

FROM FARM to SCHOOL - CROPS of NORTH CAROLINA

A
VISIT
to the
APPLE
ORCHARD

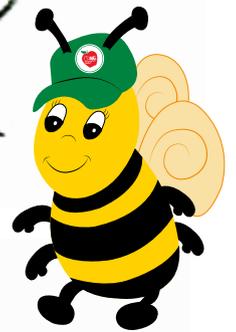


Story by
Heather Barnes and Karen Baltimore
Illustrations by Karen Baltimore

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Hi! I'm Farmer Bee.
Welcome to the farm!



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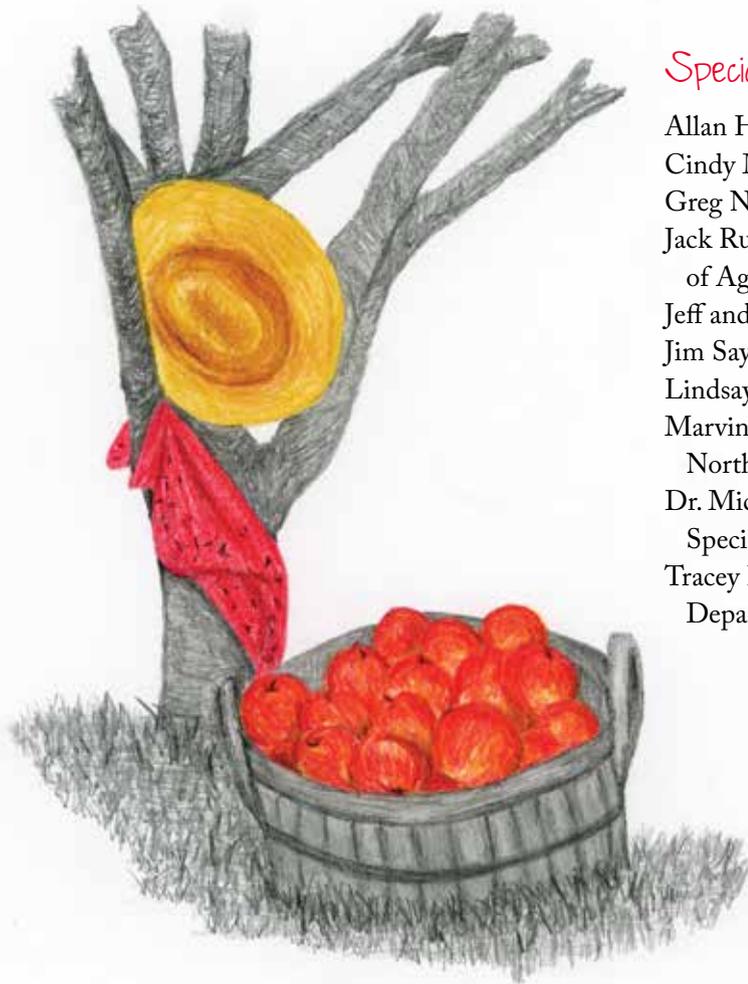


This book is dedicated to the farmers of North Carolina who grow apples and the school nutrition professionals who prepare and serve them to our students.

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North Carolina Department of Agriculture and Consumer Services
and

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Special thanks to...

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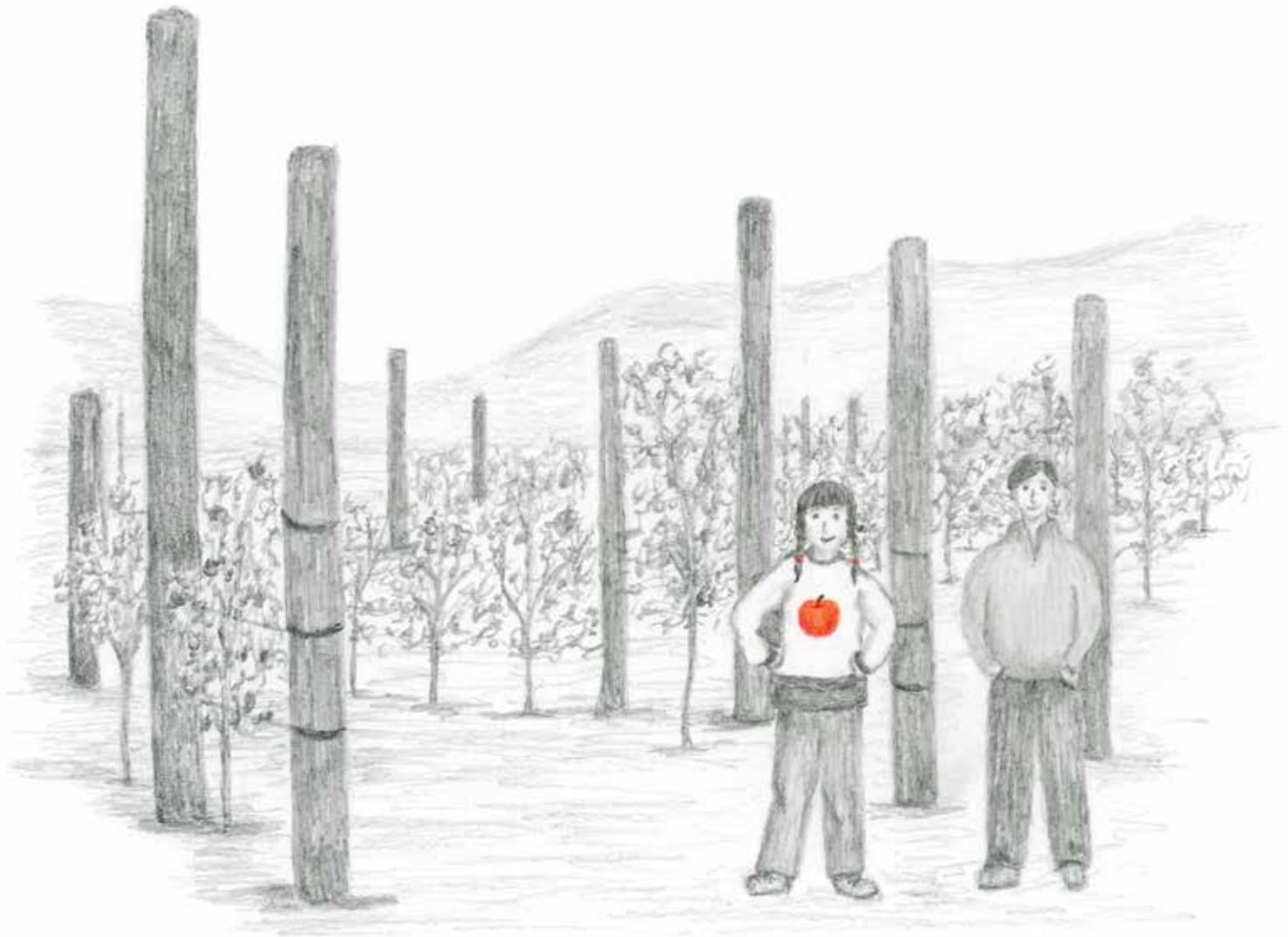
Design and illustration by Karen Baltimore
For more of her work, please visit
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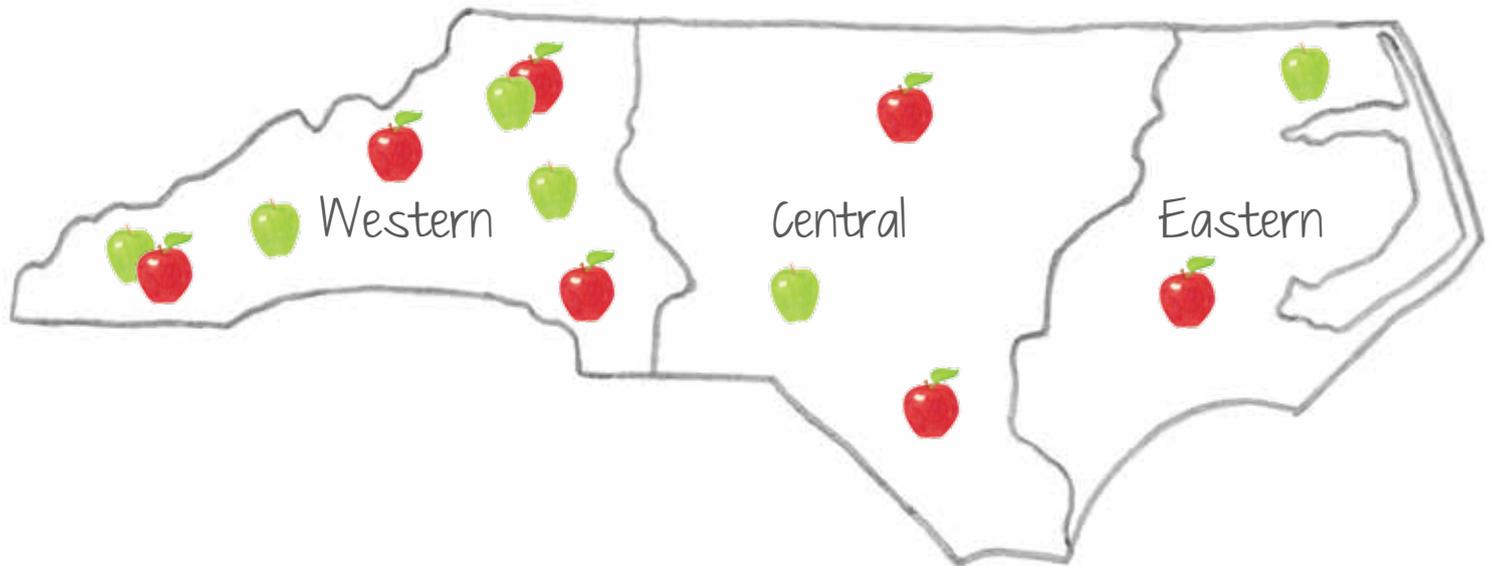
Have you ever wondered where the apples served at your school come from?



