Career Paths: Agriculture is a new educational resource for agriculture professionals who want to improve their English communication in a work environment. Incorporating career-specific vocabulary and contexts, each unit offers step-by-step instruction that immerses students in the four key language components: reading, listening, speaking, and writing.

Career Paths: Agriculture addresses topics including soil preparation, seeding methods, farm equipment, livestock, and organic farming.

The series is organized into three levels of difficulty and offers over 400 vocabulary terms and phrases. Every unit includes a test of reading comprehension, vocabulary, and listening skills, and leads students through written and oral production.

**Included Features:**
- A variety of realistic reading passages
- Career-specific dialogues
- 45 reading and listening comprehension checks
- Over 400 vocabulary terms and phrases
- Guided speaking and writing exercises
- Complete glossary of terms and phrases

The Teacher’s Guide contains detailed lesson plans, a full answer key and audio scripts.

The audio CDs contain all recorded material.
Career Paths
Agriculture

Book 1

Neil O' Sullivan
James D. Libbin

Express Publishing
## Scope and Sequence

<table>
<thead>
<tr>
<th>Unit</th>
<th>Topic</th>
<th>Reading context</th>
<th>Vocabulary</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The History of Agriculture</td>
<td>Textbook passage</td>
<td>agriculture, crop, cultivate, domesticate, farm, harvest, irrigation, plant, produce, water supply</td>
<td>Asking questions politely</td>
</tr>
<tr>
<td>2</td>
<td>Plant Products</td>
<td>Advertisement</td>
<td>cereal, farmer's market, fruit, grain, harvest, industrial crop, legume, melon, tuber, vegetable</td>
<td>Asking about prices</td>
</tr>
<tr>
<td>3</td>
<td>Animal Products</td>
<td>Magazine article</td>
<td>bone, by-product, fats, hooves, leather, meat, milk, protein, render, tallow, wool</td>
<td>Asking for clarification</td>
</tr>
<tr>
<td>4</td>
<td>Soil</td>
<td>Advice column</td>
<td>aeration, clay, dense, humus, loam, parent material, sand, silt, soil, soil structure, soil texture</td>
<td>Giving advice</td>
</tr>
<tr>
<td>5</td>
<td>Water</td>
<td>Newspaper article</td>
<td>arid, ditch, drought, drought-resistant, groundwater, irrigate, rain-fed, rainfall, water cycle</td>
<td>Making suggestions</td>
</tr>
<tr>
<td>6</td>
<td>Seeds</td>
<td>Seed catalog</td>
<td>bulk, days to maturity, dormancy, germinate, hard coat, hybrid, seed, seed vigor, seedling, sow, sowing method</td>
<td>Asking for repetition</td>
</tr>
<tr>
<td>7</td>
<td>Plant Growth</td>
<td>Magazine article</td>
<td>branch, bud, flower, growth chart, leaf, photosynthesis, Quinoa, roots, seedhead, stalk</td>
<td>Talking about expectations</td>
</tr>
<tr>
<td>8</td>
<td>Harvest</td>
<td>Harvest report</td>
<td>bale, bushel, chaff, harvest, mature, package type, reap, threshing, ton, yield</td>
<td>Giving compliments</td>
</tr>
<tr>
<td>9</td>
<td>Storage</td>
<td>Email</td>
<td>aeration, bunker silo, cool, dry, leveling, moisture, mold, silage bag, storage, tower silo</td>
<td>Asking about conditions</td>
</tr>
<tr>
<td>10</td>
<td>Feed and Nutrients</td>
<td>Job posting</td>
<td>animal nutritionist, carbohydrate, fat, feed, mineral, nutrient, protein, ration, vitamin</td>
<td>Introductions</td>
</tr>
<tr>
<td>11</td>
<td>Housing Animals</td>
<td>Blog post</td>
<td>barn, cold stress, comfort zone, coop, critical temperature, heat stress, pen, slotted floor, space requirements, waste management</td>
<td>Agreeing with an opinion</td>
</tr>
<tr>
<td>12</td>
<td>Breeding</td>
<td>Notice</td>
<td>breeding, breeding value, expected progeny difference, feed efficiency, heritability, pedigree, rate of gain, sire summary, trait selection</td>
<td>Requesting information</td>
</tr>
<tr>
<td>13</td>
<td>Slaughter and Processing</td>
<td>Webpage</td>
<td>butcher, cut, head, hide, humane, inspect, kill fee, offal, process, slaughter</td>
<td>Clarifying information</td>
</tr>
<tr>
<td>14</td>
<td>Cultivation and Planting Equipment</td>
<td>Classified ads</td>
<td>broadcast seeder, chisel plow, cultipacker, cultivator, harrow, planter, rototiller, seed drill, stone picker, tractor, transplanter</td>
<td>Telephoning</td>
</tr>
<tr>
<td>15</td>
<td>Harvest Equipment</td>
<td>Webpage</td>
<td>bale wrapper, baler, chaser bin, combine harvester, conveyor belt, forage harvester, gleaner, grain auger, gravity wagon, hay conditioner</td>
<td>Talking about readiness</td>
</tr>
</tbody>
</table>
# Table of Contents

