



A program developed by Butte County Farm Bureau

**Merced County Farm Bureau
PO Box 1232
Merced CA 95341
(209) 723-3001
dflake@mercedfarmbureau.org**

What is an Agribee?

The Agribee™ is a define and spell bee, using agriculture related words.

Who may participate?

Fourth and fifth grade students in Merced County are eligible to participate in the Agribee™.

When will it be held?

Agribee 2022 will be held on April 21, 2023 at Mainzer Theatre in Merced at 8:30 am. Depending upon amount of registrants, a preliminary Agribee may be held on March 30th or 31st at the UC Cooperative Extension in Merced, time TBA.

How does the Agribee™ work?

The procedure is much like the standard spelling bee, with one major difference. Each word must be defined and spelled. Each word is worth two points, one for the definition and one for correct spelling. Contestants may continue to participate in the beginning rounds as long as they are able to define, or spell, or both define and spell the word they are given. In the final round, the contestant must both define and spell the given word.

What are the word/definition lists?

The basic list of words/definitions are included in this packet.

What will the winner receive?

The winner of Agribee™ will receive an iPad. Second place winner will receive a \$100 Barnes & Noble gift card. All participants will receive a token of participation.

How do I sign up to participate in the Agribee™?

Each student/school must complete an Application to Participate by **Friday, February 10, 2023**. A Parent Authorization Form will need to be submitted by **Friday, February 24, 2023** to:

**Merced County Farm Bureau
PO Box 1232
Merced, CA 95341
Office (209) 723-3001
Fax (209) 722-3814**



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APPLICATION TO PARTICIPATE

PLEASE PRINT

School Name _____ Phone _____

Address _____ City, State Zip _____

Principal _____ E-mail _____

Important! Please Identify one teacher from your school as a direct contact for the program:

Teacher: _____ Phone Number: _____

E-mail: _____

Number of students participating at each grade level:

Fourth _____

Fifth _____

Total _____

Please complete this application and submit by **February 10, 2023:**

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PO Box 1232
Merced, CA 95341
dflake@mercedfarmbureau.org
Fax: (209) 722-3814

Date _____ Principal Signature _____



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PARENTAL DISCLOSURE AUTHORIZATION

The Merced County Farm Bureau has my permission to disclose my child's Agribee™ accomplishments with name and photograph/videotape of his/her image.

YES _____ NO _____

Student's Full Name _____ Grade _____

Student's School _____

Signature of Parent/Guardian _____ Date _____

Address _____ Phone _____

Dietary Restrictions _____

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Please e-mail, mail or fax this completed and signed permission form by  
**Friday, February 24, 2023** to:

Agribee™  
Merced County Farm Bureau  
PO Box 1232  
Merced, CA 95341  
Fax: (209) 722-3814  
dflake@mercedfarmbureau.org

| Word        | Definition                                                                                                                             | Sentence                                                                                                         |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| listeriosis | a bacterial disease affecting wild and domestic animals which can cause death                                                          | The cattle rancher lost two calves due to listeriosis.                                                           |
| berm        | a bank of earth                                                                                                                        | One side of our pond has a berm.                                                                                 |
| siphon      | a bent tube used for carrying liquid from a reservoir over the top edge of its container to a point below the surface of the reservoir | The peach farmer uses a siphon to transfer water from one ditch to another.                                      |
| anvil       | a block with a hard surface on which another object is struck                                                                          | the blacksmith shaped the horseshoe on an anvil                                                                  |
| fever       | a body temperature above normal for the species                                                                                        | The lamb had a fever so we called the veterinarian to check its health.                                          |
| hive        | a box or other shelter for a colony of domestic bees                                                                                   | We could hear a buzzing sound in the hive.                                                                       |
| mycology    | a branch of botany dealing with fungi                                                                                                  | Growers use information learned from mycology to produce bigger and better mushrooms.                            |
| wound       | a break in the skin                                                                                                                    | My dog had a wound on his leg from cutting himself on the barbed wire.                                           |
| barn        | a building for storing hay, grain and often for housing livestock                                                                      | Please bring the cows in to the barn tonight.                                                                    |
| greenhouse  | a building made mainly of glass, in which temperature and humidity may be controlled for the cultivation of plants                     | In England, many tomatoes are grown in a greenhouse because of the colder climate.                               |
| gopher      | a burrowing rodent that feeds on plant roots and leaves                                                                                | Even though I set a number of traps, that darned gopher got away and killed all of my tomato plants.             |
| sagebrush   | a bush that grows in dry regions with silvery wedge-shaped leaves and large flower clusters                                            | Sagebrush is an excellent forage for honeybees.                                                                  |
| steer       | a castrated male bovine                                                                                                                | A steer cannot breed.                                                                                            |
| gelding     | a castrated male horse                                                                                                                 | The gelding has a shiny mane and tail.                                                                           |
| wether      | a castrated male sheep                                                                                                                 | The wether cannot be used for breeding.                                                                          |
| wheat       | a cereal grain                                                                                                                         | Wheat is ground into flour and used in bread and biscuits.                                                       |
| sorghum     | a cereal grass used mainly for feed or silage                                                                                          | Sorghum is able to withstand dry weather conditions.                                                             |
| barley      | a cereal grass with seeds used as a food                                                                                               | Barley is a healthy addition to a vegetable soup.                                                                |
| nitrogen    | a chemical element essential for plant growth and reproduction                                                                         | Because growing plants use up the nitrogen in the soil, farmers use several ways to return nitrogen to the soil. |
| herbicide   | a chemical substance used to kill weeds                                                                                                | Round Up is an herbicide.                                                                                        |
| attractant  | a chemical that lures insects or other pests by stimulating their sense of smell                                                       | The attractant worked well to confuse the crop's pests.                                                          |

|           |                                                                                                                          |                                                                                             |
|-----------|--------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| gizzard   | a chicken's organ located between the stomach and intestines that grinds its food                                        | The bird's gizzard has a thick lining and often contains bits of grit and sand.             |
| burr      | a chipped or raised surface of a metal object                                                                            | A burr on a needle can cause pain to a pig when given an injection.                         |
| hedge     | a close-set row of bushes forming a border or boundary in a garden, field or yard                                        | A privet hedge makes an excellent boundary between the grass and the vegetable garden.      |
| ecosystem | a community of living organisms with in their surrounding environment.                                                   | rice is grown in an ecosystem that consists of soil, water air and nutrients                |
| conifer   | a cone-bearing plant with thin, needle-like leaves                                                                       | A pine tree is a conifer.                                                                   |
| calf      | a cow's offspring                                                                                                        | The cow's calf was recently born.                                                           |
| walnut    | a deeply wrinkled nut that is enclosed in a hard shell and leathery husk                                                 | A walnut tastes a little better if it is toasted.                                           |
| forklift  | a device for lifting and stacking heavy loads with projecting prongs that are slid under the load and raised or lowered  | The forklift operator stacked the peach bins three high.                                    |
| sprinkler | a device that sends out a spray of water, used for irrigation                                                            | all areas of the yard stayed moist throughout the dry season.                               |
| footrot   | a disease affecting the hooves and feet of cows, swine and sheep                                                         | That cow is limping because she has footrot.                                                |
| niche     | a distinct segment of a market, focused on a particular service or product                                               | With his unique crop of melons, he was able to carve a niche in the marketplace.            |
| bushel    | a dry volume measure of varying weight for grain and fruit                                                               | She used a whole bushel of apples to make her holidays pies.                                |
| dockage   | a factor in the grading of grains and oilseeds                                                                           | The dockage reduced the overall price of the load of rice delivered to the mill.            |
| plow      | a farm implement used to cut, turn up, and break the soil                                                                | The old plow is dented from hitting rocks in the soil.                                      |
| dairy     | a farm that is devoted to producing milk                                                                                 | The cows are milked at 5:00 AM at the dairy up the street.                                  |
| silt      | a fine-grained sediment                                                                                                  | The farmer felt fortunate to have a loamy soil made of equal parts of sand, silt, and clay. |
| gondola   | a flat-bottomed car with low sides, pulled by a tractor and used in the harvest of tomatoes                              | The picked tomatoes were placed in the gondola and taken to the grading station.            |
| abscess   | a fluid-filled pocket in or under an animal's skin                                                                       | The abscess in the lamb's mouth needs to be drained before it becomes infected.             |
| bees      | a four-winged insect used for pollination and honey production                                                           | Bees pollinate the flowers of many California crops                                         |
| harrow    | a frame with spikes pulled by a tractor to break up soil, cover seeds, or root up weeds                                  | The tractor pulled the harrow through the field.                                            |
| pepper    | a fruit that is hollow with firm walls containing the seeds and pungent flesh, can be eaten raw or cooked as a vegetable | The pepper I ate in my salad was crunchy.                                                   |

