



NEW MEXICO

2006 Catalog of Lesson Plans

**A program of:
NM Farm & Livestock Bureau**

In cooperation with:
NM Beef Council
NM Cattlegrowers
NM Department of Agriculture
NMSU Cooperative Extension Service
NMSU AXED Department

Welcome to New Mexico Agriculture in the Classroom

The lessons contained in this catalog were written by teachers attending Agriculture in the Classroom workshops. The workshops are offered each year, for graduate credit, and are open to teachers of all grade levels. Agriculture in the Classroom workshops demonstrate how to integrate children's natural curiosity about plants, animals, and bugs into general subjects like math, science, English, history, social studies and even art! ***These lessons were written BY New Mexico teachers FOR New Mexico Teachers!***

This catalog contains lessons that were developed in correlation with Content Standards adopted by the State Board of Education beginning in 1996. Lessons are written for grades kindergarten through twelfth grade, specific lessons for special education, websites, and cooperative and mini-lessons. The year each lesson was written is in parentheses after the title and author.

All lessons in this catalog are comprehensive, meaning they include objectives, standards met, activities, worksheets, answer keys, and resource references. Nearly all of the lessons could be adapted to suit grade levels other than those for which they are written. The lesson plan order form is also included in this catalog, and some lessons are available on disk or CD Rom.

It is the goal of New Mexico Agriculture in the Classroom to help you present agriculture to your students. We also have a resource library of activities, curriculum, videos, books, and more available for loan. There is no charge for use of library materials. If we can be of any assistance, please do not hesitate to call or write!

Sincerely,
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Kindergarten

K-01 “Corn” by Sharolyn Johnson (97)

This unit teaches students basic information about corn -what it is, where and how it is grown, and who uses corn. Hands on experiences are included in this lesson.

K-02 “A is for Apple” by Christina Reeves (97)

This unit teaches children the color red, the letter A, and numbers one through five using apples.

K-03 “Hay Guys” by Beverly Gunn (97)

Unit goals: To provide a fun learning experience that exposes children to the process and the reason the “hay guys” farm alfalfa.

K-04 “The Critter Characters” by Karen Buchman (99)

This unit is designed to teach students about character education and animals. K-4students learn about eh various farm animals by presentations from their peers using color sheets, games, and other activities. 5th grade lessons extend the animal theme by giving names, background, culture, ethnicity and human situations to original animals. The various lessons are enhanced with curriculum experiences that will involve each student on an individual basis as well as in groups.

K-05 “History and Agriculture- What’s the Link?” by Laurie Ballard (99)

This unit is designed to teach any student about how agriculture is an integral part of everyday life, no matter where a person lives. Through various activities, students will come to an awareness of how closely their own origins are linked to agriculture, in their everyday lives. They will look at the past and present, how agriculture has changed over time, how historical events have been influenced by agriculture, and how they use agricultural products on a daily basis.

K-06 “The Santa Fe Trail” by Janese Maness and Deborah Rice (99)

The Santa Fe Trail was an overland commerce trail of about 900 miles from Missouri to Santa Fe, the capital of New Mexico. Santa Fe was founded in 1610 and for over 200 years was isolated from trade. This unit explores the Santa Fe Trail with activities like “Santa Fe Trail-O”, “oxen and mule guess”, “land forms on the trail”, “smells and sounds of the trail”, “trail talk”, “wagons- ho!”, “good and foods of the trail”, “trail wildlife”, and more!

K-07 “A Is For....APPLES!” by Therese Rodriguez (99)

For each lesson in this unit, a read aloud book is listed followed by activities that connect curriculum to the story. Activities include, “how to make an apple pie and see the world”, “the seasons of Arnold’s apple tree”, and “what’s so terrible about swallowing an apple seed”. Recipes, bulletin board ideas, finger plays, songs, and flannel board activities are also included. This unit also contains lots of resource information- websites, a list of NM apple growers and a map of New Mexico with locations of apple orchards- just to name a few. Also available on computer disk- Microsoft Word document.

K-08 “Greenhouse Curriculum” by Ft. Sumner School Teachers (98)

See OR-01 for unit description.

K-09 “*Water for the World of Agriculture*” by Susie Swope (99)

See OR-07 for unit description.