They come from farms like this one! Did you know apples are grown on farms called orchards? North Carolina is among the top ten apple producing states in the United States.



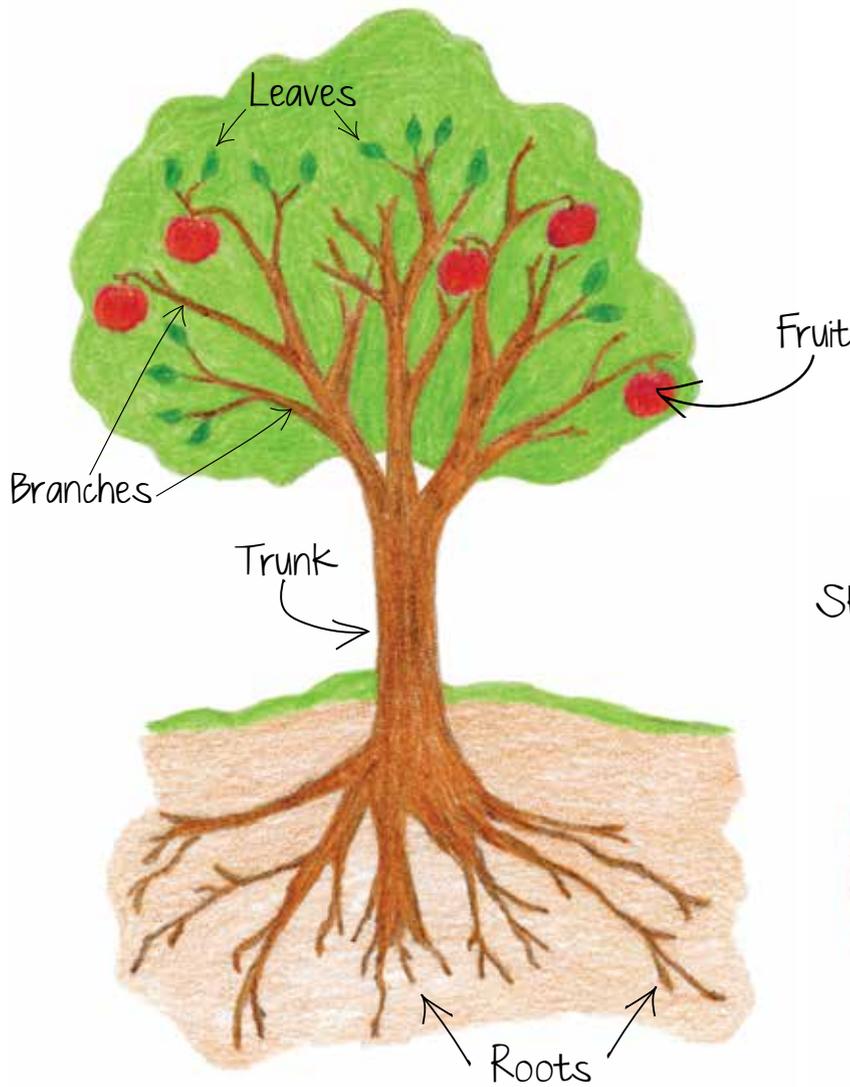
Farmers harvest North Carolina apples from August through November, but they work in orchards all year long. Come with us! We'll show you!!



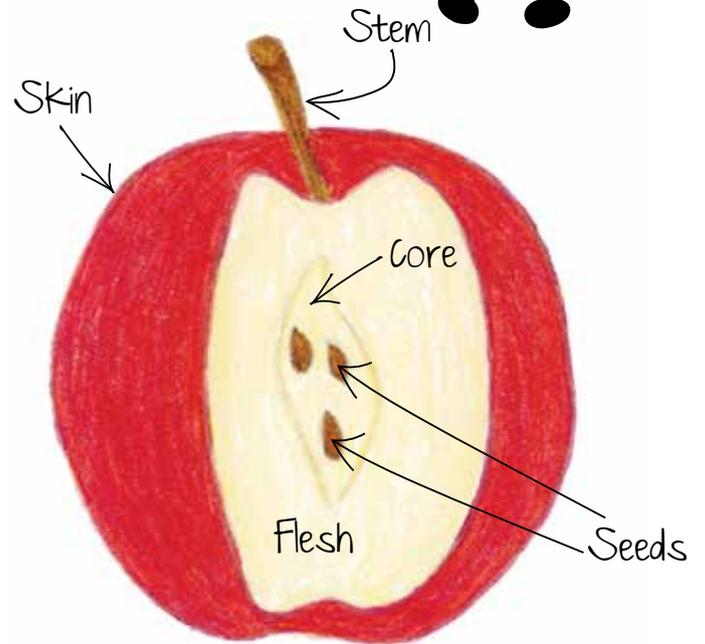
Varieties pictured from left to right are Honey Crisp, Granny Smith, Red Delicious, Royal Gala and Golden Delicious.