|             |                                                                                                                    |                                                                        |
|-------------|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| biodiesel   | a fuel partially made from oily plant products for use in diesel engines                                           | My family bought a truck that runs on biodiesel.                       |
| mildew      | a fungal disease that leaves a furry white coating                                                                 | Mildew damaged the crop.                                               |
| cauliflower | a garden plant grown for its compact edible head of usually white undeveloped flowers                              | My dad found caterpillars on our cauliflower seedlings.                |
| lettuce     | a garden plant with crisp leaves used especially in salads                                                         | There are many types of lettuce, including Bibb, Romaine, and Iceberg. |
| tailgate    | a gate at the back of a wagon or truck                                                                             | My dad's new pickup truck has a removable tailgate.                    |
| avocado     | a green pear-shaped tropical fruit with a single large seed and buttery flesh that grows on a tree                 | You need an avocado to make guacamole.                                 |
| tissue      | a group of cells that perform a specific function                                                                  | Leaf tissue is usually green.                                          |
| flock       | a group of sheep or chickens                                                                                       | The flock needs to be led up to the new pasture.                       |
| whitefly    | a group of small insects that are harmful to plants                                                                | To get whitefly off my basil plants I hose them off.                   |
| colony      | a group of social insects having a queen and workers                                                               | A bee colony is very active in the spring.                             |
| mold        | a growth of fungi associated with decay                                                                            | There is mold on the peaches.                                          |
| trowel      | a hand tool with a short handle and a curved blade used for light digging                                          | A trowel is perfect for making holes to plant garden seedlings.        |
| ranch       | a large farm devoted to the raising of livestock                                                                   | My uncle has a cattle ranch.                                           |
| eggplant    | a large fruit with purple skin, eaten cooked as a vegetable                                                        | I like to grill eggplant unpeeled, with salt and pepper.               |
| region      | a large land area which is naturally suited for particular plant and animal life                                   | Our region, the northern Central Valley, is ideal for growing walnuts. |
| pitchfork   | a large, long-handled fork used for lifting and tossing hay or straw                                               | A pitchfork can be used to clean out stalls on a dairy farm.           |
| grapefruit  | a large, round citrus fruit with pale yellow or pink rind                                                          | I ate half a grapefruit for breakfast today.                           |
| scaffold    | a larger branch growing from the central portion of a tree trunk                                                   | Tommy climbed far out onto the scaffold of the old oak tree.           |
| hardpan     | a layer of hard matter, especially clay, that lies beneath soft soil, through which plant roots cannot get through | The farmer was unhappy to find hardpan in several of his fields.       |
| alfalfa     | a legume grown as feed for livestock                                                                               | The rancher is feeding alfalfa to the lambs in the pasture.            |
| branch      | a limb or offshoot of any main stem                                                                                | We sat on the tree's lowest branch.                                    |
| pipeline    | a line of pipes for transporting water, gas, or oil                                                                | The pipeline brought water from the river to the fields.               |
| water       | a liquid needed by all living things, including plants                                                             | Drinking water is better for your body than soda.                      |
| cucumber    | a long green vegetable used in salads and for pickling                                                             | A chilled cucumber was sliced and put into sandwiches.                 |
| drought     | a long period of time with no rain                                                                                 | Texas had a three year drought until it started raining this Spring.   |

|            |                                                                                                                  |                                                                                                   |
|------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| trough     | A long, narrow open container for animals to eat or drink out of.                                                | The water trough needs to be cleaned at least once a week.                                        |
| panicle    | a loose, irregularly branched flower cluster                                                                     | The rice panicle bends over with the weight of its developing rice kernels.                       |
| reaper     | A machine for cutting standing grain.                                                                            | The invention of the horse-drawn reaper in 1831 brought about large increases in food production. |
| dryer      | a machine for drying nuts or rice by blowing heated air on them                                                  | After rice is harvested, it will be transported to the dryer.                                     |
| pump       | a machine that forces water through a pipe                                                                       | We use pump irrigation for our orchard.                                                           |
| dehydrator | a machine that removes water from foods in order to preserve them                                                | We used a dehydrator to make homemade fruit rollups.                                              |
| huller     | a machine that separates the hulls from the nuts                                                                 | After harvesting, the nuts go into the huller.                                                    |
| shaker     | a machine that shakes fruit off the tree                                                                         | When the shaker works in the orchard, I can feel the ground shaking.                              |
| swather    | a machine which cuts the hay crop a few inches above the ground and places it windrows where it dries in the sun | The farmer used a swather to harvest his alfalfa crop.                                            |
| cockerel   | a male chicken under one year of age                                                                             | Every morning at 5:30am, the cockerel sits on the fence and crows.                                |
| buck       | a male goat or sheep used for breeding                                                                           | Keep the buck in his pen until breeding season                                                    |
| cantaloupe | a melon having a tan rind with sweet fragrant orange flesh                                                       | Cantaloupe is one of my favorite summertime melons.                                               |
| compost    | a mixture of decaying vegetable scraps and manure used as a fertilizer and soil conditioner                      | Many people use vegetable trimmings to create compost for their garden.                           |
| ditch      | a narrow channel dug in the ground, usually used for irrigation or drainage                                      | The farmer dug a ditch around his crop for easier access to water.                                |
| herd       | a number of animals living, feeding, or traveling together                                                       | We need to round up the herd of cattle for branding.                                              |
| cluster    | A number of things of the same kind, growing or held together; a bunch                                           | The grapes hung from the vine in a cluster.                                                       |
| macadamia  | a nut, native to Australia, now grown in California                                                              | Macadamia nuts have a soft buttery texture.                                                       |
| pedigree   | a paper showing an animal's forebears or lineage                                                                 | Cindy's dog's pedigree showed ancestry dating back over 100 years.                                |
| bluegrass  | a perennial pasture grass with a blue-green tint                                                                 | Bluegrass is a nutritious plant that livestock feed on.                                           |
| consumer   | a person who buys goods or services for their own use                                                            | Farmers try to understand what the consumer likes to buy.                                         |
| farmer     | a person who earns a living by managing or operating a farm                                                      | My dad is a farmer who grows rice and olives.                                                     |
| blacksmith | a person who forges iron                                                                                         | Horseshoes can be made by a blacksmith                                                            |
| foreman    | a person who is in charge of a group of workers                                                                  | George is the foreman of the ranch.                                                               |