K-10 “*Water Cycle*” by Carol Gutierrez (00)

See OR-10 for unit description.

First Grade

1-01 “*Heard it Through the Grape Vine*” by Cindy Jackson (96)

This lesson seeks to introduce students to different kinds of grapes; their uses, tastes, and where they are grown in New Mexico.

1-02 “*Ladybugs*” by Robin Wood (96)

Many children love ladybugs and delight in finding them on leaves and flowers. In this series of activities, children learn about the ladybug’s body structure, life cycle, defensive behavior, and favorite foods. Activities teach science, math, observation and recording skills, systems and interactions, structure and diversity and unity.

1-03 “*A is for Apple*” by Christina Reeves (97)

See unit K-02 for description.

1-04 “*Corn*” by Sharolyn Johnson (97)

See unit K-01 for description.

1-05 “*From Peanuts to Peanut Butter*” by Robin Wood (97)

This unit provides students a fun experience that is just as nourishing and satisfying as a gooey peanut butter sandwich! It uses giant-sized photos and a simple text to give students a close-up look at the whole process of making peanuts into peanut butter. Students learn how the farmer grows and harvests peanut plants, how workers use machines to change the peanuts into something new, as well as the packing and shipping of the familiar jars to supermarkets.

1-06 “*The Critter Characters*” by Karen Buchman (99)

See unit K-04 for description.

1-07 “*History and Agriculture- What’s the Link?*” by Laurie Ballard (99)

See unit K-05 for description.

1-08 ***“The Santa Fe Trail”*** *By Janese Maness and Deborah Rice (99)*
See unit K-06 for description.

1-09 ***“A Is For....APPLES!”*** *by Therese Rodriguez (99)*
See K-07 for unit description

1-10 ***“APPLES”*** *by Kellie Hartman and Jessica Osuna (00)*
Johnny Appleseed wasn't the only one interested in apples! This unit will increase student's awareness of apples, the life cycle of apples, varieties and uses. Students will participate in two literature units and daily activity centers. Making delicious apple snacks, apple shirts and shrunken apple heads are just a few of the activities included in this lesson. This unit is also available on computer disk-Microsoft Word.

1-11 ***“Greenhouse Curriculum”*** *by Ft. Sumner School Teachers (98)*
See OR-01 for unit description.

1-12 ***“Water for the World of Agriculture”*** *by Susie Swope (99)*
See OR-07 for unit description.

1-13 ***“Windmills”*** *by Ginger Shafer (00)*
See OR-08 for unit description.

1-14 ***“Nature's Way”*** *by Ginger Shafer (00)*
See OR-09 for unit description.

1-15 ***“Water Cycle”*** *by Carol Gutierrez (00)*
See OR-10 for unit description.

1-16 ***“Land forms of New Mexico”*** *by Carol Gutierrez (00)*
See OR-11 for unit description.

1-17 ***“Watersheds”*** *by Carol Gutierrez (00)*
See OR-12 for unit description.

Second Grade

2-01 ***“Bugs and Butterflies”*** *by Stacy West (96)*
This unit is designed to teach students about the characteristics of insects and the life cycle of the butterfly. Students will use live bugs and literature books in the discovery of bugs and butterflies.

- 2-02 ***“Heard it Through the Grapevine” by Cindy Jackson (96)***
See 1-03 for unit description.
- 2-03 ***“Ladybugs” by Robin Wood (96)***
See 1-02 for unit description.
- 2-04 ***“A is for Apple” by Christina Reeves (97)***
See K-02 for unit description.
- 2-05 ***“Hay, Guys!” by Beverly Gunn (97)***
See K-03 for unit description
- 2-06 ***“Rock On!” by Stacy West (97)***
This unit is designed to teach students about the physical world around them and its importance to us. It provides experiences across the curriculum that heighten awareness of rocks and soil.
- 2-07 ***“Peanuts” by Kate Saulsberry (98)***
Peanuts are impressive! Students learn how and where peanuts are grown and harvested, as well as how they are changed into other products and taken to the grocery store.
- 2-08 ***“A Food Chain’s Home on the Range” by Kathleen Wheatley (98)***
See unit 3-09 for description.
- 2-09 ***“From Seed to Seed” by Stacy West (98)***
This lesson teaches students the needs, parts, functions, and life cycle of plants. It also teaches the importance of plants to life. The unit uses cross curriculum hands on activities to allow discovery of the world of plants.
- 2-10 ***“The Critter Characters” by Karen Buchman (99)***
See K-04 for unit description.
- 2-11 ***“History and Agriculture- What’s the Link?”***
See K-05 for unit description.
- 2-12 ***“The Santa Fe Trail” by Janese Maness and Deborah Rice (99)***
See K-06 for unit description.
- 2-13 ***“A Is For....APPLES!” by Therese Rodriguez (99)***
See K-07 for unit description.
- 2-14 ***“APPLES” by Kellie Hartman and Jessica Osuna (00)***
See 1-10 for unit description.

