A R I Z O N A  A G R I C U L T U R E

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N O W  A V A I L A B L E

BY B O N N I E  A P P E R S O N  J A C O B S
A N D  T E R R I  M A I N W A R I N G

in cooperation with
The University of Arizona College of Agriculture and Life Sciences Cooperative Extension
and Maricopa County Farm Bureau

Little Five Star
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Great Books for Growing Minds
Chandler, Arizona
HI KIDS!

Pee Wee Bee here. I am one proud and gorgeous Arizona honeybee.

I want to invite you to join me for an **AMAZ-Z-Z-ING** adventure! We’ll **Z-Z-Z-IP** across the state together, learning about Arizona agriculture.

We’ll even meet up with some members of my bee family! Our role in Arizona agriculture is **very** important!
ARIZ-Z-Z-ONA.

You probably already know about our deserts, our hot weather, our cacti, and of course, our spectacular Grand Canyon. Arizona folks brag about these things ... I know I do!

But many of you don’t know much about Arizona agriculture. Since I do, I want to help spread the word.

LET’S GET BUZ-Z-Z-ING ALONG!
IN SOME WAY, AGRICULTURE HAS TOUCHED YOUR LIFE TODAY.

DID I HEAR SOMEONE ASK, "WHAT IS AGRICULTURE?" GREAT QUESTION!

Agriculture is all about growing crops and raising animals, using water carefully, and protecting the land.

Agriculture is an important business in Arizona, and it’s how farmers and ranchers make a living. We have so much to learn together!
MY UNCLE, BILL E. BEE, AND I SAY THAT FARMERS AND RANCHERS ARE AGRICULTURAL SCIENTISTS.

Farmers and ranchers play an important part in the lives of all Arizonans. Their hard work brings fruit, vegetables, eggs, milk, and meat to our dinner tables. Farmers and ranchers also produce cotton for clothes, grow hay to feed animals, and raise plants to bee-utify our homes.
Farmers and ranchers go to college to study and learn about the best ways to farm and ranch. They use the latest and greatest technologies and machines to help solve problems, save time, work safely, and answer difficult questions.
Advancements in *technology* have made a big difference in the way we farm and ranch. How do you think technology improves Arizona’s agriculture?

**AUTO-STEER TRACTOR**

Most of us have seen a tractor. But many of us don’t know that some tractors can operate mostly hands-free. These are called auto-steer tractors and are controlled by computer GPS systems and other wireless technologies. These vehicles can plant seeds, fertilize plants, and dig the soil—and they won’t run into people, animals, or objects.

**MODULE BUILDING COTTON PICKER**

A module building cotton picker allows one machine to do two jobs at once. This machine picks cotton from the plants and then packs it tightly together so it is easier to move.

**SMARTPHONE APPLICATIONS**

Many of today’s farmers use “apps” on their smartphones to manage their water and keep track of the work they do on the farm.

**RESEARCH**

Farmers often talk to scientists to learn about new ways to grow crops, save water, improve their soil, and control pests.
Arizona farmers grow most of the winter lettuce for America’s salads. In fact, in the winter, Arizona is one of the only states with lettuce to sell. Because of our warm climate, lettuce is picked earlier here than anywhere else in the country.

As lettuce grows, its leaves open like a flower. The inner leaves form a solid ball or head. About 90 days after a lettuce seed is planted, a head of lettuce is ready to be picked and delivered to your grocery store.
Along with lettuce, Arizona farmers grow many of the other ingredients we use to toss together a delicious salad. These are called specialty crops and include fruits, vegetables, and nuts. Other specialty crops include a wide variety of trees, plants, and flowers that are used in medicine and to be-utify our homes.
To harvest nuts, huge shaker machines jiggle each tree so the nuts drop into nets or onto the ground, ready for collection by special raker machines. Look out bee-low!

**Pistachios** and **pecans** are nuts grown on trees in southern Arizona. These trees produce a lot of nuts one year, and not as many the next year. This is called alternate bearing.

**Melons** are one type of specialty crop that Arizona farmers grow. Some of these crops include watermelons, cantaloupes, and honeydews, which can be planted and **harvested** twice a year: once in the fall and once in the spring.
Chile peppers are another important specialty crop in Arizona. These peppers are small, hot-tasting pods that come in different shapes, sizes, and colors. Salsa and other spicy sauces are made from chiles.

Salsa has become even more popular in the USA than ketchup. It’s “nacho” time!
Thanks to Arizona’s warm climate, citrus can grow in several parts of the state. Citrus crops include oranges, lemons, grapefruit, limes, and tangerines. Citrus fruit begins growing in the springtime when the trees fill with blossoms. That’s when bees pollinate the flowers.

When citrus fruit is growing, a farmer’s two biggest worries are cold weather and insects. Both can harm the crop.
November through February are the very best months to pick citrus. Because the fruit is fragile, farmers have it picked by hand.

Farmers often invite families to pick their own fruits and vegetables straight from the orchards and fields. This is a fun way for families to work together and learn about Arizona agriculture.

Because the trunks on citrus trees can get sunburned, they are sometimes painted white or tan. Paint on a tree trunk protects it from the sun, much like sunscreen.
Arizona farms produce more hay per acre than any other state in America.