- **Unit 1 – The History of Agriculture** ......................................................... 4
- **Unit 2 – Plant Products** ................................................................. 6
- **Unit 3 – Animal Products** .............................................................. 8
- **Unit 4 – Soil** .................................................................................. 10
- **Unit 5 – Water** .................................................................................. 12
- **Unit 6 – Seeds** .................................................................................. 14
- **Unit 7 – Plant Growth** ................................................................. 16
- **Unit 8 – Harvest** ................................................................................ 18
- **Unit 9 – Storage** ............................................................................. 20
- **Unit 10 – Feed and Nutrients** .................................................... 22
- **Unit 11 – Housing Animals** ....................................................... 24
- **Unit 12 – Breeding** ............................................................................. 26
- **Unit 13 – Slaughter and Processing** ........................................ 28
- **Unit 14 – Cultivation and Planting Equipment** .......................... 30
- **Unit 15 – Harvest Equipment** ..................................................... 32
- **Glossary** ......................................................................................... 34
Agriculture

Neil O' Sullivan
James D. Libbin

Book 2
## Scope and Sequence

<table>
<thead>
<tr>
<th>Unit</th>
<th>Topic</th>
<th>Reading context</th>
<th>Vocabulary</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Beef Industry</td>
<td>Magazine article</td>
<td>antibiotics, beef, cattle, feed conversion efficiency, feed ration, feedlot, grade, grass-fed, growth hormone, herd, market weight, processing facility, rancher</td>
<td>Disagreeing</td>
</tr>
<tr>
<td>2</td>
<td>Swine Industry</td>
<td>Industry journal</td>
<td>dynamic space, farrow-to-finish farm, farrow-to-nursery farm, hog, litter, social space, sow, sow farm, static space, swine</td>
<td>Agreeing</td>
</tr>
<tr>
<td>3</td>
<td>Poultry Industry</td>
<td>Webpage</td>
<td>broiler, chick, free-range, hatchery, hen, intensive farming, layer, litter, poultry, primary breeder, pullet, roaster, rooster</td>
<td>Clarifying information</td>
</tr>
<tr>
<td>4</td>
<td>Dairy Industry</td>
<td>Webpage</td>
<td>calf, dairy, heifer, Holstein, homogenize, milk pipeline, milking herd, milking parlor, pastureize, rBST, udder</td>
<td>Giving an opinion</td>
</tr>
<tr>
<td>5</td>
<td>Sheep Industry</td>
<td>Business announcement</td>
<td>accelerated lambing, confinement lamb production, distribute, ewe, feeder lamb, finishing, flock, lambing period, market slaughter lamb, predation, range production, seasonal market</td>
<td>Making a suggestion</td>
</tr>
<tr>
<td>6</td>
<td>Equine Industry</td>
<td>Brochure</td>
<td>bridling, broodmare, foal, halter breaking, mare, preventative disease control, sacking out, saddling, stall, stallion, vaccination schedule</td>
<td>Asking for an explanation</td>
</tr>
<tr>
<td>7</td>
<td>Apiculture</td>
<td>Webpage</td>
<td>apiary, beehive frame, beesuit, cold smoke aerosol, colony, honey, honeycomb, liquid smoke, skep, smoker, top-bar hive, veil</td>
<td>Recommending</td>
</tr>
<tr>
<td>8</td>
<td>Soil Classification and Composition</td>
