

WELCOME TO THE FOUR SEASONS OF GROWING APPLES!

The majority of apple orchards are family-run farm businesses, operated in cooperation with the laws of nature. This highly seasonal enterprise is as varied as the days in a year, with each day bringing a new chance to test the orchardist's skills against the measure of the eventual harvest. An apple orchard is a busy place.

WINTER

In January, while the trees are dormant, pruning begins. Limbs are sawed off and clipped to allow maximum sunlight into the growing structure. Pruning allows the tree to produce larger, better colored, higher quality and more valuable fruit. Equipment repairs and maintenance occupies the days too cold or stormy to be outdoors, through the winter months of February and March.

SPRING

April is the time to prepare for spring planting. The average tree will bear fruit in 3 years, with full production coming in 8-10 years. Most apple trees planted today are on dwarf stock, allowing for more efficient use of valuable land and labor. If Newton sat under one of these small wonders, the lesson of gravity would have been easier to learn. Since apples do not grow true to their seeds, young trees that have been grown in a nursery from cuttings are transplanted to the orchard site. These trees have a desired fruit variety grafted (attached by tissue splicing) on to a root-stock selected for characteristics of size and vigor.

Sometime around the beginning of May, the buds begin to swell. Spring is near and the pace of the farm quickens. The brush from pruning is picked up or mulched back into the orchard soil. Grass that has grown tall is mowed to reduce competition for nutrients and habitat for pests. Growers using Integrated Pest Management (IPM) start monitoring the weather while hanging various insect traps to collect data for an annual spray program. Temperature, humidity, and rainfall are recorded in orchard weather stations to predict disease outbreaks and identify effective management tools. Both harmful and beneficial insects are counted to determine spray schedules. Spraying is done only when needed to protect the tree and fruit.

SUMMER

With the opening of the "King" blossom (the largest and center - most of the five-blossom clusters), it is time for pollination to begin. Bee colonies rented from bee keepers must be moved in quickly, usually at night so the bees are "home" and not in flight. Sunny mild days are needed during bloom to encourage strong bee activity. Apples need more than one variety of pollen for the cross-pollination that ensures good fruit set. Fertilizing and tree

SUMMER (CONT'D)

training round out the busy June calendar. Limbs must be tied up or weighted down to spread the young tree into the perfect shape. Pomology (the science and art of growing apples) has become a very refined practice, and apple producers attend regional meetings and classes to keep abreast of the latest information and technology.

In some dry years, irrigation must be used during July. Fruit size and firmness are affected by moisture in this critical month. Spraying, mowing, and shaping practices continue, and some summer pruning is done to expose growing fruit to ripening sunlight.

August is the last growing month before the apples begin to ripen. Red apples need the assistance of cool nights during harvest to trigger an enzyme which increases the amount of color or "blush." Mowing is completed and bins (the large bulk boxes picking buckets are emptied into) are positioned strategically around the orchard. Ladders are repaired and the harvest logistics are carefully planned. Storage rooms must be cleaned and their refrigeration systems tested. Most growers store some of their fruit in controlled atmosphere (CA) rooms where the temperature is rapidly brought down to 32°, and the oxygen is replaced with nitrogen to slow ripening. Apples come out of these rooms months later as fresh as the day they were picked. For an apple to pass the "admissions test" to a fall CA room, it must have the proper starch and hardness measurements (to determine ripeness) at harvest.

FALL

Apples bruise easily and must be hand picked. Additional harvest workers are hired both locally and from other areas and countries to help get the crop in on time. When picking begins around the end of August, there is a constant buzz of activity until the last of the fruit comes off near the end of October. Now it becomes the job of the farmers to market their fruit; either through their own farm store or packed and shipped fresh to supermarkets, restaurants, and schools nationwide and around the globe. During the harvest season, some farms invite the public to come for the fun of picking their own apples (PYO).

Many apples are processed into sauce, pies, and jelly - or pressed into fresh cider and processed apple juice. Some apple varieties are designed specifically for this market. For others, cider is a delightful by-product of apples not "pretty" enough for the fresh whole-apple market.

An apple is in the pome family - a fruit whose seeds are embedded in the core of the fruit. Another surprising member of this family is the rose. Apples come in lots of colors and shapes--all of which add up to America's No. 1 snack. Select one of each type and have a taste test - each apple is loaded with minerals, vitamins, and fiber. At 85% water and 1% fat, an apple makes a low (80) calorie contribution to the five-a-day recommendation from the U.S. Department of Health and Human Services.

With the harvest complete, it is time to prepare again for winter. Growing an apple takes all year, and there is always something going on in the orchard. If you look closely, you can even see the promise of next year's crop at the tip of each branch in the snow. It is the bud that will become the apple which you might eat a year from now.

Apple Learning Activities Teachers Guide

The Apple Orchard Poster and its learning activities have been designed to help the teacher in the instruction of many subject matter skills while students learn about Apples.

Although the poster is a self-explanatory pictorial of apple production, the learning activities provide a method to test the students general knowledge, determine their comprehension, and better understand a students ability to conduct analysis or synthesis process. The learning activities cover a wide range of subjects: art, language arts, mathematics, science, nutrition, and social studies. These activities are created in both master and white master format so the teacher can duplicate the desired number of copies for students.

Teachers will find the learning activities are self-explanatory, requiring a minimal amount of preparation time. The activities will integrate into existing lesson plans and serve as a unique opportunity to deliver a ready-made seasonal program.

The poster and learning activities can be used as a stand alone learning activity or serve as a field trip preparation and follow-up learning series. Regardless of how used, the students will become more familiar with the production of food and present environment.

The learning activities with subjects and grades served are:

<u>Activity Title</u>	<u>Subject(s)</u>
1. Orchard Word Puzzle	Language Arts
2. Apple Foods Word Puzzle	Language Arts, Nutrition
3. Apple Words	Language Arts
4. Apple Matching	Language Arts
5. Apple Word Find	Language Arts
6. Apple Senses	Science
7. Apple Are Amazing	Art
8. Apple Life Cycle Puzzle	Art, Science
9. Apple Jobs	Social Studies
10. Apple Number Dots	Art, Mathematics
11. Apple Counting	Art, Mathematics
12. Counting Apples	Art, Mathematics
13. Apple Testing	Science
14. Apple Coloring	Art, Social Studies
15. Apple Trip Report (I)	Art, Language Arts, Social Studies
16. Apple Trip Report (II)	Art, Language Arts, Social Studies

A BRIEF APPLE HISTORY

The apple emerged as a celebrated fruit at the beginning of the peopling of Earth. Whether you start with Adam and Eve or the anthropological data on Stone Age man in Europe, the apple was there. Greek and Roman mythology refer to apples as symbols of love and beauty. When the Romans conquered England about the first century B.C., they brought apple cultivation with them. William Tell gained fame by shooting an apple off his son's head at the order of invaders of Switzerland.

The Pilgrims discovered crabapples had preceded them to America, but the fruit was not very edible. The Massachusetts Bay Colony requested seeds and cuttings from England, which were brought over on later voyages of the Mayflower. Other Europeans brought apple stock to Virginia and the Southwest, and a Massachusetts man, John Chapman, became famous for planting trees throughout Ohio, Indiana, and Illinois (his name became "Johnny Appleseed"). Seeds from an apple given to a London sea captain in 1820 are sometimes said to be the origin of the State of Washington apple crop (now the largest in the US).

As the country was settled, nearly every farm grew some apples. Although some were very good, most of the early varieties would be considered poor today. Of nearly 8000 varieties known around the world, about 100 are grown in commercial quantity in the US., with the top 10 comprising over 90% of the crop.

Our modern orchards combine the rich heritage of apple growing with research and field trials to grow an annual US crop exceeding 220,000,000 bushels. New varieties are still being discovered and cultivated, with the best eventually becoming "household words" like McIntosh, Delicious, Empire, Rome, Spartan, Cortland, Granny Smith, etc.. Recent arrivals include Fuji, Braeburn, Liberty, and more than a few "throwbacks" to antique varieties enjoying a resurgence.

It can certainly be said that an apple combines the best attributes of "something old and something new".

The following is an exercise that the UNH Extension Sea Grant program uses to give their volunteers (docents) a sense of awareness. It shows us that the game board upon which we live isn't all that big.

1. Cut an apple into 4 equal pieces from top to bottom. Use only ONE segment now, setting aside the other three segments for use later. The 3 set-aside pieces represent the three-quarters of the earth that are covered with ocean. The other piece represents land.

2. Cut this remaining quarter into 2 equal pieces. One of these represents all the land that is too dry, too wet, too hot, or too cold for people. This uninhabitable land consists of mountains, river basins, deserts, and icebergs. The other piece, one-eighth of the earth's surface, is the part of the land where people live.

Let An Apple Tell You A Story

3. Cut this one-eighth piece into 4 equal segments. Set aside three of the segments. The remaining one represents the portion of habitable land on which we are able to grow food.

4. Take this 1/32 part of the apple and cut off a very thin slice. This tiny slice represents 3/100 of the earth's surface. All of our drinking water comes from this area, which we must protect for our survival.

5. Now take the three-quarters of the whole apple you set aside; they represent the oceans. Take ONE of these quarters and cut it in half. This one-eighth of the earth's surface represents the productive zones of the oceans. The rest supports very little life.

6. Cut this one-eighth piece into 4 equal segments. One represents the productive ocean area along the Pacific coast of North America, one of the richest regions of the ocean.

7. Take one of these 1/32 segments and cut off a very thin slice. This tiny segment represents the photic zone, the top 300 feet of the oceans through which light can penetrate and support photosynthesis. Almost all of the ocean's life is concentrated in this narrow surface region.

ACKNOWLEDGMENTS:

The design of the "All About Apples" kit was a cooperative effort of The New York and New England Apple Institute and Agriculture In The Classroom. An advisory group was formed including apple growers, teachers, farm market operators, and Cooperative Extension staff. Support from the State Departments of Agriculture in New York, Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, and Vermont has aided in development and distribution, as have the Farm Bureau chapters in those states.