2-15 ***“Greenhouse Curriculum” by Ft. Sumner School Teachers (98)***
See OR-01 for unit description.

2-16 ***“Water for the World of Agriculture” by Susie Swope (99)***
See OR-07 for unit description.

2-17 ***“Windmills” by Ginger Shafer (00)***
See OR-08 for unit description.

2-18 ***“Nature’s Way” by Ginger Shafer (00)***
See OR-09 for unit description.

2-19 ***“Water Cycle” by Carol Gutierrez (00)***
See OR-10 for unit description.

2-20 ***“Land forms of New Mexico” by Carol Gutierrez (00)***
See OR-11 for unit description.

2-21 ***“Watersheds” by Carol Gutierrez (00)***
See OR-12 for unit description.

Third Grade

3-01 ***“Ladybugs” by Robin Wood (96)***
See 1-02 for unit description.

3-02 ***“Symbiotic Relationships Between Insects and Plants” by Debra Rodgers (96)***
This unit begins with teaching students parts and processes of plants. Then, students investigate parts and processes of insects. The lesson closes with students preparing a seed or insect collection and presenting it with research to the class.

3-03 ***“Weaving Wisdom and Webs” by Patricia Clark (96)***
See 4-02 for unit description.

3-04 ***“International and Cultural Awareness of Agriculture in the World” by Jean Simmons (97)***
Students will explore and research the countries of Canada, Mexico, France, China, Kenya, and the continent of Australia, and identify the factors that impact a country’s ability to provide food and an appropriate way of life for individuals.

3-05 ***“Farmer Boy” by Shelli Pinnell (97)***

This unit is based on the book Farmer Boy, by Laura Ingalls Wilder. It attempts to acquaint the student with the tradition of American farming and how this way of life was highly self-sufficient, stubbornly independent, and often satisfying; even with its struggles and hardships. The lesson also provides a great source for comparing agricultural life in the 1870's to modern agricultural life.

3-06 “Risks and Consequences” by Anne Parmer (97)

Students will learn the importance of kindness to animals and the value of country living. Based on the book Shiloh by Phyllis Reynolds Naylor.

3-07 “Peanuts” by Kate Saulsberry (98)

See 2-07 for unit description.

3-08 “On the Wild Side” by Jean Simmons (98)

This unit uses the book Tracker by Gary Paulson to teach the importance and the responsibility of caring and coexisting with wildlife. Students will explore and research different aspects of wildlife.

3-09 “A Food Chains Home on the Range” by Kathleen Wheatley (98)

This unit teaches students about the interdependence of the land and animals (both domestic and wild) and helps students begin to be aware of their feelings concerning them.

3-10 “Animals in the Desert” by Robin Wood (98)

Students will learn about how animals and plants adapt to their environments in this lesson. By studying animals, students will learn how fragile desert environments are and how important it is to be good stewards of the land. This unit teaches an understanding of how nature, agriculture, and man must learn to co-exist.

3-11 “From Seed to Seed” by Stacy West (98)

See 2-09 for unit description.

3-12 “The Critter Characters” by Karen Buchman (99)

See K-04 for unit description.

3-13 “History and Agriculture- What’s the Link?” by Laurie Ballard (99)

See K-05 for unit description.

3-14 “The Santa Fe Trail” by Janese Maness and Deborah Rice (99)

See K-06 for unit description.

3-15 “New Mexico State Symbols” by Sylvia Lopez (00)

See 4-18 for unit description.