In the winter, farmers plant seeds that keep growing for four months. As the hay gets taller, farmers mow it and leave it on the warm ground to dry. Then, they collect it with machines. Hay grows back and needs to be cut over and over, just like the grass on your school’s playground!
Farmers keep cutting, baling, and storing hay all year long. One type of machine cuts the hay and another machine collects it and packs it into bales. A bale keeps the hay pressed together in a bundle that can be easily stored and transported.

Hay is used for feed, and cows and horses love to eat it. Straw is used for bedding, and animals love to sleep on it.
Arizona is one of the top ten cotton-producing states in America. Cotton’s growing season begins in the spring. In the summertime, a boll forms after the cotton flower is pollinated. A boll is a hard shell on the plant that holds and protects the cottonseeds and fiber. In the fall, the boll pops open, displaying the fluffy white cotton inside. Then, it’s harvest time!

A large machine called a cotton picker removes the cotton from the plant. Then, the harvested cotton is taken to a building where another machine called a cotton gin pulls out the seeds and forms the remaining cotton lint into bales, just like hay.
You already know that cotton is used to make fabric for clothing, but cotton is also valuable for so much more! Oil from cottonseeds is used in cooking, medicines, lamps, and lotions. It is also an ingredient in foods like crackers, salad dressing, and cereal. None of the plant is ever wasted in the cotton industry. There’s an important use for it all.
There’s so much to love about Arizona agriculture! Green grass, colorful flowers, and leafy trees are also grown on Arizona farms and in greenhouses statewide. These products are sold in nurseries for families to buy. Why? To make our yards, homes, and businesses bee-utiful!
Some Arizona farms are organic. To grow crops organically, farmers use fertilizers, chemicals, and pest controls that are produced by nature. Some organic farmers release ladybugs or other helpful insects into their fields to eat the harmful bugs that damage crops. This is an example of natural pest control.

Arizona families can purchase many kinds of organic foods at grocery stores or farmers' markets, including produce, meat, dairy products, and eggs.
Arizona egg farmers worry about taking care of their hens, their farms, and their businesses. They don’t worry about how the eggs are laid, because their hens know exactly what to do.
Hens live in henhouses, where water and nutritious grain are always available. Farmers rarely touch the eggs because modern machines do the day-to-day work.

Hens lay eggs that roll onto a moving conveyor belt. Machines then wash and size the eggs, check them for cracks, and pack them into cartons. Next, the eggs are carefully loaded onto trucks and delivered to stores. Most eggs reach Arizona grocery stores just one day after they are laid.

**WHAT'S THE BUZZ?**

One hen lays about five eggs per week. That's 260 eggs per year!
Each day, a cow eats 100 pounds of food and drinks enough water to fill a bathtub.

If you like yogurt, cheese, ice cream, and milk, please thank a dairy farmer! Arizona dairy farmers take good care of their cows. That’s why Arizona produces high-quality milk. Modern dairy farmers use special machines to milk their cows two or three times a day. Computers keep track of each cow’s health and the amount of milk she produces.
Nutritionists recommend that people enjoy three cups of milk or milk products a day. Yogurt, cheese, ice cream, and cottage cheese are all dairy products.

Dairy farmers often raise their own hay to feed their cows. They save time and money when hay is grown on their own farms.

TIME FOR AN ICE CREAM BREAK! I'M THINKIN' COOKIES AND CREAM.
Arizona ranchers produce enough beef for every person in our state to chow down on a burger each day for 300 days in a row! That’s a pile of hamburgers!

Raising cattle for beef is another important business in Arizona. Most cattle ranches are owned by families who have been ranching for generations. Ranchers cannot take days off because cattle need care every day of the week. There are lots of chores to do!
When cattle have eaten most of the grass in one area, ranchers travel on horseback or in four-wheel drive vehicles to move the herd to another *pasture*. Moving the cattle gives them plenty of fresh grass to *graze*. The grass in the pasture they leave grows back, so the cattle can graze there again.

Ranchers also feed their cattle grain and hay, and they make sure their animals always have fresh drinking water.
Farmers and ranchers in Arizona have always worried about water. Because there isn’t much rain, they must find other ways to supply water to their crops and animals. Some farms and ranches get water from wells dug deep in the ground. Arizona also has many dams and reservoirs connected to canal systems that carry water to fields and pastures.
Along with conserving water, it’s also important to preserve our land! Arizona ranchers often set aside some of their property to protect wildlife and endangered species. This is a perfect example of how ranchers care about the environment.
WHEN! WE’VE COME ALL THIS WAY, AND I HAVE SAVED THE BEST FOR LAST. LET’S TALK HONEYBEES!

Bees are really important to Arizona’s amazing agricultural industry. Farmers depend on bees to pollinate their fields and orchards. When bees move pollen from one plant to another, it helps the plants produce crops. Bees also take pollen back to their beehives to eat.
Bees have other special jobs, too. They make honey and beeswax. Honey is a tasty, sweet treat that people love to eat. Beeswax is used for candles, crayons, soap, and furniture polish.

Whenever you color with a crayon, polish a table, or dip your chicken strip in honey sauce, remember to thank a bee!
WHOA ... LOOK AT THE TIME!

I need to Z-Z-Z home so I won’t be late for dinner. Now that we have traveled together, you can see why I love Arizona agriculture! What agricultural products do you love?
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