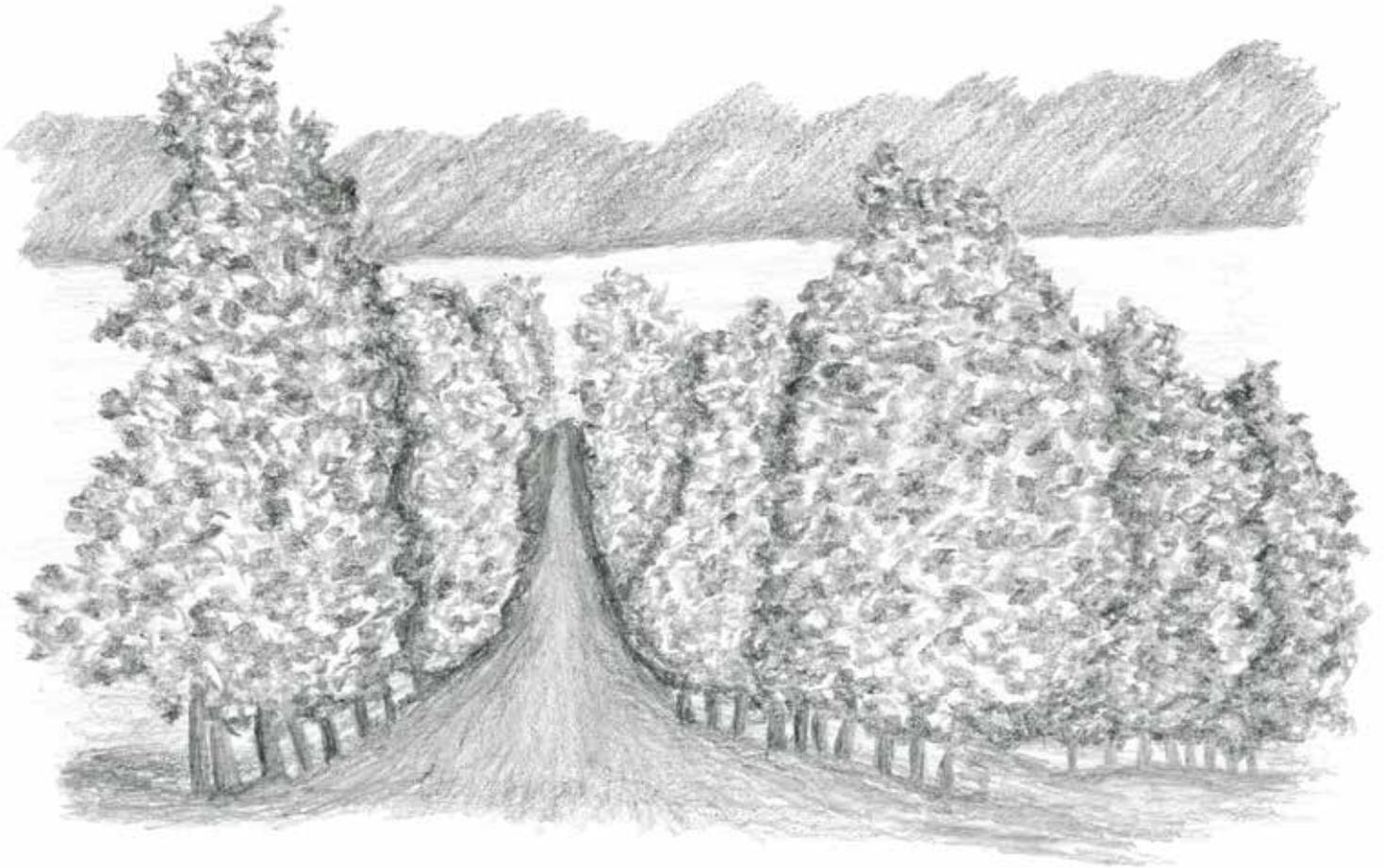
Apples are primarily grown in western North Carolina, but can be grown across the state. Farmers choose what kind of apples to grow from over 7,500 different varieties. Some varieties have red skin while others have green, pink or yellow. Apples can taste sweet, sour or tart.

Apples grow on trees. Each tree has roots, a trunk, branches and leaves. Trees flower in the spring and have fruit in the fall. Parts of an apple include a stem, skin, flesh, core and seeds.



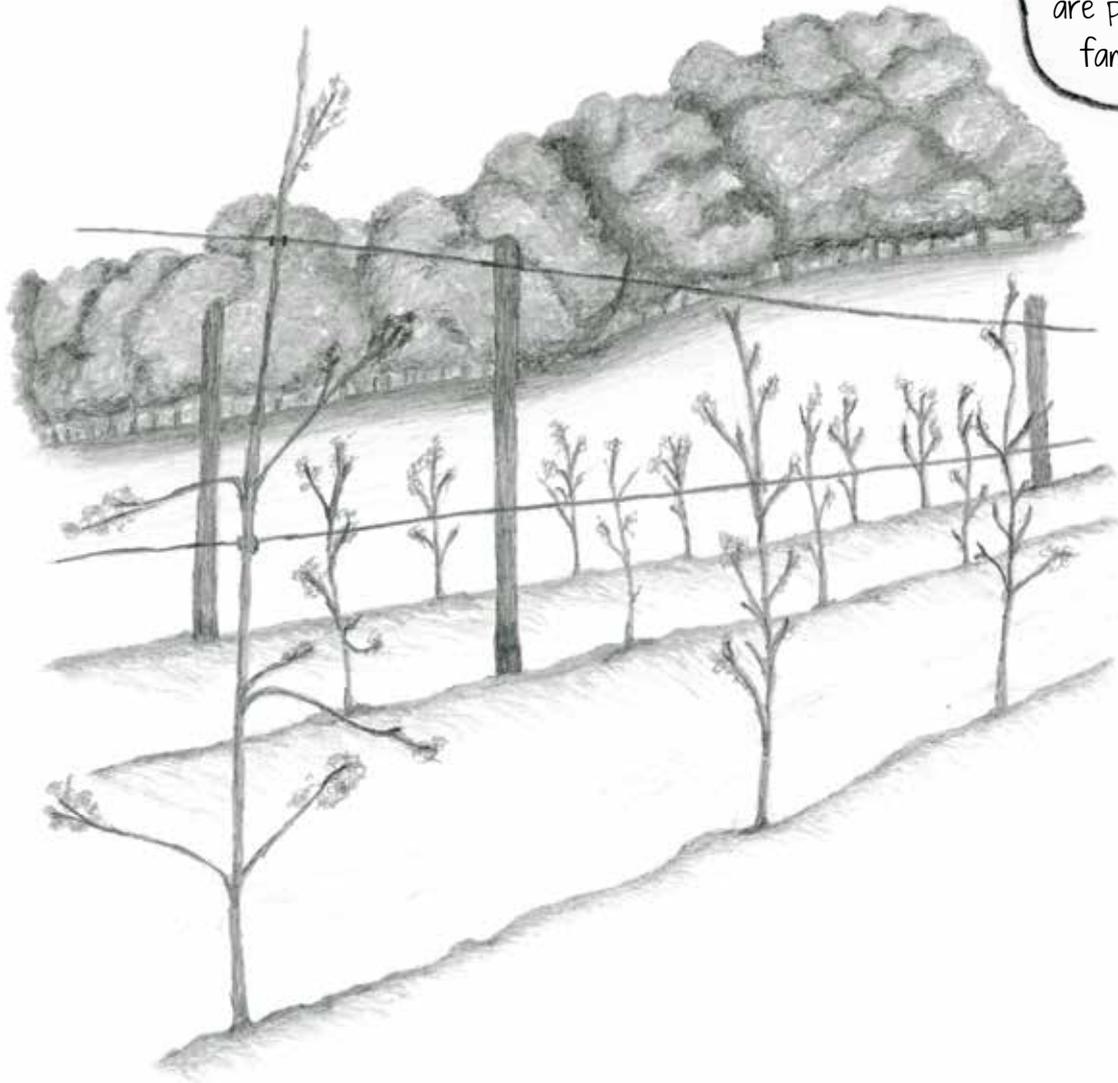
The apple's core has 5 to 10 seeds in 5 chambers.



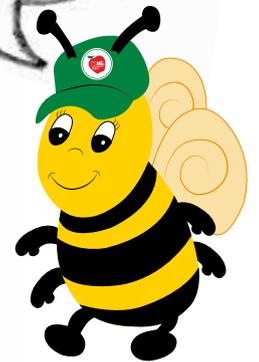


Apple trees are planted in orchards. Standard orchards have rows of trees that can reach 20 feet tall. These trees reach full production when they are 12 to 15 years old and continue producing fruit for 30 to 40 years. Wow! That's a long time!!

