



# **SOCIAL STUDIES: K-5**

## **Meets North Carolina Standard Course of Study**

Enjoy NC Apples

Apple Producing Areas of NC (map)

Popular North Carolina Apples

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# ENJOY

## NORTH CAROLINA APPLES

**Apples** are America's favorite fruit! They contain modest amounts of nearly all the most important nutrients and because of their universal flavor appeal, versatility and convenience for use, nutritionists and dietitians rate them highly. Apples are good for your teeth, stomach, skin, complexion, nerves, smile, and overall good health!

That's why we say...

*North Carolina apples are good for you!*

**North Carolina** typically ranks seventh in apple production in the United States. North Carolina has over 300+ commercial apple operations comprised of over 14,000 bearing acres of apple orchards.

The peak harvest of North Carolina apples is mid August through October. The warm days and cool nights here in the mountains are perfect for growing firm, crisp, juicy apples.

Eight million bushels of apples can be produced in a given year. Thirty percent of the state's crop is marketed as fresh apples through packing/shipping operations and direct marketing outlets, whereas the remaining seventy percent is utilized in the processing industry, mainly as apple sauce and juice.

**APPLES** are produced in five areas of the state and are identified alphabetically as follows:

**Haywood County Area:** Haywood, Jackson, and Macon counties.

**Henderson County Area:** Buncombe, Henderson, Polk, and Rutherford counties.

**Mt. Mitchell Area:** Avery, McDowell, Mitchell, Watauga, and Yancey counties.

**Northwest Area:** Alexander, Ashe, Stokes, Surry, Wilkes, and Yadkin counties.

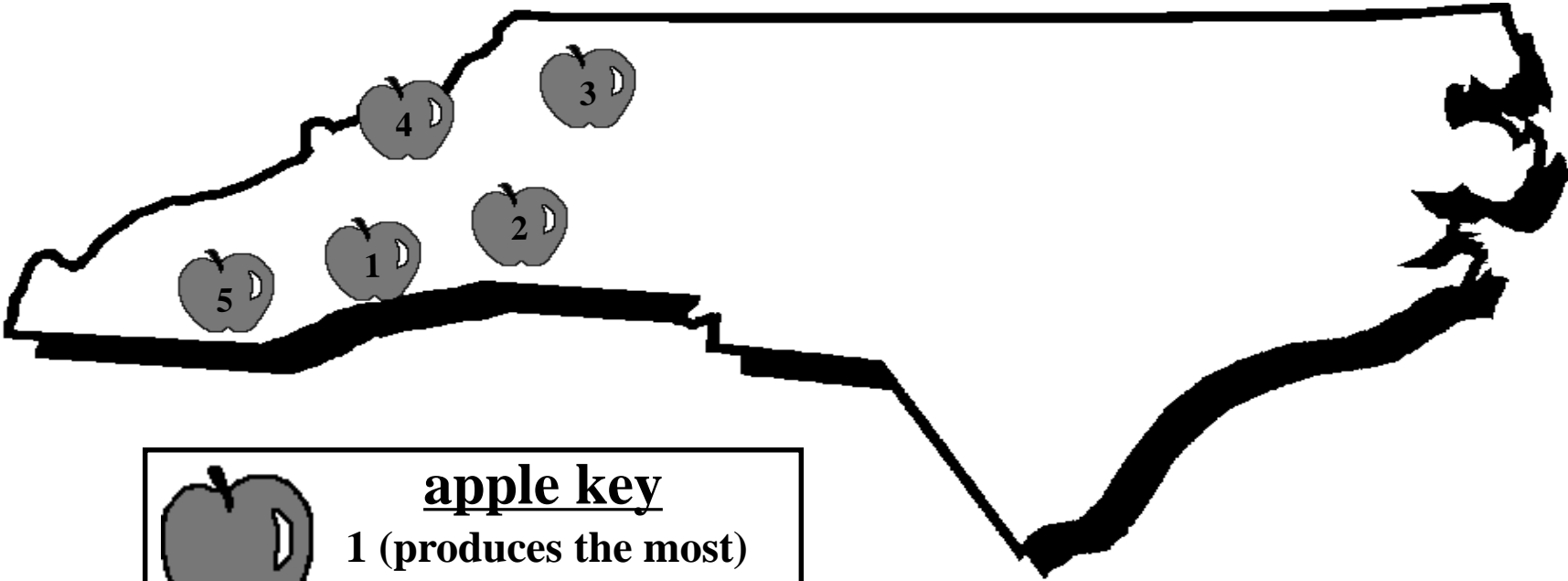
**South Mountain Area:** Burke, Catawba, Cleveland, Gaston, and Lincoln counties.



# APPLE PRODUCING AREAS OF NORTH CAROLINA



N.C. Apple Education Committee



**apple key**  
 1 (produces the most)  
 5 (produces the least)

**#1 - Henderson, Buncombe, Polk, and Rutherford**

**#2 - Burke, Catawba, Cleveland, Gaston, and Lincoln**

**#3 - Alexander, Ashe, Stokes, Surry, Wilkes, and Yadkin**

**#4 - Avery, McDowell, Mitchell, Watauga, and Yancey**

**#5 - Haywood, Jackson, and Macon**





## POPULAR NORTH CAROLINA APPLES

The four major varieties that make up the bulk of North Carolina's apple production are Rome Beauty, Golden Delicious, Red Delicious, and Gala.

New cosmopolitan varieties are *Empire, Fuji, Gingergold, Goldrush, Granny Smith, Honeycrisp, Jonagold, Mutsu/Crispin, Pink Lady, Cameo, and Sundowner.*

Antique varieties that are still available at roadside stands throughout the area are *Arkansas Black, Cortland, Grimes, Hoover, Jonathan, Limber Twig, Sheepnose, Stayman, Winesap,<sup>6</sup> and Wolf River.*

Choose your favorite -- for eating out-of-hand -- for cooking --  
for sweetness or for tartness.

**ARKANSAS BLACK** - A chance seedling discovered in Arkansas in 1870. A medium sized apple with yellow skin that colors from a purplish-red to nearly black. This apple has a yellow flesh that is moderately juicy with a slight tang.

**CAMEO** - An apple with bright red strips over a golden blend and a sweet tart flavor. This apple has a crunch that doesn't quit. The flesh is creamy white with almost no browning. It is an excellent apple for storage.