We wish to particularly thank the following individuals and agencies for their extra assistance (listed alphabetically):

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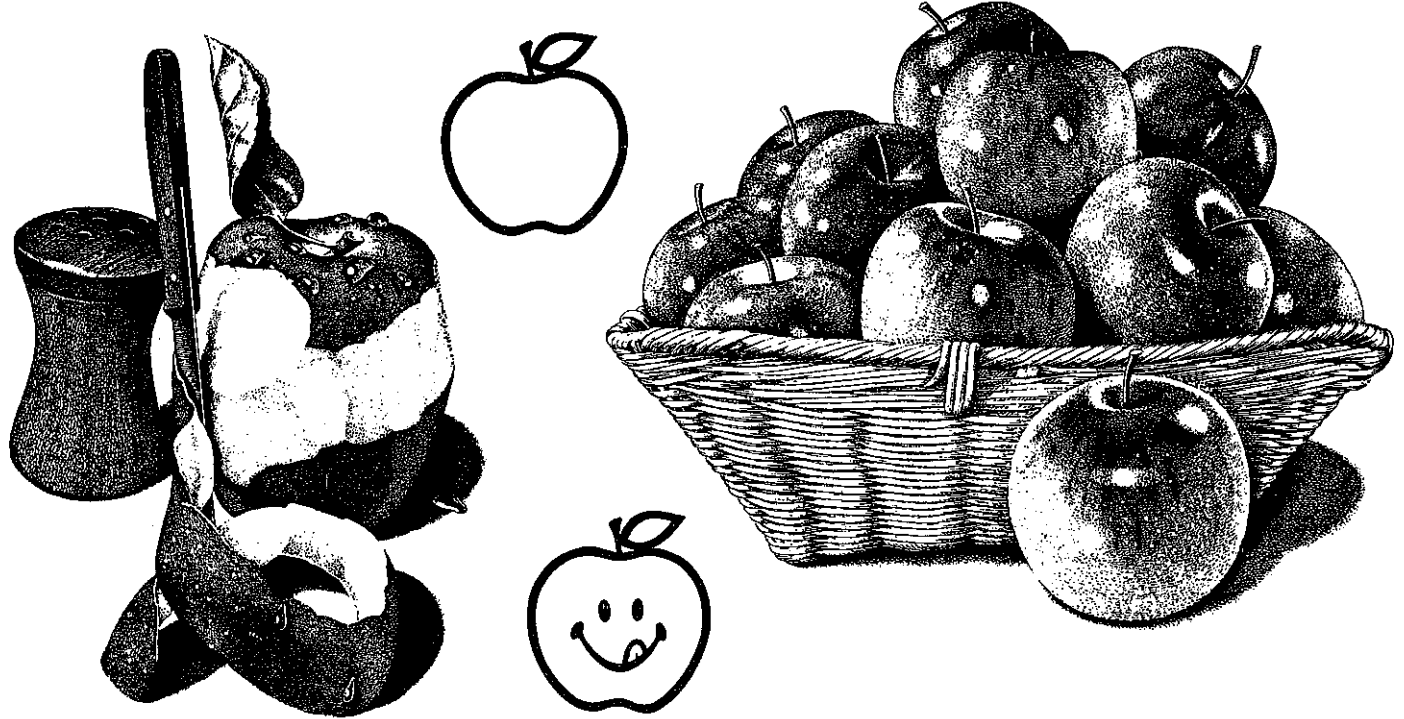
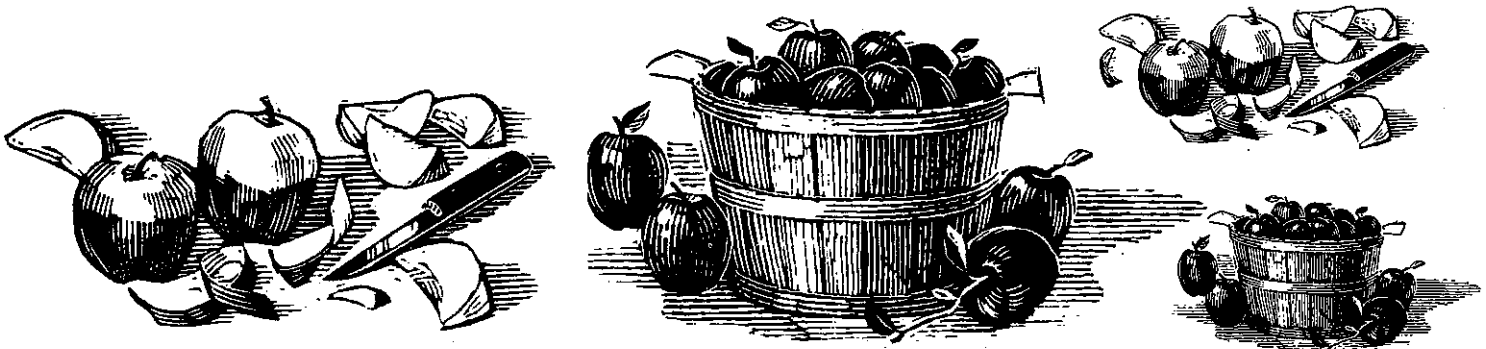
AGENCIES:

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Massachusetts Dept. of Food and Agriculture

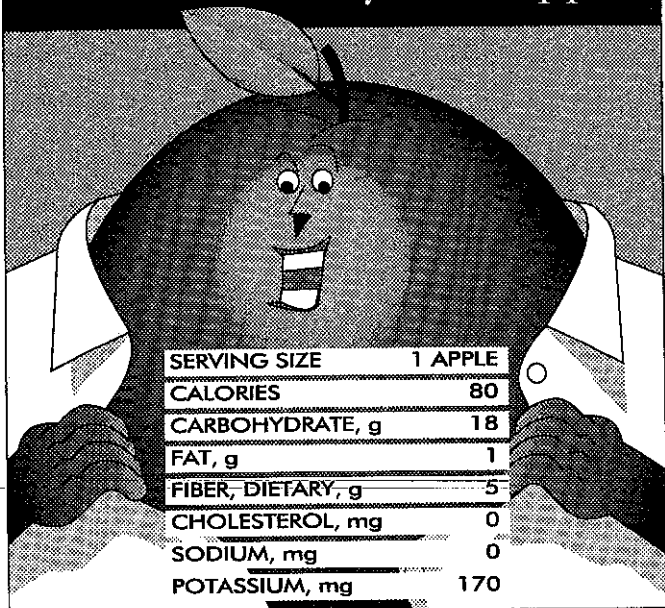
We invite you to become part of the continuing development of this teaching resource. A bibliography of tested classroom resources will be added to future editions. Additional insert sheets will expand the curriculum materials to different grades. Please tell us what you would like to see added to enhance your use of this kit, and give us sources for your favorite outside materials so that we can list them in the bibliography.

If you take field trips to an orchard, apple packing house, juice presser, farm market, or other apple related industries, please tell us what you liked or found lacking in the experience. We are working with the hosts in these locations to improve their ability to assist you and your students in learning "All About Apples".

CLIP AND GLUE ART



Nutritional Analysis of Apples



King Solomon, in his wisdom, hailed the apple as a fruit of healing. Ages later, in Devonshire, England, the saying arose: "ATE AN APFEL AVORE GWAIN TO BED, MAKES THE DOCTOR BEG HIS BREAD." Today, there is substantial evidence that an apple a day can help keep the doctor away.

America's Favorite Snack

Apples are a bulky food that is low in calories, with no cholesterol and can be eaten daily without fear of excess. They provide an excellent source of pectin, fiber and bulk that aids digestion as well as help reduce cholesterol levels in the body.

Filling But Not Fattening

Apples are filling but not fattening—a benefit to anyone on a weight-reduction diet. The energy supplied by apples comes from easy to digest fruit sugars and hemicellulose carbohydrates. Their high potassium and low sodium content offers a special thirst-quenching benefit to athletes and sportsmen and to some cardiac and renal patients.

Apples Relieve Tension

University studies have shown that students eating apples regularly, reported fewer headaches and illnesses associated with stress and have also shown a reduced incidence of colds and minor upper respiratory ailments.

Nature's Toothbrush

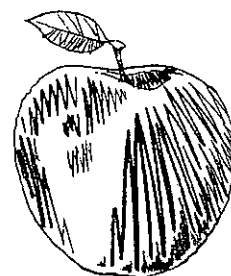
Apples are a natural toothbrush. Their crisp, fibrous texture and the aromatic cleansing action of the juice effectively cleans and freshens the breath, teeth and gums. Marked reductions in dental caries have resulted when apples have been eaten regularly in lieu of, or following, excessive consumption of sweet, sticky foods.

People eat apples because they are enjoyable and refreshing but it is our special good fortune that they are also plentiful, economical and good for our health.

APPLES... a snack that's good for you.

TYPE	CHARACTERISTICS	BEST USES
McIntosh	Two-toned red and green skin; especially juicy, slightly tart; the most aromatic of all apples.	The perfect snacking apple, good in salads, too.
Red Delicious	America's most widely and plentifully grown apple; sweet, tender and juicy; unique shape tapering to five-knobbed base.	Best for crunching out of hand and in fruit cups and salads.
Rome Beauty	Red and red-striped skin; firm, slightly tart; harvested late in season.	Excellent for baked apples.
Cortland	Deep, purple-red color; resists bruising; snow-white flesh that stays whiter longer when cut.	White fresh makes it great for salads, fruit cups; good for cooking too.
Golden Delicious	The second major volume variety in the U.S.; on the sweeter side; firm, low-acid apple with golden skin and flesh that remains white longer.	Excellent for all uses; delicious sweet snacking right out of hand.
Empire	New variety introduced in 1966 from McIntosh and Delicious parents; deep red skin brushed with green and gold, firm white flesh, mildly tart-sweet.	Excellent for snacks and dessert. Good for all culinary uses.
Idared	A cross between Jonathan and Wagener, bright golden red with tangy taste that mellows at maturity. Crisp and juicy.	Excellent for snacks and all culinary uses.
Spartan (Spartamac)	A cross between McIntosh and Yellow Newtown; red and green two-toned skin, juicy tart-sweet taste.	Excellent for snacks, salads, and culinary use.
Northern Spy	Large, red and green-skinned; rich, spicy, moderately tart flavor.	A favorite for apple pies; great for snacks, salads.
Macoun	Highly regarded in northeast for flavor. Crisp white flesh with juicy sweet-tart flavor. Wine-red color flushed over light yellow skin.	Excellent for snacks and dessert. Good for all culinary uses.

An apple
a day...
keeps
the doctor
away



IPM gets the bugs out with less chemicals

Integrated Pest Management (IPM) is a program designed to reduce chemical use to the smallest amount possible in the production of quality food.

Research at leading agricultural colleges began in the early 1970's with funding from the United States Department of Agriculture. Within a short time, IPM test plots were established. Growers were instructed by State University Personnel, Cooperative Extension Agents, and Specialists, on how to monitor and identify unacceptable levels of insects, weeds, pests, and diseases. Applications of chemicals were made only at critical times and in the smallest quantity necessary. Ecological, non-chemical methods are incorporated into grower management practices whenever possible.

IPM IS SUCCESSFUL - Remarkable progress in reduced chemical use and improved pest management has been accomplished by the apple growers in the Northeast. (Connecticut, Maine, Massachusetts, New Hampshire, New York, Vermont, and Rhode Island)

IPM REDUCES CHEMICAL USE - In 1987 alone, apple growers in the Northeast reduced chemical application by 30%.

OVER 80% OF ORCHARDS USE IPM - Latest published reports show over 80% of the orchards covering 30,000 acres in the Northeast used some IPM.

IPM HAS STRONG SUPPORT - The United States Department of Agriculture, Environmental groups, and grower associations are supporting IPM projects to the total of \$1,464,000 in the Northeast. In addition, growers individually have employed private consulting firms at their own expense.

