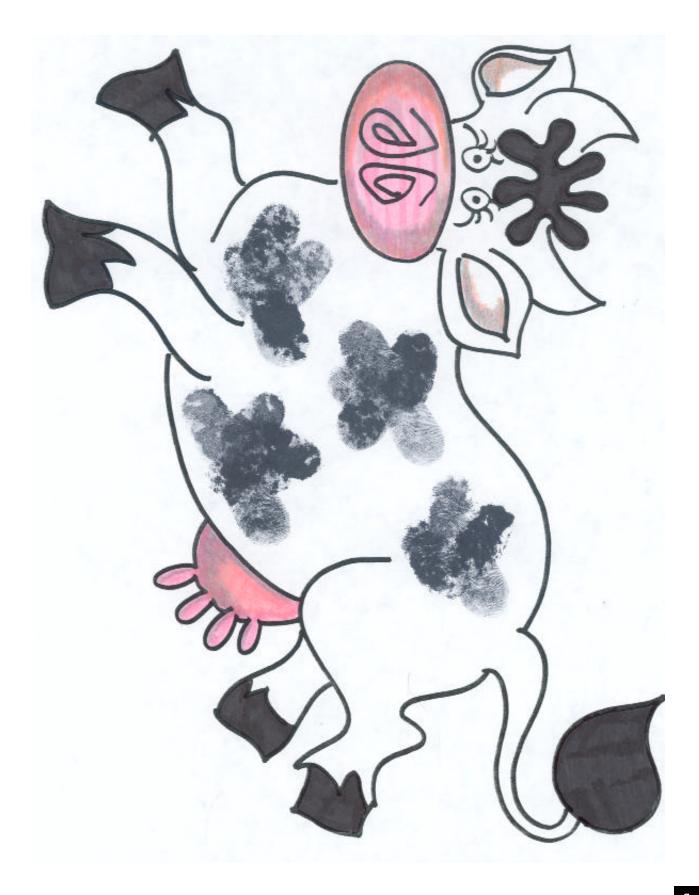
- Note the difference between dairy and beef cows.
- List the different types of dairy cows.
- Note which type is most prevalent in Tennessee.
- Where does milk come from?
- Using the recipe listed below, emphasize that dairy cows only produce white milk. There is no such thing as a chocolate cow. Chocolate milk and strawberry milk are only flavor additives.
- Note the number of dairy farms in Tennessee.
- What products are made from milk?

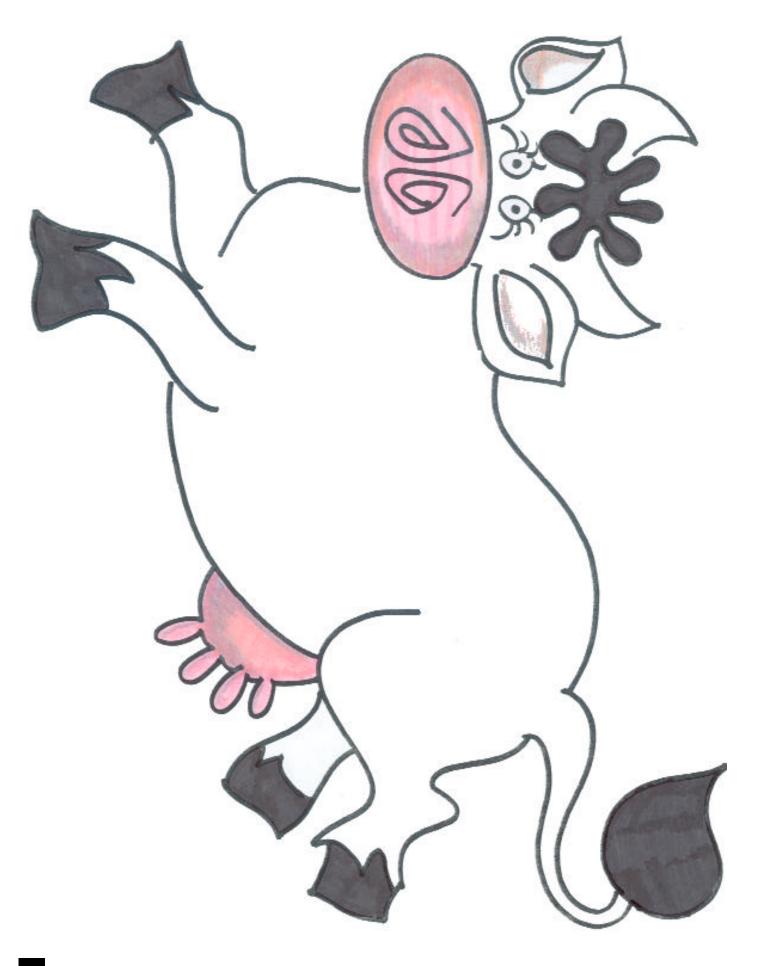
HEALTH AND NUTRITION:

(Food Guide Pyramid Poster available through AITC)

- To which food group does milk belong?
- To which food group do the other products made from milk belong?
- Number of servings that one should eat from that food group.
- Using the "Purple Cows" recipe, classify in which category grape soda belongs.

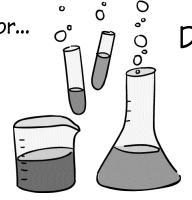
Thumbprint cow example







D is for...



DETECTING STARCHES AND FATS



TALKING POINTS

1 ACTIVITY

GRADE LEVEL: 3-6 SUBJECT AREA: Science

DETECTING STARCHES AND FATS

Materials:

- lodine Solution (may be purchased at a drugstore)
- Paper from brown paper bags
- Half slice of white bread
- Several grains of rice
- Paper towels
- Slice of raw potato
- Unshelled peanut
- Pat of margarine
- Toothpick
- Soda cracker
- French fry

Objective: Determining which of the foods above belong to the starch group or the fat group.

Procedure: Take each of the substances above and rub them on the piece of brown paper sack. Check the paper for a grease spot where you rubbed it. Dip the toothpick in the iodine and put drops on the potato. Observe the color of the iodine after it is on the potato. Write down your observations. (Note: Test both the outside and the inside of the french fry.)

Observations:

- Which items left a grease mark on the brown paper?
- Which items changed the iodine to a dark purple or black color?
- Which substances do you think were starches?
- Which substances do you think were fat?
- What was different about the french fry?
- How did the potato part of the french fry get fat to surround it?

Notes and Explanations: The substances with fat left the greasy spot on the brown paper. They did not change the color of the iodine. Those items that were starches did not leave a greasy spot on the paper. They did turn the iodine into a dark color.

Fats: • Margarine

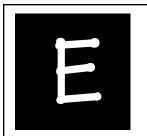
- Peanut
- Outside of the french fry

Starches: • Potato

- White bread
- Soda cracker Rice
- Inside of the french fry

The french fry had both fat and starch. The fat was added to the french fry when a raw piece of potato was placed into very hot oil. Things that are cooked in oil typically have fat on the outside.

Further Explanation: Starches are complex carbohydrates (simple sugars) that are manufactured only by green plants. Green plants and all of the foods in the experiment are products of agriculture. Green plants are an essential food source for humans. Green plants convert energy from the sun into chemical energy that is stored in all carbohydrates. Our digestion makes that energy available to cells to carry on life precesses. Fats can come from plants or animals and provide us with a very concentrated energy source. The fatty acids contained in fats are needed for normal growth and development. Both starches and fats are considered organic compounds because they contain hydrogen, carbon and oxygen.