**CORTLAND** - A cross between a Ben Davis and McIntosh developed in New York in 1898. A red striped apple with a sweet, juicy flavor, similar to a McIntosh. Cortland apples are good for both eating and baking.

**MUTSU/CRISPIN** - A cross between a Golden Delicious and Indo developed in Japan in 1939. A large, crisp, yellowish-green apple with excellent flavor at maturity. Excellent for eating and may also be used for baking.

**EMPIRE** - A cross between a McIntosh and Red Delicious developed in New York in 1966. A medium sized red apple with excellent, slightly tart flavor. Excellent for eating and may also be used for baking.

**FUJI** - A cross between a Red Delicious and Ralls Janet was selected in Japan in 1939. A red blush apple with green and yellow stripes. The flavor is sweet.

**GALA** - A cross between a Cox Orange Pippin and Golden Delicious. A red or orange colored apple with a sweet flavor. Excellent for eating and baking.





**GINGERGOLD** - A chance seedling found in Nelson County, Virginia in 1980. A greenish-yellow apple with pink blush. The flavor is sweet.

**GOLDRUSH** - A large golden apple that is disease resistant. This apple has a unique rich spicy flavor and a firm texture. This apple will hold up very well in storage.

**GOLDEN DELICIOUS** - A chance seedling discovered in West Virginia in 1914. This golden colored apple is a favorite of many because of its excellent sweet, juicy flavor. Golden Delicious is used for eating as well as for baking and making applesauce.

**GRANNY SMITH** - A chance seedling discovered in Australia in 1868. A large, tart, green apple is the best way to describe the Granny Smith. A favorite of many for fresh eating.

**HONEYCRISP** - A cross between a Macoun and a Honeygold at the University of Minnesota. A red apple that is exceptionally crisp and juicy with a well-balanced flavor. This apple will keep well in storage.

**JONAGOLD** - A cross between a Jonathan and Golden Delicious. An all-purpose variety developed in New York in 1826. A larger red apple with white flesh that is juicy with an excellent sweet-tart flavor. Excellent for both eating and cooking.

**JONATHAN** - A chance seedling discovered in New York in 1826. A small red apple speckled with gold and green. The apple has a white flesh that is juicy with an excellent sweet-tart flavor. Excellent for both eating and cooking.

**KING LUSCIOUS** - A chance seedling discovered in Hendersonville, North Carolina by William Dalton in 1935. King Luscious is native to North Carolina and is a large, deep red apple with excellent flavor. Good for eating and cooking.

**LIMBER TWIG** - Also referred to as Willow Twig or Willow; origin is unknown. Limber twig is a late maturing apple of medium size with a pale yellowish or green color with a red blush.

**McINTOSH** - A chance seedling discovered in Ontario, Canada in 1811. Juicy, slightly tart and tender with a very white flesh, McIntosh has a deep red blush against a yellow-green background. Uses of this apple include cooking eating and cider.

**PINK LADY** - A cross between a Golden Delicious and a Lady Williams. A very attractive medium sized apple with a pink blush over yellow undertone. An apple with a crisp sweet/tart flavor.





**RED DELICIOUS** - A chance seedling discovered in Iowa in 1870. This is the most popular apple in production around the world. There are many different strains of Red Delicious, but all are conical shaped with the five lobes at the bottom of the apple. Red Delicious is preferred for fresh eating and salads.

**ROME BEAUTY** - A rootstock sprout developed in Ohio, in 1828. A late maturing variety allows the Rome time to turn almost completely red. Romes are very firm with a light flavor and store very well. Romes may be used for eating or baking.

**SHEEP NOSE** - Not sure of origin as several varieties are called Sheep nose. A unique conical shaped large apple that is dark red when ripe.

**STAYMAN** - A juicy creme-colored to yellowish flesh with a tart wine-like flavor. Staymans are excellent for snacking, cooking, and cider.

**WINESAP** - A seedling developed in Kansas in 1866. A medium to large apple with a yellowish color covered with a dull red. This apple is very juicy with a pleasant slightly tart flavor. Excellent for eating and cooking.

**YORK** - A very firm, slightly tart apple with a lopsided shape. Excellent for baking and cooking.





## WHO AM I?

1. I am tart in taste, green in color and I was discovered in Australia. My name is associated with your Grandmother. Who am I? \_\_\_\_\_
2. I am a cross between a small red apple, that is juicy with an excellent sweet-tart flavor. I am a piece of gold that has a wonderful sweet flavor. Together they make me a large blushing red apple that is juicy with a sweet-tart flavor. Who am I? \_\_\_\_\_
3. We make up the four most well known varieties. We also make up the bulk of North Carolina's apple production. Who are we? \_\_\_\_\_, \_\_\_\_\_  
\_\_\_\_\_ and \_\_\_\_\_
4. I am a beauty to see and cook. I am ready to pick later in the apple season. I was developed in Ohio in 1828. Who am I? \_\_\_\_\_
5. I have a purplish-red to black color. I have a hard texture and a tangy taste. I am named for a state. Who am I? \_\_\_\_\_
6. Discovered in 1914, I am a favorite to many. I am sweet as GOLD. Who am I?  
\_\_\_\_\_
7. I am an antique, but still popular. Discovered in Kansas in 1866, I have a dark red color and slightly tart flavor. Who am I? \_\_\_\_\_
8. A lady that is I dressed in pink. I am very attractive and have a crisp sweet tart flavor. Who am I?  
\_\_\_\_\_
9. I am popular worldwide, but home to me is Iowa. I was born in 1870. I have a beautiful red. color. Who am I? \_\_\_\_\_
10. King of them all, I was discovered in Hendersonville, North Carolina. I have a deep red color is large in size and has an excellent flavor. Who am I? \_\_\_\_\_

*Match the names in the word list with the clues above.*

Red Delicious	Golden Delicious	King Luscious	Jonagold
Pink Lady	Rome Beauty	Granny Smith	Arkansas Black
Winesap	Stayman		

**Teacher note: Use Popular North Carolina Apples to help the students in identifying which variety belongs in each sentence.**





# MY FAVORITE NORTH CAROLINA APPLE

## TEACHERS:

Slice different varieties of apples into bite-sized pieces. Distribute several to each student.

## Students should answer the following questions:

- Do the varieties taste different?
- What words describe the differences?
- Which do you prefer?

Students should make notes describing the different tastes.