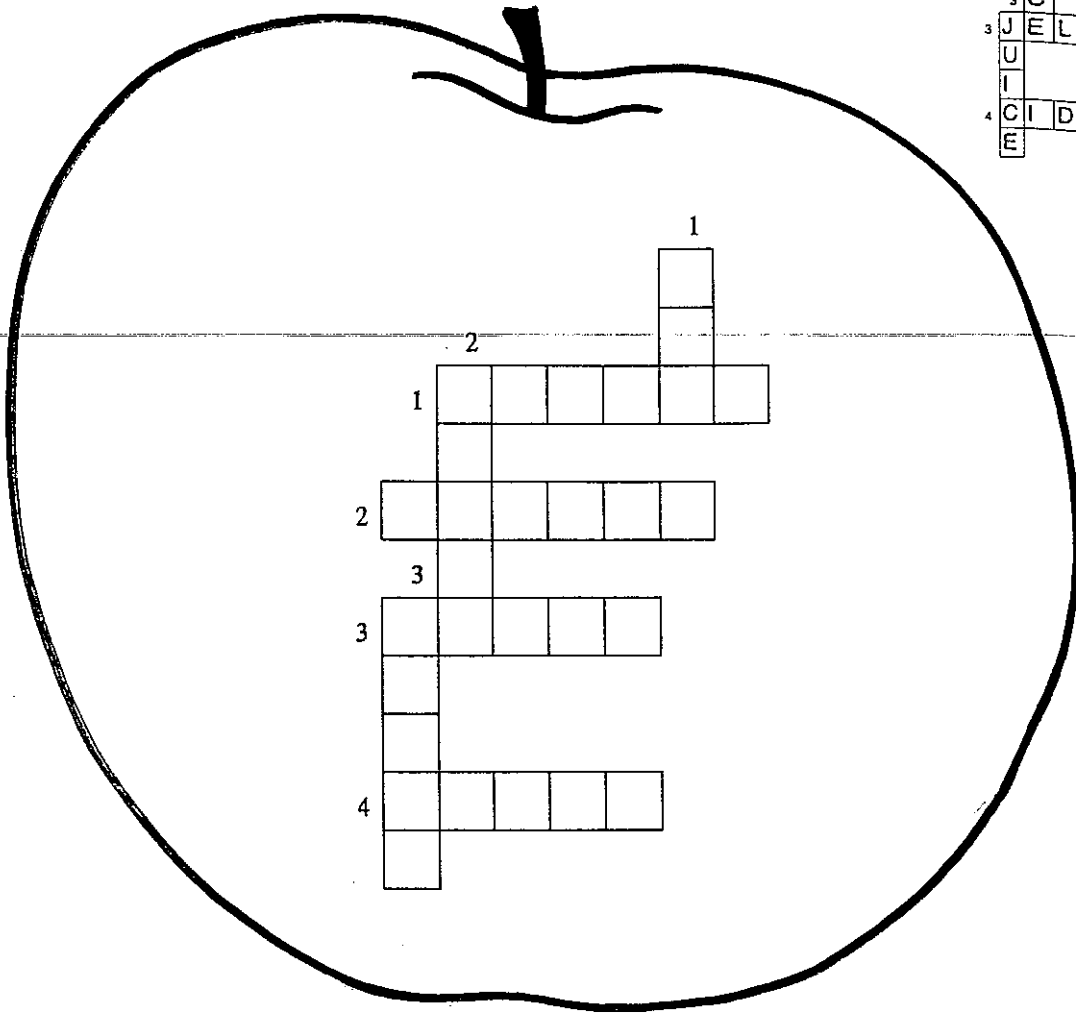
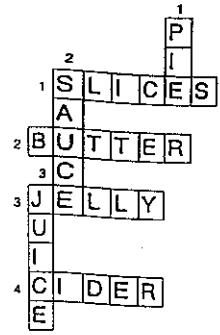
IPM IS SCIENTIFICALLY SOUND - Every state college in the Northeast uses the expertise of leading scientists in the areas of entomology, biology, and plant pathology to design and evaluate IPM programs that will further reduce the need for chemical use.

IPM IS ENVIRONMENTALLY SOUND - Over 2 million insects, thousands of nematodes, and a variety of fungi that cause 1,500 different plant diseases are facts of life. IPM identifies the "harmful" species and applies chemicals to control them at the lowest dose level *only* when alternate controls are ineffective.

CAN IPM DO MORE? - Yes. Scientists and growers believe that taking advantage of natural predators and employing more physical and cultural practices will further reduce dependence on chemical use and protect the environment. The industry is pledged to continue IPM research and application.



APPLE FOODS WORD PUZZLE



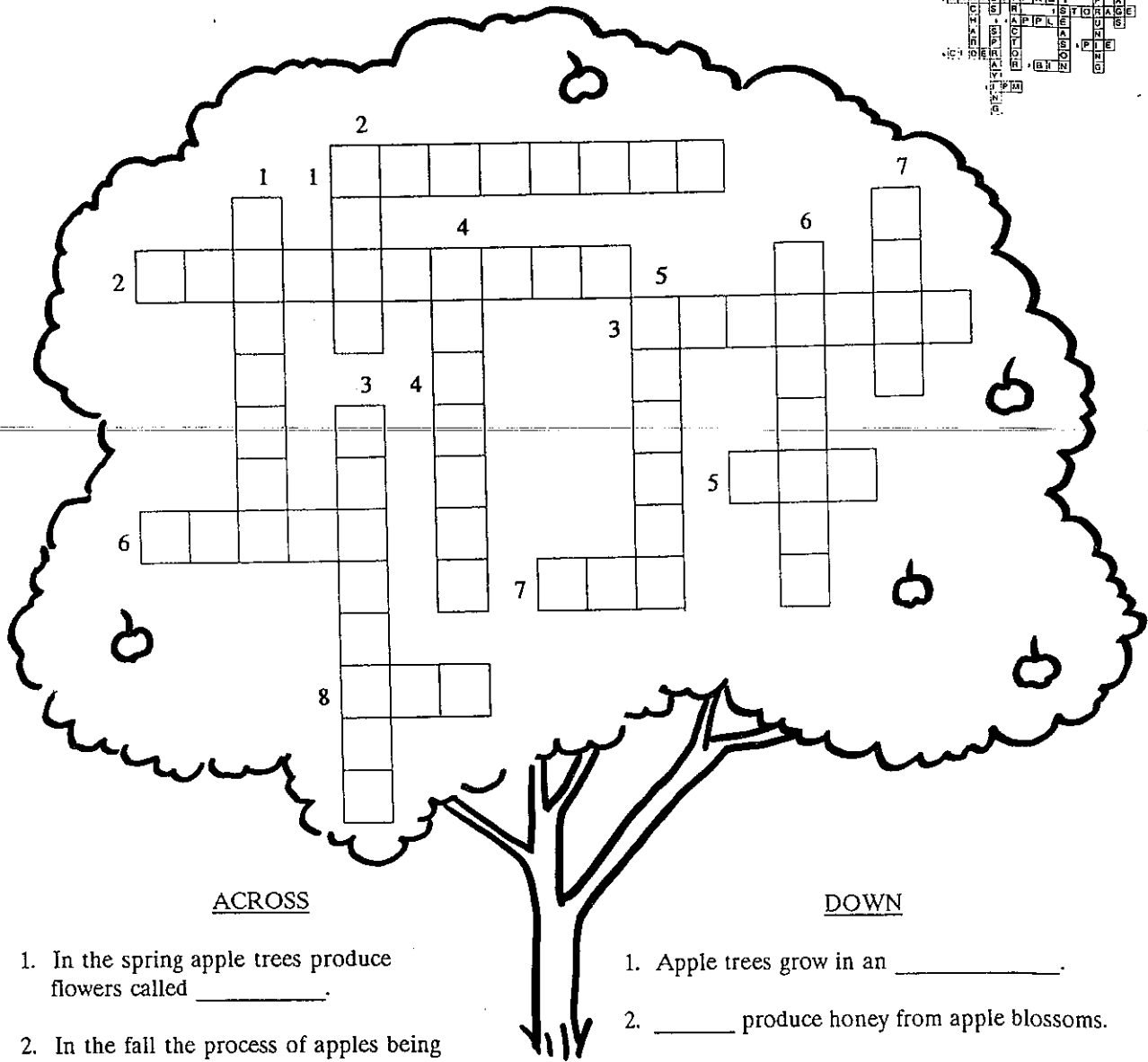
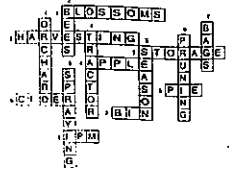
ACROSS

1. You cut apple pie into _____.
2. Apple _____ can be spread on toasted bread as a morning snack.
3. You can spread on bread to make a peanut butter and _____ sandwich.
4. Freshly pressed apples produce _____.

DOWN

1. People love a fresh baked apple _____.
2. Many people like apple _____ as a dessert or a snack.
3. Apple cider that has been filtered and pasturized is called apple _____.

ORCHARD WORD PUZZLE



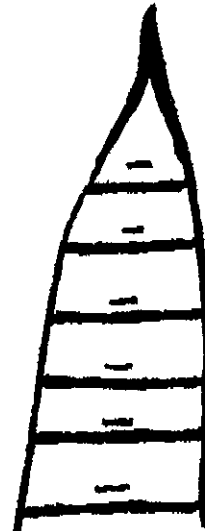
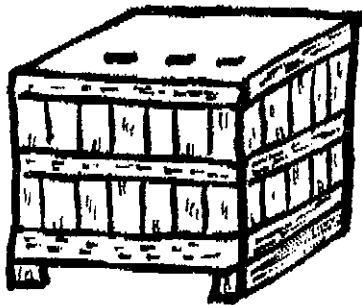
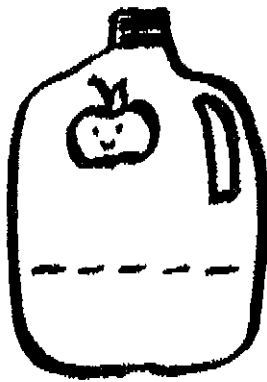
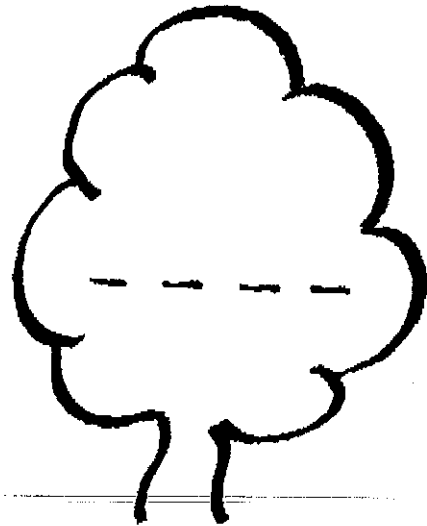
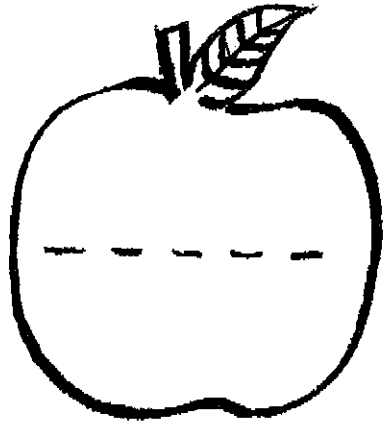
ACROSS

1. In the spring apple trees produce flowers called _____.
2. In the fall the process of apples being picked from trees is called _____.
3. After apples are picked, they are placed in refrigerated _____.
4. The fruit from the apple tree is called an _____.
5. An apple _____ is the result of baking apple slices in a dough crust.
6. The liquid made from freshly pressed apples is called _____.
7. A wooden _____ is used to transport and store apples.
8. Integrated pest management.