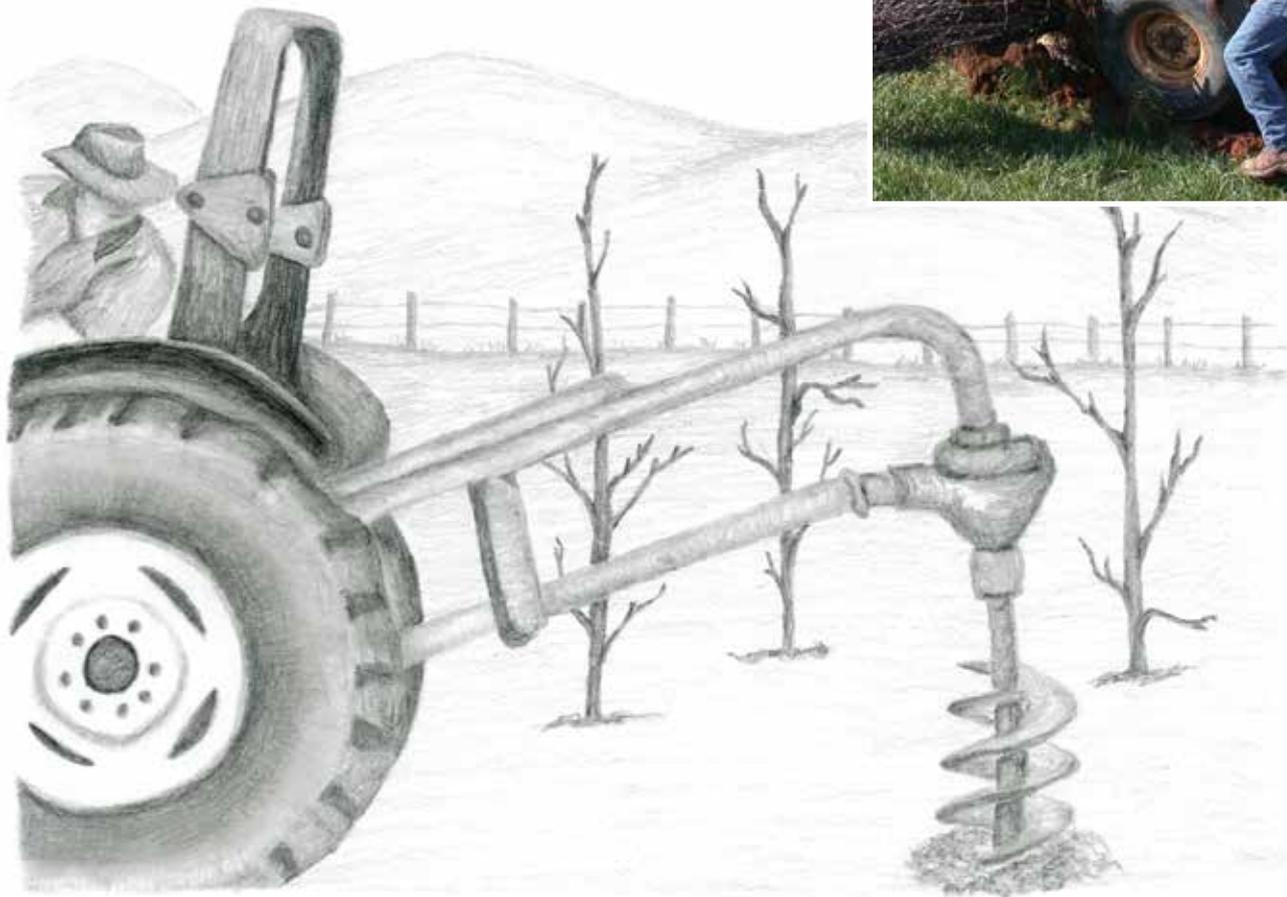
Dwarf apple trees, which do not grow over twelve feet tall, are planted in many new orchards. Branches are trained to grow along wires on a trellis system. This allows more air and sun to reach the fruit. Shorter trees also make it easier for workers to prune and harvest. Trees start producing a good crop of apples when they are three years old.



Did you know apples are part of the rose family of plants?



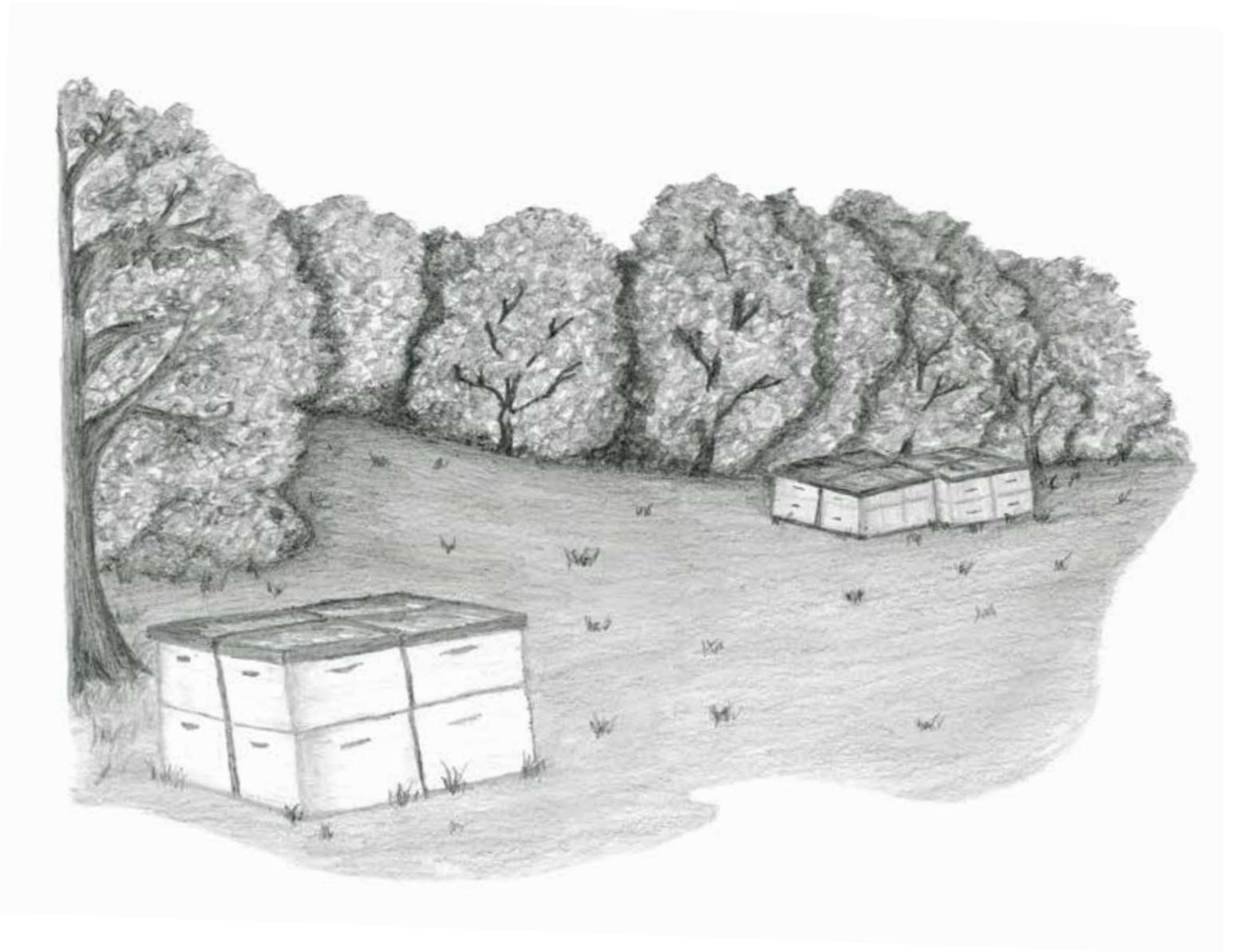
Farmers may also use a tree planter to plant trees. This machine digs holes in the ground and a worker places a tree into each hole.