Have the class share responses with each other.

Refer to the "Popular North Carolina Apples" sheet for information on listing the new varieties.

## Activities

- Make a large chart to record student responses to questions about the apple varieties.
- Make a graph showing the apples that the class liked most.
- Challenge students to create their own variety of apple and name it.
  - You can do this by grating several varieties of North Carolina apples into small containers or onto paper plates.
  - Mix the gratings in order to create a new apple variety.
  - Name the new apple variety. Remember to note which ingredients they used to come up with the new taste.







# My Favorite North Carolina Apple Testing Chart



N.C. Apple Education Committee

Apple Variety	Shape	Weight	Sound	Color & Skin	Texture of Skin	Taste	Number of Seeds	Rank of Apples

**Use the following terms to describe the apples:**

**Shape**

- round
- oblong
- oval

**Skin Texture**

- smooth
- hard
- waxy

**Skin Color**

- red
- yellow
- green

**Sound**

- loud
- quiet
- crunchy
- soft

**Taste**

- sweet
- tart
- spicy
- sour



## Apple Sources

**Packer/Shippers** are operators who either pack their own fruit or provide custom packing service for other growers in the region. There are 125 North Carolina packer/shippers. For the most part, shipper/packers pack U.S. combination grade.

(U.S. Extra Fancy & U.S. Fancy) and U.S. Fancy Fruit in 3, 5, and 10 pound poly-bags contained in a master carton. In addition, 138, 125, 113, 100, 88, 80, and 72 count tray-packed cartons are normally available. A number of packers offer poly-bags or sized fruit contained in 15 bushel cardboard, bulk display bins for in-store-display. All of these packers/shippers have cold storage capacity and can organize shipping. Most packing operations, typically, begin packing Red and Golden Delicious near the first of September, followed by Red Romes near mid-September. There are also limited quantities of Stayman, Gala, Jonathan, and Mutsu/Crispin available. Apples from these sources are often available through January. Packer/shippers are attractive sources for chain store buyers, wholesale grocers, and wholesalers.

**Bulk Packers** for the most part are small, individual producers who have smaller packing lines to size, brush, and grade apples. There are over 50 of these operators in North Carolina. These businesses normally operate in the volume ranges of 20 to 500 bushel lots on a F.O.B. basis. Bulk packers normally have the ability to size fruit to 2 1/4", 2 1/2", and 2 3/4" minimums. Fruit are jumble packed into one bushel face-&-fill pack. A multitude of standard, antique, and cosmopolitan varieties are available from these sources. It is not uncommon for an individual grower to offer more than 20 varieties. Many of these operations begin offering early maturing varieties in mid-August and continue operation through December. Bulk packers are attractive sources for farmers' market, roadside stand vendors, small truckers, and small wholesalers.

**Direct Marketing** allows the consumer to buy apples directly from the grower. Usually growers have roadside stands where they can offer the consumer fresh picked apples by the bushel, 1/2 bushel, peck or 1/2 peck. Some growers also have "pick your own" orchards where consumers can pick the apples themselves.

Most of the operations will begin offering apple varieties in late August and continue operation through October to mid-November. Some roadside stands will stay open until Christmas. The cost of direct market apples is a fraction of the cost consumers would pay for apples in the grocery stores.







## APPLE BUYING TIPS

- ö Look for apples that are firm to touch and free of bruises.
- ö Larger apples should be very firm, because they mature faster than small apples and become soft sooner.
- ö Brownish, russeted areas on the skin, usually caused by weather, may appear somewhat but don't affect the flavor.
- ö Three medium-sized apples generally weigh about one pound.
- ö One pound of apples equals three cups, diced.
- ö One large apple, cored and put through a food grinder, makes about one cup of ground apple.
- ö Allow about two pounds of apples for one nine-inch pie.
- ö One bushel of apples will make 16 to 20 quarts of applesauce.
- ö One bushel of apples provides 96 to 144 medium-sized apples.
- ö In canning, one box of apples will fill 18 to 20 quarts in slices.

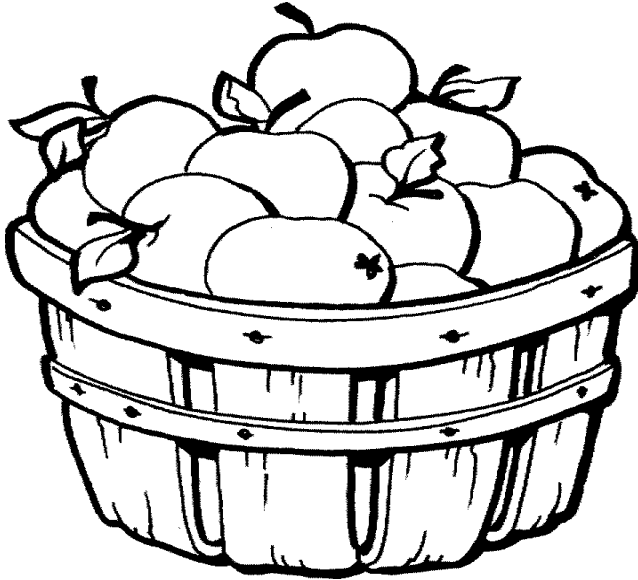


Sources: NCDA, NC Apple Growers Association, U.S. Apple Association





## When you Shop for apples

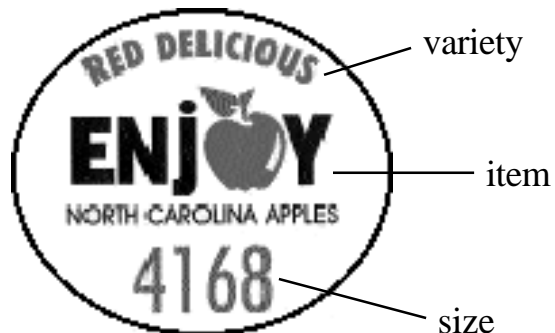


*Look for apples that have been handled carefully-- apples bruise easily.*

- Ö Choose The Right Apples For Your Particular Needs
- Ö Some apples are especially good for cooking, and some are better for eating fresh.
- Ö Be adventurous and try different apples - each has its own unique taste.

### PLU

Price Look Up (PLU) Code is used in retail sales to ID the item, size, variety and price of each item. Chain stores are using more and more PLU labels on each apple to speed up check outs and ID the variety. This allows stores to price each variety individually rather than price all varieties the same.