DOWN

1. Apple trees grow in an _____.
2. _____ produce honey from apple blossoms.
3. _____ is used to control harmful insects and diseases.
4. Farmers use a _____ to pull wagons, sprayers, and tree planters.
5. The work at an apple orchard changes with each _____ of the year.
6. During the cold months, apple trees have their branches trimmed to control tree growth. The process is called _____.
7. Paper and plastic _____ are used by people to take fresh apples home.

APPLE WORDS



1. FILL IN THE LETTERS OF EACH WORD THAT DESCRIBE THE OBJECT.

2. Unscramble the words and name the objects.

plpae

riecd

drelda

etre

ibn

ipe

APPLE MATCHING

DRAW A LINE TO CONNECT THE MATCHING WORD OR WORDS WITH SIMILAR MEANINGS.

Example:

Boy Woman
 \ /
 / \
Girl Man

Apple

Juice

Orchard

Insect

Harvest

Farm

Bee

Flower

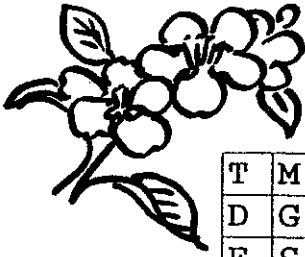
Cider

Pick Apples

Blossom

Fruit

APPLE WORD FIND



T	M	Y	G	O	B	O	X	R	B	I	N	Q	U	E	S	V
D	G	R	S	H	L	A	D	D	E	R	X	I	P	M	T	L
E	S	E	A	S	O	N	S	T	E	M	G	C	I	B	O	C
F	O	F	G	L	S	N	Q	W	O	B	R	S	C	G	R	I
T	H	R	A	E	S	Z	E	B	Z	G	H	R	K	F	A	C
Z	E	A	P	R	O	L	R	Y	F	K	D	A	P	P	G	H
Y	O	X	P	C	M	I	H	A	D	O	R	C	P	N	E	M
P	B	A	L	C	F	E	A	G	G	C	R	W	V	C	Q	Z
C	I	D	E	R	S	T	R	U	W	E	D	C	P	O	Y	P
Z	O	E	F	V	C	D	V	I	D	R	E	R	H	L	P	F
S	I	U	W	E	S	J	E	L	L	Y	O	N	M	A	D	O
K	P	L	N	X	F	W	S	R	Y	G	H	V	T	R	R	O
L	I	R	N	E	C	R	T	R	A	C	T	O	R	I	O	D
K	W	B	A	J	G	B	R	D	S	T	U	W	X	F	B	M
E	B	D	T	Y	A	C	D	X	L	A	R	A	D	W	O	F



CAN YOU FIND THE HIDDEN WORDS FOUND ON THE APPLE ORCHARD POSTER?

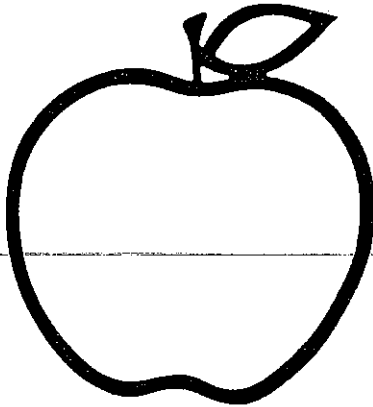
- | | |
|------------|-------------|
| 1. FARMER | 11. LADDER |
| 2. APPLE | 12. BIN |
| 3. CIDER | 13. GROCERY |
| 4. PIE | 14. ORCHARD |
| 5. HARVEST | 15. SPRAY |
| 6. TRACTOR | 16. U PICK |
| 7. BEE | 17. IPM |
| 8. JELLY | 18. STORAGE |
| 9. BLOSSOM | 19. FOOD |
| 10. HONEY | 20. SEASONS |

USE THESE WORDS IN A COMPLETE SENTENCE TO TELL THE STORY ABOUT AN APPLE ORCHARD.

APPLE SENSES

Color the apples. Then smell and taste real apples the same color. Color the face to describe smell and taste.