Winter is a busy time in the orchard. Trees are dormant, or not actively growing, so it is the perfect time to plant new trees. Farmers use an auger powered by a tractor to dig the hole. Each tree is planted by hand.



Trees are pruned every year to remove old or damaged branches. This improves the quality of the fruit because sunshine and air can reach the leaves and fruit.



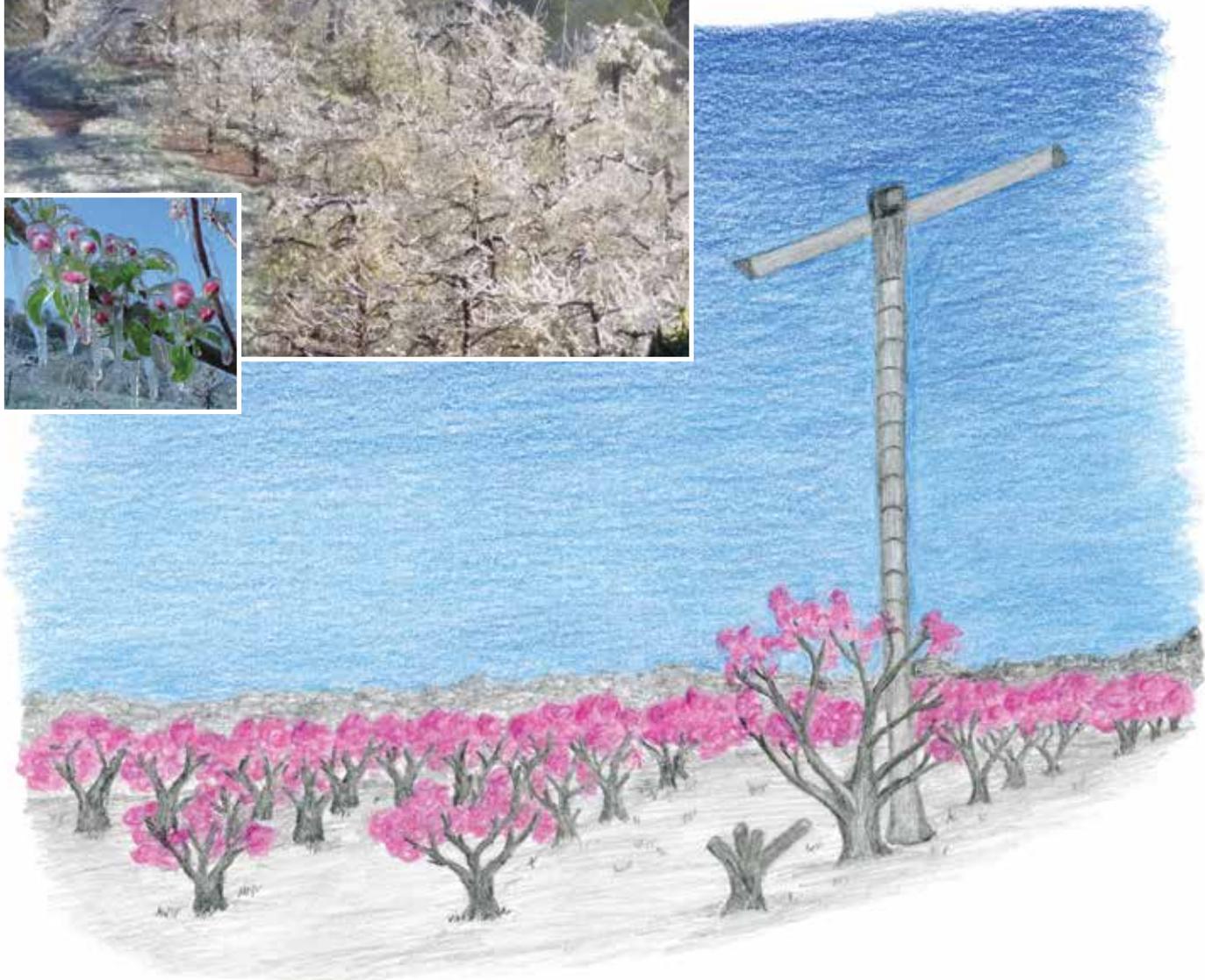
Many farmers rent honey bee hives. Beekeepers move hives into the field before apple trees start blooming in March. Honey bees carry pollen from one flower to another as they drink nectar from each one. This is called pollination.

Without pollination, apples trees will not produce fruit. An apple will grow from each pollinated flower. If a tree has too many flowers, the fruit will be small and poor quality. While flowers are blooming, farmers can thin, or remove, some of the flowers. This results in larger, healthier fruit on the tree.



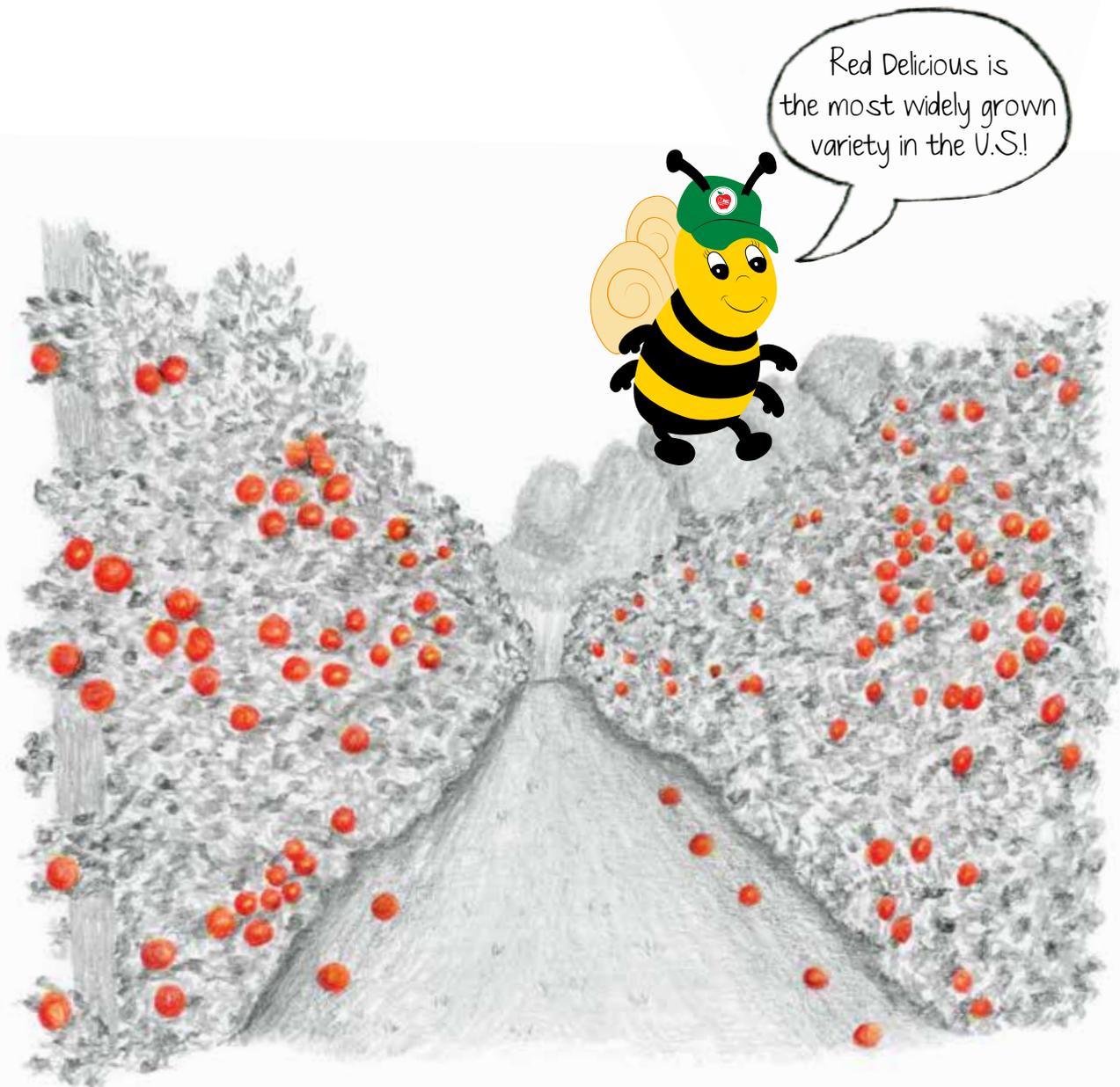
Flowers can be killed by freezing temperatures or frost. In the past, farmers used helicopters to protect crops from frost. There is usually a layer of warmer air above the trees. Wind from the helicopter blades pushed warmer air down around the flowers to protect them from cold.