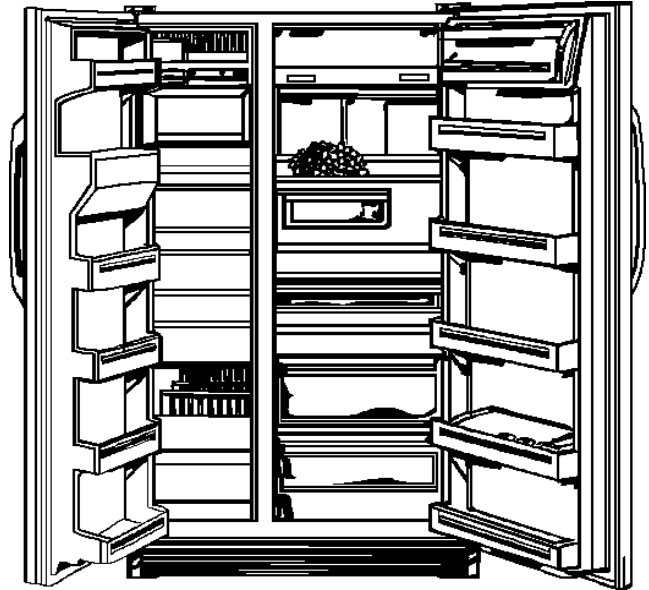


# How to Store Apples at Home --

## Keep (and serve) apples cold

Ö Keep apples refrigerated - serve them cold or at room temperature . Apples keep well with reasonable care.

Ö Don't store near the freezer; it's too cold; they will freeze!



*Store in Plastic Bag or Hydrator Drawer to prevent absorbing other food flavors and to maintain proper humidity.*

## STORAGE TIPS

- Ö Care must be taken to store apples at home to keep them at their best.
- Ö Keep small quantities of apples in a plastic bag in the refrigerator, away from strong smelling foods. The plastic bag helps the apples retain moisture and prevents shriveling.
- Ö Refrigerator storage life is one to two weeks, depending upon the variety and the maturity of the apple.
- Ö Larger quantities may be stored in a cool, dark, airy place such as a garage, basement or cellar. Line the box or container with plastic and cover the apples with a damp towel.
- Ö Apples stored at room temperature will soften about 10 times faster than if refrigerated.
- Ö Long or improper storage results in mealy apples with brown cores.
- Ö Sort apples occasionally to remove those with signs of spoilage.





# The Four Seasons of Growing North Carolina Apples

## SPRING

In the spring apple trees begin waking up. Leaves start growing, reaching for the sun. Fragrant, sweet-smelling white flower blossoms pop out. Honeybees love to visit the sweet-smelling blossoms, spreading pollen from flower to flower. When the blossoms fall off the pollinated flowers, baby apples begin to grow in their place. The apples keep growing all summer.

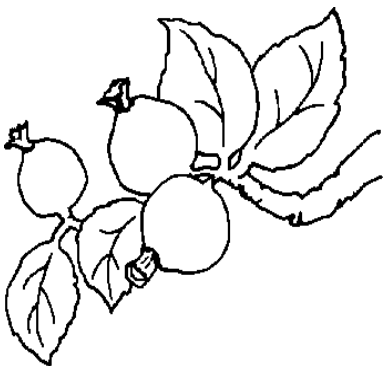


The average tree will bear fruit in 3 years, with full production coming in 8-10 years. Some apple trees planted today are on a dwarf rootstock, allowing for more efficient use of valuable land and labor. If Newton had sat under one of these small wonders, the lesson of gravity would have been easier to learn. Because apples do not grow true to their seeds, young trees that have been grown in a nursery from budded or grafted trees are transplanted to the orchard site. These trees have a desired fruit variety grafted onto a rootstock selected for characteristics of size and vigor.

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

During the summer months limbs must be tied up or weighted down to spread the young tree into the perfect shape. By the end of summer mowing is completed and bins (the large bulk boxes that picking buckets are emptied into) are positioned around the orchard. Ladders are repaired and the harvest logistics are carefully planned. Storage rooms must be cleaned and their refrigeration systems tested. Apple blossoms for the following year are being formed on new limbs.

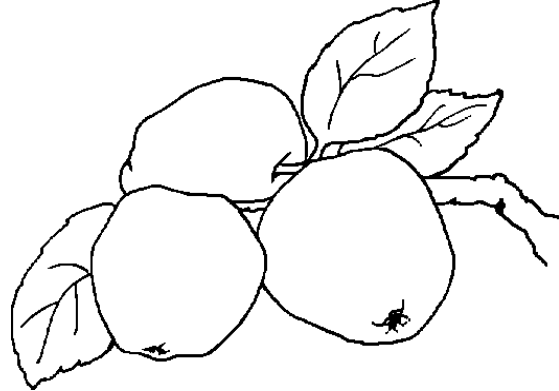




## FALL

In the fall the apples are fully-grown and ripened. When picking begins in August, there is a constant buzz of activity until the last of the fruit comes off near the end of October.

Most of North Carolina's crop is picked from the trees by hand, then washed, packed and delivered by refrigerated trains and trucks to markets and grocery stores, or made into apple juice, apple cider, apple butter, applesauce and other nutritious apple products. Extra harvest workers are hired both locally and from other areas and countries to help get the crop in on time. During harvest time, some farms invite the public to come for the fun of picking their own apples (PYO).



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!

## WINTER

During the winter apple trees have no leaves, no flowers and no apples. Just as you sleep every night to store up energy, apple trees sleep all winter to store energy to make apples for the fall.

While the trees are dormant, the orchardist removes dead, damaged, and cross branches. 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. The grower uses the cold, stormy days to repair and maintain his equipment.