SMELL

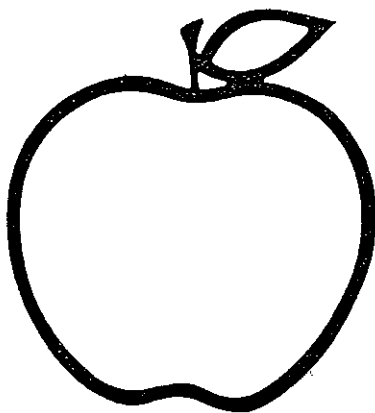


TASTE



APPLE COLOR _____
APPLE NAME _____

SMELL



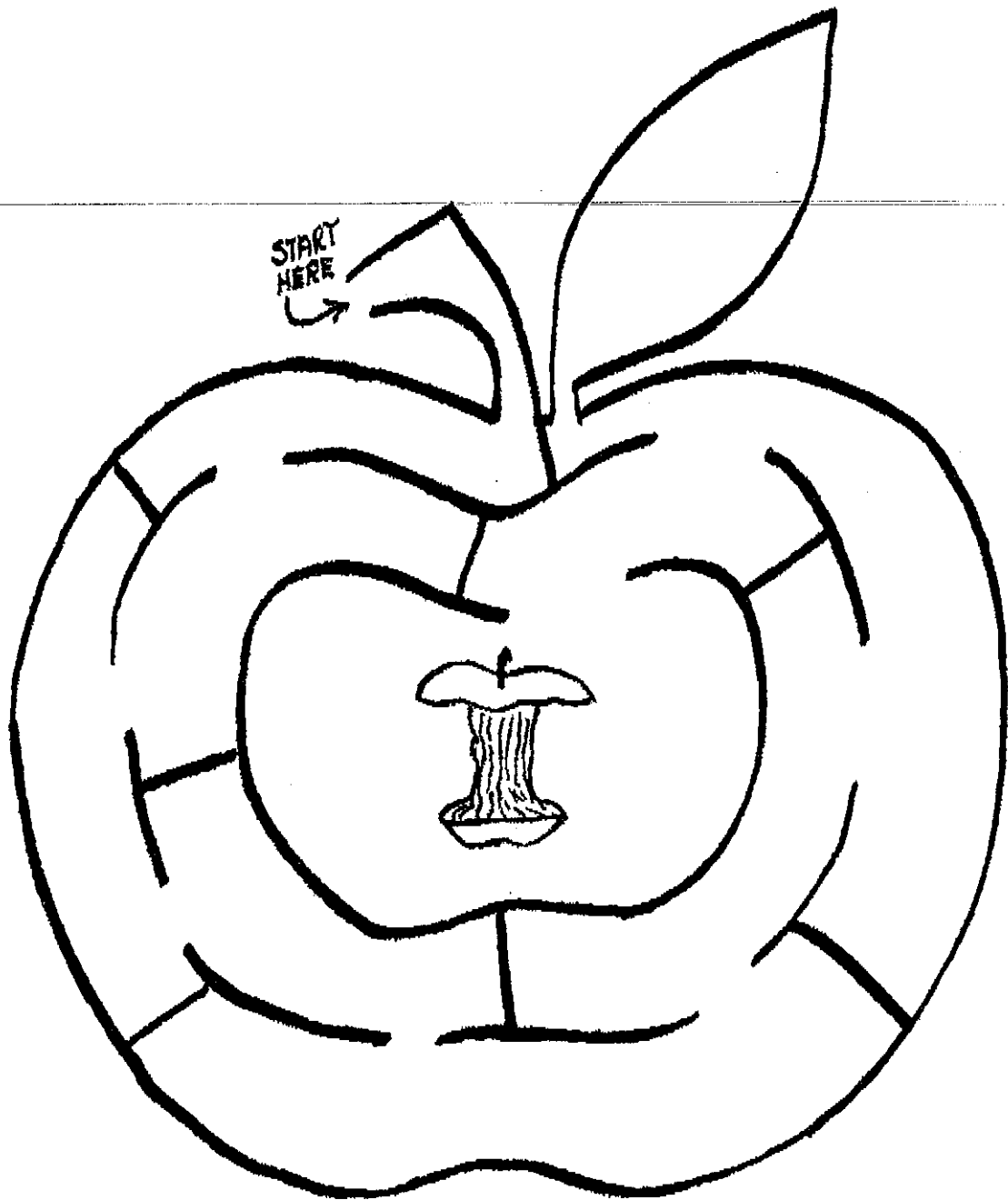
TASTE



APPLE COLOR _____
APPLE NAME _____

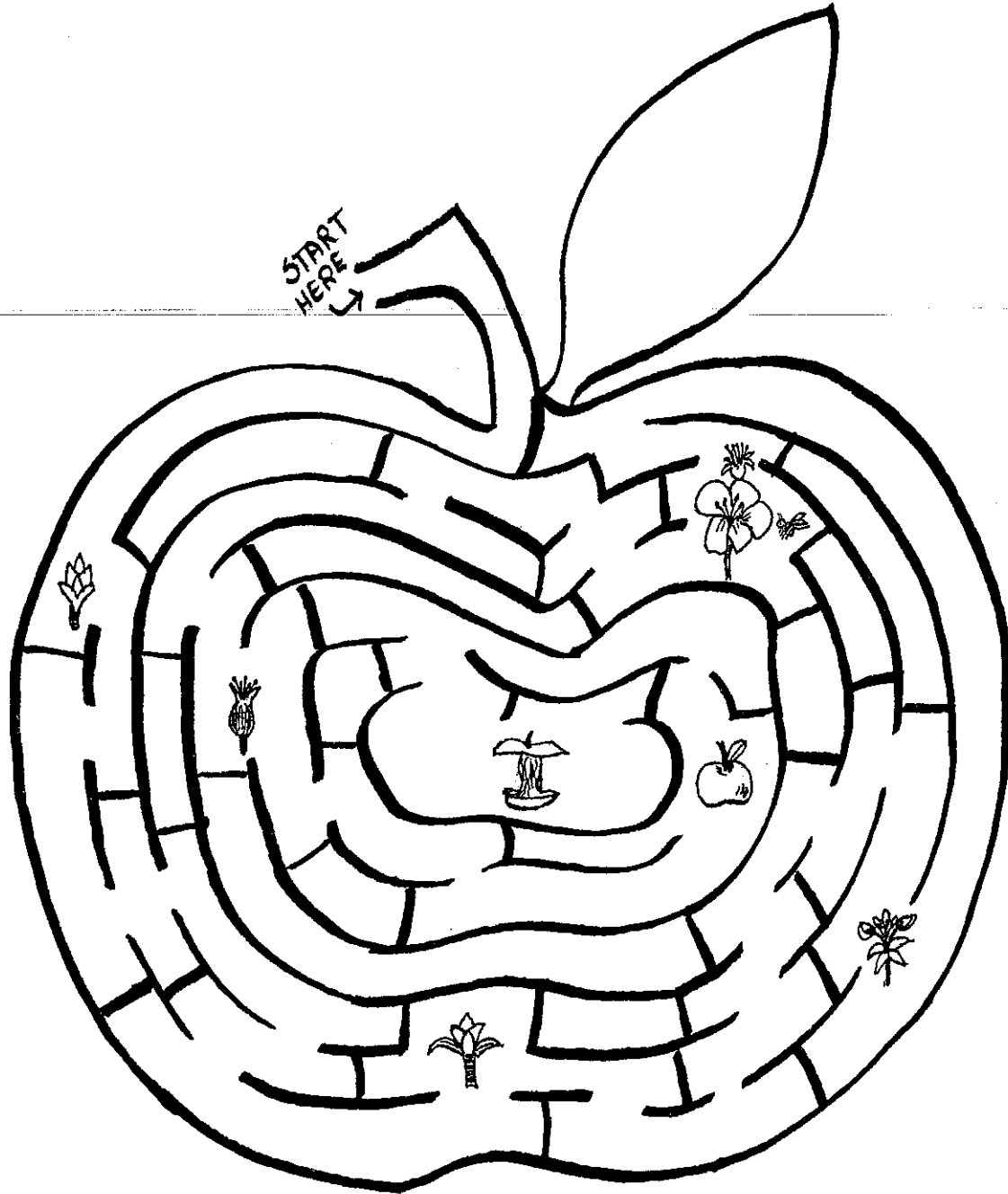
APPLES ARE AMAZING

CAN YOU FIND YOUR WAY TO THE APPLE CORE.



APPLE LIFE CYCLE PUZZLE

SEE IF YOU CAN SOLVE THE APPLE LIFE CYCLE MAP PUZZLE. DRAW A LINE THROUGH THE MAZE TO REACH THE "APPLE CORE."



First Stage - Bud
Second Stage - Green Tip
Third Stage - Pink Pre-Bloom

Fourth Stage - Full Bloom
Fifth Stage - Fruit Set
Sixth Stage - Mature Fruit

USE THE BORDER OF THE APPLE ORCHARD POSTER TO FOLLOW THE APPLE LIFE CYCLE.

APPLE - JOBS

After reading and viewing the apple orchard poster, fill in the blanks. You may use the job titles listed below to help you.

1. The person who trims branches and limbs from apple trees is called a _____.
2. A _____ maintains the beehives to help with pollination of the apple trees.
3. An _____ helps the farmer determine the best time to spray apples and suggests safe levels of pesticides.
4. Around the orchard, a _____ performs important work such as: planting, spraying, and transporting.
5. The _____'s work is limited to the fall harvest season.
6. Quality, size, and varieties of apples are checked by machines and people called _____.
7. The person who makes fresh apples into cider is called a _____.
8. At a roadside fruit stand, this person helps customers select their apples. What is the name of their job? _____
9. On a visit to a grocery store, apples are usually found in the produce department. What is the name of the person in charge of this department?

10. Apples are made into other products by _____.

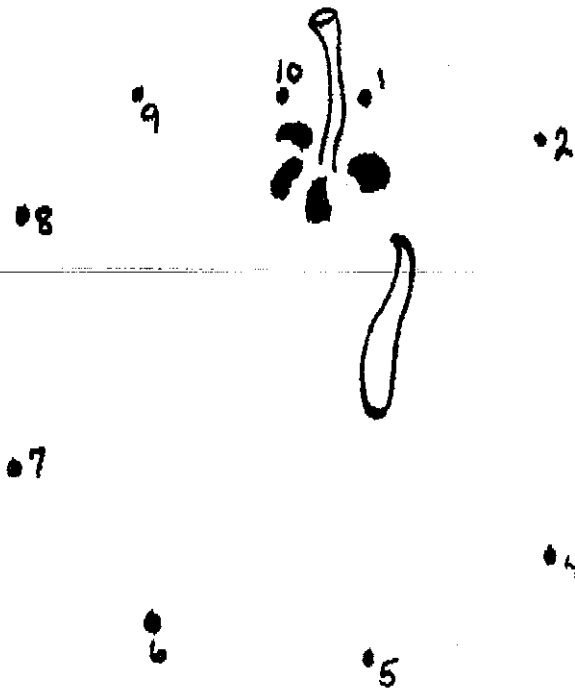
Choose the correct answer from these jobs:

Apple Picker
Beekeeper
Cider Maker
Entomologist
Food Processors

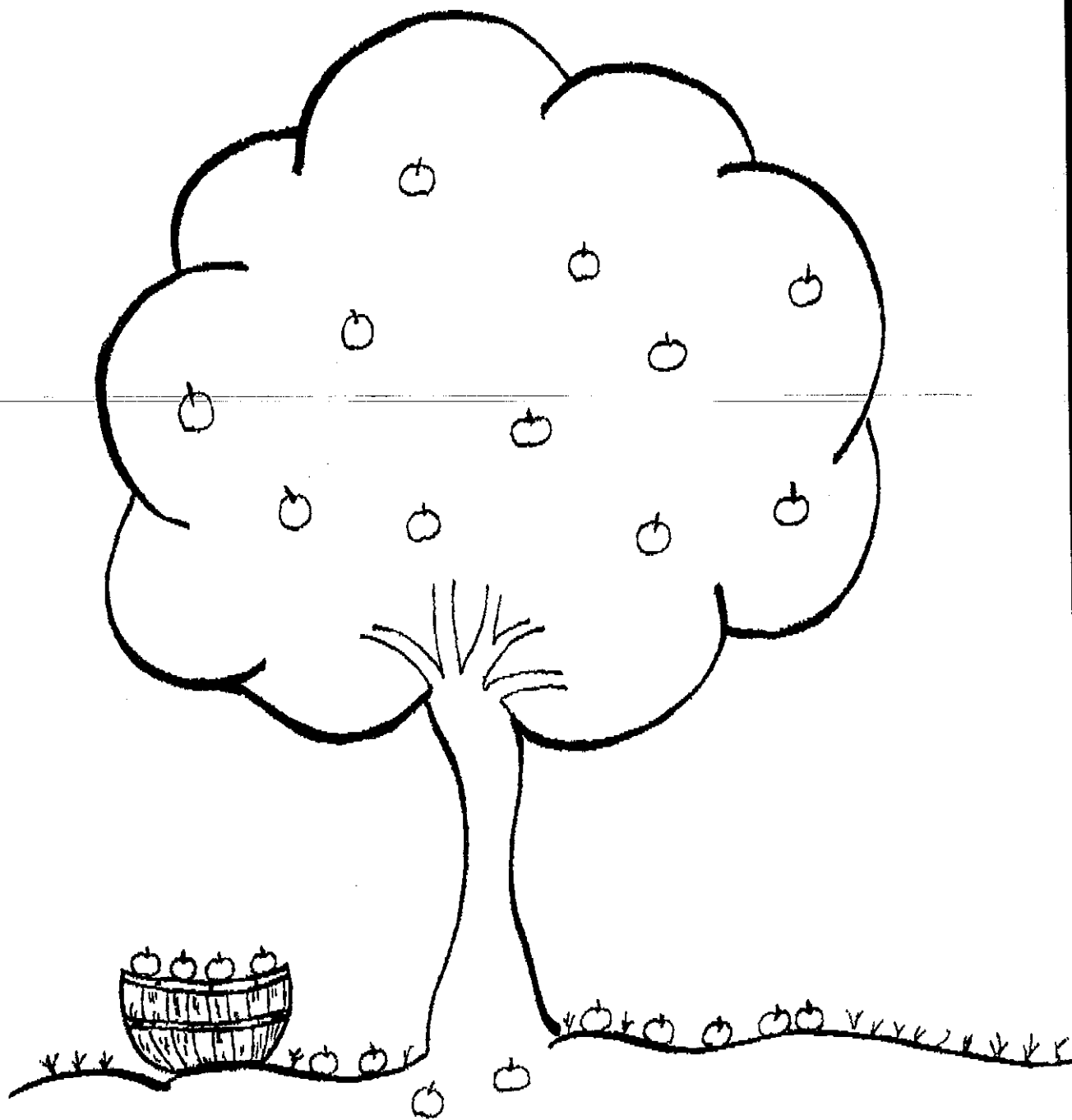
Packers
Producer Manager
Pruner
Sales Clerk
Tractor Operator

APPLE NUMBER DOTS

CONNECT THE NUMBERS IN THE CORRECT SEQUENCE TO MAKE APPLE ART.