|              |                                                                                                                |                                                                                                                       |
|--------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| veterinarian | a person who practices the branch of medicine dealing with animal diseases and injuries                        | The veterinarian examined the dairy cattle to be sure they were healthy.                                              |
| farrier      | a person who shoes horses                                                                                      | Please call the farrier and set up an appointment for the pony.                                                       |
| pomologist   | a person who studies the science of fruit cultivation                                                          | The pear farmer's daughter wants to become a pomologist after going to college.                                       |
| shepherd     | A person whose job is to care for sheep.                                                                       | Sheep know their shepherd by his voice.                                                                               |
| field        | a piece of cleared land for raising crops                                                                      | This field is planted with melons.                                                                                    |
| farm         | a piece of land on which crops or animals are raised                                                           | Our family has a dairy farm.                                                                                          |
| swine        | A pig.                                                                                                         | I prefer the Hampshire breed of swine.                                                                                |
| refuge       | a place providing protection or shelter                                                                        | Rice wetlands become a refuge for migratory birds.                                                                    |
| insectaries  | a place to keep or raise insects                                                                               | The Smith Insectaries Company produces thousands of good bugs such as praying mantises, ladybugs, and lacewing flies. |
| reservoir    | a place to store water                                                                                         | as the drought continues the Oroville dam resevoir will be more important to farmers                                  |
| cannery      | a place where foods are canned                                                                                 | My brother works at the local peach cannery.                                                                          |
| nursery      | a place where plants are grown to a usable size                                                                | It is wise to visit a nursery before ordering trees from them.                                                        |
| weed         | a plant growing in an unwanted place, often hindering the growth of other desirable plants                     | No matter what I do, I cannot kill that weed growing in my lawn!                                                      |
| ornamental   | a plant grown for its beauty rather than for food                                                              | The fruit of an ornamental plum tree isn't good to eat, but the purple foliage is lovely.                             |
| yarrow       | a plant in the daisy family with leaves like ferns                                                             | I grow bright yellow yarrow in my flowerbeds.                                                                         |
| rootstock    | a plant onto which another is grafted as a new top                                                             | Most varieties of apple trees are grafted onto a particularly hardy rootstock.                                        |
| parasite     | a plant or animal that lives on or in an organism of another species, usually with harmful effects on the host | Mistletoe is a parasite that lives on trees.                                                                          |
| stalk        | a plant stem                                                                                                   | I love to eat the crunchy stalk of the celery.                                                                        |
| perennial    | a plant that lives for more than two years                                                                     | my daisy has continued to thrive after two years of blooming, because it is a perennial                               |
| annual       | a plant that lives for only one growing season                                                                 | Mary planted many annual flowers in her garden this year.                                                             |
| perennial    | a plant with a life cycle of more than two years                                                               | My perennial flowerbed has begun to bloom again this spring.                                                          |
| vine         | a plant with a long, thin stem that grows along the ground or climbs a wall or other support                   | Melons and grapes grow on a vine.                                                                                     |



|             |                                                                                                                 |                                                                                             |
|-------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| dibble      | a pointed gardening tool used for making holes in soil, especially for planting bulbs and seedlings             | After tilling the soil, the gardener used a dibble to plant her flower seedlings.           |
| carryover   | a portion of the current year's crop that will be sold in the next year's crop                                  | The large carryover of the 2008 rice crop made it difficult to sell the new 2009 rice crop. |
| tractor     | a powerful vehicle used for pulling farm machinery                                                              | Jack bought a new tractor for his farm this year.                                           |
| welding     | a process of joining pieces of metal by using a torch                                                           | Jennifer enjoyed welding and made a new trailer to carry farm equipment.                    |
| loppers     | a pruning tool with long handles                                                                                | The farmer used loppers to prune the peach trees.                                           |
| chili       | a pungent pepper related to the tomato                                                                          | My mother added a hot chili to the barbeque sauce.                                          |
| angora      | a rabbit or goat with a coat about 3 inches long, raised for wool or meat                                       | Jessica is raising an angora rabbit for 4H this year.                                       |
| tomato      | a round fruit, typically with bright red skin and pulpy flesh, can be eaten raw or cooked as a vegetable        | I grew my first tomato plant this year!                                                     |
| peach       | a round, juicy orange-yellow fruit with a fuzzy skin                                                            | I like to add a juicy peach to my breakfast smoothies.                                      |
| turnip      | a roundish, light-colored fleshy root used as a vegetable                                                       | I pulled up a turnip from the garden and added it to my soup.                               |
| auction     | a sale where bids are received and the item is sold to the highest bidder                                       | The 4H hogs were sold at auction this summer.                                               |
| dormancy    | a season in which a plant stops most growth activity                                                            | During the dormancy period the plant does not grow larger.                                  |
| saddle      | a seat for a rider on the back of a horse                                                                       | Will you put the saddle on the horse so I can ride it?                                      |
| sucker      | a secondary shoot coming out of a limb, the base or roots of a woody plant that gives rise to a new plant       | A sucker formed where the tree limb had broken off.                                         |
| kernel      | a seed or a nut                                                                                                 | The peach kernel is not edible.                                                             |
| combine     | a self-propelled machine that harvests a crop while moving across the field                                     | The antique combine harvested the wheat at the Patrick Ranch.                               |
| mottling    | a series of blotches, streaks, or spots on fruit or leaves of a plant                                           | Leaf mottling is typical of many viruses, such as the watermelon mosaic virus.              |
| bloat       | a severe swelling up of the abdomen, caused by gas; usually in animals that graze or over eat                   | If allowed to suddenly overeat in lush alfalfa pasture, sheep may suffer bloat.             |
| flat        | a shallow box for growing seedlings. Also: A single-layered carton of picked fruit                              | The seedlings were taken from the flat and planted in the garden.                           |
| wheelbarrow | a shallow open box with a single wheel and two handles                                                          | He uses a wheelbarrow to carry compost to the garden.                                       |
| mole        | a small burrowing rodent that feeds on insects, and whose tunnels can cause problems in farm fields and gardens | I found a mole hole right in the middle of my lettuce bed!                                  |

|             |                                                                                                              |                                                                                               |
|-------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| hock        | a small cut of meat, especially ham, from the front or hind leg directly above the foot                      | A ham hock is often used to flavor pea soup.                                                  |
| aphid       | a small insect that feeds on the juice of plants                                                             | I see an aphid on that plant.                                                                 |
| nodule      | a small knot or lump on the stem or root of a plant                                                          | Bacteria enter the root hairs of a plant, and as they multiply, a nodule forms.               |
| lemon       | a small, egg-shaped citrus fruit with a yellow skin                                                          | I like to add a slice of lemon to my ice water.                                               |
| pesticide   | a specific chemical used to kill pests                                                                       | We use a pesticide around the foundation of our house to kill ants.                           |
| measure     | a standard unit used to express size, amount or degree                                                       | farmers rely on an accurate measure of temperature during bloom                               |
| ammonia     | a strong-smelling gas formed naturally when bacteria decompose nitrogen-containing compounds, such as manure | I wrinkled my nose because it smelled like ammonia as I drove by the cow pasture.             |
| trellis     | a structure made of open latticework, used to support plants or to provide shade                             | Jackie built a trellis over our patio.                                                        |
| chemicals   | a substance created by a chemical process used to enrich soil and to help produce better crops               | The farmer added a specific chemical to his fields so the plants might produce a larger crop. |
| nutrients   | a substance or ingredient that provides nourishment                                                          | Fruit that is eaten raw gives the body many nutrients.                                        |
| insecticide | a substance used to kill insects                                                                             | My mother sprayed insecticide on the ants.                                                    |
| tuber       | a swollen, fleshy underground stem with multiple buds which produce new growth                               | A potato is a good example of a tuber.                                                        |
| ventilation | a system to provide fresh air without causing drafts                                                         | Dad needed to adjust the ventilation in the shop since it was so hot inside.                  |
| honey       | a thick, sweet, syrupy substance that bees make as food from the nectar of flowers                           | Honey is used to sweeten some beverages.                                                      |
| cambium     | a thin layer of tissue between the bark and wood of a tree                                                   | In a tree, the cambium layer repeatedly subdivides to form new wood and bark.                 |
| cultivator  | a tool attached to a tractor drawn between rows of growing plants to loosen the earth and destroy weeds      | Fertilizer can be mixed into the soil using a rotary cultivator.                              |
| auger       | a tool or machine with a corkscrew-shaped bit for drilling holes                                             | Dad used an auger to drill post holes                                                         |
| shovel      | a tool with a long handle and a broad scoop or blade for digging and moving loose material, such as soil     | The farmer used a shovel to dig holes for planting his new trees.                             |
| aggregate   | a total of different parts                                                                                   | The aggregate nut crops grown in Butte County mostly contain almonds, walnuts and pistachios. |