- Sources: U.S. Apple Association, N.C. Cooperative Extension Office, N.C. Department of Agriculture



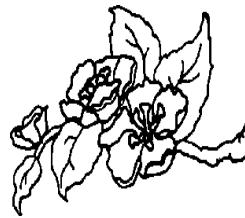
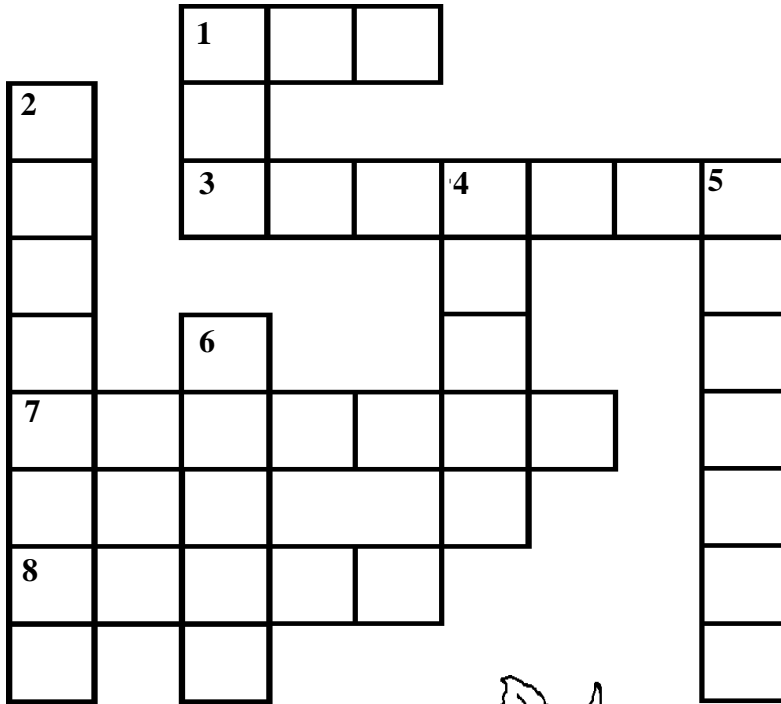
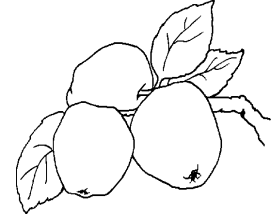
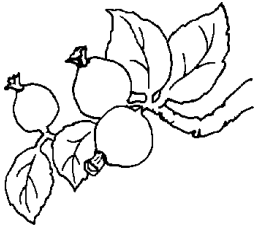




# The Apple Seasons

Use the clues to solve the puzzle.

These are things associated with the 4 Seasons of growing NC Apples.



**Across**

- 1. large box that holds apples
- 3. temporary time of inactivity during the winter
- 7. a device by which a spray is applied
- 8. period of time made up of events that repeat themselves regularly and in the same order

**Down**

- 1. the part of a tree limb that will develop into apple blossoms
- 2. a heavy duty fabric container used to hold apples while harvesting
- 4. a machine used to cut down grass and weeds
- 5. a vehicle used especially for pulling farm implements
- 6. a vehicle used to haul heavy objects and transport goods and equipment





# The Apple Industry in Henderson County

## *Then and Now*

The apple has been called the loveliest of all fruits. It is also one of the most important agricultural crops grown in Henderson County. During a normal year it brings in an average income of \$22 million dollars or more.

Henderson County ranks seventh in production among all the counties in the United States. The county grows 65 percent of all the apples grown in the state. If the number of apples from a normal crop grown in the county were laid two abreast, they would reach from Hendersonville to Tokyo and return. Today there are approximately 200 apple growers in Henderson County.

The first apple grower in Henderson County was William Mills. He set fruit trees (including apple) near his home in Fruitland. He was also the first white settler in Henderson County. Mr. Mills was a loyalist, a major in the British Army, and first came to the area after escaping from capture by the Revolutionary Army at the Battle of Kings Mountain. In 1782 Asa and Samuel Edney married daughters of William Mills. They were among some of the first settlers in the Edneyville Community of Henderson County - where apple production first started in a big way.

The development of the apple industry was very slow for the first 150 years due to poor means of transportation. During the 1890's and early 1900's farmers began hauling apples and other produce to Greenville, Spartanburg, and other South Carolina counties. After the first railway was built into Henderson County in the early part of the twentieth century, people began to ship apples and vegetables out of the county.

In 1936 the sale of apples amounted to approximately two hundred thousand dollars per year. Since the mid-1930's apple production in Henderson County has rapidly expanded. The varieties that began to expand at that time were Regular Red Delicious, Stayman, and Regular Rome Beauty, with some Golden Delicious coming in later. Black Ben was also very popular at that time along with Banana Rose, Hoover, Wolf River, and Early June. Growers started planting Starking in the Hendersonville Area about 1945. Double Red Rome and Double Red Delicious were started about the same time. The acreage of Golden Delicious was also greatly expanded. These were the main varieties until about 1959 or 1960 when some of the later sports varieties such as Starkrimson, Red King, Topred, Vance Red Sport and others were planted in the county. In 1952 there were about 180,000 bearing apple trees in the county.

Modern equipment such as speed sprayers and automatic power pruners were first introduced in Henderson County in the 1950's. Andy Lyda of the Edneyville Community was the first grower to purchase a large speed sprayer. Mr. Lyda was well known for his operation of the Bee Hive Inn on St. Paul Road in the Edneyville Community. His inn was a favorite of many tourists that came in from Florida, Georgia, South Carolina and other states. His apple orchard surrounded his inn. The visitors could go and eat apples at their convenience.

Prior to 1950 most of the apples were picked and sold to truckers who bought directly from the orchard in bulk. The only method of packing was known as the "Ring pack" in bushel baskets. J.R. Thomas and H.E. Baxter were the first two packers in the county to pack apples in





a commercial apple packing house. They both started about 1946 or 1947. During the early 1950's, they along with other packers, started to use the tray pack method that uses the same size and number of apples in trays and boxes. At present many growers have built their own packing houses and are packing their own, plus some of their neighbors' apples. Cecil Henderson was the first grower to build a controlled atmospheric storage building in the county. This was built in 1983, with a storage capacity of 90,000 bushels.

In 1958 Gerber Products Company came to Henderson County to select a site for processing apples, peaches and many vegetables crops. This company finally located at Skyland in Buncombe County where they could get adequate water for processing. Gerber practically revolutionized the harvesting of apples in the county. The company introduced the idea of harvesting apples in bins and using forklifts to handle the boxes in loading them on trucks. The standard 20-bushel bin or box introduced by Gerber is now being used by all the growers in the county. Gerber also played a great part in causing the building of the Mountain Horticultural Crops Research Station. The company convinced the Agricultural Experiment Station at North Carolina State University in Raleigh of the importance of building the station - not only for apple research but also research on all kinds of vegetable crops. Sadly, the Gerber plant located in Skyland, North Carolina, closed in 1998.