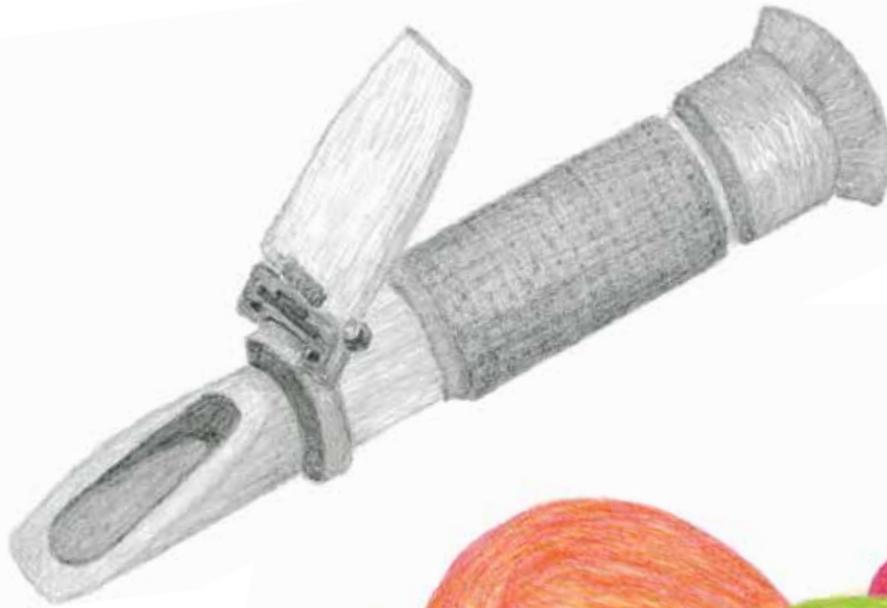




Today, many farmers have large fruit fans in orchards to protect flowers. The fans mix upper warm air with cold air below, raising the temperature enough around trees to help prevent damage. Other farmers use sprinkler systems to spray water over the trees. Water freezes around the flowers, protecting them from damage.

Some apple varieties are ready to harvest sooner than others. Farmers start picking early varieties like Ginger Gold in mid-August. Harvest continues through November, when later maturing varieties like Pink Lady are ripe. How do they know when apples are ready to pick?

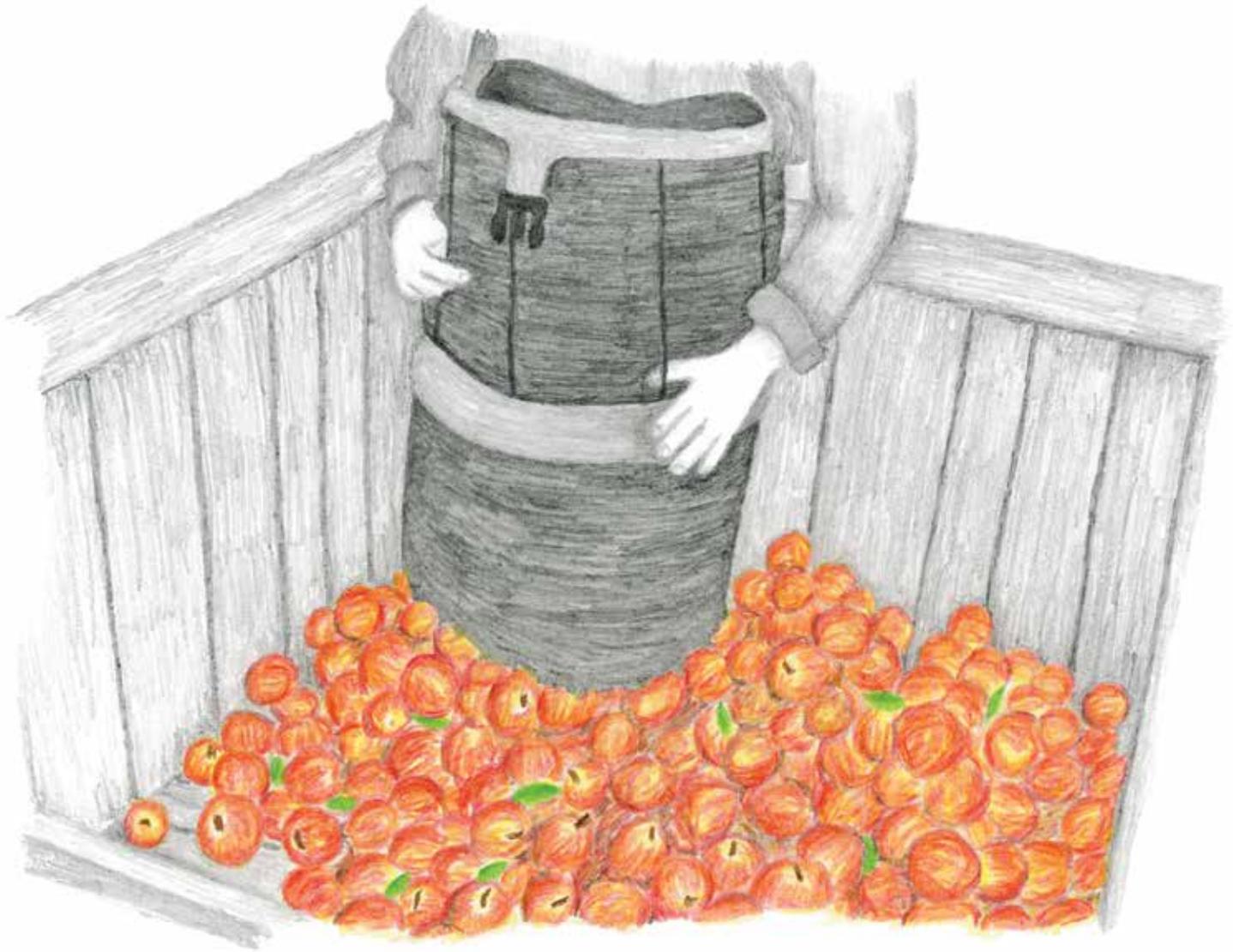




As fruit matures, the amount of sugar increases. Farmers can use a tool called a refractometer to measure sugar in the juice. They also look at the skin. All apples begin with green skin, but cool evening temperatures in late summer cause some apples to change color. For example, Red Delicious apples will have red skin when ripe. Granny Smith apples will stay green.



Apples are picked by hand. Growers wait until most of the fruit on a tree is ripe before harvest. Workers use ladders to reach the top of the tall trees in standard orchards.



Apples are placed in cloth picking bags worn by workers, which are emptied into large wooden or plastic bins. Workers can harvest 20 bushels from one mature apple tree in a year. One bushel equals 40 pounds. That is a lot of apples!

Bins are taken to the packing house. Some apples are packed right away. Other apples are stored for six to seven months in refrigerated rooms. Apples can be kept in special rooms for one year.