<td>Soil analysis report</td>
<td>classification, clay, coarse-grain, composition, fine-grain, grain, highly-organic, peat, sand, silt, texture, unified soil classification system</td>
<td>Confirming information</td>
</tr>
<tr>
<td>9</td>
<td>Salts and Acidity</td>
<td>Newspaper article</td>
<td>acidity, alkaline, dryland salinity, lime, pH value, salinity, salinity, secondary salinity, sodicity, sodium, sulphur, toxic</td>
<td>Asking about results</td>
</tr>
<tr>
<td>10</td>
<td>The Nitrogen Cycle</td>
<td>Textbook passage</td>
<td>ammonia, dentrification, eutrophication, fixation, mineralization, nitrates, nitrification, nitrates, nitrogen cycle, nitrous oxide, nutrient-poor</td>
<td>Expressing confusion</td>
</tr>
<tr>
<td>11</td>
<td>Soil Conservation</td>
<td>Magazine article</td>
<td>contour farming, cover crops, crop rotation, erosion, grassway, green manure, keyline design, land degradation, nutrition depletion, perimeter runoff control, soil conservation, windbreaks</td>
<td>Expressing concern</td>
</tr>
<tr>
<td>12</td>
<td>Preparing, Seeding, and Planting</td>
<td>Farmer's guide</td>
<td>amendment, broadcast seeding, emergence, fertilizer, grain, herbicide, no-till method, seeds per pound, soil temperature, tillin method, top soil</td>
<td>Asking for suggestions</td>
</tr>
<tr>
<td>13</td>
<td>Climate and Weather</td>
<td>Seed catalog</td>
<td>climate, hardiness zone, humidity, last frost, long-range forecast, mulch, precipitation, soil moisture, temperature</td>
<td>Asking for help</td>
</tr>
<tr>
<td>14</td>
<td>Pricing</td>
<td>Business letter</td>
<td>cost of production, direct marketing, indirect marketing, market, pricing, pricing for competition, pricing for profit, pricing for value, pricing strategy, produce, supply and demand</td>
<td>Expressing surprise</td>
</tr>
<tr>
<td>15</td>
<td>Government Intervention</td>
<td>Newspaper article</td>
<td>adjusting production, decline, fallow, food and fiber industry, foreign trade enhancement, market demand, price floor, price support, quota, surplus, tariff</td>
<td>Checking understanding</td>
</tr>
</tbody>
</table>
Table of Contents

Unit 1 – Beef Industry ................................................................. 4
Unit 2 – Swine Industry .............................................................. 6
Unit 3 – Poultry Industry ......................................................... 8
Unit 4 – Dairy Industry ........................................................... 10
Unit 5 – Sheep Industry .......................................................... 12
Unit 6 – Equine Industry ......................................................... 14
Unit 7 – Apiculture ................................................................. 16
Unit 8 – Soil Classification and Composition ............................ 18
Unit 9 – Salts and Acidity ......................................................... 20
Unit 10 – The Nitrogen Cycle .................................................. 22
Unit 11 – Soil Conservation .................................................... 24
Unit 12 – Preparing, Seeding and Planting ............................... 26
Unit 13 – Climate and Weather ............................................... 28
Unit 14 – Pricing ................................................................. 30
Unit 15 – Government Intervention ....................................... 32
Glossary ............................................................................. 34
# Scope and Sequence