APPLE COUNTING



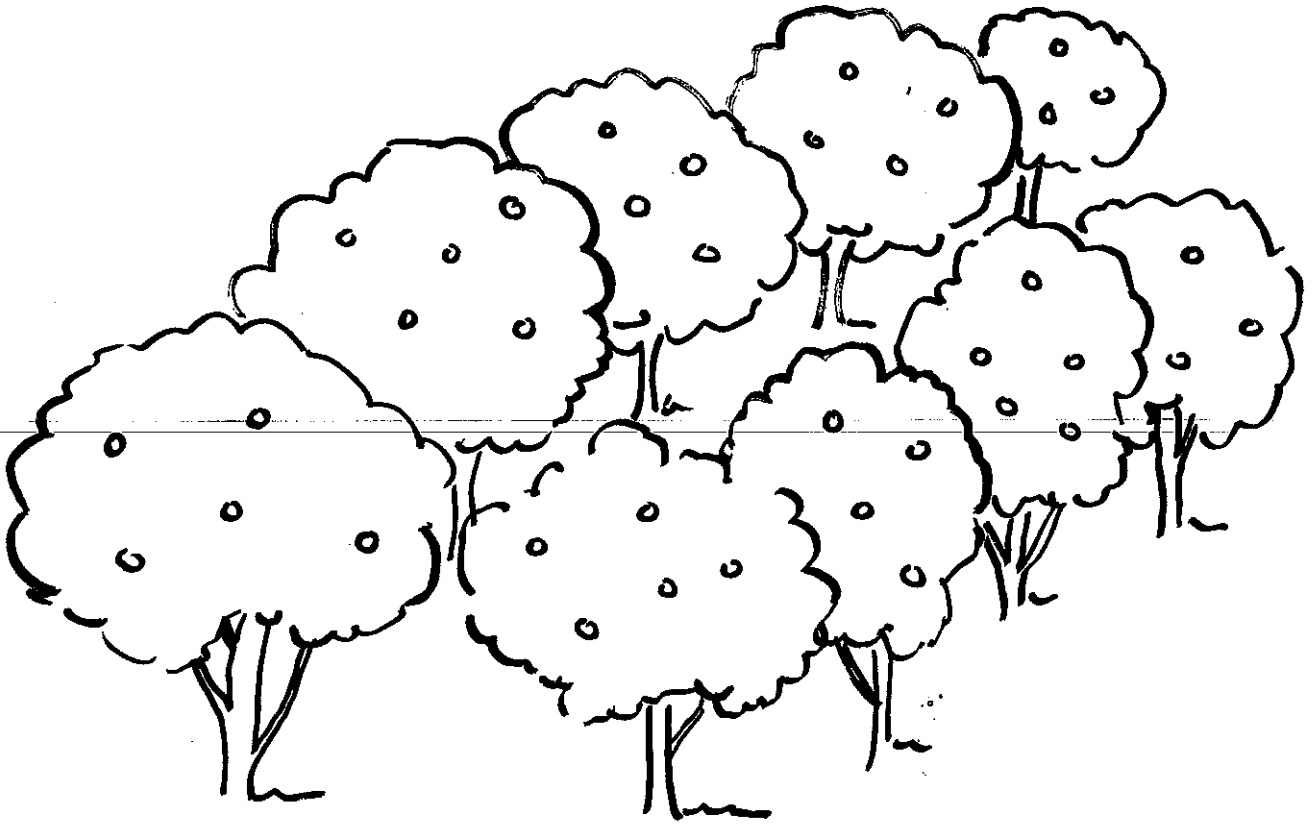
How many apples can you count on the apple tree? _____

How many apples can you count on the ground? _____

How many apples can you count in the basket? _____

Color the apples your favorite apple color. Color the tree and basket.

COUNTING APPLES



Row 1

Row 2

1. How many apple trees are in Row 1? _____
2. How many apples are on the trees in Row 1? _____
3. How many apple trees are in Row 2? _____
4. How many apples are on the trees in Row 2? _____
5. How many apple trees are in this orchard? _____
6. How many apples are on all the trees? _____

APPLE TESTING

Apple Variety	Weight oz./g	Shape	Color of Skin	Texture of Skin	Sound	Color of Pulp	Taste	Juices	Number of Seeds	Rank the Apple

Use the following to describe the apples:

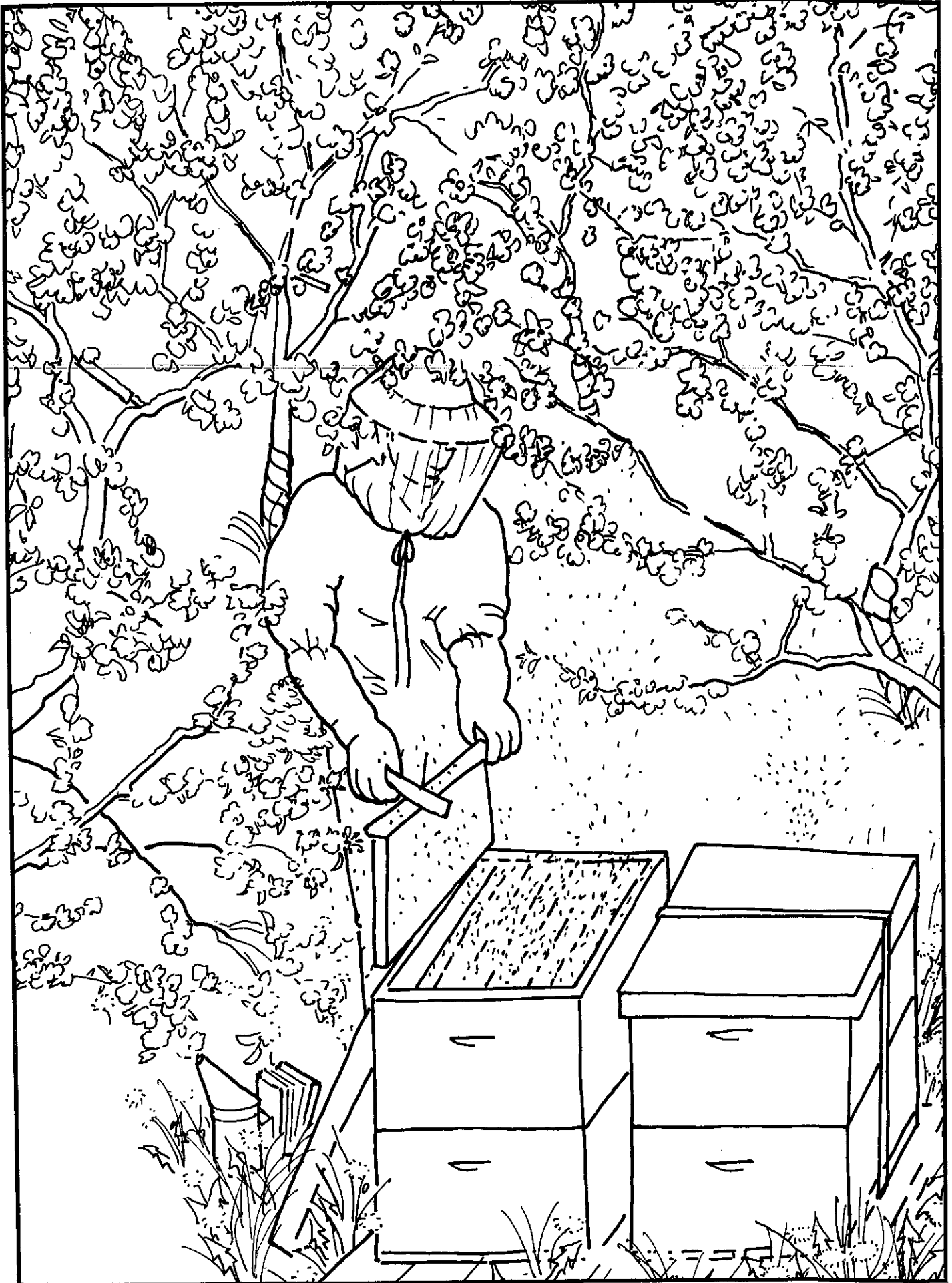
- | | | | | | | |
|---|---|--|---|--|--|--|
| <u>SHAPE</u>
Round
Oblong
Oval | <u>SKIN TEXTURE</u>
Hard
Smooth
Waxy | <u>COLOR OF PULP</u>
White
Yellow
Green | <u>JUICES</u>
Dry
Moderate
Wet | <u>TASTE</u>
Sour
Sweet
Spicy
Tart | <u>SOUND</u>
Quiet/soft
Loud/crunchy | <u>COLOR OF SKIN</u>
Red
Green
Yellow |
|---|---|--|---|--|--|--|

TEACHER GUIDE

APPLE TESTING ACTIVITY

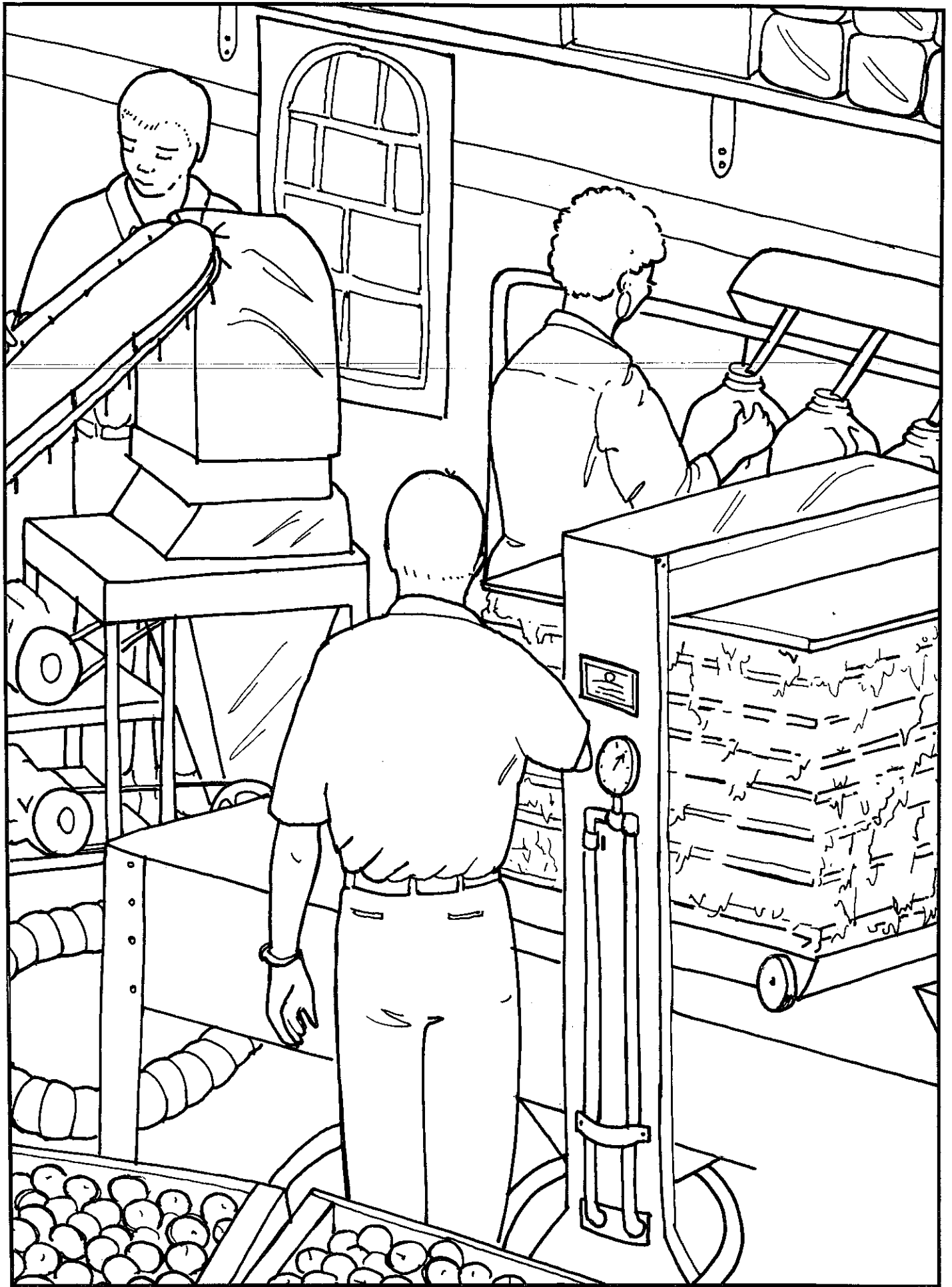
1. Collect as many apple varieties as possible or as many as you plan on using. Bring masking tape with you to the market or orchard so that you can label each apple by name. Most orchard farmers are happy to help you select as many varieties as are available if you tell them about your project.
2. Show your class the apples and have them describe differences that they can see (color, size, shape). (Have them sort the apples--smallest to largest.)
3. Brainstorm vocabulary to describe the apples in each category and record responses.
4. Ask students which other senses they might use to detect differences in the apples and list them.
5. Brainstorm adjectives they predict they will use in each of those categories.
6. Prepare a chart based on students' responses or use the entire activity sheet.
7. The activity can be done with a whole class by enlarging the chart and then recording responses by an apple a day. Tasting can be done by small groups taking turns.
8. At snack time, small groups or pairs of students can also chart their observations and opinions.
9. This is an interesting activity to do at open house night when children show their parents the classroom.