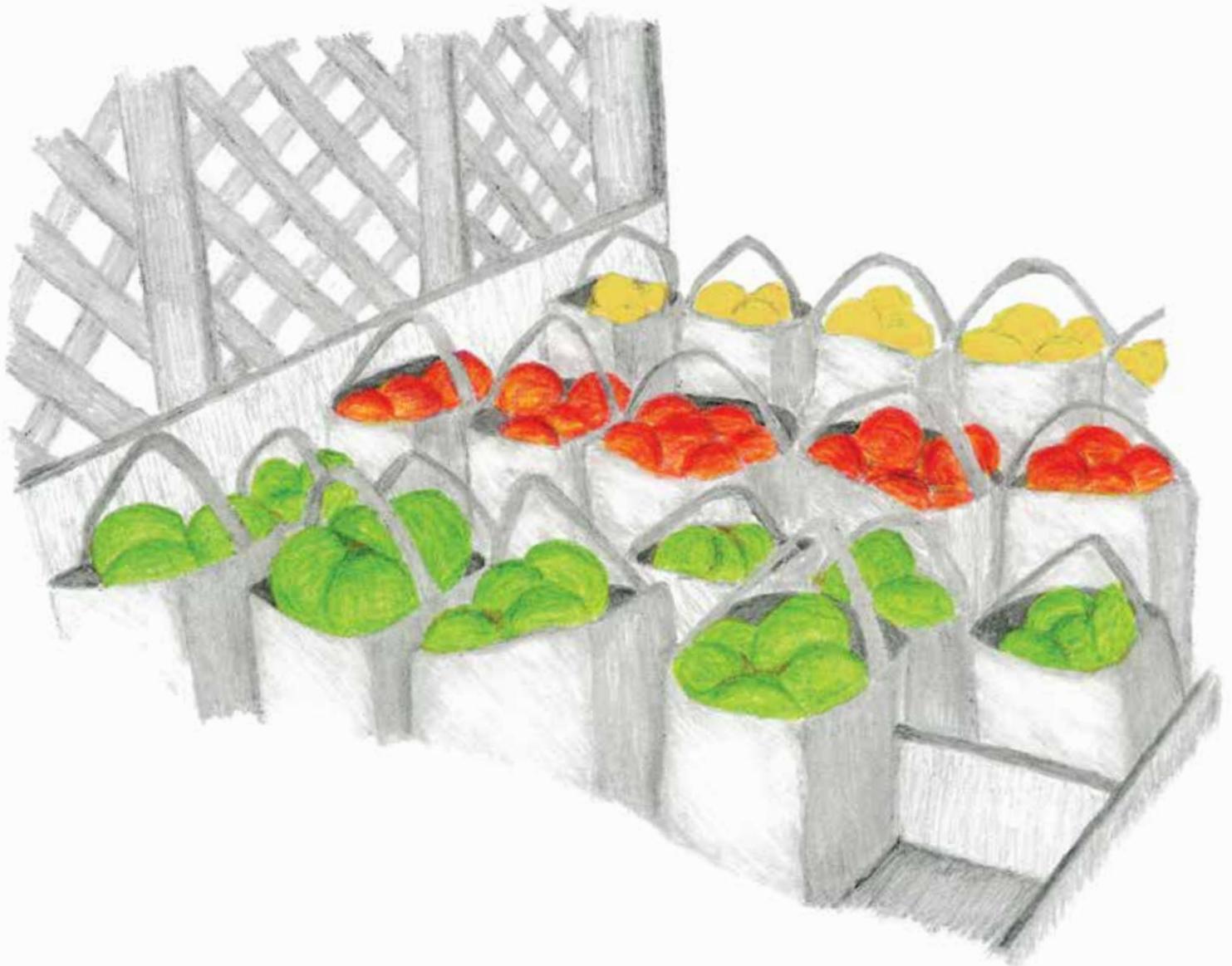
Apples bruise easily, so the first step on the packing line is to lower the bin into a tank of water. Apples are 25 percent air, so they float out. On the line, apples are checked for quality, color and size. Whole apples are then packed into bags or boxes. Sliced apples are packed in snack bags.

Fun fact: It takes about 36 apples to make one gallon of apple cider.