|             |                                                                                                      |                                                                                       |
|-------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| disk        | a tractor-drawn tool with circular plates used to prepare the soil for seeding                       | After the field was plowed, the farmer used a disk to break up the soil for planting. |
| season      | a traditional division of the year based on distinctive weather conditions                           | We usually end the harvest season with a moonlight bonfire.                           |
| deciduous   | a type of plant that loses its leaves or needles in the fall and winter                              | Trees such as peaches and prunes are deciduous.                                       |
| legume      | a type of plant with seeds that grow inside pods and adds nitrogen to the soil                       | The lentil is a type of legume that provides protein and fiber to your diet.          |
| boll        | a type of seed pod                                                                                   | When the cotton boll opens, it is getting ready for harvest.                          |
| lactose     | A type of sugar that is found in milk.                                                               | Some people are allergic to the lactose in dairy foods.                               |
| acre        | a unit of land measure                                                                               | The farmer planted one acre of corn.                                                  |
| degree      | a unit of measurement for temperature                                                                | If the temperature goes up one more degree, the bees might come out of their hive.    |
| ton         | a unit of weight equal to two thousand (2,000) pounds                                                | One ton bags of rice seed were placed on the truck for shipping.                      |
| cultivar    | a variety of a plant selected for its specific characteristics                                       | Beefsteak is a tomato cultivar.                                                       |
| tangerine   | a variety of mandarin orange with a deep reddish-yellow color and segments that are easily separated | Peeling and eating a tangerine is very easy.                                          |
| prune       | a variety of plum that dries without spoiling                                                        | This prune is delicious!                                                              |
| zucchini    | a variety of summer squash, which can have different shapes and colors                               | Grandpa grows zucchini in his garden every year.                                      |
| broccoli    | a vegetable having dense clusters of green flower buds                                               | Steamed broccoli is delicious when served with cheese sauce.                          |
| caterpillar | a worm-like insect larva of a butterfly or moth                                                      | I put the caterpillar in a jar with a stick.                                          |
| lease       | a written agreement allowing someone to use your land                                                | The farmer has leased the orchard from his neighbor for 25 years.                     |
| broiler     | a young chicken, usually 6-8 weeks old, that is raised for meat                                      | Broiler chickens have been bred to gain weight rapidly.                               |
| pullet      | a young female chicken who has never laid an egg                                                     | A new pullet was purchased for the chicken yard.                                      |
| heifer      | a young female cow                                                                                   | The boy led his heifer to the stall at the County Fair.                               |
| gilt        | a young female swine that has not produced a litter                                                  | The 3-month old gilt laid close to her mother to sleep.                               |
| lamb        | a young sheep under 1 year of age                                                                    | The lamb bleated out for its mother.                                                  |
| sapling     | a young tree                                                                                         | The sapling needs to be transplanted so it has more room to grow.                     |

|            |                                                                                |                                                                                                               |
|------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| stallion   | adult male or father horse                                                     | We hope the new stallion will be a good breeder for our mares.                                                |
| sow        | an adult female pig.                                                           | Our two-year old sow had eight piglets in her litter.                                                         |
| drone      | an adult male bee                                                              | The drone mates with the queen bee.                                                                           |
| easement   | an agreement between property owners to share the use of the land              | The easement on the farmer's property allowed for his neighbor to drive their tractors to their own property. |
| payment    | An amount paid                                                                 | The bank has loaned us money to buy property, so we make an annual payment to the bank.                       |
| predator   | an animal that survives by eating other animals                                | The coyote is a natural predator of sheep.                                                                    |
| offspring  | An animal's young                                                              | A lamb is the offspring of a ewe and a ram.                                                                   |
| penicillin | an antibiotic made from a specific mold                                        | Some people are allergic to penicillin and must take a different medicine.                                    |
| assessment | an appraisal or evaluation                                                     | The assessment on my father's property was valued at \$150,000.                                               |
| orchard    | an area of land devoted to the cultivation of nut or fruit trees               | We have an orchard of almonds and a grove of pines on our property.                                           |
| herb       | an aromatic plant used fresh or dried for seasoning food                       | Basil is the traditional herb used in pesto.                                                                  |
| canal      | an artificial waterway                                                         | We get our water for irrigation from the canal.                                                               |
| milo       | an early-growing, usually drought-resistant feed grain which resembles millet  | Milo, also known as grain sorghum, is primarily used for animal feed.                                         |
| pistachio  | an edible nut with a green kernel                                              | The pistachio tree was developed for commercial use in Chico in the 1930's.                                   |
| almond     | an edible nut, oval shaped and pointed at one end                              | There are many almond orchards in Butte County.                                                               |
| corral     | an enclosure for confining animals                                             | We keep the horses in the corral.                                                                             |
| manzanita  | an evergreen bush or tree with drooping clusters of pink or white flowers      | Manzanita is the earliest blooming plant for honeybee production                                              |
| brand      | an identification mark burned into the hide of livestock                       | All the cattle had the AAA Ranch brand on them.                                                               |
| mastitis   | an infection of a cow's udder                                                  | The dairy farmer couldn't sell the milk from the cow that had mastitis.                                       |
| borer      | an insect or insect larva that chews or tunnels into the woody parts of plants | This sweet corn is genetically modified to protect itself from corn borer insect damage.                      |
| weevil     | an insect that feeds on cotton, fruits, and grains                             | Mother found a weevil in the cornmeal box in the cupboard.                                                    |
| butterfly  | an insect with long, usually colorful wings, a slender body, and long antennae | The butterfly is an important plant pollinator.                                                               |

|              |                                                                                                               |                                                                               |
|--------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| bluetongue   | an insect-borne viral disease of sheep, cattle, goats and wild ruminant animals                               | Three of the farmer's sheep were taking medication for bluetongue.            |
| barometer    | an instrument for measuring atmospheric pressure                                                              | A barometer can be used to forecast the weather.                              |
| tensiometer  | an instrument for measuring the surface tension of a liquid                                                   | A tensiometer can help the farmer to know when to irrigate and for how long.  |
| transit      | an instrument used for surveying land                                                                         | I used a transit to determine the land's elevation.                           |
| pathogen     | an organism that causes a disease                                                                             | The veterinarian is trying to find out which pathogen caused the lamb to die. |
| pecan        | an oval-shaped nut with a smooth, thin shell                                                                  | Pecan pie is my favorite pie to eat in the fall.                              |
| landowner    | an owner of land                                                                                              | A right of a landowner is to choose to grow whatever crop he or she desires.  |
| aquifer      | an underground layer of porous rock or sand containing water where wells may be sunk                          | The farmer located a large aquifer on his property.                           |
| ruminant     | animal that has a stomach with four sections                                                                  | A cow is a ruminant.                                                          |
| agribusiness | any business associated with farming                                                                          | Our local feed store is an agribusiness.                                      |
| fungicide    | any chemical used to kill fungus                                                                              | We spray fungicide on our crops to prevent mildew.                            |
| organism     | any individual living body                                                                                    | A tree is one example of an organism.                                         |
| biomass      | any living matter that can be changed into energy                                                             | We can burn plant biomass to produce steam for making electricity.            |
| amendment    | any material added to soil to improve water retention, drainage, and overall structure                        | The farmer used compost as a soil amendment.                                  |
| fertilizer   | any material, such as manure or chemicals, put on or in the soil to improve plant growth or plant quality     | Grandpa added fertilizer in his garden to help his vegetables grow larger.    |
| fruit        | any plant product, such as grain, flax, vegetables                                                            | Peaches and oranges are two types of fruit grown in Yuba County.              |
| blight       | any weather or soil condition, parasite, disease or insect that kills, withers, or stops the growth of plants | Late spring rains caused blight that ruined the cherries last year.           |
| ricelands    | aquatic fields where rice is grown in warm climates                                                           | California ricelands provide a beautiful scenery at sunset.                   |
| natural      | as found in nature with no changes made by man                                                                | This fabric is made from a natural fiber.                                     |
| commodity    | basic items or staple products of agriculture                                                                 | Wheat is a very important and versatile commodity.                            |
| apiculture   | beekeeping                                                                                                    | Study apiculture before you buy your bees.                                    |
| subcutaneous | beneath the skin                                                                                              | He gave the cow a subcutaneous injection                                      |
| native       | born or originating in a particular place or region                                                           | Oak trees are native to Northern California.                                  |