E is for... 'EGG'CELLENT NUTTY PUTTY AND MAGICAL





ACTIVITY

GRADE LEVEL: Pre K-2 SUBJECT AREA: Science and Math

'E*GG*'CELLENT NUTTY PUTTY

(Make your own silly putty)

Materials:

1 T. liquid starch

2 T. white glue

3 drops food coloring (optional)

Plastic eggs

Directions:

- Put starch in a bowl.
- Add glue and let set for 5 minutes.
- If desired, add food coloring.
- Mix until starch is absorbed and color is spread smoothly. (Hint: The more you mix, the better it gets.)
- Store in plastic egg (or small food jar, if eggs are not available) overnight before using to pick up pictures from comics.
- Use to bounce, pick up pictures from comics or newspaper, and mold into shapes.

Tips:

- If left in open air, it will melt and then turn
- Add 1 tsp. more starch for a tougher, more rubbery putty.
- It will lasts for several days if stored airtight.
- If putty dries out or gets tough, just dip into warm water and knead.

2 TALKING POINTS

ACTIVITY EXTENSIONS:

- Talk about the different properties of eggs.
- Discuss the different ways to prepare eggs. Graph and compare the answers using a similar graph format to the one on page 18.

AGRICULTURE CONNECTIONS:

- From where do eggs come?
- What other animals lay eggs?
- What other food comes from chicken?
- Discuss chicken hatcheries as an important farming industry to Tennessee agriculture.

HEALTH AND NUTRITION:

- To which food group do eggs belong?
- Name other foods in that food group.
- Determine the number of servings that one should eat from that food group.



OTHER ACTIVITIES

MAGICAL VINEGAR EGGS

Ingredients: egg

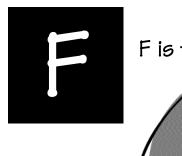
vinegar

Air-tight glass container

Directions: Place the egg in a glass container filled with vinegar. Seal the container tightly. The vinegar will slowly dissolve the calcium shell and rubberize the egg.

OBSERVATIONS:

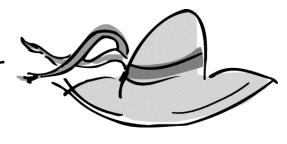
- Have students observe the changes in the egg daily.
- In approximately two days, the shell will begin to soften and disappear.
- On the third day, take the egg out of the vinegar and let students hold it. The shell will be completely dissolved an the egg will look and feel like a balloon filled with jelly.



FAT IN

F is for...

THE HAT





TALKING POINTS

1

ACTIVITY

GRADE LEVEL: Prek-2

SUBJECT AREA: Health and Nutrition

Critical Thinking Visual Memory Skills

FAT IN THE HAT

Materials:

Hat

Candy bar

Potato Chips

Soft drink can

Bag of candy

Butter (empty container)

How to play:

- Display the items and hat on a tabletop.
- Have the students close their eyes while one item is hidden under the hat.
- Invite the children to open their eyes and try to remember the name of the "fat" that's under the hat.

Note: Depending on the age group, you can add more items to increase the difficulty.

ACTIVITY EXTENSIONS:

- Using the Food Guide Pyramid (a poster is available through the AITC program), show students where the fats, oils, and sweets are located on the pyramid.
- Explain that they occupy the smallest part of the pyramid because we are to limit our intake to small amounts of food from this group.
- Note the number of servings one should eat from this food group each day.
- Identify other types of food from this group, other then the ones used in the game.
- Make a clear distinction of the meaning of the word, "good." (i.e. "good" for you/ healthy and "good" tasting.)

AGRICULTURE CONNECTIONS:

• Explain that even these foods are derived originally from agriculture.

For older students...

- Identify what agriculture products went in to making these food items.
 - Sugar
 - Cocoa/chocolate
 - Milk
 - Corn syrup
 - Potatoes
 - Soybeans
- Explain that while the above mentioned products are all ag products, they all don't come from Tennessee or the United States.
- Identify which of these products are grown in Tennessee.
- Using a map, show where the other products are produced (i.e. cocoa/chocolate comes from South America.)



G is for...

GARDENING IN A GLOVE



2 TALKING POINTS



GRADE LEVEL: Any
SUBJECT AREA: Art and Science

GARDENING IN A GLOVE

Materials:

Gardening glove (one for each student)
Scraps of felt or other material
Small plants (i.e. geranium, violets, etc...)
Paint pens and magic markers
Glue and scissors
Potting soil

Note: This makes a unique Mother's Day gift.

- Distribute gardening gloves to students.
- Have students fill each glove part of the way with potting soil.
- Place small plant inside the glove.
- Fill the glove the rest of the way with more potting soil.
- Encourage students to decorate their glove using art supplies.

Tips:

- Because of their age, it may be necessary to have students decorate their gloves first, before adding the plant.
- Because the gloves are porous, be sure to give plenty of water to your plants before you put them in the glove. Adding water to the glove after the plant has been placed may ruin the student's art work. However, occasionally sprinkling the plant with water is fine. The glove is only a temporary means of potting. It is to be used simply for decorating purposes.

ACTIVITY EXTENSIONS:

- AITC Outdoor Classroom and Aquatics Grant
- Instead of individual plants, your class can plant a "garden" in a large, plastic dishpan or small swimming pool. (Note: Before filling the pan with soil, spread small rocks or charcoal in the bottom for drainage.)
- Field trip to a nursery.
- Bring in fresh vegetables from a garden, like corn. Have students help prepare the vegetable for a meal. (Example: With corn, have them shuck, silk and boil it.) Eat and enjoy!

AGRICULTURE CONNECTIONS:

- Plants are agriculture products.
- Purposes for plants--¹. Clean the air ². Provide food ³. Produce oxygen ⁴. Beautification
- List types of plants that are grown in Tennessee for food--corn, soybeans, wheat, vegetables.
- What do plants need in order to live?
- What things do we need in order to live?

HEALTH AND NUTRITION:

• Discuss the many parts of a plant that we eat, such as the root (potato), flower (cauliflower), seed (corn), fruit (tomato), stem (asparagus), and leaves (spinach).



RECIPES

SUNFLOWER SEED CANDY

Ingredients: 1 C. Nonfat dry milk

1 C. Honey

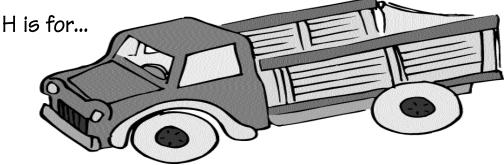
1 C. Peanut butter

1 C. Sunflower seeds

1 C. Sesame seeds

Directions: Mix ingredients thoroughly. Shape into one-inch balls. Roll in sesame seeds to coat.





HOT DOG HOT RODS



ACTIVITY

GRADE LEVEL: Pre K-2

SUBJECT AREA: Health and Nutrition

Math

HOT DOG HOT RODS

Ingredients:

Hot dogs Raisins Cucumbers or zucchini, sliced Toothpicks

Directions:

- Assemble the hot dogs into hot rod shapes.
- Put a tooth pick through the hot dog near the front and another near the back for the axles.
- Attach a zucchini or cucumber slice on the end of each tooth pick for wheels
- Add a raisin on each end for hubcaps.