3-16 “What Grows in Curry County?” by Kelly Jones (99)

Plants and crops grown in Curry County are important to all of us. They provide us with both food and non- food products many of us use everyday. Plants studied in this unit include corn, cotton, potatoes, wheat, and milo. Food and non-food products of each crop are explained. Also available on computer disk- Power Point presentation.

3-17 “APPLES” by Kellie Hartman and Jessica Osuna (00)
See 1-10 for unit description.

3-18 “Water Wisdom” by Edwina Trujillo (00)
Water is the most commons substance on earth. Water is everywhere. What is water? How does it form? How do we use it? How can we conserve it? What IS a watershed? Activities, worksheets, and colorful student books are included in this lesson. Social studies and science content standards are met in this lesson.

3-19 “INSECTS!” by Edwina Trujillo (00)
More than 800,000 insects have been identified by scientists. Another name for insect is “bugs”. Insects are found everywhere in the world. Some insects are helpful and some are harmful. This unit will learn about insects, follow a caterpillar in becoming a butterfly, learn about harmful and helpful insects, research an insect of their choice, and build their own insect.

3-20 “Plants! Plants! Plants!” by Edwina Trujillo (00)
This unit introduces children to plants and their importance. Students will learn that plants are living things, they have many parts and jobs, what plants need to grow, people need plants for food and oxygen.

3-21 “Greenhouse Curriculum” by Ft. Sumner School Teachers (98)
See OR-01 for unit description.

3-22 “Water for the World of Agriculture” by Susie Swope (99)
See OR-07 for unit description.

3-23 “Windmills” by Ginger Shafer (00)
See OR-08 for unit description.

3-24 “Nature’s Way” by Ginger Shafer (00)
See OR-09 for unit description.

3-25 “Water Cycle” by Carol Gutierrez (00)
See OR-10 for unit description.

3-26 “Land Forms of New Mexico” by Carol Gutierrez (00)
See OR-11 for unit description.

- 3-27 ***“Watersheds” by Carol Gutierrez (00)***
See OR-12 for unit description.

Fourth Grade

- 4-01 ***“Symbiotic Relationships by Debra Rodgers (96)***
See 3-02 for unit description.

- 4-02 ***“Weaving Wisdom and Webs” by Patricia Clark (96)***
This unit is based on the book Charolette’s Web by E.B. White. It incorporates all subject areas across the curriculum and unfolds emotions. Students also have opportunities to study spiders as more than just predators.

- 4-03 ***“My Best Friends are Bugs” by Sharon West (96)***
Students who have the opportunity to learn this lesson will become more bug friendly. The unit uses James and the Giant Peach as a theme to introduce insects, spiders, and earthworms as a major part of our everyday life and world. As the students read about James’ adventures with his new friends they will come to appreciate the beneficial aspects of creatures large and small.

- 4-04 ***“Anthropods” by Susan Houston (96)***
Nine out of every ten living creatures on earth is an insect. Contact and involvement with insects is both beneficial and harmful. Standards met are not included in this lesson.

- 4-05 ***“Hay, Guys!” by Beverly Gunn (97)***
See K-03 for unit description.

- 4-06 ***“Farmer Boy” by Shelli Pinnell (97)***
See 3-05 for unit description.

- 4-07 ***“Risks and Consequences” by Anne Parmer (97)***
See 3-06 for unit description.

- 4-08 ***“The 100 Dresses” by Sharon West (97)***
This unit uses the book The Hundred Dresses, by Eleanor Estes, as the driving force. Students will learn about cotton and wool industries and their many facets. It also is designed to develop an appreciation for agriculture and immigration while trying to help eradicate prejudice of others.

- 4-09 ***“The Study of Cotton” by Debbie Kissner (97)***
See 5-01 for unit description.

- 4-10 ***“Happy Trails” by Karen Buchman (98)***

Wanted: Sharp shooting fourth grade students for a trail blazing time! Students will develop an awareness of the history and geography of the state of New Mexico and DeBaca County, using the wild west theme.

4-11 “A Food Chains Home on the Range” by Kathleen Wheatley (98)

See 3-09 for unit description.

4-12 “Animals in the Desert” by Robin Wood (98)

See 3-10 for unit description.

4-13 “The Critter Characters” by Karen Buchman (99)

See K-04 for unit description.