In 1959 the apple growers of the county saw the need for more apple packing facilities as well as cold storage. They got together and organized the first apple packing cooperative in the county that was owned by farmers. This organization was known as the Western North Carolina Apple Growers Cooperative. During the mid 1980's the cooperative had about 50 members and could pack in excess of 100,000 bushels and store more than 150,000 bushels of apples per year. Today, the co-op is used mainly for cold storage of apples.

Two other large apple processing and juice plants have been built in the county. J.N. Major, of Old Virginia, built a juice processing plant at Mountain Home in 1965. The plant was later purchased by Seneca and expanded in 1978. It is the Seneca headquarters for the southeastern states and is one of the largest producers of apple juice in the nation. In one year the plant can expect to press 525,000 bushels of apples, or 2 million gallons of juice.

The Blue Ridge Apple Growers is an organization made up of Henderson County area growers. It was formed in 1936 in cooperation with the Agricultural Extension Service. The object of this organization was to advertise and promote apples. Each year signs were erected on each highway leading into the county - stating that Henderson County apples were the "Best Flavored Apples" in the USA, and that an apple orchard map showing locations of apple orchards in the county could be found at any local service station. These maps were also mailed to apple buyers and truckers in Eastern America. This promotion was continued until 1970. Today the organization still concentrates on advertisement and promotion of apples while educating the growers and the public about the apple industry.

In 1976 the apple growers organized the Carolina Apple Processing Cooperative known as "CAP". This organization was affiliated with Red Cheek of Pennsylvania and remained a good market for juice apples until 1984 when it was sold by the growers to H.P. Bomers, Ltd. of Hereford, England. It is currently operating under the name "All Juice."

National Fruit Products Company of Winchester, Virginia with a plant in Lincolnton, North Carolina, Knouse Foods in Peach Glen, Pennsylvania, and Cadbury Beverages, (formerly





Duffy-Motts), in Aspers, Pennsylvania are three other companies where Henderson County apples are shipped for processing. There are many other apple processing companies that buy apples in the area.

The North Carolina Apple Growers Association was organized in 1954 by the Head of the Horticulture Department at North Carolina State University, Professor M. E. Gardner, in cooperation with leading apple growers in the state. Since that time this organization has been the primary apple promoter. The organization was instrumental in voting in a program to assess a fee on apples sold for advertising. Presently the fee is three cents per packed bushel and three cents per hundred weight for juice and processing apples. The money raised is used to promote North Carolina apples and apple research. This association also sponsors the Apple Ambassador scholarship program.

The Apple Ambassador is a rising senior in one of the Henderson county high schools. Two young people are chosen from each school. A committee then selects the Apple Ambassador. The representative must be knowledgeable about the apple industry and exhibit good leadership skills and good public speaking skills. The winner receives a scholarship sponsored by the North Carolina Apple Growers Association and a gold "Apple" necklace. Some of the duties the ambassador performs include meeting with the Governor and the Commissioner of Agriculture, speaking at the Southeastern Apple Growers meeting, and other official functions. She also participates in the Apple Festival activities.

The North Carolina Apple Blossom Festival was organized in 1947 by the Hendersonville Chamber of Commerce, Blue Ridge Apple Growers Association, and the County Agricultural Extension Service. The organization was later changed to the North Carolina Apple Festival. The Festival, held each year during the latter part of August, is climaxed with the King Apple Parade on Labor Day. The object of this organization is to promote North Carolina apples and the tourism industry in Henderson County.

Cultural methods have changed drastically since 1936, as well as chemicals used for controlling diseases and insects. In 1936 there were only four chemicals used for controlling diseases and insects, namely: liquid lime-sulfur, Bordeaux mixture, arsenate of lead, and nicotine sulfate. None of these are used at present. These have been replaced through the years by safer chemicals. Due to EPA regulations and reviews many chemicals are being lost for use on apples and other crops. There are also herbicides used for controlling weeds, brambles and grasses.

Likewise, cultural practices are changing from the "Good Old Days." In the 1930's apple trees were spaced 30 to 35 feet in the row, with rows 30 to 35 feet apart. At present the most popular spacing is 10 to 15 feet apart in the row, with row widths of 16 to 20 feet. The numbers of trees per acre has changed from 40 to 50 trees to 400 to 500 trees. The newer plantings are mostly of medium density plantings and of dwarfing rootstocks.

The names Dalton, Edney, Enloe, Freeman, Gilbert, Henderson, Hill, Jackson, Justice, Justus, Lamb, Lancaster, Laughter, Lyda, Merrill, Moore, Moss, Nix, Staton, and Stepp are very important in apple production in the county.

There are many organizations in the county that have worked with the apple growers to develop the industry. Some of these include: Agricultural Extension Service(North Carolina Cooperative Extension Service), Farmers Home Administration(Farm Service Agency), Agricultural Stabilization and Conservation Service, Vocational Agriculture Department, Hendersonville Chamber of Commerce, Production Credit Association(Mountain Farm Credit ACA), and many of the local banks and business leaders.





## BRUSHY MOUNTAIN APPLES

The Brushy Mountain area in Wilkes and Alexander Counties has historically been an important apple production area. The earliest settlers grew for their families and livestock. Surplus apples were dried and sold. Bootleg brandy was made from apples to help warm cold winter nights and to sell for a little extra money.

Popular older varieties grown in the Brushy Mountain area included Magnum Bonum, Wine-sap, Red June, Blacktwig, and Grimes Golden. One older variety which is still locally popular in the Brushy Mountain is Limbertwig. The Limbertwig variety got its name from the drooping characteristics of the tree, and the apple is known for its good eating quality long after it has been picked.

In 1913, Herbert Morehouse joined with two partners in what became the first large scale commercial orchard venture in the Brushies. By 1925, the Brushy Mountain Fruit Growers Association was holding marketing schools to help sell and promote the local crop. In 1941, the personnel at the Brushy Mountain Apple Research Laboratory conducted an experiment with controlled atmosphere storage. Today this technology is accepted world wide as a method to store apples year round without affecting the apple's quality. Controlled atmosphere storage is accepted world wide today as a method to store apples up to a year without affecting apple quality.

The Brushy Mountain Apple Co-operative was chartered in 1957 to help pack the large amount of Red Delicious, Golden Delicious, and Stayman apples being grown in the area. A new packing facility was built and went into operation in 1964. The apple Coop packed apples for local growers until 1992.