Note: Help students remove the tooth picks before eating.



TALKING POINTS

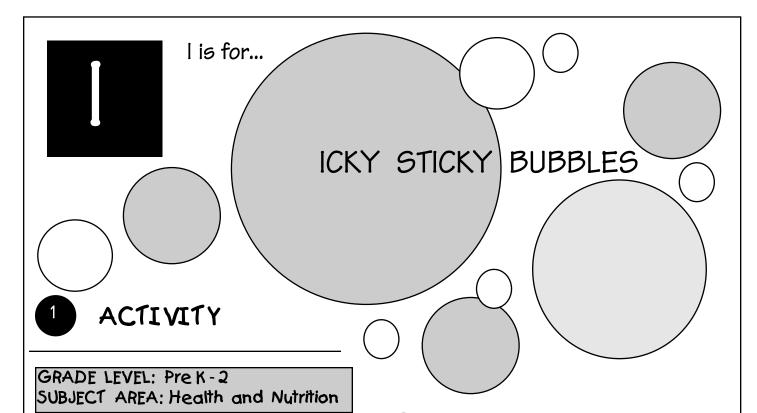
ACTIVITY EXTENSIONS:

- Have students "race" their hot dog hot rods before they eat them. Be sure to spread a clean roll or paper on the floor or table top. Incorporate measurement activities by measuring the distance the hot rods traveled.
- Think of other foods that you can incorporate into this activity to "soup up" the hot rods.

AGRICULTURE CONNECTIONS:

- Point out that all the food items used to make the hot dog hot rods are agriculture products.
- Hot dogs come from which farm animal?
- What other foods come from hoas?
- List non-food items that come from hogs.
- Discuss the hog industry as an important part of Tennessee agriculture.

- To which food group do these foods belong?
- List other foods that belong in these respective food groups.
- Determine the number of servings that one should eat from that food group.



ICKY STICKY BUBBLES

Materials:

2 tsp. glycerin *(available at any drug store)* 2/3 C. water

1/4 C. dishwashing liquid Wire (26 gauge works best) Cinnamon sticks

Directions:

- Mix the glycerin, water and dishwashing liquid together.
- Use wire to make bubble wire. Either wrap wire around a bottle or cookie cutter to form shape.
- Tie off ends. Be sure to leave enough wire to make a short handle.
- Cover handle by sliding wire through cinnamon stick. Tie off bottom of wire.

Note: Instead of cinnamon sticks, use small, plastic beads to cover handle. Tie off bottom.

ACTIVITY EXTENSIONS:

- Make a list of other things that are "icky sticky".
- Have a contest to see which student can make the biggest bubble, the most uniquely shaped bubble or the most bubbles without having to redip their wand.

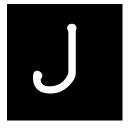
TALKING POINTS

AGRICULTURE CONNECTIONS:

- Dishwashing liquid is a form of soap. Talk about the different types of soap on the market today.
- How was soap made a long time ago?
- Soap is made from a by-product of soybeans.
 Name other by-products that we use everyday that are made from soybeans.

- Discuss good hygiene practices that prevent people from being "icky sticky" and getting sick from germs.
- Emphasize food safety and the importance of hand washing.

J is for... JUNK FOOD JUNKIES





ACTIVITY

GRADE LEVEL: Pre K-2 SUBJECT AREA: Math

Health and Nutrition

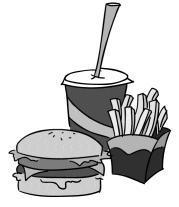
JUNK FOOD JUNKIES AND SUPER SNACKERS

Materials:

Zip lock bags Potato Chips
Cheese cubes Celery sticks
Raisins Popcorn (plain)
Candy Candy bar
Apple slices Cookies

Cucumber slices Paper sacks (two)

- Fill individual bags with each one of the food items listed above. (To insure that each student will be able to participate, you may have to double up on some of the items used.)
- Write "Junk Food Junkie" on one of the paper bags and "Super Snacker" on the other.
- Display the sacks on a tabletop.
- Pass around a tray or basket filled with the food items and have students select one that they would like for a snack.
- Before eating, have students determine whether the snack they selected was "junk food" or a "super snack".
- Graph or tally the results on a chalkboard (example on back of page.)
- Using the data from the graph or tallying, decide which type of food was most popularthe "junk food" or "super snack."



and SUPER SNACKERS









TALKING POINTS

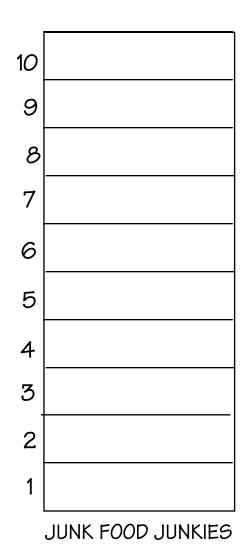
ACTIVITY EXTENSIONS:

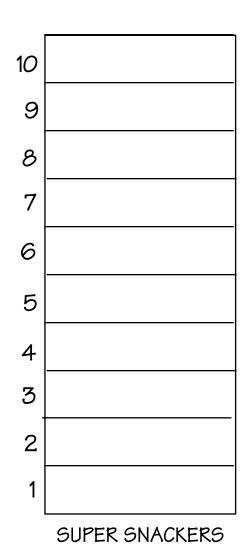
- Brainstorm and list other types of "junk food" and "super snacks."
- Classify the food items into their respective food groups using the Food Guide Pyramid (Poster available through AITC.)
- Determine the number of servings that one should eat from that food group.

AGRICULTURE CONNECTIONS:

- All of these foods are products of agriculture.
- What is the origin of the foods? (i.e. raisins come from grapes. Grapes are mostly grown in California.)

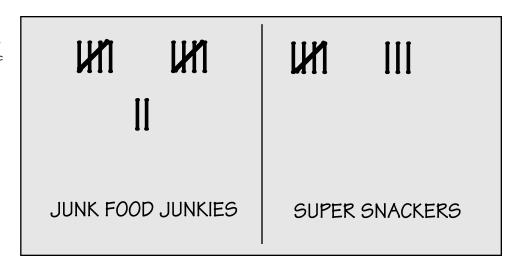
GRAPHING THE RESULTS --

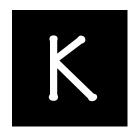




On a chalkboard, design a graph similar to the one shown. As the students decide the proper category for the snack food items they have selected, color the space in. At the end, compare the graphs to show the number of 'Junk Food Junkies" and "Super Snackers" in the class.

... or for you can tally your results. Then have the students count to determine if there are more "Junk Food Junkies" or "Super Snackers" in the class.





K is for...



ACTIVITY

GRADE LEVEL: Pre K-4 SUBJECT AREA: All

KICK - THE - CAN - ICE CREAM

Materials: 1 C. milk

1 C. whipping cream

1/2 C. sugar

1 top. vanilla

lce

Rock salt

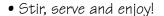
Large and small cans with lids

Newspaper

Tape

Directions:

- Pour the milk, whipping cream, sugar and vanilla into the small can.
- Cover the can and tape well. Shake the can to mix.
- Put a layer of ice and rock salt in the large can. Add small can and layer with more ice and rock salt.
- Place the lid on the large can. Wrap newspaper around the can and secure with tape.
- Kick or roll the can for about 10 minutes.
- Remove the small can. Scrape ice cream away from the side of the can. Put back in large can, with more ice and salt. Kick or roll for 5 more minutes.