Coloring Sheet

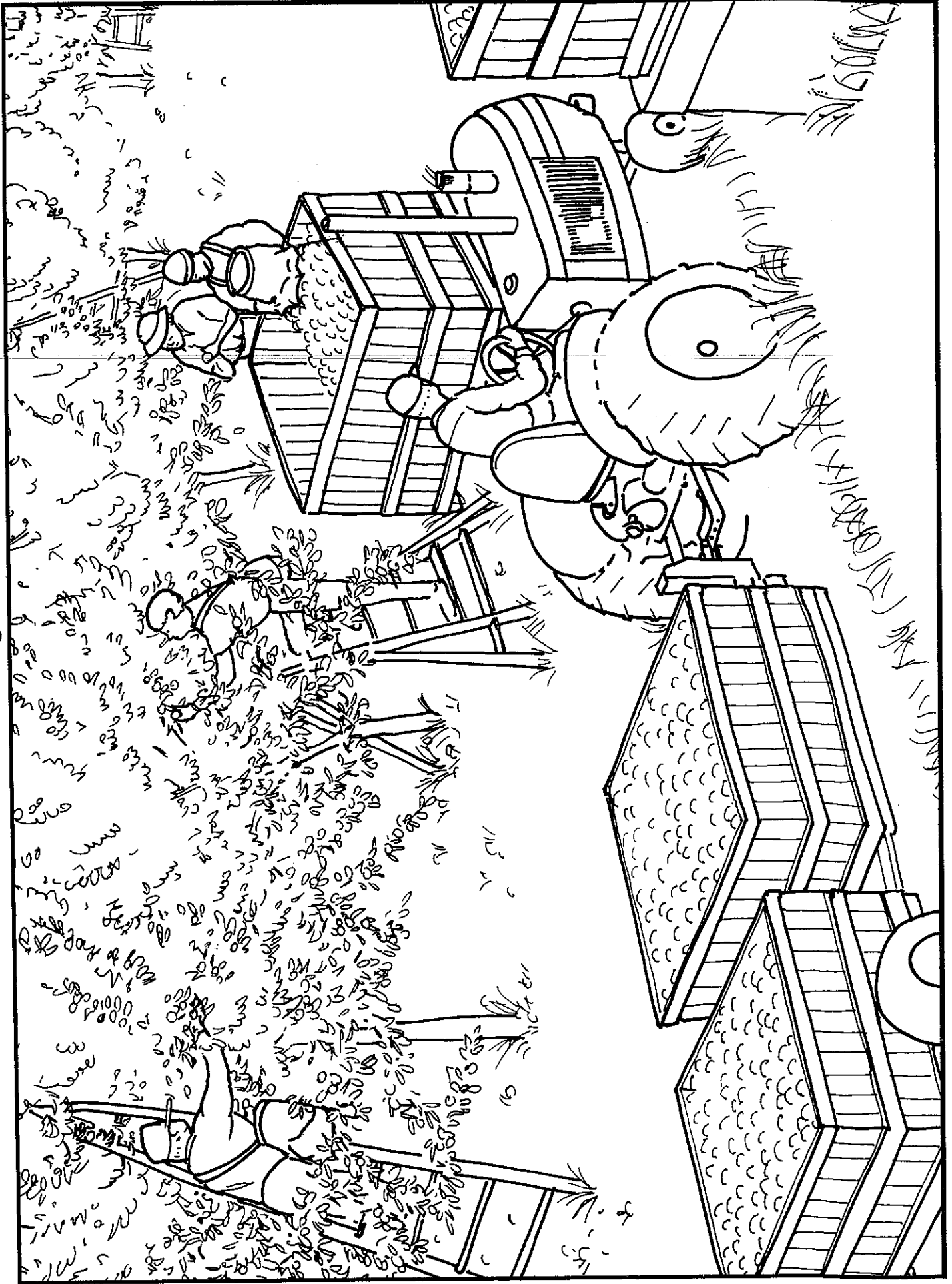


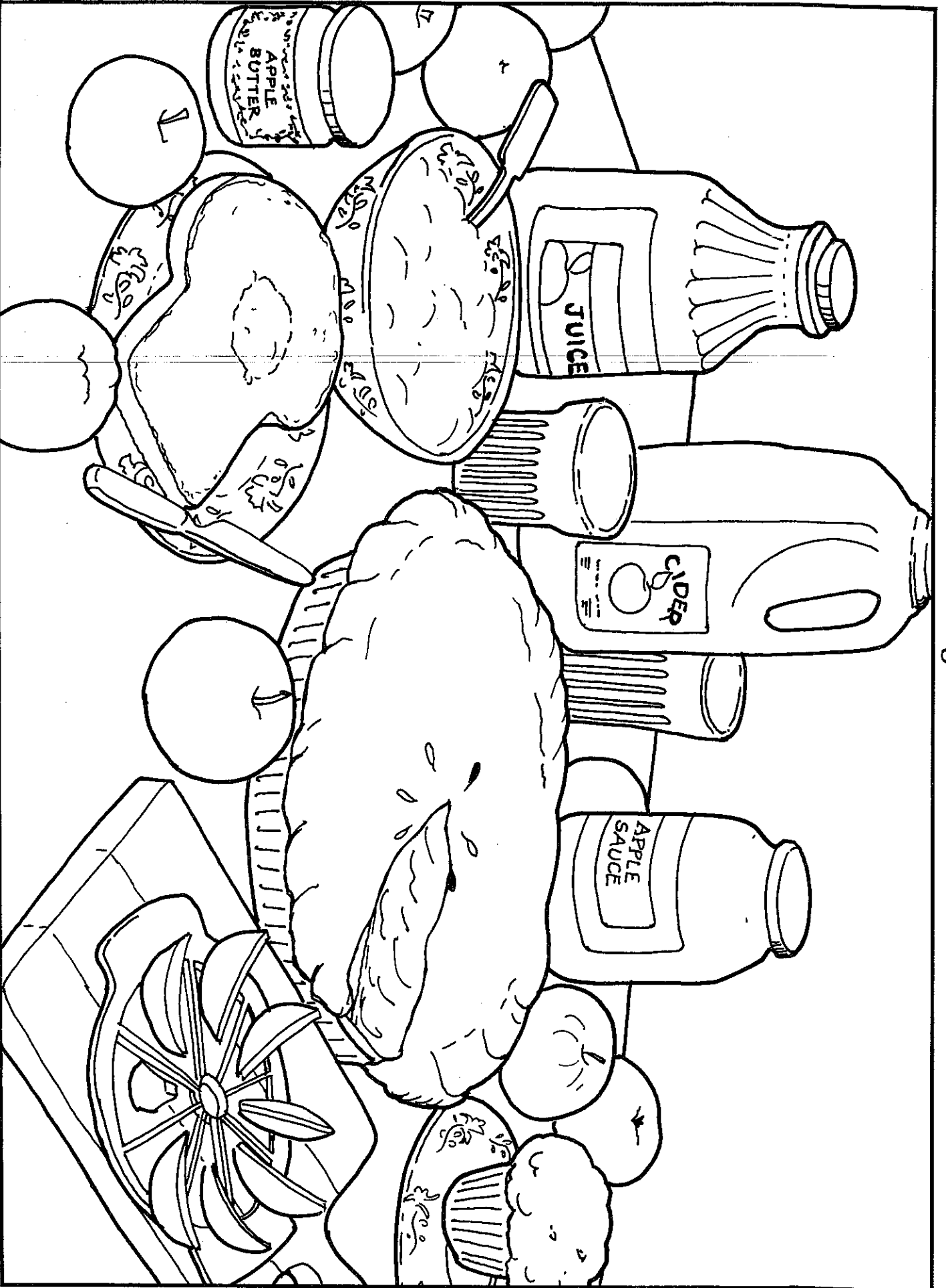
Pollination

Coloring Sheet



Cider Making







APPLE KITCHEN RECIPES

DEEP-DISH APPLE PIE

"Less Crust — More Apple"

SERVES 8-10

2½ quarts sliced Apples (9 to 12 apples)
 1½ cups sugar ¼ teaspoon salt
 ½ teaspoon cinnamon Dash of mace
 ½ teaspoon nutmeg 3 tablespoons butter

1. Pare and slice apples. Fill an oblong glass baking dish* (about 12" x 8" x 2") with apples.
2. Mix dry ingredients and sprinkle over apples, mixing lightly. Dot with butter.
3. Roll piecrust thin; place on top. Brush crust with cream — cut slits.
4. Bake in hot oven (450°F.) for 15 minutes. Then reduce heat to 350°F. and cook 45 minutes longer.

PASTRY

1½ cups flour ½ cup shortening
 ½ teaspoon salt 3 tablespoons cold milk

1. Sift flour and salt. Cut in shortening with pastry blender until pieces are size of small peas.
2. Add cold milk by teaspoonfuls, tossing with a fork until all the flour-coated bits of fat are barely dampened.
3. Turn mixture onto a square of waxed paper. Gather up corners, pressing from the outside to form a compact ball. Roll out on floured board.

MACARON TOP APPLE PIE

Quick and different — easily prepared — very tasty!

SERVES 6

4 cups sliced Apples
 ½ cup sugar
 ¼ teaspoon cinnamon

TOPPING

½ cup sugar
 2 tablespoons butter
 1 egg
 ½ teaspoon baking powder
 ¼ teaspoon salt
 ½ cup flour
 ½ teaspoon vanilla
 ½ cup coconut (optional)

Peel apples and slice into buttered 9 or 10 inch glass pie plate. Mix ½ cup sugar and cinnamon, add apples, stirring enough to coat the slices with sugar. Bake for 20 minutes in 375°F. oven while preparing the topping.