### **Families involved in apple growing today include:**

Perry Lowe	Bobby Lowe	Lindsay and Alan Deal	Donald Hendren
Lowell Hendren	Jimmy Land	Armit Tevepaugh	Connie Robinson
John Robinson	Mike Graf	Lynn St. Clair	Jonah Parker
Gary Morrell	Waitsel Wike		

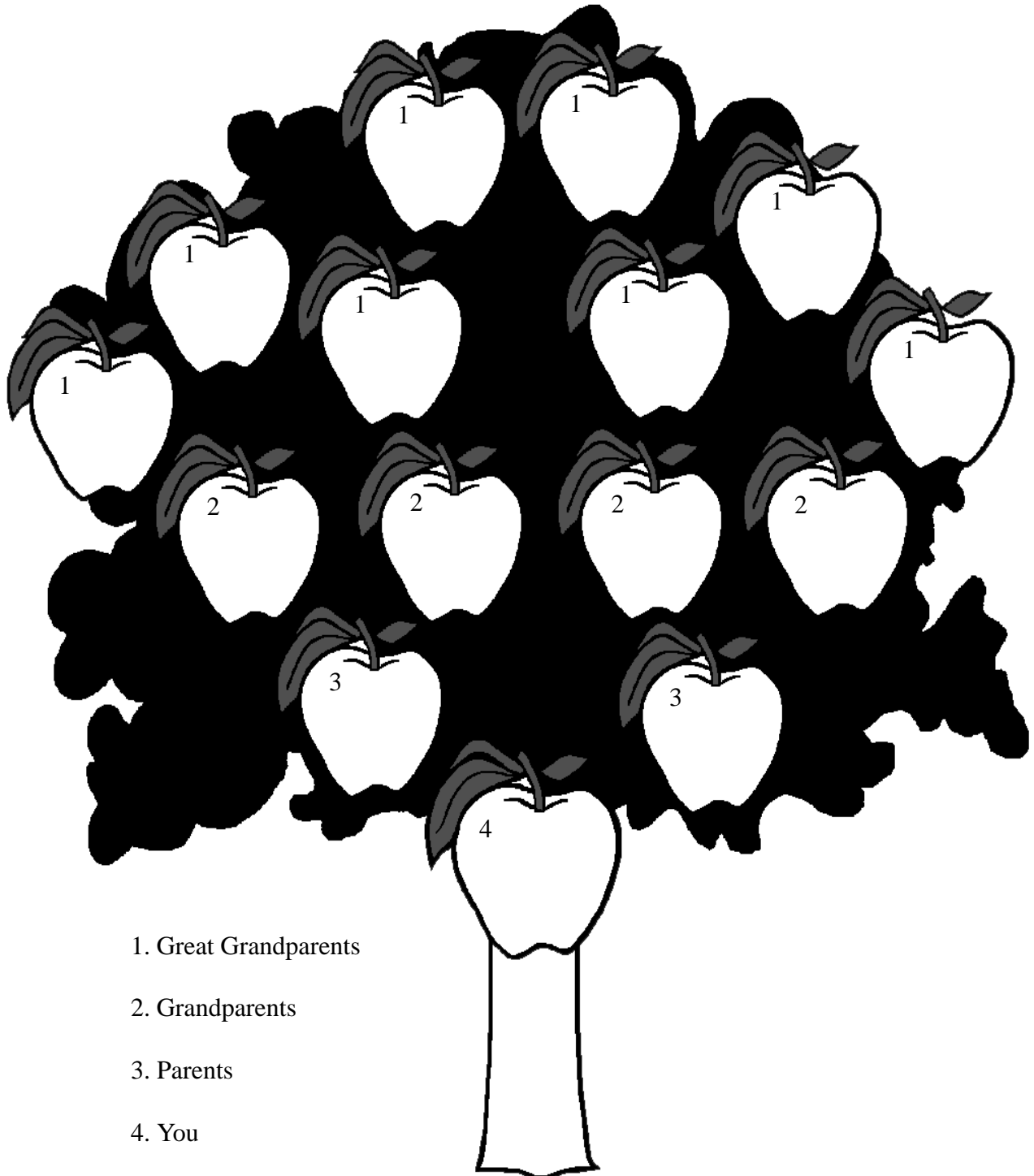
Growers today are beginning to grow different apple varieties which are known for their own unique tastes. These varieties include Gala, Jonagold, Fuji, Ginger Gold, Suncrisp, Goldrush and Pink Lady. As the acreage of these new varieties goes up, the number of Golden and Red Delicious acres is steadily going down.





# FAMILY TREE

Let's all gather around your Family Tree! Get your family members to help you fill in the names on your family tree.



1. Great Grandparents
2. Grandparents
3. Parents
4. You





### A TRIP TO THE APPLE ORCHARD

There is always something going on in the apple orchard.  
Look at the orchard below.

Label the pictures with words from the word list.