<table>
<thead>
<tr>
<th>Unit</th>
<th>Topic</th>
<th>Reading context</th>
<th>Vocabulary</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Animal Behavior</td>
<td>Job posting</td>
<td>animal welfare, body length, chute score, conditioning, crowd pen, flight zone, flighty, handling, point of balance, restraint, squeeze chute, temperament</td>
<td>Asking about experience</td>
</tr>
<tr>
<td>2</td>
<td>Animal Health</td>
<td>Magazine article</td>
<td>antibiotics, deworm, diagnose, infectious, insecticide, lethargy, lice, monitor, parasite, respiration, tick, vaccination, veterinarian</td>
<td>Discussing symptoms</td>
</tr>
<tr>
<td>3</td>
<td>Animals and Grain</td>
<td>Newspaper article</td>
<td>consumption, feed grains, feedstuff-to-foodstuff, food grains, inedible, inefficient, land use, livestock, manure, roughage</td>
<td>Correcting a misconception</td>
</tr>
<tr>
<td>4</td>
<td>Bioengineering</td>
<td>Conference schedule</td>
<td>biotechnology, cloning, expression, gene, gene enhancement, genetic engineering, prohibition, regulation, societal concerns, transgenic</td>
<td>Disagreeing</td>
</tr>
<tr>
<td>5</td>
<td>Cropping Systems</td>
<td>Conference publication</td>
<td>burn-down herbicide, conservation tillage, conventional tillage, crop residue, crop rotation, cropping system, diversify, fallow, polyculture, spring wheat, winter wheat, zero tillage</td>
<td>Guessing</td>
</tr>
<tr>
<td>6</td>
<td>Growing Seasons</td>
<td>Magazine article</td>
<td>base temperature, elevation, freeze protection, greenhouse, growing degree day, growing season, heaters, hoop house, last frost date, mean temperature, photoperiod, site selection</td>
<td>Making suggestions</td>
</tr>
<tr>
<td>7</td>
<td>Weeds, Pests, and Disease</td>
<td>Farmer's guide</td>
<td>bacterial, biological control, blight, fungal, fungicide, herbicide, mulching, pathogen, pest management, pesticide, sanitize, suppression, weed, weed map</td>
<td>Expressing preference</td>
</tr>
<tr>
<td>8</td>
<td>Diagnosing Crop Problems</td>
<td>Webpage</td>
<td>abiotic, agricultural advisor, biotic, brown, field pattern, stippled, stunted, symptom, symptom pattern, symptomology key, wilt</td>
<td>Discussing problems</td>
</tr>
<tr>
<td>9</td>
<td>Agribusiness Management</td>
<td>Business letter</td>
<td>debt, farm cash receipts, feed costs, fixed cash expense, gross farm revenue, income, interest payments, loan, net farm income, noncash expense, total production expenses</td>
<td>Pointing out an error</td>
</tr>
<tr>
<td>10</td>
<td>International Trade</td>
<td>Trade profiles</td>
<td>balance of trade, export, export dependent, import, import dependent, international trade, quota, tariff, trade deficit, trade surplus, World Trade Organization</td>
<td>Asking for a recommendation</td>
</tr>
<tr>
<td>11</td>
<td>The Futures Market</td>
<td>Article</td>
<td>beginning stock, carryover, change, commodity, ending stock, futures market, high, index, low, open, stocks-to-use ratio, value</td>
<td>Expressing opinion</td>
</tr>
<tr>
<td>12</td>
<td>Sustainable Farming</td>
<td>Flyer</td>
<td>biodiversity, compost, economic sustainability, intercropping, monoculture, non-renewable resource, off-farm impact, soil amendment, sustainable, systems perspective</td>
<td>Asking for advice</td>
</tr>
<tr>
<td>13</td>
<td>Technological Advances</td>
<td>Product listing</td>
<td>air seeding, auto-steer, automated bin management, drip irrigation system, GPS, mechanized, overplanting, overwatering, self-propelled, smart irrigation control, technology</td>
<td>Expressing doubt</td>
</tr>
<tr>
<td>14</td>
<td>Organic Farming</td>
<td>Industry publication</td>
<td>audit trail documents, certifier, commingle, compliance, contamination, field activity log, inspector, material inputs, organic, organic integrity, organic systems plan</td>
<td>Asking for an opinion</td>
</tr>
<tr>
<td>15</td>
<td>GMOs</td>
<td>Webpage</td>
<td>analysis, animal performance assessment, biotech seed, characterizing, conventional seed, drought-tolerant, genetically modified organism, herbicide-tolerant, insect-resistant, nitrogen efficiency, trait, yield enhancement</td>
<td>Asking for more information</td>
</tr>
</tbody>
</table>
Table of Contents