|             |                                                                                             |                                                                                               |
|-------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| sustainable | capable of being continued with minimal long-term effect on the environment                 | Integrated pest management is a sustainable farming practice.                                 |
| grain       | cereal seeds in general: wheat, rice, corn rye, etc.                                        | Rice is a type of grain grown in Butte County.                                                |
| chevre      | cheese made from goat's milk                                                                | I like to eat chevre spread on crackers.                                                      |
| nematicides | chemicals that destroy nematodes                                                            | The farmer treated his infected beet crop with nematicides.                                   |
| coalition   | combination of alliances, for example farmers, ranchers and agri-business                   | Butte County has formed a water coalition to talk about water and environmental issues.       |
| carding     | combing the clean, dry wool to straighten the fibers                                        | The farmer is carding his wool before it is used to make yarn.                                |
| canker      | dead, discolored and often sunken area on a root, stem or branch                            | The farmer was worried that a canker had formed on the walnut tree.                           |
| traits      | distinguishing characteristics or qualities of something                                    | Only sheep with desirable traits are kept for breeding.                                       |
| straw       | dried plant matter used as bedding                                                          | Dad laid straw down in the chicken coop.                                                      |
| arid        | extremely dry                                                                               | Crops need regular irrigation in arid regions of California.                                  |
| baler       | farm equipment that compresses and binds straw, hay, or cotton into a standard-sized bundle | The baler was attached to the tractor.                                                        |
| harvester   | farm machines used for harvesting crops                                                     | The harvester cut down the winter wheat crop.                                                 |
| tallow      | Fat from cattle and sheep that has been boiled, strained, and allowed to cool into a solid. | Tallow is one of the many useful byproducts of cattle, used chiefly to make candles and soap. |
| ration      | feed fed to an animal in a 24 hour period                                                   | The animals were fed a daily ration of hay and grain.                                         |
| fodder      | feed for livestock, especially coarsely chopped hay or straw                                | Maize is a variety of corn used as fodder.                                                    |
| roughage    | feeds that are made of grass, hay or silage                                                 | Livestock need plenty of roughage to eat.                                                     |
| loam        | fertile, workable soil with a mixture of sand, silt, and clay                               | The farmer was lucky to have rich loam in which to plant his crops.                           |
| pollen      | fine, dustlike particles in the blossom of a plant                                          | Bees collect pollen from flowers.                                                             |
| edible      | fit to be eaten                                                                             | The blueberry is the edible portion of the blueberry bush.                                    |
| silage      | fodder preserved through fermentation in a silo                                             | Instead of making hay, alfalfa was wrapped in plastic to produce silage.                      |
| forage      | food provided for animals, especially taken by browsing or grazing                          | almond blossoms are a good forage for honeybees                                               |
| apiary      | for the purpose of breeding and supplying bees, honey and other bee products                | The apiary reached its maximum number of bees.                                                |
| citrus      | fruits of the lemon, lime, orange, etc., trees                                              | Vitamin C is found in citrus fruits.                                                          |
| ethanol     | fuel made from corn                                                                         | Some vehicles run on ethanol rather than gasoline or diesel.                                  |

|             |                                                                                  |                                                                             |
|-------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| hazardous   | full of risk; of potential danger                                                | The diesel fuel that spilled into the creek will be hazardous to the fish.  |
| ripe        | fully developed and ready for harvest                                            | I picked a ripe apple from my tree in the backyard.                         |
| harvest     | gathering a crop from a field or orchard                                         | Almond harvest is in the fall.                                              |
| pasture     | grass-covered land used for grazing livestock                                    | The rancher had hundreds of cattle grazing in his pasture.                  |
| lanolin     | grease that is on the fleece of sheep                                            | Lanolin from sheep is used in hand lotion to heal dry skin.                 |
| organic     | grown without chemical fertilizers or sprays                                     | The organic apple farmer grows very sweet and juicy apples.                 |
| galls       | growths on plants caused by insects or insect larvae                             | There are many galls on the oak trees.                                      |
| hemisphere  | half of the Earth, usually divided into northern and southern                    | In the winter, most of our produce comes from the southern hemisphere.      |
| leveled     | having a consistently even surface throughout                                    | The field needed to be leveled before planting.                             |
| serrate     | Having a saw-toothed edge.                                                       | The serrate pattern on the leaves helped me to identify the plant.          |
| renewable   | having an endless supply                                                         | solar power is a renewable resource used for electricity in pumps on farms  |
| polled      | having no horns; as with sheep or cattle                                         | His cattle are polled.                                                      |
| registered  | having recorded an animal's birth and ancestry through a registry association    | We registered Jason's dog through AKC.                                      |
| botanical   | having to do with plants                                                         | We visited the botanical gardens in San Francisco last weekend.             |
| livestock   | horses, cattle, sheep, and other useful animals raised on a farm or ranch        | The livestock on the ranch broke out of their pens.                         |
| tattoo      | identification of animals using ink that permanently stains the skin             | The rabbit has a tattoo on his ear.                                         |
| pupa        | in insects, a resting stage between larva and adult, when no feeding takes place | The pupa is enclosed in a cell inside the beehive.                          |
| larva       | in insects, an immature form not resembling the adult                            | The bee larva is also called a grub.                                        |
| aerial      | in the air or flying; a method of application                                    | Rice farmers use aerial seeding to plant rice.                              |
| beneficials | insects that help to control crop pests                                          | Ladybugs are important beneficials to control aphid populations.            |
| injection   | insertion of a substance into the body by means of a needle                      | cattle are given an injection to prevent and treat disease                  |
| invasive    | involving unwanted, aggressive intrusion and spreading                           | Weeds are invasive plants that deprive crops of water, space, and sunlight. |

|                |                                                                                           |                                                                                                     |
|----------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| sushi          | Japanese delicacy consisting of cooked rice and vegetables, seafood and/or egg            | California grows nearly 85% of America's sushi rice.                                                |
| feedlot        | land on which cattle are fattened for market                                              | If you are traveling on I5 in the valley, you'll pass the Harris Ranch feedlot.                     |
| foliage        | leaves of a plant or tree                                                                 | The foliage of a plant takes in sunlight.                                                           |
| gestation      | length of pregnancy                                                                       | The gestation of a lamb is five months.                                                             |
| sunlight       | Light from the sun.                                                                       | Sunlight is one of the main ingredients for plant growth.                                           |
| microorganisms | living creatures of microscopic size                                                      | Millions of microorganisms can be found in just a handful of soil.                                  |
| ridges         | long narrow raised strips of soil which direct the flow of irrigation water in an orchard | The entire orchard was watered by using ridges.                                                     |
| incubator      | machine used to keep eggs warm so baby chicks will hatch from them                        | Mrs. Davis borrowed the incubator from the 4H office for her chicken lesson in her 2nd grade class. |
| boar           | male or father pig                                                                        | A boar is used in the breeding of pigs.                                                             |
| forestry       | management and protection of forest resources for human benefit                           | mountains, John thought he might study forestry when he went to college.                            |
| conservation   | management of human and natural resources to provide long-term benefits                   | Water conservation has been of great concern in our community due to lack of rain.                  |
| microbes       | Microscopic organisms; (micro-organisms)                                                  | Microbes are so tiny that you would find a million of them in one teaspoon of soil.                 |
| curd           | milk solids used in cheese making                                                         | In cheese making, the curd is separated from the whey.                                              |
| migration      | movement to another region with change of season                                          | The duck migration has started in northern California.                                              |
| loin           | muscle (meat) from the back of an animal                                                  | The loin is a tender cut of meat.                                                                   |
| immature       | Not fully developed.                                                                      | In May the young walnuts are still immature and not ready for harvest.                              |
| acorn          | nut from an oak tree                                                                      | The acorn was an important part of the Native American diet.                                        |
| scarecrow      | object for scaring birds away in a field or garden                                        | I want to put a red hat on my scarecrow.                                                            |
| domestic       | of the home and family, made in one's own country                                         | We purchased domestic cheese for the harvest party.                                                 |
| urban          | of, pertaining to, or characteristic of a city or town                                    | Compared to rural areas, urban areas contain the largest amount of people.                          |
| rural          | of, pertaining to, or characteristic of the country.                                      | The region is rural in appearance, with well-farmed land on all sides.                              |
| sell           | offer a product in exchange for money                                                     | The farmer will sell his broccoli at the Farmer's Market.                                           |