Topping: Cream butter and second half-cup sugar. Add beaten egg, then sifted dry ingredients, vanilla and coconut. Spread this completely over the surface of hot apples. Bake 30 minutes longer at 375°F., or until the apples are tender, and the crust is golden brown. Cut into wedges. Serve warm or cold. Whipped cream or ice cream make a good addition. Coconut gives the macaroon flavor, but dessert is equally good without it. Cortlands or McIntosh are best in this recipe.

BLENDED APPLE DESSERT

A quick, healthful snack treat
 (No cooking required)

4 ripe apples, unpeeled (your favorite variety).
 ¼ cup liquid (sweet cider, water or fruit juice).
 ¼ cup sugar
 ¼ teaspoon Ascorbic Acid (or 500 mgs Vitamin C tablets).

Core apples and cut into eighths. Dissolve sugar and Ascorbic Acid in liquid. Put liquid and four or five pieces of apple in blender. Cover and process until smooth. Remove blender cover and add remaining apple pieces, a few at a time.

Note: Ascorbic Acid will keep fruit from darkening (lemon juice may be substituted for Ascorbic Acid). The amount of liquid used will determine consistency of the dessert. Serve at once.

Yield — about 2 cups.

AN APPLE CUE

You make the most of the vitamins and minerals in apples when you eat them raw, skin and all, and use them in cooking unpeeled. The amounts you get add up if you eat apples often. As apples are low in calories, they make good between-meal snacks.

MRS. CHENEY'S "WHOLE-APPLE" SAUCE

*3 quarts apples
 2 cups water
 ½ cup sugar

Wash apples and slice. Do not peel. Place apples in heavy pan and add water. Cover pan and cook apples until soft. Run through food mill or sieve. CHILL. Add sugar and stir until dissolved (less sugar is required when applesauce is chilled before adding sugar).

SPICY MULLED APPLE JUICE

1 quart apple juice
 ¾ teaspoon pumpkin pie spice
 Navel orange slices
 Whole cloves
 4 or 5 sticks cinnamon

In a medium saucepan, combine apple juice and pumpkin pie spice. Over medium heat cook until hot, reduce heat to low and keep warm until ready to serve.

Pour mulled apple juice into mugs and garnish with orange slices stuck with whole cloves. Insert a stick of cinnamon in each mug.

Yield: 1 quart, or 4 or 5 servings.



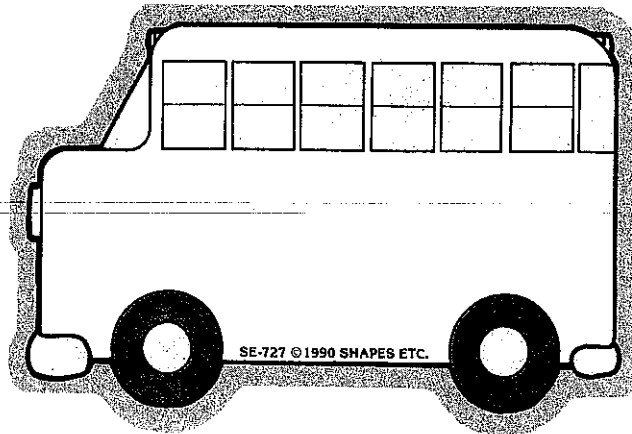
COOKING TIPS with Apple Juice & Cider

- Use apple juice or cider as an easy glaze for turkey, ham or chicken.
- For the delicate approach to fish, poach filets in apple juice or cider.
- Mix mayonnaise with equal parts of apple juice as dressing for salads of fruit, ham, chicken or turkey.
- Fill paper cups with apple cider, insert a wooden stick and freeze. You've got a cidersicle.
- Mix sour cream and apple juice with finely chopped herbs to make a tasty dip for raw vegetable pieces.



- Prepare corn muffins, biscuits, breads, rolls, pancakes, waffles and omelets using apple juice instead of the usual liquid in the recipe.
- Thicken apple juice with cornstarch, cool and fold into whipped topping with finely chopped fruits and nuts for an easy apple parfait dessert.
- Thicken apple juice with cornstarch and mix with lemon juice for a hot syrup for pancakes, waffles or French toast.

APPLE SCHOOL BUS



The school bus can be used as an attention focus for your students while you discuss the apple orchard poster. By using velcro fasteners, the school bus can be moved to each activity panel of the poster. The school bus becomes your "field trip vehicle." Here's a simple process to develop this concept.

The school bus can be used as an attention focus while discussing the apple orchard poster with your class. Here's how simple it can be:

- STEP ONE -** Color the school bus, perhaps personalize it to your school or district.
- STEP TWO -** Mount the school bus on a rigid backing (i.e., foam core, construction paper, cardboard or poster board).
- STEP THREE -** Cut out the school bus with scissors or an X-acto knife.
- STEP FOUR -** Apply a velcro fastener to the back of the school bus.
- STEP FIVE -** On the apple orchard poster, affix the opposing velcro face at a position to draw attention to a specific picture panel.
- STEP SIX -** You are ready to conduct your school bus "field trip" for the production of apples.

FIELD TRIP TIPS

We hope you can take a class trip to an apple orchard. The following tips will help your tour go smoothly and will stretch the value of the time you spend "in the field". The grower tips come from farmers experienced in hosting tours, and the teacher tips are provided by a second grade teacher who has taken her class to the orchards many times. We encourage you to go to the orchard on your own before you bring the whole class. Introduce yourself, pick up relevant information, and try to watch another class having the tour if possible.

GROWER TIPS FOR TEACHERS:

What are you going to see?

A working fruit orchard where apples are raised for distribution and sale. How the fruit is harvested. How apples are carefully handled through grading and packing before selling. How the fruit is stored for optimum quality.

What do you need to do before going?

Call the orchard to make a reservation and ask if there is a fee. Request teaching materials they may have to aid in preparation. Begin your apple unit one week ahead, and plan to continue at least one week after the visit. Prepare your class and yourself for inclement weather and field conditions. Orchards are usually located on hillsides and have cool breezes and wet morning grasses. Don't forget bee kits if you have students who are allergic. Plan on about an hour for the complete tour. Inquire about places to eat lunch or snacks.

What do you do when you arrive?

Find the orchard tour guide and let them know how you have prepared the students. The tour may include some of the following: 1) A walk or ride in the orchard. 2) An explanation of the growing process. 3) Viewing (if possible) of the harvest, handling, and storage techniques. 4) A chance to pick your own apple (supervised). 5) Explanation or viewing of cider making. 6) A visit to the orchard store and discussion of market

Please remember:

An apple orchard is a busy place! While your orchard hosts have made a commitment to teaching children about apples, this is not their primary job. Please be active in the control of your class and careful in the selection of your chaperons. Orchards are full of equipment and workers who are rushing to get the crop harvested and stored. To assure your safety and quality of experience, your orchard hosts have planned a route and presentation within this busy context. There may be other schools or classes nearby who are in a different part of the their tour. Please help your students to experience the beauty of the orchard and to recognize that it is not a playground.

TEACHER TIPS ON REVERSE

FIELD TRIP TIPS

TEACHER TIPS FOR TEACHERS:

Field Trip Focus Papers

Pre-visit classroom activities and discussions will stimulate curiosity and questions that children can research answers to at the orchard. Find out whether there will be an opportunity for an interview with an "apple expert". Even if this time cannot be structured into the field trip, a focus paper with space for observations and sketches provides students of any age with a sense of purpose and direction. The information gathered will also be the springboard for follow-up discussion and activities.

Each child can have his/her own clipboard, or they can work in pairs or small groups. If the children need help recording information, a chaperon can be assigned to that responsibility.

PRE-VISIT PREPARATION IDEAS

Discuss and make charts related to these questions:

- What do we already know about apples and apple orchards?
- What do we predict we'll see at the orchard?
- What do we wonder about orchards?

Brainstorm a list of questions that might be asked at the orchard. In order to help the children think of the questions, give them categories and record their ideas under the separate headings. Example:

JOB PEOPLE MACHINES TREES SEASONS

Or make up the charts by question words - WHO,WHAT,WHEN,WHERE,WHY

POST-VISIT FOLLOWUP IDEAS:

- Make individual or class books.
- Make a "Jeopardy" type game with the information everyone has gathered.
- Make up a quiz to give parents, or another class, or the chaperons.
- Have an apple tasting parents night.
- Make a mural of the orchard based on sketches.
- Write letters or make phone calls to learn answers to further questions.
- Plan an "off season" visit to the orchard to see what is different.
- Make a model of the packing house out of blocks or Legos.
- Make a maze using a tractor going through the orchard, or an apple finding its way from orchard to lunch box.

APPLE TRIP REPORT (I)

Name: _____

My field trip to: _____

I predict I will find: _____

Was my prediction correct? Yes No

One thing I noticed was:

WRITE: _____

SKETCH:

APPLE TRIP REPORT (II)

Name: _____

My Field Trip Report

Date

Place

1. I predict that I will see _____

Was my prediction correct?

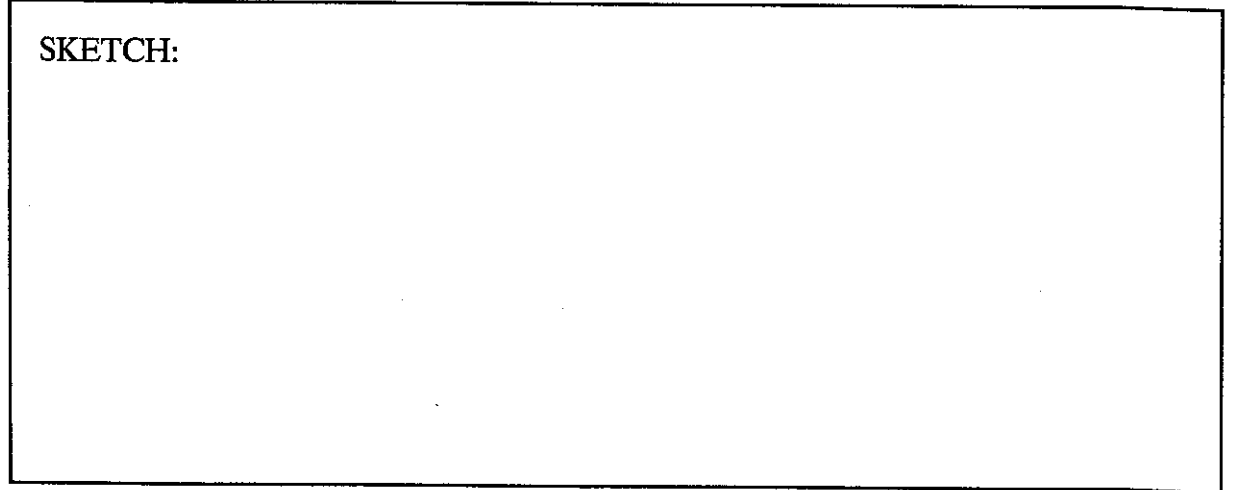
Yes ____

No ____

2. My question is: _____

3. Something interesting I noticed was: _____

SKETCH:



4. My wondering question is: _____

_____ ?