4-14 “Garbage is a Worm’s Best Friend” by Robin Wood and Elliot McDaniel (99)

This unit teaches students all about worms and their important functions. Activities include; a yucky worm interview, worm observation, how to build a worm column, and population expansion. The unit also contains lessons for special needs students.

4-15 “The Santa Fe Trail” by Janese Maness and Deborah Rice (99)

See K-06 for unit description.

4-16 “Hydroponics in the Classroom” by Linda Alaniz (99)

Hydroponics, or the growing of plants without soil, was developed during the mid-1800's. Plants grown with hydroponics are grown in metal or plastic containers filled with water, coarse sand, gravel, or other materials, to which nutrients are added. Students will learn how to grow vegetables, house plants and herbs without soil in this unit.

4-17 “Seed to Plant- Wheat, Corn and Potatoes” by Glenda Belcher (00)

Students learning from this unit will come to know the difference in corn, wheat and potato plants. They will understand the planting and harvesting process. Through various projects, they will experience the difference in taste, texture, and smell of the three products. Students analyze and chart the growth process of the three different types of plants, discovering that corn and wheat grow from a seed while a potato is grown using a piece of the potato with eyes!

4-18 “New Mexico State Symbols” by Sylvia Lopez (00)

New Mexico is truly the “Land of Enchantment”! Do your students know the New Mexico State Symbols and why they were chosen? This unit explores the state flower- Yucca, state tree- Pinon, and state fish- the Cutthroat Trout with a variety of activities and learning experiences! Use this in conjunction with lessons on New Mexico History, and students will learn how agriculture is an important

part of this state's history and heritage! Also available on CD ROM, written in Word '97.

4-19 "Water Wisdom" by Edwina Trujillo (00)

See unit 3-18 for unit description.

4-20 "INSECTS!" by Edwina Trujillo (00)

See unit 3-19 for unit description.

4-21 "Plants, Plants, Plants!" by Edwina Trujillo (00)

See unit 3-20 for unit description.

4-22 "Greenhouse Curriculum" by Ft. Sumner School Teachers (98)

See OR-01 for unit description.

4-23 "The Giving Tree" by Sharon West and Joel Wood (98)

See OR-02 for unit description.

4-24 "Beef and It's By-Products" by Ed Kerr (98)

See OR -03 for unit description.

4-25 "Water for the World of Agriculture" by Susie Swope (99)

See OR-07 for unit description.

4-26 "Windmills" by Ginger Shafer (00)

See OR-08 for unit description.

4-27 "Nature's Way" by Ginger Shafer (00)

See OR-09 for unit description.

4-28 "Water Cycle" by Carol Gutierrez (00)

See OR-10 for unit description.

4-29 "Land Forms of New Mexico" by Carol Gutierrez (00)

See OR-11 for unit description.

4-30 "Watersheds" by Carol Gutierrez (00)

See OR-12 for unit description.

4-31 "And Now Miguel" A Literature Study by Charlanne Cooper (01)

The objective of this study is to give students a feel and flavor for life in Northern New Mexico as experienced by a three generational Hispanic family of shepherders. Readings and activities will bring students to the Sangre De Cristo Mountains for an opportunity to experience caring for sheep. Also available on computer disk.

Fifth Grade

5-01 “*The Study of Cotton*” by Debbie Kissner (97)

No one knows exactly how old cotton is. Scientists searching caves in Mexico found bits of cotton bolls and pieces of cotton cloth that proved to be at least seven thousand years old. They also found that the cotton itself was much like that grown in America today. This unit will give students the opportunity to understand and learn the skills that are needed by today’s cotton growers to succeed.

5-02 “*Weaving, Wisdom and Webs*” by Patricia Clark (96)

See 4-02 unit for description.

5-03 “*My Best Friends are Bugs*” by Sharon West (96)

See 4-03 unit for description.

5-04 “*Risks and Consequences*” by Anne Parmer (97)

See 3-06 unit for description.

5-05 “*Anthropods*” by Susan Houston (96)

See 4-04 unit for description.

5-06 “*The Critter Characters*” by Karen Buchman (99)

This unit is designed to teach students about character education and animals. Lessons extend the animal theme by giving names, background, culture, ethnicity and human situations to original animals. The various lessons are enhanced with curriculum experiences that will involve each student on an individual basis as well as in groups.