|             |                                                                                               |                                                                                          |
|-------------|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| regulations | Official rules or laws that say how something is to be done.                                  | You need to know the county regulations before you apply a tree spray.                   |
| phosphorus  | one of the 17 mineral elements essential for plant growth and reproduction                    | All plants require phosphorus during periods of rapid growth.                            |
| potassium   | one of the 17 mineral elements essential for plant growth and reproduction                    | Farmers often apply potassium as fertilizer for optimum plant growth.                    |
| magnesium   | one of the many mineral elements necessary for good health                                    | Almonds are an excellent source of Vitamin E and magnesium.                              |
| epicurean   | one who is devoted to the enjoyment of food and comfort                                       | my friend Maria is an epicurean and loves ethnic foods.                                  |
| nematodes   | parasitic worms with long, cylindrical, unsegmented bodies which may infest animals or plants | The farmer's beet crop was infested with nematodes.                                      |
| laborers    | People who do hard physical work for money.                                                   | The harvest of cherries was slow due to the lack of farm laborers.                       |
| butcher     | person that cuts meat into pieces for purchase                                                | Most of animals sold at the Fair Auction will go to the butcher.                         |
| stewards    | persons responsible for the planning and management of resources                              | Farmers are the best stewards of the land.                                               |
| bovine      | pertaining to cattle, buffalo or oxen                                                         | Our neighbor's pasture is home to a large bovine herd.                                   |
| riparian    | pertaining to the area along the banks of a river, stream, or lake                            | Because of riparian erosion, the farmer's field was getting smaller.                     |
| booted      | pertaining to the feathers on chicken legs                                                    | A booted chicken is often raised as an ornamental breed rather than one for consumption. |
| labor       | physical or mental work done that provides goods or services                                  | The cost of labor is much higher than the cost of parts to fix the tractor.              |
| dandelions  | plants with bright yellow flowers on hollow stalks that produce fluffy white seed heads       | Dandelions always sprout up in my lawn.                                                  |
| abundant    | plentiful                                                                                     | There was an abundant rice crop last year.                                               |
| canned      | preserved in a metal or glass container                                                       | Some peaches from this orchard will be sent to the cannery to be canned.                 |
| fertile     | Producing or capable of producing abundant vegetation or crops.                               | The pasture grass grew very quickly because the soil is fertile.                         |
| productive  | Producing or capable of producing. Producing abundantly; fertile                              | As the walnut trees grow older, they become more productive.                             |
| byproducts  | products made during the making or processing of something else                               | Lanolin is one of many sheep byproducts.                                                 |

|           |                                                                                                                       |                                                                                    |
|-----------|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| dieback   | progressive death of branches or shoots beginning at the tips                                                         | Insufficient watering and feeding can cause dieback in many perennial plants.      |
| mulch     | protective ground cover, often nutshells or compost                                                                   | This flower bed has a mulch of walnut shells.                                      |
| hutch     | rabbit house                                                                                                          | The hutch is made of wood and wire.                                                |
| grading   | rating a crop according to a quality standard                                                                         | My summer job is grading peaches.                                                  |
| bolus     | regurgitated food that has been chewed                                                                                | The cow was chewing on a bolus of food.                                            |
| agrarian  | relating to land or the ownership of land                                                                             | Farming is an agrarian life.                                                       |
| pruning   | removing parts of a plant to increase fruit or flower production                                                      | By pruning the trees, we have more fruit.                                          |
| lard      | rendered fat from swine                                                                                               | Lard is still commonly used to make soap.                                          |
| melon     | round edible fruit of vines belonging to the gourd family                                                             | Honeydew melon is my favorite summer fruit.                                        |
| windrows  | rows of grain, hay or other harvested plants such as beans, raked into rows and left to dry before further processing | That field of lima beans is in windrows.                                           |
| agronomy  | science of producing and using plants for fuel, food and fiber                                                        | A farmer needs to have a good understanding of agronomy to produce bountiful crops |
| threshing | separating the grain from its plant by some mechanical motion                                                         | The threshing machine knocked out the grain from the ears of corn.                 |
| threshing | separating the grain from its plant by some mechanical motion                                                         | The threshing machine knocked out the grain from the ears of corn.                 |
| candling  | shining a light behind eggs to check for cracks and other problems                                                    | Candling is a good way to check the health of a chick before it hatches.           |
| wool      | short, thick fiber of sheep                                                                                           | After shampooing, the lamb's wool was white and fluffy.                            |
| marbling  | small amounts of fat found in meat that adds flavor when cooked                                                       | The steak was delicious due to the amount of marbling.                             |
| squirrel  | small, bushy-tailed rodent                                                                                            | The walnut farmer considers the squirrel a pest.                                   |
| sediment  | soil particles that settle to the bottom of water or liquid                                                           | She took a stick to stir up the sediment in the river.                             |
| frass     | solid feces produced by insect larvae                                                                                 | The frass was from a navel orange worm.                                            |
| broker    | someone who is paid to negotiate contracts or who buys and sells products                                             | My father works as a rice broker.                                                  |
| vaccine   | something given to stimulate antibody production and provide immunity against a disease                               | The lambs were all given the same vaccine.                                         |
| windbreak | something that breaks the force of strong wind, such as a wall or a line of trees                                     | the pasture to shield the animals from the northerly winds.                        |
| crop      | something that can be harvested                                                                                       | The rice crop is ready for harvest in the fall.                                    |

|                |                                                                                                        |                                                                                                                                                             |
|----------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| medication     | something that treats, prevents or reduces the symptoms of a disease                                   | We needed to give the pony some medication before his illness became worse.                                                                                 |
| endangered     | species threatened with extinction                                                                     | farmers provide habitat that supports endangered species                                                                                                    |
| weather        | state of the atmosphere with regard to temperature, rainfall, wind and other meteorological conditions | Summer weather in Chico is hot.                                                                                                                             |
| hydrology      | study of the movement, distribution or quality of water                                                | it is important for a farmer to know the hydrology under his farm                                                                                           |
| arable         | Suitable for producing crops                                                                           | There is a lot of arable land in this valley.                                                                                                               |
| wetlands       | swampy, marshy land mass; lands saturated with water                                                   | Wetlands are habitats for ducks, snow geese and cranes.                                                                                                     |
| nectar         | sweet liquid in many flowers, used by bees in making honey                                             | The worker bees gather the nectar from many flowers.                                                                                                        |
| elevator       | tall warehouse facility using vertical conveyors to raise and elevate grain                            | The elevator at the rice dryer is used to load the trucks with rice to take to the rice mill.                                                               |
| certification  | The act of making something official; official approval to do something professionally or legally.     | Farmers must participate in a certification program in order to sell their crop as organic.                                                                 |
| certification  | The act of making something official; official approval to do something professionally or legally.     | Farmers must participate in a certification program in order to sell their crop as organic.                                                                 |
| parturition    | the act or process of giving birth                                                                     | The cow will experience parturition soon, and we hope the calf will be healthy.                                                                             |
| dosage         | the amount of medication to be given at one time                                                       | The correct dosage of the lamb's medication will make sure it heals faster.                                                                                 |
| host           | the animal or plant on which, or in which, another organism lives                                      | The almond tree is a host for the shothole borer, a tiny black beetle.                                                                                      |
| udder          | the bag-like milk gland on the underside of a cow's body                                               | The cow's udder is full of milk.                                                                                                                            |
| microbiology   | the branch of biology that deals with microscopic animal or vegetable organisms                        | Through the study of microbiology, we learn more about improving the production of the food we eat.                                                         |
| husbandry      | The care, cultivation and breeding of crops and animals.                                               | If you cultivate the land or breed animals, you are practicing husbandry.                                                                                   |
| photosynthesis | the chemical process by which green plants make energy-producing carbohydrates                         | Photosynthesis occurs in the leaves of the plant.                                                                                                           |
| microclimate   | the climate of a small, distinct area                                                                  | California has a wide range of microclimates.                                                                                                               |
| production     | the creation of something of economic value                                                            | California almond growers are responsible for 100% of the commercial supply of almonds in the United States and 80% of the worldwide production of almonds. |
| bleat          | the cry of a sheep or goat                                                                             | I hear the bleat of my new goat.                                                                                                                            |