tractor

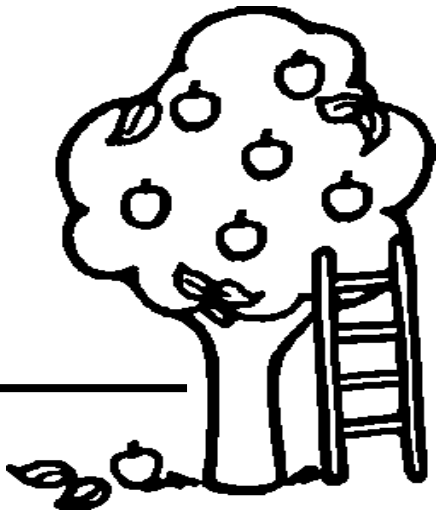
apple picker

bin

apple tree

truck

ladder

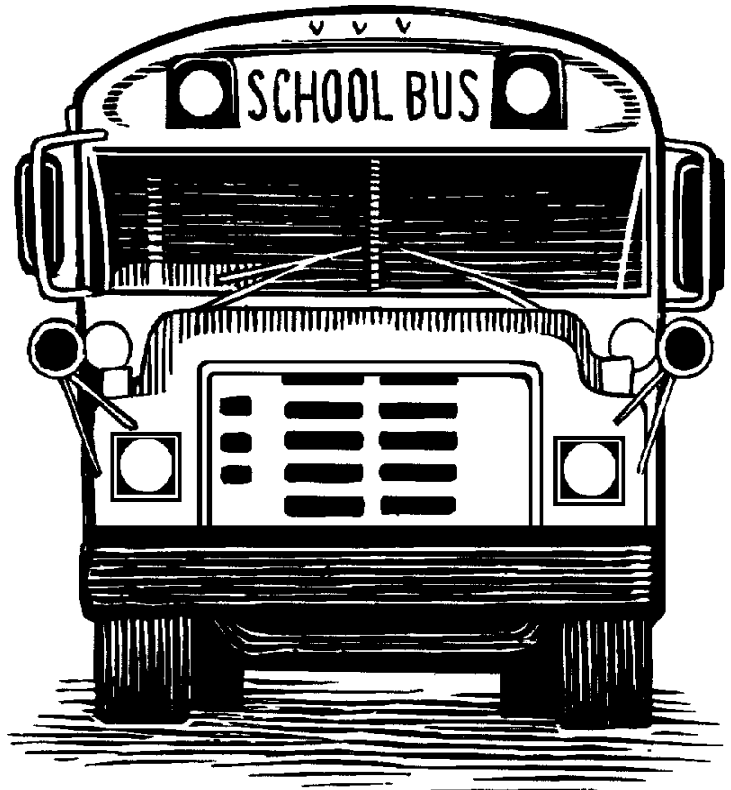




# IDEAS FOR A FIELD TRIP

## FIELD TRIP

1. Make an appointment.
2. Ask questions as to what the owner has to offer.
3. Visit location prior to field trip with students.
4. Get materials from tour guides to teach students or prepare your own after your visit. Allow at least 2 weeks of work before and a few days for follow-up.
5. Take enough parents to help with students.
  - 1 parent per two children (K -1st grade)
  - 1 parent per three children (1st - 2nd grades)
  - 1 parent per five children (3rd - 5th grades)
6. Field trip report







# Social Studies Activities

*List the top six apple producing counties in North Carolina.  
(hint: look for the North Carolina apple symbol)*

#1 \_\_\_\_\_

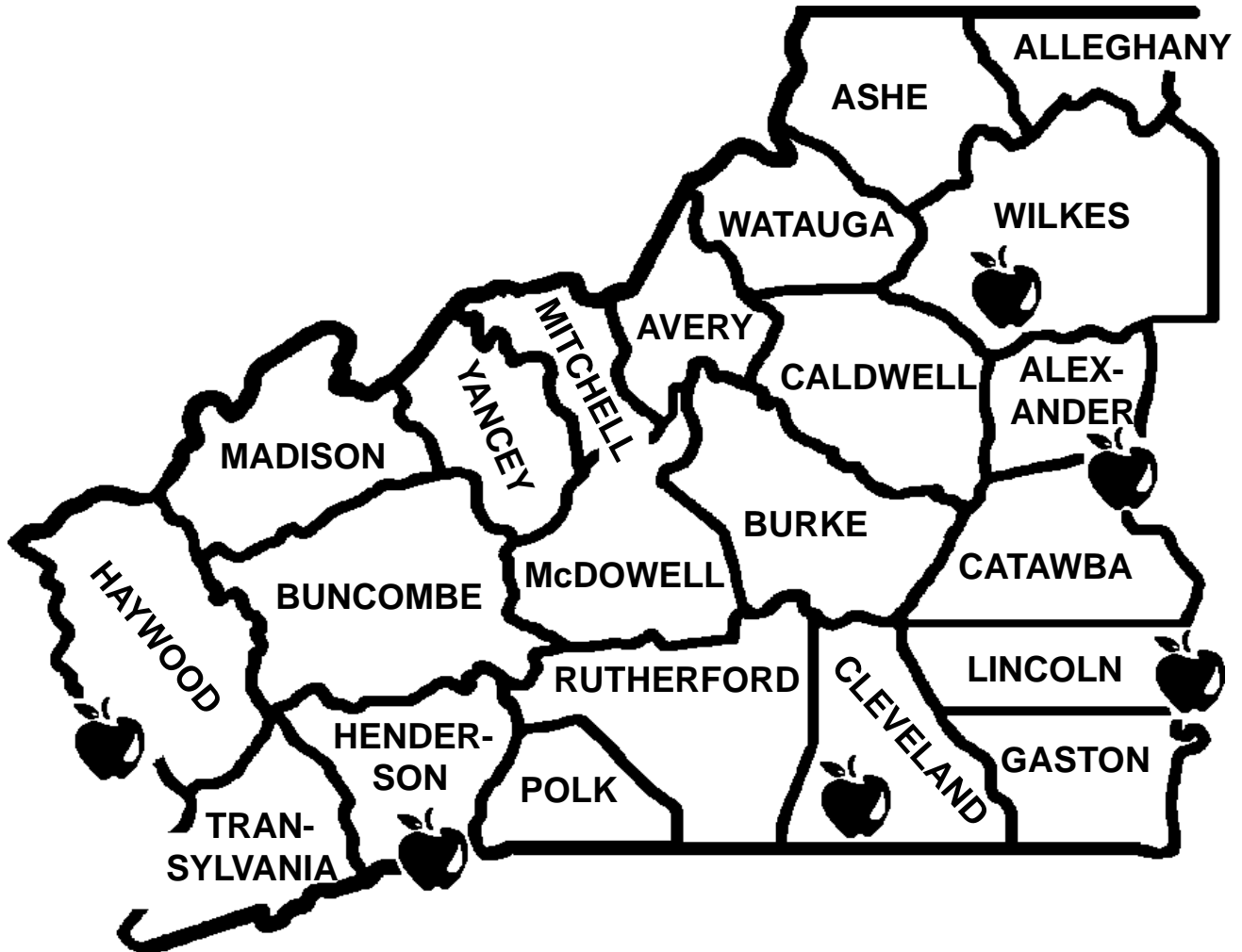
#2 \_\_\_\_\_

#3 \_\_\_\_\_

#4 \_\_\_\_\_

#5 \_\_\_\_\_

#6 \_\_\_\_\_



# MAJOR APPLE GROWING STATES



Leading Apple Producing States:

- Washington
- New York
- Michigan
- California
- Pennsylvania
- Virginia
- North Carolina
- West Virginia



N.C. Apple Education Committee