TALKING POINTS

ACTIVITY EXTENSIONS:

• (See the following page.)

AGRICULTURE CONNECTIONS:

- From where does ice cream come?
- What other foods come from dairy cows?
- List the different types of dairy cows in Tennessee.
- Which is the most common?
- Discuss the process of getting milk from the farm to its final product as ice cream.

HEALTH AND NUTRITION:

- To which food group does ice cream belong?
- Name other foods in that food group.
- Determine the number of servings that one should eat from the food group.



RECIPES

Note: This recipe makes approximately three cups of ice cream.

GET THE SCOOP ON CLASSROOM ACTIVITIES THAT ARE REALLY A TREAT!

LANGUAGE ARTS

- Ask each student to write down three adjectives to describe the ice cream they just made, each on a small card. Make an illustration of an ice cream cone and hang the cards from it to make a mobile.
- Have the students to divide up into small work groups. Then have them to come up with as many words as they can using the letters in "ice cream".

Example:

I -- ialoo

C -- cream

E -- egg

Ect... or have them to come up with as many words as they can using the letters in "ice cream" that describes ice cream.

Example:

1 -- ice

C -- cold

E -- excellent

SCIENCE

- Incorporate this activity into a unit on liquids and solids.
- Have students record their observations on the taste, texture, smell, temperature, ect... of each of the ingredients in the ice cream. Then ask them to do the same with the completed ice cream. Compare and contrast their observations.

MATH

- Treat the making of the ice cream as a math activity that involves:
 - 1. Measuring ingreadients
 - 2. Noting volume changes
 - 3. Telling time
- Have students estimate various aspects of the project, such as:
- 1. How many kicks it will take to make the ice cream?
- 2. How many licks are in a scoop?
- Create a pictograph of your classes' ice cream preferences. Find out each student's favorite flavor. Have each student write his or her name on an appropriate colore circle (scoop) and add it to the chart.
- Create an ice cream cone-like ruler for each student. Ask them to find objects in the room that are 1, 2, or 3 ice cream cones-long.

ART

• Have students sponge-paint ice cream cones using either sweetened condensed or evaporated milk (another way to highlight agriculture) that has been colored with food coloring.

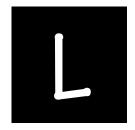
For example: Pink--strawberry

Green -- mint

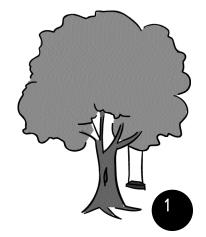
Yellow -- vanilla

Give students 2-3 white circles (for the ice cream) and 1 tan triangle (for the cone.)

Have students sponge-paint the circles with the colored milk. Hang or set on a ledge to dry. The pointed circles will shine and drip -- just like real ice cream. Once dry, have students assemble their ice cream cones.



L is for...



LEAF BISCUITS

TALKING POINTS



ACTIVITY

GRADE LEVEL: 3-5 SUBJECT AREA: Science

LEAF BISCUITS

- Buy canned biscuit dough from the grocery store.
- Have students roll each biscuit our flat and use a cookie cutter in the shape of a leaf to cut out a leaf pattern from each biscuit.
- Bake the biscuits according to the directions on the package.
- When the leaf biscuits are ready to eat, the students can "paint" their leaves a fall color with different kinds of jams or jellies.

Examples:

Red -- Strawberry Green -- Mint

ACTIVITY EXTENSIONS:

- Discuss the functions of leaves.
- Name other parts of a tree and talk about their functions.
- What is the importance of trees?
- Identify trees native to your area.
- Gather leaves from those trees and have students to identify them.
- Note that the biscuits are also agriculture products. From what grain are they made?

AGRICULTURE CONNECTIONS:

- Discuss tree farms.
- Are their any tree farms in Tennessee, if so point out their locations using a state map.
- Highlight the conservation practices that farmers use when growing and harvesting trees.
- Emphasize that farmers are very good environmentalist.
- Talk about ways that farmers care for trees.
- Brainstorm other ways that students, them selves, can take care of trees.

- Name some foods that are grown on trees.
- Determine which of those "tree foods" are grown in Tennessee.
- Identify food groups.
- Calculate the number of servings that one should eat from that food group.



M is for... MUD PIES





ACTIVITY



GRADE LEVEL: 3-5 SUBJECT AREA: Science

MUD PIES

Materials:

1 pkg. Jell-O™ Chocolate Flavor Instant Pudding 2 C. milk

8 oz. tub Cool Whip ™ whipped topping, thawed 1 pkg. Oreos™ (crushed)

7 oz. clear plastic cups (one for each student) 1 pkg. vanilla wafers

Directions:

- Follow directions on back of pudding package to make chocolate pudding.
- After pudding has set, add Cool Whip™.
- Pass out cups to students
- Have students place a spoonful of the crushed Oreos $^{\text{TM}}$ into the bottom of their cup. This represents the parent rock layer of soil.
- Next, fill cups approximately 3/4 full with pudding mixture. This represents the subsoil.
- Sprinkle crushed vanilla wafers on top. This represents top soil.
- Note: Students can decorate their mud pies with gummy worms.
- Eat and enjoy!



TALKING POINTS

ACTIVITY EXTENSIONS:

• Discuss which foods are dependent on soil to grow. (Answer: All food)

AGRICULTURE CONNECTIONS:

An explanation of soil:

- Soil is the loose top layer of the earth's surface which is suitable for the growth of plant life.
- Soil is not dirt!
- The first layer of soil is called parent rock material. It is formed from natural erosion events such as wind, rain, plants and other living organisms.
- The next layer is subsoil. It is formed by tiny particles of the parent rock layer and all the nutrients from the topsoil as they are washed down. As plats grow, roots reach down to this layer for water and nutrients to grow healthy.
- The final layer is topsoil. It is an organic layer of soil that consists of decomposing elements of leaves, wood, roots plants, worms and other organic matter. This is the most productive layer of soil and is where planted seeds begin their arowth.
- Small burrowing animals, worms, and insects continually churn and mix the organic soil matter with parent soil particles. This is the natural way of adding nutrients to the soil.
- Discuss soil erosion.
- Soil forming erosion is good.
- Erosion that blows or washed soil away is bad.
- Introduce conservation methods that farmers use to prevent soil erosion (i.e. no-till).
- Explain why farmers sometimes use fertilizers. (It is imperative that students understand that farmers do not abuse the use of fertilizers. They are trained in use and proper application. They perform soil testing methods to determine if they need fertilizers and how much. Fertilizers are very expensive, therefore they are only used when necessary. Fertilizers make soil more productive. Without them, farmers could not grow all the food that we need in order to live.



N is for...

NUTTY PEANUT BUTTER PLAYDOUGH

1

ACTIVITY

GRADE LEVEL: Pre K-2

SUBJECT AREA: Science and Math

NUTTY PEANUT BUTTER PLAYDOUGH

Materials:

1 medium-sized jar of peanut butter 1/4 C. honey Non-fat dry milk

Directions:

- Combine the jar of peanut butter with the honey.
- Add non-fat dry milk until mixture has consistency of play dough.
- Students can play with dough and nibble as they play.