|               |                                                                                                                     |                                                                                              |
|---------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| aquaculture   | the cultivation of aquatic animals; underwater agriculture, especially fish, shellfish, seaweed                     | The quality of young fish is important for successful aquaculture production.                |
| floriculture  | the cultivation of flowers, especially those to be cut and sold                                                     | Many people at the farmer's market are in the floriculture business.                         |
| temperature   | the degree of heat in an object or living organism                                                                  | Bees come out of their hives if the temperature is warm enough.                              |
| efficiency    | the degree to which something is done well without wasted energy                                                    | A farmer must plan his day with efficiency in mind.                                          |
| heartwood     | The dense inner part of a tree trunk, yielding the hardest timber.                                                  | The heartwood of a tree acts like a steel beam, providing strength to endure harsh wind.     |
| giblets       | the edible organs of poultry, such as the heart, gizzard and liver                                                  | Some cooks like to add the giblets to turkey stuffing.                                       |
| cutability    | the estimated percentage of salable meat from a carcass                                                             | The cutability of top quality beef is higher than those of lesser quality.                   |
| habitats      | the external conditions which surround, influence, and affect the life and development of an organism or population | The egret, bullfrog, and crayfish all thrive in watery habitats.                             |
| lodging       | the falling over of a grain crop due to bad weather                                                                 | The rice in the field was lodging.                                                           |
| lint          | the fibers removed from cotton seeds at the cotton gin                                                              | The lint is packed into 500 pound bales and taken to the textile mills.                      |
| blossom       | the flower of a plant                                                                                               | The almond blossom's color is delicate pink.                                                 |
| artichoke     | the flower of a thistlelike plant, cooked as a vegetable                                                            | Lemon juice will prevent an artichoke from turning brown.                                    |
| phloem        | the food-conducting tissue of plants                                                                                | Aphids suck on the phloem of plant tissues.                                                  |
| girdling      | the formation of a ring of dead or damaged tissue around the stem or root of a plant                                | A shaker can sometimes harm the tree trunk, which may cause girdling.                        |
| chlorophyll   | the green colored matter of plants that functions in photosynthesis                                                 | Chlorophyll in a plant makes the leaves green.                                               |
| rotation      | the growing of different crops, in differing seasons, on the same land                                              | Crop rotation helps preserve the fertility of the soil.                                      |
| intercropping | the growing of two or more different species of crops at the same time, as in alternate rows in the same field      | Intercropping is frequently done with seed crops, as in planting melons alongside cucumbers. |
| bridle        | the headgear used to control a horse                                                                                | I have a new bridle for my horse.                                                            |
| cell          | the hexagon-shaped unit which honeybees make for storage                                                            | Honeybees construct a special cell for the queen larvae.                                     |
| hoof          | the horny covering of the foot of some livestock animals like horses and cows                                       | The front left hoof of that cow looks cracked.                                               |
| chaff         | the husks of wheat, or other grain, separated in threshing                                                          | The chaff is used for fodder after sorting it from the wheat.                                |

|               |                                                                                 |                                                                                                                     |
|---------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| rumen         | the largest compartment of the ruminant's stomach that digests fiber            | The cow's rumen has a capacity of over 20 gallons.                                                                  |
| canopy        | the leafy portion of a tree or shrub                                            | It felt much cooler underneath the walnut tree's canopy.                                                            |
| citron        | the lemon-like fruit of an Asian citrus tree                                    | Dried citron is good in fruitcakes.                                                                                 |
| shank         | the lower part of an animal's leg, between the bottom and middle joints         | The cow limped from a bruised shank.                                                                                |
| casein        | the main protein in milk                                                        | Casein is often removed from milk products and used in processed foods.                                             |
| taproot       | the main root of a plant, growing straight downward from the stem               | Some weeds have a long taproot, making them difficult to pull out by hand.                                          |
| sire          | the male parent                                                                 | The sire to that calf is an Angus bull.                                                                             |
| anther        | the male part of a flower that produces the pollen                              | The legs of the bee pick up pollen from one anther and take it to the next flower.                                  |
| crossbreeding | the mating of two different breeds within the same species                      | Ranchers often rely on crossbreeding of their livestock in order to improve certain characteristics in the animals. |
| mutton        | the meat from sheep that are more than one year old                             | Mutton has a strong flavor and is not very tender.                                                                  |
| butterfat     | the natural fat in milk                                                         | The butterfat content in whole milk is higher than in lowfat milk.                                                  |
| crimp         | the natural waviness of sheep's wool                                            | The crimp in this wool is extreme and making it hard to card.                                                       |
| acreage       | the number of acres in a piece or pieces of land                                | Steve needed to know the total acreage of rice he farms before ordering seed this year.                             |
| clutch        | the number of eggs produced or incubated at one time                            | A hen will wait patiently on her clutch.                                                                            |
| progeny       | the offspring of animals                                                        | The progeny of the prize ram will grow to be champions of the show ring.                                            |
| progeny       | the offspring of animals                                                        | The progeny of the prize ram will grow to be champions of the show ring.                                            |
| hybrid        | the offspring of two plants of different varieties                              | Pluots are a hybrid of a plum and an apricot.                                                                       |
| humus         | the organic part of soil that is made up of decomposed plant and animal remains | Fallen leaves decompose to provide rich humus for orchard trees.                                                    |
| testa         | the outer coating of a seed                                                     | The testa of a pumpkin seed is white.                                                                               |
| hull          | the outer covering of a seed on fruit or nuts                                   | The hull of a walnut is green.                                                                                      |
| bark          | the outer covering of tree trunks and branches                                  | The bark of the tree was very rough.                                                                                |
| dock          | the part of a tail left after cutting or clipping                               | The dock of the lamb was very short.                                                                                |

|               |                                                                                                                          |                                                                                               |
|---------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| transpiration | the passing of moisture through the surface of a leaf                                                                    | Transpiration, evaporation and condensation are all parts of the water cycle.                 |
| tilth         | the physical condition of soil in relation to plant growth                                                               | The farmer improved the tilth of his fields by using a cultivator.                            |
| seed          | the plant part that contains the embryo and produces another plant                                                       | A watermelon seed can be black or white.                                                      |
| stamen        | the pollen-producing male part of a flower                                                                               | Bees were bouncing from one stamen to the next on that beautiful flowering shrub.             |
| stomata       | the pores in a plant leaf or stem                                                                                        | Potassium regulates the opening and closing of the stomata in plants.                         |
| pickling      | the preservation or flavoring of food in a solution of brine or vinegar                                                  | My aunts are in the kitchen pickling green beans.                                             |
| evaporation   | the process in which water droplets are changed from a liquid to a gas                                                   | Due to warm weather increasing the evaporation rate, I need to refill the cow's water trough. |
| erosion       | the process of wearing away soil by the action of water or wind                                                          | Erosion by the Sacramento River caused the farmer to lose several acres of his land.          |
| pomace        | the pulpy residue remaining after the juice has been pressed from fruit                                                  | The smell of pomace from Concord grapes reminds me of Fall.                                   |
| yield         | the quantity or amount produced                                                                                          | The yield on that acre of walnuts was about 1200 pounds.                                      |
| vermiculture  | the raising of earthworms for use as bait or composting                                                                  | We are learning about vermiculture by using a worm bin in our class.                          |
| drainage      | the removal of excess water from fields or crops                                                                         | The farmer installed a pipe system to improve drainage in his fields.                         |
| yolk          | the round yellow portion of an egg                                                                                       | The yolk broke when I dropped the egg.                                                        |
| hydroponics   | the science of growing plants in nutrient-rich liquid solutions instead of soil                                          | The study of hydroponics can help us find more ways to grow our food.                         |
| horticulture  | the science of growing plants, especially flowers, fruit, and vegetables                                                 | The gardener received extra training in horticulture before planting the garden.              |
| biology       | the science of living organisms                                                                                          | We studied bees in biology class.                                                             |
| nutrition     | the science or study of a healthy diet                                                                                   | She wanted to learn more about nutrition in order to become more healthy herself.             |
| limnology     | the science that deals with the physical, chemical, and biological properties of fresh water, especially lakes and ponds | Research on limnology assists us in keeping irrigation water pure.                            |
| cocoons       | the silk coverings of pupae which are spun by larvae                                                                     | There were two cocoons attached to the branch.                                                |