Unit 1 – Animal Behavior ......................................................... 4
Unit 2 – Animal Health .......................................................... 6
Unit 3 – Animals and Grain ....................................................... 8
Unit 4 – Bioengineering .......................................................... 10
Unit 5 – Cropping Systems ....................................................... 12
Unit 6 – Growing Seasons ....................................................... 14
Unit 7 – Weeds, Pests, and Disease ......................................... 16
Unit 8 – Diagnosing Crop Problems ......................................... 18
Unit 9 – Agribusiness Management ......................................... 20
Unit 10 – International Trade .................................................. 22
Unit 11 – The Futures Market .................................................. 24
Unit 12 – Sustainable Farming ............................................... 26
Unit 13 – Technological Advances .......................................... 28
Unit 14 – Organic Farming ...................................................... 30
Unit 15 – GMOs ................................................................. 32
Glossary ............................................................................. 34
Get ready!

1 Before you read the passage, talk about these questions.

   1 What are your favorite fruits and vegetables?
   2 What non-food products come from plants?

Reading

2 Read the advertisement. Then, fill in the blanks with the correct items.

   1 Available fruits:

   2 Available vegetables:

   3 Cereal products:

   4 Industrial crop products:

Vocabulary

3 Match the words (1-6) with the definitions (A-F).

1 ___ harvest 4 ___ tuber  
2 ___ legume 5 ___ cereal  
3 ___ melon 6 ___ farmer’s market

A a crop that grows underground  
B a crop that produces grain  
C a crop that has pods  
D crops that have been gathered  
E a type of large, sweet fruit  
F a group of farmers selling crops
Check (√) the sentence that uses the underlined part correctly.

1. ___ A. Legumes are a very popular fruit.
   ___ B. Kevin likes to wear hemp clothing.

2. ___ A. Many people prefer cereals because they have no seeds.
   ___ B. Vegetables are used in many meals.

3. ___ A. Most harvests grow completely underground.
   ___ B. Fruit is popular because it is sweet.

4. ___ A. Industrial crops are not eaten.
   ___ B. Some tubers are used to make clothes.

Listen and read the advertisement again. What can someone find at the market?

Listen to a conversation between a customer and a farmer at a farmer’s market. Place a check (√) next to items the customer buys.

1. □ potatoes  4. □ apples
2. □ granola  5. □ cereal crops
3. □ strawberries

Listen again and complete the conversation.

Farmer: Welcome to the farmer’s market. Can I 1 _________ with something?
Customer: Yes, please. I want some fresh fruit.
Farmer: These 2 _________ are perfect. We picked them yesterday.
Customer: Oh, good. And I’d like some 3 _________, too. 4 _________ are they?
Farmer: A three pound bag costs one dollar.
Customer: I’ll take a bag, thanks.
Farmer: Okay. Anything else today?
Customer: Yeah. I saw your ad for 5 _________. Do you have that?
Farmer: Yes, we do. 6 ________ are grown on a nearby farm.

Speaking

With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

Can I help you?
I want some ...
How much are they?

Student A: You are at a farmer’s market. Talk to Student B about:
- three products
- prices

Student B: You are a farmer at a farmer’s market. Answer Student A’s questions.

Writing

Use the conversation from Task 8 to fill out the customer’s receipt.