RECIPES

MAKE YOUR OWN ...

PEANUT BUTTER

Ingredients:

1 C. shelled peanuts 2 T. oil 1/2 tsp. salt

Directions: Use a blender to blend the ingredients together for one minute or until smooth. Serve the peanut butter on crackers or bread.

2

TALKING POINTS

ACTIVITY EXTENSIONS:

- Integrate a language arts activity by reading,
 "From Peanuts to Peanut Butter" by Melvin Berger.
- After reading the book, ask students if they think peanuts or peanut butter taste better. Shell some peanuts and do a taste test. Graph the results (use the example graph on page 18.)
- Purchase several different kinds of peanut butter. Have a taste test. Graph the results (use the example graph on page 18.)
- Show the students a peanut plant or a picture of one. Identify the different parts of the plant, describing the peanuts as being a part of the root system.

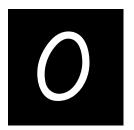
AGRICULTURE CONNECTIONS:

- Peanut butter is made from several agricultural products. Name them.
- Are peanute grown in Tennessee? (Emphasize that many of the foods we eat are grown in other states and all across the world. Also explain that we ship many of the foods grown in this state elsewhere for other people to enjoy.)
- Which state grows the most peanuts?

HEALTH AND NUTRITION:

(Food Guide Pyramid Poster available through AITC)

- To which food group does peanut butter belong?
- Name other foods in that food group.
- To which food group do peanuts belong?
- List other foods in that food group.
- Determine the number of servings that one should eat from those food groups mentioned above.



0 is for...

ONION AND APPLE SENSE EXPERIMENT

1

ACTIVITY

GRADE LEVEL: Any
SUBJECT AREA: Self-concept

ONION AND APPLE SENSE EXPERIMENT

Materials:

Onion

Apple

Handkerchief (or something else that could be used as a blindfold)

Knife

Directions:

- Chop up small bits of the apple and onion.
 Be sure to remove peeling and skin.
- Blindfold a student and have them hold their nose.
- Give the student a bite of the apple.
- Give the student a bite of the onion.
- The student won't be able to distinguish the difference between the apple and onion.
 Without our senses of sight and smell, all foods would be the same.



TALKING POINTS

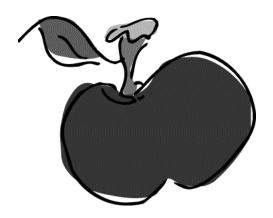
ACTIVITY EXTENSIONS:

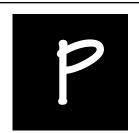
- Think about other foods with similar textures. Would this process work for them, as well?
- List the five senses. Discuss their importance. What are some things that we would have difficulty doing if we couldn't see, taste, etc...
- How do people who do not have all five senses compensate?

AGRICULTURE CONNECTIONS:

- Apples and onions are agriculture products.
- Are either of these foods grown in Tennessee?

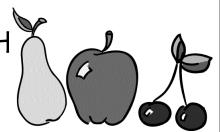
- Classify the two food into the appropriate food groups.
- Discuss nutritional values of each.
- List other foods that belong in those food groups.
- Determine the number of daily servings that one should eat from those food groups.





P is for...

FRUITY PLAYDOUGH





ACTIVITY

GRADE LEVEL: Pre K-2

SUBJECT AREA: Health and Nutrition

FRUITY PLAYDOUGH

Materials:

4 oz. plastic cups 1/4 C. + 1/2 tsp. water

1 T. oil

1/4 top. unsweetened powdered drink mix 1 qt. "zipper-close" plastic bag

3/4 C. white flour

1/4 C. salt

Directions:

- Combine water, oil and powdered drink mix together in the plastic cup. Stir to mix color, then set aside.
- Mix flour and salt together in the plastic bag.
- Pour the liquid into the bag with the flour and salt.
- Close the bag securely as you squeeze out as much air as possible.
- Knead th playdough together in the bag until it is a smooth consistency.

Note: If dough seems too dry, add 1/2 tsp. of water at a time. If dough seems too wet, add 1/2 tsp. of flour at a time.)

- Playdough is ready to use immediately.
- Store in plastic bags.

2

TALKING POINTS

ACTIVITY EXTENSIONS:

- Have students create the fruit from their playdough in which their color or smell represents.
- List other types of fruit that may not be represented by the playdough.

AGRICULTURE CONNECTIONS:

- Have examples of fruit on hand for students to examine and taste.
- Is the fruit grown on a vine or tree?
- Which fruits are grown in Tennessee?
- Where are other fruits grown?
- Talk about the different parts of fruit (i.e. seeds, pulp, peel, etc..)
- List other foods that we like to eat that are made from fruit.

HEALTH AND NUTRITION:

(Food Guide Pyramid Poster available through AITC)

- To which food group does fruit belong [
- How many servings of fruit should we eat each day?

TIPS:

- To make this activity easier, mix water, oil and drink mix together in the cups ahead of time and let each student choose their color of playdough by the color of the water they pick up.
- The powdered drink mix will determine the color of the playdough as well as add the fruity smell.

Example:

Grape drink mix -- purple playdough Orange drink mix -- orange playdough



Q is for... QUICK!

HAVE YOU THOUGHT OF AN IDEA

FOR AN

AITC ALPHABET SOUP





SHARE IT WITH EVERYONE!

GO TO PAGE 40 TO FIND OUT HOW.

ITS AS EASY AS A-B-C!

R is for...

ROCK - N - ROLL ICE CREAM -



ACTIVITY

GRADE LEVEL: Pre K-2

SUBJECT AREA: Health and Nutrition

ROCK - N- ROLL ICE CREAM

(Ice Cream in a Bag Recipe)

Materials:

1 small "zipper" bag (snack size) per person 1 large "zipper" bag (pint size) per person 1/4 C. rock salt or table salt 11/2 to 2 C. ice per person 1-2 drops vanilla 1 T. sugar per person or 1 sugar packet 1/2 C. milk per person Measuring cups and spoons Plastic spoons Paper towels

Directions:

- Measure out ingredients (vanilla, sugar, and milk) into a small bag.
- Shake to mix and seal carefully.
- Place the small bag inside the large one.
- Fill the large bag with ice and salt.
- Shake, rattle, rock and roll the mixture in the bag until it is hard. (This should take approximately 5 minutes.)
- Wipe off excess ice and salt from the top of small bag.

* Enjoy!

TALKING POINTS

ACTIVITY EXTENSIONS:

• (See the activities listed on page 20.)

AGRICULTURE CONNECTIONS:

- From where does ice cream come?
- What other foods come from dairy cows?
- List the different types of dairy cows in Tennessee.
- Which is the most common?
- Discuss the process of aettina milk from the farm to its final product as ice cream.

- Establish what the nutritional value of this food product is. (vitamins A and D, calcium, protein, riboflavin, etc...)
- To which food group does ice cream belong?
- Name other foods in that food group.
- Determine the number of servings that one should eat from the food group.





S is for...

SCRIBBLE COOKIES





GRADE LEVEL: Pre K-2 SUBJECT AREA: Art and Math

SCRIBBLE COOKIES

Materials:

Crayons (using old, broken crayons for this exercise is best.)

Muffin tin

CAUTION: This activity is HOT! Please supervise young students carefully!