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| hide        | the skin of an animal, especially the tough thick skin of a large mammal                                 | The bull's hide was very tough.                                                                    |
| infestation | The state of being invaded or overrun by pests or parasites.                                             | There is a total infestation of white flies on the lettuce in my garden.                           |
| maturity    | the state of being fully grown and developed                                                             | The maturity of the lamb can be judged by its teeth.                                               |
| harness     | the straps and metal pieces used to fasten a horse or mule to a plow                                     | The farmer put the harness on his mule so it could pull the plow.                                  |
| entomology  | the study of insects and their environment                                                               | We learned all about crickets in our entomology class.                                             |
| botany      | the study of plants                                                                                      | Having studied botany, Neil has always been a keen gardener.                                       |
| asparagus   | the tender shoots of a plant of the lily family, cooked as a vegetable                                   | My favorite way to eat asparagus is to grill it.                                                   |
| lactation   | the time when a female animal produces milk for its young                                                | The lactation period for a cow is usually about ten months.                                        |
| farrow      | the time when a sow gives birth to pigs                                                                  | During farrow season, we ended up with fifty new piglets.                                          |
| acidosis    | the unfavorable formation of too much acid produced in a digestive system                                | Acidosis in cattle can be easily treated if caught early.                                          |
| whey        | the watery substance left after the cheese making process                                                | The whey was drained away after making the cheese.                                                 |
| tare        | the weight of a container deducted from the total weight to determine the weight of the contents or load | What is the tare on that truckload of nuts?                                                        |
| birthweight | the weight of an animal when it is born                                                                  | The birthweight of the calf was 65 pounds.                                                         |
| timber      | the wood of growing trees suitable for structural uses                                                   | The timber was cut and used to build the house.                                                    |
| xylem       | the woody vascular tissue of a plant that carries water and minerals in the stems, roots and leaves      | Bark and xylem are different parts of plants.                                                      |
| fleece      | the wool coat of sheep                                                                                   | After shampooing, the sheep's fleece was white and fluffy.                                         |
| epidermis   | thin outer layer of cells on plant surfaces, bodies of animals and insects                               | The epidermis is like armor for your body, protecting your body from being attacked by germs.      |
| weaning     | time when young calves are taken away from their mother and not allowed to drink her milk                | During weaning I was busy separating the calves from their mothers.                                |
| saturated   | to be completely soaked with liquid                                                                      | The rainstorms caused the ground to be fully saturated.                                            |
| sprout      | to begin to grow from a seed                                                                             | It won't take long for the bean seeds to sprout.                                                   |
| pollard     | to cut back the branches of a tree to its trunk                                                          | The rancher chose to pollard the trees in his meadow to increase sunlight for the pasture grasses. |
| absorb      | to drink up or take in                                                                                   | A plants roots absorb water from the soil.                                                         |
| graze       | to feed on growing grass                                                                                 | The cows graze in the pasture.                                                                     |

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| survey     | to find the borders and measurements of land                                                                       | Special instruments are needed to accurately survey the creek that runs through our property.    |
| bolt       | to flower or produce seeds prematurely                                                                             | As the season gets warmer, the lettuce will bolt.                                                |
| vegetate   | to grow or sprout like a plant                                                                                     | The plants grow when the seeds vegetate.                                                         |
| flourish   | to grow vigorously                                                                                                 | Her rosebushes will flourish in the sunny part of her backyard.                                  |
| grow       | to increase in size or substance                                                                                   | New shoots grow on the plants.                                                                   |
| disinfect  | to kill bacteria with a chemical                                                                                   | Before and after collecting eggs, I always disinfect my hands.                                   |
| transplant | to lift and reset a plant in another soil or situation                                                             | I need to transplant these daisies since they have become completely rootbound.                  |
| bale       | to pack into a large bundle                                                                                        | The baler machine will bale the hay into large rectangles.                                       |
| vacuum     | to pick up by suction                                                                                              | We vacuum the orchard for fallen nuts.                                                           |
| pollinate  | to place pollen on a flower so that fruit will grow from the blossom                                               | Bees pollinate the flowers of many plants.                                                       |
| schedule   | to plan for a certain date                                                                                         | I schedule irrigation according to the soil's moisture levels.                                   |
| till       | to prepare land for planting crops by plowing, fertilizing, etc.                                                   | My dad will till the field before planting potatoes.                                             |
| cultivate  | to prepare the ground for the growing of crops                                                                     | We will cultivate this field before we plant corn.                                               |
| propagate  | To produce a new plant.                                                                                            | Some flowers are easy to propagate from cuttings.                                                |
| deadhead   | to remove spent flowers or unwanted growth from a plant to encourage more flowering and/or bushier foliage         | I need to deadhead my roses to keep them blooming all summer long.                               |
| castrate   | to remove the reproductive organs of a male animal                                                                 | The rancher had to castrate some of his animals to make them more docile and to prevent disease. |
| recycle    | to reuse or make available to reuse                                                                                | Many farmers recycle the metal from their old farm equipment.                                    |
| export     | to send goods to a foreign country for sale                                                                        | Many farmers export seed around the world.                                                       |
| germinate  | to sprout, as from a seed, spore, or bud                                                                           | I will germinate seeds on the windowsill before setting them outside to grow.                    |
| irrigation | to supply crops with water by means of ditches, sprinklers or drip systems                                         | Most orchards have an irrigation system.                                                         |
| aerated    | to supply soil with air                                                                                            | Peanuts grow better in dry, aerated soil.                                                        |
| shear      | to trim the wool of sheep                                                                                          | The farmer will shear his sheep so he can sell the wool.                                         |
| graft      | to unite two plants by placing a bud of one into a cut in the other, then allowing the two plants to grow together | We can graft a nectarine bud to a peach tree.                                                    |



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| monitor     | to watch carefully and continually for a specific purpose                                        | A beekeeper must closely monitor the number of unhealthy bees in a hive.                                        |
| evergreen   | trees or bushes that retain their leaves throughout the year                                     | Having evergreens on our property allows for our landscape to be more colorful all year long.                   |
| siblings    | two or more animals having the same parents                                                      | My dog has two siblings, one brother and one sister.                                                            |
| climate     | typical weather in a certain region                                                              | It is wise to consider climate conditions before planting a crop.                                               |
| hayloft     | upper story in a barn where hay is stored                                                        | Putting hay in a hayloft keeps it dry.                                                                          |
| plant       | vegetation that grows by using sunlight, water, and nutrition in a process called photosynthesis | The process of photosynthesis makes the plant grow.                                                             |
| tropical    | very hot climate and often combined with a high degree of humidity                               | Our climate here is too dry to be considered tropical.                                                          |
| landscape   | visible features of an area                                                                      | the landscape is changing as northern California farmers plant more walnut trees                                |
| groundwater | water within the earth that supplies wells and springs                                           | In some places there is not enough groundwater, so the farmer must get irrigation water from a river or stream. |
| moisture    | wetness                                                                                          | The moisture in the air on a hot summer day makes you feel very sticky when you go outside.                     |