Date of Sale: ________________________

Items Purchased:  Price:

____________________________  ______________________________
____________________________  ______________________________
____________________________  ______________________________
____________________________  ______________________________
____________________________  ______________________________

Total Amount Due: ________________________
The Nitrogen Cycle

Nitrogen is a crucial nutrient for growing plants. Without the nitrogen cycle, which restores nutrient-poor soil, plants could not survive. During this cycle, nitrogen takes on many forms. It starts in the atmosphere as nitrogen gas. In this form, plants cannot absorb it. That changes after fixation, the next phase of the nitrogen cycle. During fixation, bacteria turn nitrogen into ammonia. In the next phase, mineralization, decomposers in the soil turn ammonia into nitrates and nitrites—forms of nitrogen that plants can use. Finally, during dentrification, bacteria reduce nitrates back into nitrogen gas.

Of course, the nitrogen cycle can also have negative effects. For example, it produces chemicals like nitrous oxide. When this substance leaks into bodies of water, eutrophication occurs. This build-up of algae can ruin a water supply. Unfortunately, commercial farming produces a great deal of such chemicals. A challenge facing modern farmers is to reduce their contribution to this harmful aspect of the nitrogen cycle.

Get ready!
1. Before you read the passage, talk about these questions.
   1. How is nitrogen added to soil?
   2. Why must farmers monitor nitrogen levels in soil?

Reading
2. Read the textbook passage. Then, mark the following statements as true (T) or false (F).
   1. __ Plants cannot survive without nitrogen.
   2. __ During fixation, decomposers turn ammonia into nitrogen.
   3. __ Nitrous oxide can cause algae build up in water supplies.

Vocabulary
3. Read the sentence pairs. Choose which words best fit the blanks.
   1. ammonia / nitrous oxide
      A ____________ is a component in many fertilizers.
      B ____________ is a toxic product of the nitrogen cycle.
   2. eutrophication / dentrification
      A ____________ restores nitrogen in the air.
      B ____________ occurred in the pond due to fertilizer runoff.

4. Match the words (1-6) with the definitions (A-F).
   1. __ fixation
   2. __ decomposer
   3. __ nitrite
   4. __ nutrient-poor
   5. __ nitrate
   6. __ nitrogen cycle

A. not having the right amount of minerals to be healthy
B. substance that bacteria create from ammonia
C. the processes by which nitrogen is changed into chemical forms
D. the process of converting nitrogen into ammonia
E. substance that bacteria create from nitrites
F. organism that turns dead animals or plants into chemical nutrients
Listen and read the textbook passage again. At what stage can plants start to absorb nitrogen gas?

Listening

Listen to a conversation between two farmers. Choose the correct answers.

1. Why are the farmers concerned about using fertilizer?
   A. It might set back the current harvest.
   B. It could affect the water supply.
   C. It can reduce the nitrogen in the soil.
   D. It may cause damage to the cover crop.

2. What will the farmers do with the south field?
   A. irrigate it more often
   B. leave the field fallow next year
   C. finish harvesting its legumes
   D. plant nitrogen restoring crops in it

Listen again and complete the conversation.

Farmer 1: So, what should we do with the south field?
Farmer 2: I’m not sure what you mean.
Farmer 1: Well, this year’s yield is pretty low. The soil might be nutrient-poor.
Farmer 2: What do you suggest?
Farmer 1: We could plant legumes.
Farmer 2: I’m not sure what you mean.
Farmer 1: Well, the soil is low on nitrogen. We could use legumes as this year’s cover crop.
Farmer 2: Just have the legumes restore the nitrogen.
Farmer 1: Exactly. It’s better than using too much fertilizer. I don’t want our getting damaged.
Farmer 2: Well, I think that’s a good idea. Let’s this year’s harvest. We still have a few days left.
Farmer 1: Sounds good. Then we can sit down and what legumes to plant.

Speaking

With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

What should we do with the south field?
I’m not sure what you mean.
It’s better than using too much fertilizer.

Student A: You are a farmer. Talk to Student B about:
- nitrogen in the fields
- fertilizer
- legumes

Student B: You are a farmer. Talk to Student A about nitrogen in the fields.

Writing

Use the conversation from Task 8 to fill out the farmer’s schedule.

Harvest and Planting Schedule

South Field
1. 
2. 
3. 