Directions:

- Have student break or shave the crayons down into tiny bits.
- Place the crayon shavings and bits into the muffin tin and heat in a warm oven at low heat until the crayons are melted.
- Watch at all times. Crayons should melt and soften, float in a liquid, but not melt completely to total liquid.
- Once cool, the crayon molds may be popped out of the plastic tray and used to color.

TIPS:

- For the easiest removal of "scribble cookies", freeze and then remove from muffin tin.
- Do not use the muffin tin to bake edible goods once it has been used for this activity.
- When melting the crayons, be sure to do so on low heat. If the temperature is too hot, the crayons will become wax-like and will not color. Heat long enough to melt the crayons. If the crayon mixture becomes "soupy", they have been heated too long.

TALKING POINTS

ACTIVITY EXTENSIONS:

- Another variation, for older students, is to melt crayons separately, as individual colors. Have students select which colors they want to mix together to form their own "scribble cookie." They can use toothpicks to swirl the different colors together before the melted mixture hardens.
- Have students try to find as many colors in their "scribble cookie" as possible. Who found the most?
- Compare the "scribble cookie" with regular crayons--which do students like the best? Graph the results using a graph format similar to the one on page.
- Compare the "scribble cookie" with soybean crayons -- which do students like the best? Graph the results using a graph format similar to the one on page.
- Compare regular crayons to soybean crayons -which do students like the best? Graph the results using a graph format similar to the one on page .

Note: For information on how to get soybean crayons contact AITC.

AGRICULTURE CONNECTIONS:

- Introduce students to soybean crayons and explain that they are a by-product of soybeans.
- List other items that are non-food products that are made from soybeans. Have some on display for students to see.
- Bring a soybean plant, or picture of one for students to see. Identify the parts.
- Discuss where soybeans are grown.
- Use a state map to highlight the counties where soybeans are grown in Tennessee.



T is for...



1

ACTIVITY

GRADE LEVEL: Pre K - I SUBJECT AREA: Science

THE GRAIN TRAIN

- Duplicate the train patterns on the following pages, so that each child has one engine and three cars.
- Mix together pasta or wheat, corn, and soybeans. Put this mixture into bowls for students to share of in individual "zipper" bags.
- Help students identify the three different grains in the bowls or bags. Discuss different foods or non-food products that come from these grains.

Example: Corn -- cereal
Wheat --flour, bread, pasta

- Instruct students to color their train engine and cars.
- Encourage students to sort and glue the grains onto the separate cars.
- Finally, hook the engine and cars together using construction paper strips.

All Aboard!



TALKING POINTS

ACTIVITY EXTENSIONS:

- Make one very long train by having students work in groups to make the cars. Hook all the cars to just one engine. Cute wall or bulleting board exhibition!
- Other grains may be substituted based on availability--rice, cereal, etc...

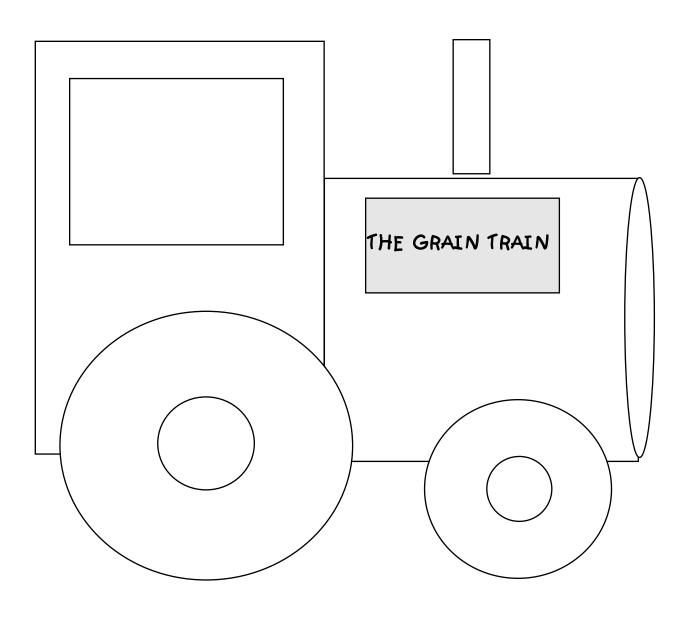
AGRICULTURE CONNECTIONS:

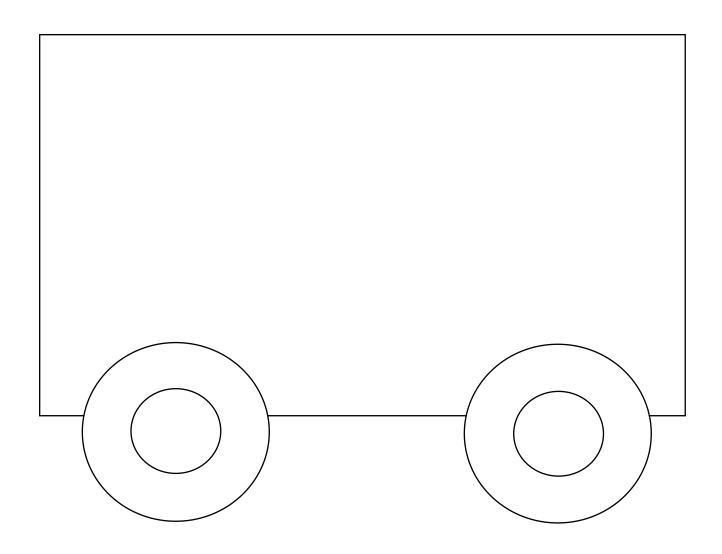
- Have examples of the plants from which the grain comes on hand.
- Extend beyond discussing different food or non-food products that come from these grains--have examples to show!
- Play a guessing game. Show students products that come from these grains--can they guess which one goes with which? (A list of non-food grain by-products is available through AITC.)

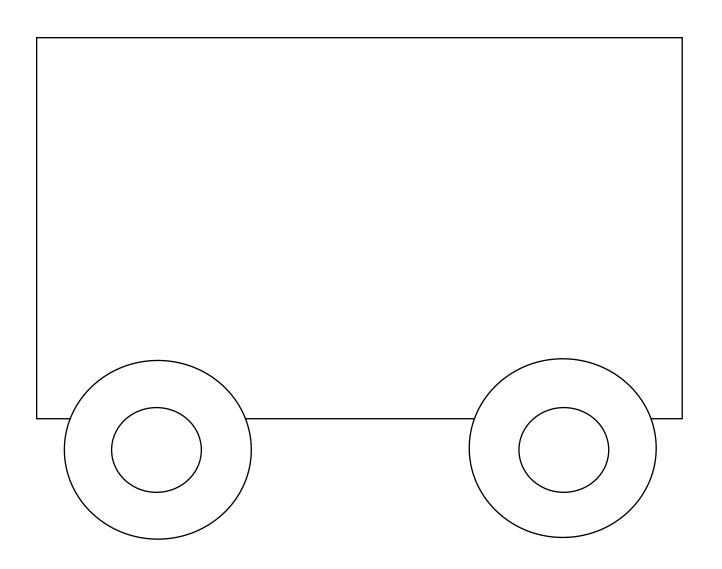
HEALTH AND NUTRITION:

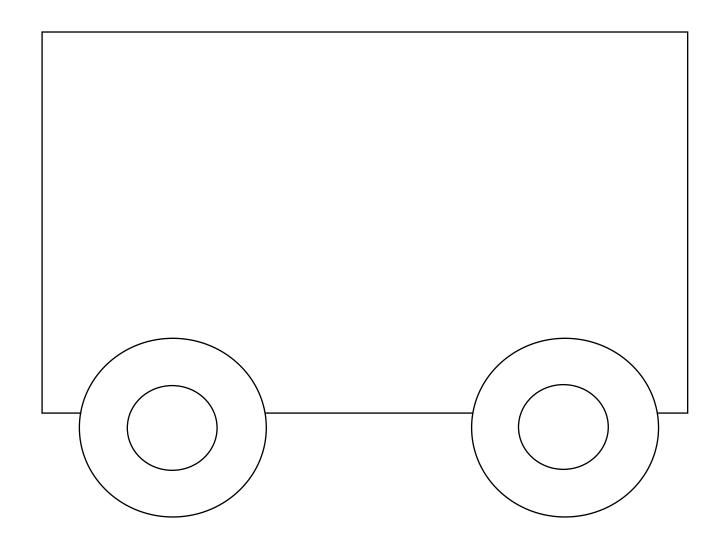
(Food Guide Pyramid Poster available through AITC)

- Identify the food groups to which these grains belong.
- List other foods that belong to these food groups.
- Discuss the number of servings hat one should eat from that food group.





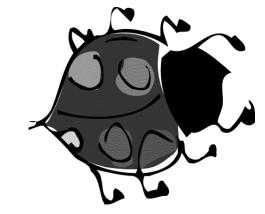






U is for...

UGLY BUG JUICE





GRADE LEVEL: 2-4

SUBJECT AREA: Science, Social

Studies, and Art

UGLY BUG JUICE

Materials:

1/2 C. cornstarch 1/4 C. water Measuring cup Food coloring Tray, bowl, spoon or pan

Directions:

- Mix cornstarch and water in a measuring cup.
- Pour into a large, flat baking pan.
- Explore and observe the ugly bug juice with bare hands. There is no finished product, just the process of exploring with a strange mixture.
- Add a few drops of food coloring to the mixture and mix in with the hands.
- When finished, the mixture can be stored in an airtight container and reused.
- Wash hands and clean up.

Note: The mixture of ugly bug juice is 2 parts cornstarch to 1 part water. The above recipe is good for one or two artists to explore in a flat baking pan. Larger batches can be made up for a dishpan or small plastic wading pool.

2

TALKING POINTS

ACTIVITY EXTENSIONS:

- Integrate a history lesson by identifying Tennessee's state insect.
- Using recyclable trash, such as toilet paper rolls, cereal boxes, soda cans, etc... have student construct their own bug.
- Discuss several different types of bug noting body parts, number of legs and wings.
- Distinguish the difference between bugs and spiders.

AGRICULTURE CONNECTIONS:

- List several different types of bugs.
- In relationship to agriculture, which bugs are good and which are bad?
- Ladybugs are good bugs for agriculture. how do they help farmers.
- What are some methods by which farmers get rid of bugs?
- Why is it important for farmers to eliminate harmful buas?

Variations:

- Add more corn starch and see what happens
- Add more water and see what happens
- Experiment with other colorings such as crushed chalk, crayon shavings, $Jello^{TM}$, or powdered tempra paint



V is for...



VEGGIE PRINTING

1

ACTIVITY

GRADE LEVEL: Pre K-2 SUBJECT AREA: Science, Art,

and Math

VEGGIE PRINTING

Materials:

- Cutting and digging tools, such as: knife, nail pencil, scissors and apple corer
- Choice a fruit, vegetable, or food such as: potato, apples, celery, citrus, cauliflower, carrot, turnip, corn-on-the-cob, etc...
- Tempra paint--a variety of colors--mix each color separately with liquid starch on paper plates
- Paint brushes
- Paper
- Paper towels
- Tape
- Newspaper or old table cloth

Directions:

- Cover the working surface with an old table cloth or paper and mix the paint.
- Place the plates of paint on the table and tape them down to prevent spills.
- Have students select a vegetable or fruit of their choice that can be cut into shapes or have designs cut into it, such as a potato or a carrot.
- Experiment with making prints by pressing the cut food design into the paint and then onto paper.
- Another approach is to paint the food with a paintbrush and them make a print.

2

TALKING POINTS

ACTIVITY EXTENSIONS:

- Have an art contest -- Have students design a farm scene using the veggie printing technique.
- Bring edible examples of the foods that are being used in the printing activity for the students to taste test.
- Describe the food as it is being cut up for use--how does it feel? Smell? etc...?
- Do a taste test. Which food was the most popular? Least popular? Graph your results using a format similar to the graphs on page 18.

AGRICULTURE CONNECTIONS:

- Where did all these foods come from?
- Are they grown in Tennessee, if not, where?
- Identify what part of the plant these foods are --root, stem, leaf, fruit, seed, or flower?

HEALTH AND NUTRITION:

(Food Guide Pyramid Poster available through AITC)

- Classify the foods into their respective food groups.
- List other foods that belong in that group.
- How many servings should one eat each day from that particular food group?

CAUTION:

- You might consider precutting some designs ahead of time. AVOID INJURY -- Do not allow students to attempt to cut their own designs out of a food items using a sharp utensil.
- Do<u>not</u> eat any food that has been dipped into paint.



W is for... WEATHER WATCHING





2 TALKING POINTS



ACTIVITY

GRADE LEVEL: 3-5

SUBJECT AREA: Science and Math

TORNADO IN A BOTTLE

Materials:

2 two-liter plastic soda bottles (empty) Water Duck tape

Directions:

- Fill one of the two-liter soda bottles with water.
- Place the other bottle upside on top of the bottle filled with water. (The open ends should be touching.)
- Securely tape the two bottles together using duck tape.
- To form a tornado, fiercely shake the bottle of water, then quickly turn the bottle upside.
- Watch to tornado form and get BLOWN AWAY!

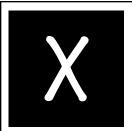


ACTIVITY EXTENSIONS:

- Discuss typical weather, such as rainfall amounts, and climate conditions for Tennessee.
 Have students keep a weather journal for a week. Compare the two.
- Review emergency disaster plans with students.
- Set up a rain gauge. Have students measure rainfall per day, week, or month. Compare that to the average rainfall amounts.
- List other "natural weather disasters."
- Place 4 small plants in a clear, plastic cup. Set up a controlled experiment determining how soil, water and sunlight affect the plant's growth. Give one plant sunlight, good soil, and proper amounts of water. Give another one of the plants all of the aforementioned except water. Give another plant everything except sunlight. Be sure the last plant has water and sunlight, but not rich, fertile soil. Correlate this to all the crops that a farmer grows.

AGRICULTURE CONNECTIONS:

- Explain that soil, climate, and rainfall are three very important natural resources for farmers.
- How does soil, climate and rainfall help to determine the types of crops a farmer can grow?
- Why is rain important?
- What happens to plants and animals if there is a drought, or not enough rain?
- What happens to plants and animals, if there is a flood?
- Point out that farmers, more than most other workers, are affected by the weather.
- Discuss how different types of weather affects farming.
- List ways that farmers compensate for bad weather (i.e. irrigation systems, fertilizers, etc...)



X is for...