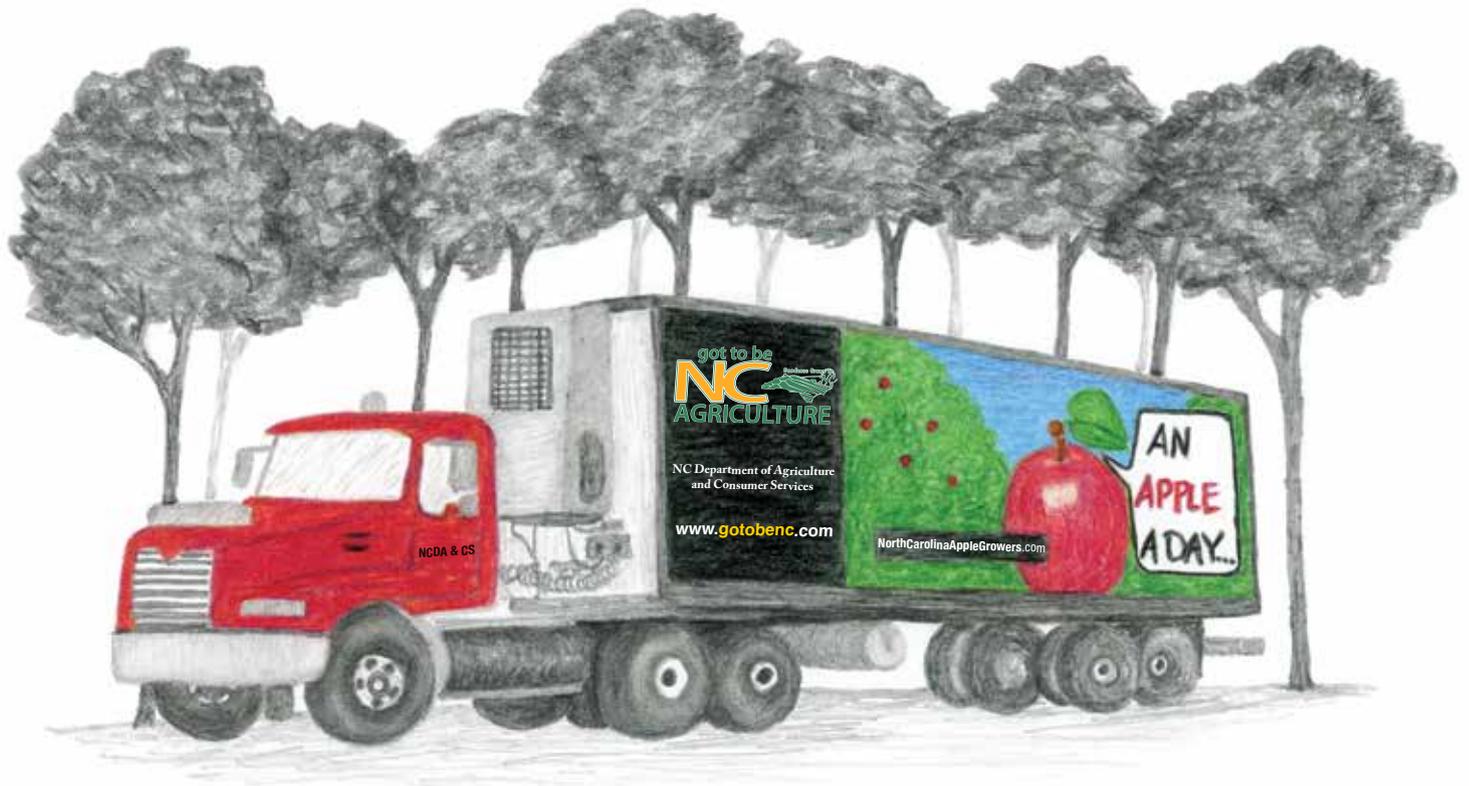


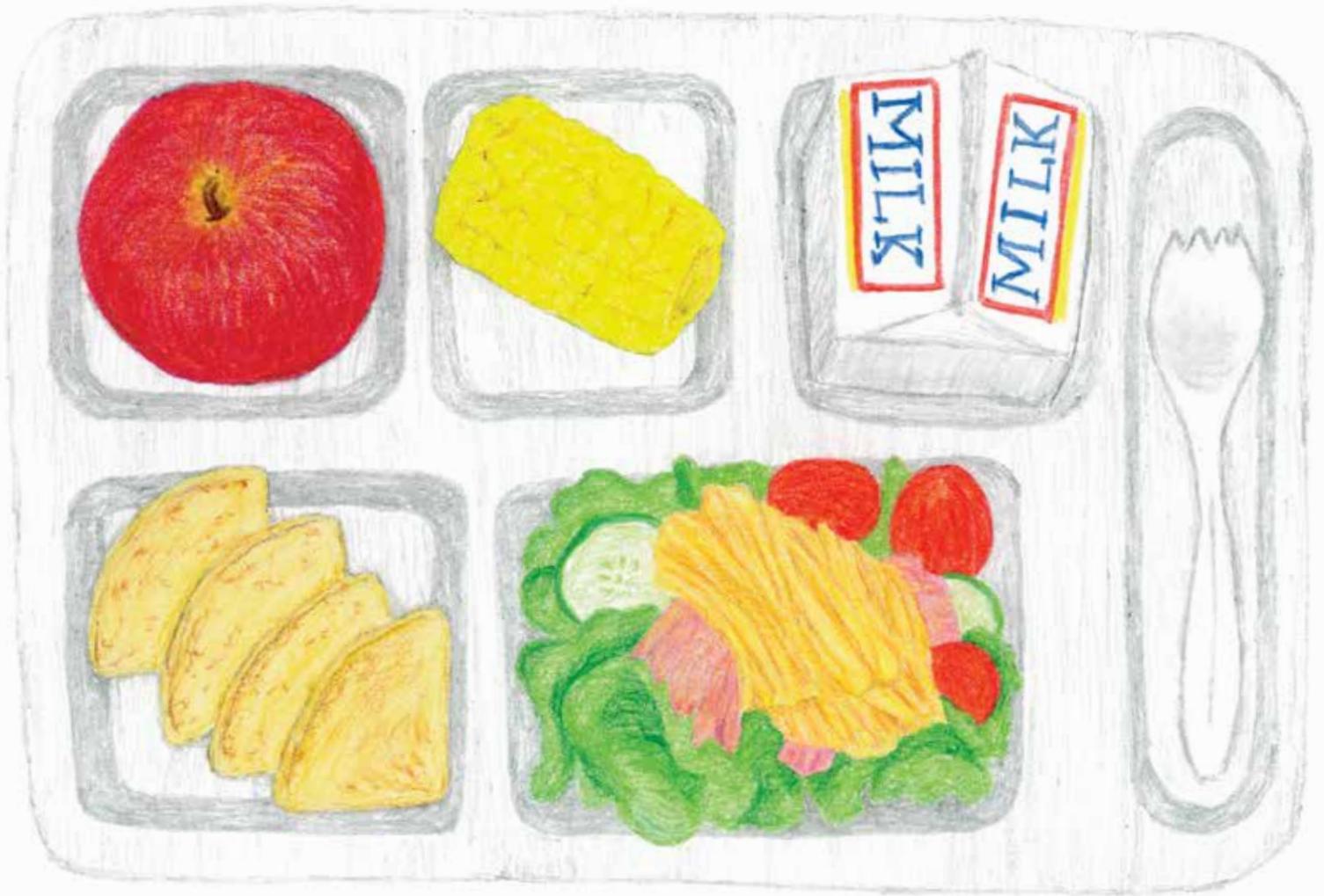
Many of North Carolina's apples are used to make applesauce, apple slices, cider, juice, vinegar, baby food or other food products.

Farmers also sell fresh, whole apples at roadside markets, in pick-your-own orchards or to grocery stores. Where does your family buy apples?



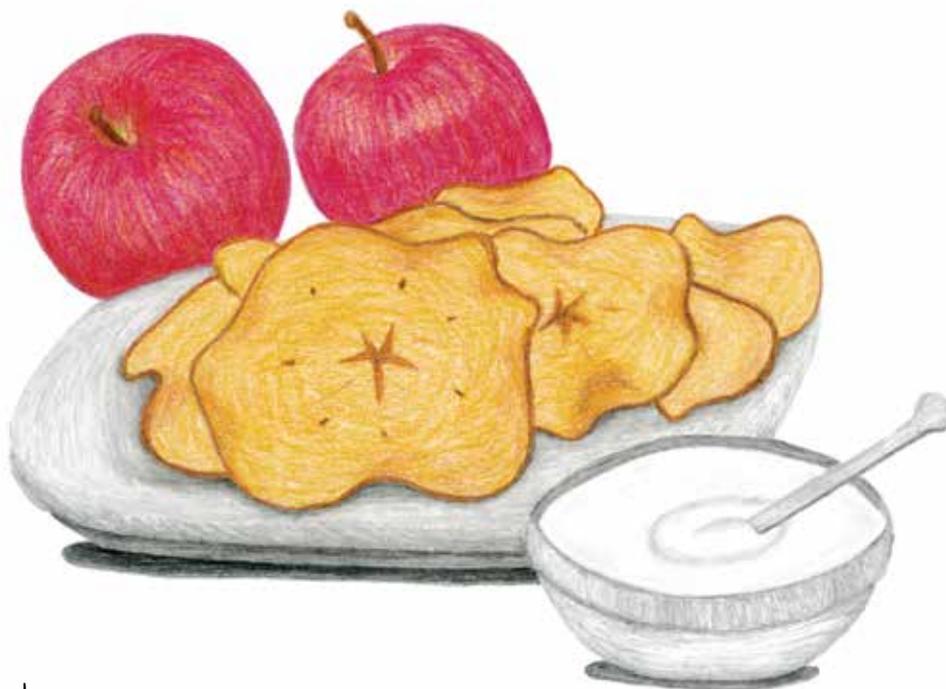
Some apples are sold to schools in North Carolina through the NC Farm to School program. A truck from the North Carolina Department of Agriculture and Consumer Services delivers them to schools like yours.





Schools serve North Carolina apples and bagged apple slices. Your lunch might also include a chef's salad with pita points, corn and milk like the one pictured here. Have you eaten apples at your school?

Apple chips with yogurt dip is a healthy snack that is easy to make.
Don't forget to ask an adult for help!



Apple Chips

2 large apples, cored
1 tsp cinnamon
Vegetable oil spray

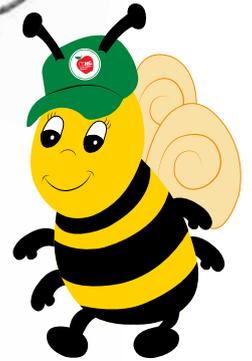
Preheat oven to 225°. Thinly slice apples crosswise about 1/8-inch (2 mm) thick with a sharp knife. Line two baking sheets with parchment paper or spray with vegetable oil spray. Arrange apple slices in a single layer on each baking sheet, and spray them with vegetable oil spray. Sprinkle cinnamon evenly over the apple slices.

Bake in the top or bottom third of the oven until slices are dry and crisp, about 2-2 1/2 hours. Remove from oven and let chips cool completely before transferring to a sealed container for up to 3 days. Makes about 2 cups of apple chips.

Enjoy your chips dry or dipped in your favorite vanilla low-fat or nonfat yogurt.



You can also dip
fresh apple slices!



North Carolina apples are tasty and good for you! One medium apple has 70 to 90 calories. Apples are cholesterol free, low in fat and a good source of Vitamin C and fiber. They are delicious eaten fresh or cooked.



North Carolina apples are a delicious snack you can eat anywhere.
What is your favorite variety?



The North Carolina Farm to School program has been supplying school cafeterias with fresh, NC grown produce since 1997. The program is coordinated by the North Carolina Department of Agriculture and Consumer Services. For more information, please visit ncfarmtoschool.com.



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