Student A: You are a farmer. Talk to Student B about:

Student B: You are a farmer. Talk to Student A about nitrogen in the fields.
**Glossary**

**non-renewable resource** [N-COUNT-U12] A non-renewable resource is something that exists in fixed quantities and cannot be reproduced.

**off-farm impact** [N-UNCOUNT-U12] Off-farm impact is the effect of farming materials and actions on areas other than the farm.

**open** [V-T-U11] To open a stocks trading market is to begin it for the day.

**organic** [ADJ-U14] If food is organic, it is produced without unnatural fertilizers or pesticides.

**organic integrity** [N-UNCOUNT-U14] Organic integrity is a verification that a product is organic and not contaminated.

**organic system plan** [N-COUNT-U14] An organic system plan is a written statement which describes the organic methods a producer will use.

**overplanting** [N-UNCOUNT-U13] Overplanting is the act of planting too many seeds in an area.

**overwatering** [N-UNCOUNT-U13] Overwatering is the act of giving plants more water than they need.

**parasite** [N-COUNT-U2] A parasite is an organism that lives on or in another organism.

**pathogen** [N-COUNT-U7] A pathogen is any organism that causes illness or disease.

**pest management** [N-UNCOUNT-U7] Pest management is the practice of preventing, suppressing, or destroying organisms that harm crops.

**pesticide** [N-COUNT-U7] A pesticide is a chemical that kills insects and other pests harmful to crops.

**photonperiod** [N-UNCOUNT-U6] A photonperiod is the amount of time each day that a plant is exposed to light.

**point of balance** [N-COUNT-U1] A point of balance is the spot on an animal’s body that determines which way it will move in relation to the position of a herder.

**polyculture** [N-UNCOUNT-U5] Polyculture is a method of farming in which farmers grow several different crops together on the same piece of land.

**prohibition** [N-COUNT-U4] Prohibition is the act of forbidding something.

**quota** [N-COUNT-U10] A quota is trade restriction by which a government limits the amount or number of goods imported into a country.

**regulation** [N-UNCOUNT-U4] A regulation is something that limits or controls something else.

**respiration** [N-UNCOUNT-U2] Respiration is the act of breathing.

**restraint** [N-COUNT-U1] A restraint is a device that is used to restrict movement.

**roughage** [N-UNCOUNT-U3] Roughage is tough plant material that animals, but not humans, can eat.

**sanitize** [V-T-U7] To sanitize is to clean something so that no bacteria remains.

**self-propelled** [ADJ-U13] If something is self-propelled, it moves by its own power.

**site selection** [N-UNCOUNT-U6] Site selection is the act of choosing an area to plant crops in.

**smart irrigation control** [N-UNCOUNT-U13] Smart irrigation control is a system for watering plants that adjusts watering based on environmental conditions.

**societal concerns** [N-UNCOUNT-U4] Societal concerns are worries about the potentially negative effects of new technologies.

**soil amendment** [N-COUNT-U12] A soil amendment is a material added to soil to improve plant growth.

**spring wheat** [N-UNCOUNT-U5] Spring wheat is a type of wheat that farmers plant in spring and harvest in late summer or early fall.

**squeeze chute** [N-COUNT-U1] A squeeze chute is a narrow fenced passage designed for passing animals through single file.
Career Paths: Agriculture is a new educational resource for agriculture professionals who want to improve their English communication in a work environment. Incorporating career-specific vocabulary and contexts, each unit offers step-by-step instruction that immerses students in the four key language components: reading, listening, speaking, and writing. Career Paths: Agriculture addresses topics including soil preparation, seeding methods, farm equipment, livestock, and organic farming.

The series is organized into three levels of difficulty and offers over 400 vocabulary terms and phrases. Every unit includes a test of reading comprehension, vocabulary, and listening skills, and leads students through written and oral production.

Included Features:
- A variety of realistic reading passages
- Career-specific dialogues
- 45 reading and listening comprehension checks
- Over 400 vocabulary terms and phrases
- Guided speaking and writing exercises
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The Teacher's Guide contains detailed lesson plans, a full answer key and audio scripts. The audio CDs contain all recorded material.