X's FROM THE EXTRA FOOD GROUP AND AN EXCELLENT MIXTURE



ACTIVITY



SUBJECT AREA: Language Arts

Health and Nutrition

X's FROM THE EXTRA FOOD GROUP ...

Ingredients: (makes 8 servings)

Canned shoestring potatoes

Catsup

Lowfat milk

Bananas

Frozen orange juice

Frozen strawberries (optional)

Utensils:

Serving tray

Electric blender

Paper cups

Butter knives, metal spoon

Can opener

Measuring cup and spoons

Directions:

 On a tray, arrange shoestring potatoes to form X's. X's may be served with 1 tablespoon of catsup in a small cup.

Note: Shoestring potatoes, catsup, potato chips, pickles, relish, candy, soda, etc... are all part of the Extra Food Group. They do not provide any valuable nutrients.

But ... the Excellent Mixture does!



... AND AN EXCELLENT MIXTURE

- Measure 3 cups of milk into a blender.
- Slice 1 banana and add to milk.
- Add 1/3 cup still-frozen strawberries to milk (optional).
- Add 3 tablespoons still-frozen orange juice.
- Blend the Excellent Mixture and serve with shoestring X's.



TALKING POINTS

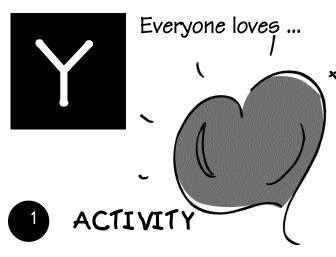
ACTIVITY EXTENSIONS:

• Use the shoestring potatoes to make other letters of the alphabet.

AGRICULTURE CONNECTIONS:

- Identify and discuss where each of the foods used as ingredients are grown.
- How many and which ones are grown in Tennessee?

- To which food groups do each of these belong?
- Name other foods that belong in that group.
- Number of servings that one should eat from that group.



GRADE LEVEL: Prek-I

SUBJECT AREA: Language Arts

Health and Nutrition

YELLOW YOGURT YUMMIES

Ingredients:

Lowfat milk Instant vanilla pudding Vanilla yogurt Yellow food coloring

Utensils:

3-ounce paper cups
Tongue depressors or popsicle sticks
Jars with lids

Directions:

- Give each child a jar with a lid.
- Children measure and put into their jars:
 - 2 tablespoons lowfat milk
 - 1 tablespoon instant pudding
 - 4 tablespoons yogurt
- Put the lid on the jar. Shake.
- Add 2 drops yellow food coloring. Shake again.
- Pour into 3-ounce cup.
- Put in freezer.
- When partially frozen, insert the popsicle stick.
- When completely frozen, carefully remove the paper cup.

YELLOW YOGURT YUMMIES



TALKING POINTS

ACTIVITY EXTENSIONS:

- Practice words that begin with a "Y" while doing this exercise.
- Have students practice following directions as you use commands that begin with a "Y". Some examples include:
 - Eat your yummy yellow yogurt in the yard.
 - Don't yank off the paper.
 - Yell. "Ya-hoo!"

AGRICULTURE CONNECTIONS:

- Milk and yogurt are both dairy products.
 Discuss which farm animal produces milk and subsequently yogurt.
- Name other dairy products that come from cows
- Discuss dairy operations in Tennessee.
- How does milk get from the farm to the grocery store?
- Identify the different types of dairy cows.
- Which of these are the most common in Tennessee?

- To which food groups do each of these belong?
- Name other foods that belong in that group.
- Number of servings that one should eat from that group.
- What other ag products are used to make up the other ingredients needed for this activity?



Z is for...

ZIPPY ZUCCHINI PATTIES



GRADE LEVEL: PreK-2 SUBJECT AREA: Science

Health and Nutrition

ZIPPY ZUCCHINI PATTIES

Ingredients:

Zucchini squash (3 zucchinis make about 15 patties)

Egg

4 tablespoons Matzo meal, or flour

Salt

Pepper

Cooking oil

Utensils:

Electric skillet

Grater

Big spoon and a spatula

Measuring cup and spoons

Bowl

Paper towels

Directions:

- Children take turns grating zucchini. Put grate and zucchini in a big bowl.
- Add egg to 1/2 cup meal or flour.
- Add 1/4 teaspoon salt and pepper, to taste.
- Children take turns stirring mixture.
- A grown-up heats oil in skillet and gently drops a spoonful of mixture into oil.
- A grown-up uses spatula to turn over patties so they are lightly browned on both sides.
- A grown-up spoons cooked patties onto paper towels. Students may blot off excess oil with paper towels.
- Zucchini patties may be eaten plain, salted, or dipped in applesauce or salso, for extra zip.

2

TALKING POINTS

ACTIVITY EXTENSIONS:

• Plant and grow your own zucchini squash and other vegetables using the Outdoor Classroom and Aquatics grant available through AITC.

AGRICULTURE CONNECTIONS:

- Cooking oil is a derivative of some grain -typically corn, soybean, sunflower, etc...
 Discuss with your students which grain is used to make the cooking oil used in this product.
- What other by-products are made from this grain?

HEALTH AND NUTRITION:

- To which food groups do each of these ingredients belong?
- Name other foods that belong in that group.
- Number of servings that one should eat from that group.
- What other ag products are used to make up the other ingredients needed for this activity?



OTHER ACTIVITIES

ZANY ZOO

- Give each child an 8 x 11 sheet of paper with a letter of the alphabet printed in black marker.
- Each child uses crayons to create a zany zoo animal from his or her letter.
- Paste on black circles or bars, for cages, if you wish.

Note: This activity can also be used to create farm animals from letters, or vegetables and other foods from each of the letters.



Now you know your ABC's... Next time make some up for me!



Z

We're always looking for new ideas! If you have an idea of a simple, inexpensive, relatively quick classroom activity that incorporates agriculture, we'd like to know! Please make a copy of this sheet, fill out the information below and mail to the following address:

Ag In The Classroom Tennessee Farm Bureau Federation P. O. Box 313 Columbia, TN 38402-0313

Attention: Lori Gallimore Belew

We'll try to include as many of these unique ideas as possible in our next addition of "AITC Alphabet Soup Activities."



Name of group or individual submitting idea:

Phone number of contact person:

County:

Name or title of idea(s):

Materials needed:

Directions:

Special thanks to ...

ACTIVITIES AND PROGRAMMING IDEAS:

Tennessee Foundation for Agriculture In The Classroom Consultants:

- Mandy Clark
- Barbara Davis
- · Cindy Dowell
- Linda Fowler
- Rita Layman
- Becky Mitchell
- Nancy Morris
- Herbert Parks
- Leah Thompson
- Carole Willis
- Linda Willis

RESOURCES:

- 1. "Ag Ambassador" newsletter and activities
 Newletter Coordinators:
 - Cindy Dowell
 - Linda Fowler
 - Rita Layman
- 2. Amy Gallimore

The University of Tennessee Agriculture Extension Service (former)

3. "Scribble Art"

by MaryAnn Kohl

4. "Mudworks"

by MaryAnn Kohl

5. "Plant a Seed in Tennessee"

K-4 agriculture education curriculum series Tennessee Foundation for Agriculture In The Classroom

6. "ABC Crafts and Cooking"

Teacher Created Materials, 1996

RESEARCH:

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AITC Alphabet Soup Activities

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