5-07 “*New Mexico State Symbols*” by Sylvia Lopez (00)

See 4-18 for unit description.

5-08 “*Hydroponics in the Classroom*” by Linda Alaniz (99)

See 4-16 for unit description.

5-10 “*Water for the World of Agriculture*” by Susie Swope (99)

See OR-07 for unit description.

5-11 “*Windmills*” by Ginger Shafer (00)

See OR-08 for unit description.

5-12 “*Nature’s Way*” by Ginger Shafer (00)

See OR-09 for unit description.

- 5-13 ***“Water Cycle” by Carol Gutierrez (00)***
See OR-10 for unit description.
- 5-14 ***“Land Forms of New Mexico” by Carol Gutierrez (00)***
See OR-11 for unit description.
- 5-15 ***“Watersheds” by Carol Gutierrez (00)***
See OR-12 for unit description.
- 5-16 ***“And Now Miguel” A Literature Study by Charlanne Cooper (01)***
See 4-31 for unit description.

Sixth Grade

- 6-01 ***“The Study of Cotton” by Debbie Kissner (97)***
See 5-01 for unit description.
- 6-02 ***“Risks and Consequences” by Anne Parmer (97)***
See 3-06 for unit description.
- 6-03 ***“Family, Fun, and Finances” by Patricia Clark (97)***
This unit is based on the book *The Christmas Secret* by Joan Lexau. Students will learn about Puerto Rico, the importance of friendships and family, and all about TREES!
- 6-04 ***“The Functions of Water in Plants” by Joel Wood (99)***
Why do plants need water? What are the functions of water in plant growth and development? This lesson addresses these and other important questions.
- 6-05 ***“Hydroponics in the Classroom” by Linda Alaniz (99)***
See 4-16 for unit description.
- 6-06 ***“Beef and It’s By-Products” by Ed Kerr (98)***
See OR-03 for unit description.
- 6-07 ***“Water for the World of Agriculture” by Susie Swope (99)***
See OR-07 for unit description.
- 6-08 ***“Windmills” by Ginger Shafer (00)***
See OR-08 for unit description.
- 6-09 ***“Nature’s Way” by Ginger Shafer (00)***
See OR-09 for unit description.

6-10 “Wetlands” by Charlanne Cooper (00)

See OR-13 for unit description.

6-11 “Groundwater and Surface Water” by Charlanne Cooper (00)

See OR-14 for unit description.

6-12 “A River Simulation” by Charlanne Cooper (00)

See OR-15 for unit description.

Seventh Grade

7-01 “Scientific Method and Agriculture” by Lindy Kerr (96)

First, this unit allows students to become proficient in all aspects of the scientific method. Then, this unit teaches students about various aspects of agriculture. Emphasis is on the realization that all people are scientists, to a certain degree, because they are problem solvers. People in agriculture are involved in science to a great degree because of the special problems they face as they try to feed the world. Students will begin by learning about scientific equipment, then prepare some gardening experiments, and ultimately participate in lessons on both plants and insects.

7-02 “The Functions of Water in Plants” by Joel Wood (99)

See 6-04 for unit descriptions.

7-03 “Beef and It’s By-Products” by Ed Kerr (98)

See OR-03 for unit description.

7-04 “Water for the World of Agriculture” by Susie Swope (99)

See OR-07 for unit description.

7-05 “Wetlands” by Charlanne Cooper (00)

See OR-13 for unit description.

7-06 “Groundwater and Surface Water” by Charlanne Cooper (00)

See OR-14 for unit description.

7-07 “A River Simulation” by Charlanne Cooper (00)

See OR-15 for unit description.

Eighth Grade

- 8-01** *“The Scientific Method and Agriculture” by Lindy Kerr (96)*
See 7-01 for unit description.
- 8-02** *“Insects” by Susie Swope (96)*
This unit is designed to be taught to 8th grade students who will then teach elementary students (K-5) lessons about insects. Students will identify insects and their parts, will learn insect facts, collect insects and do projects.
- 8-03** *“The Functions of Water in Plants” by Joel Wood (99)*
See 6-04 for unit description.
- 8-04** *“The Giving Tree” by Sharon West and Joel Wood (98)*
See OR-02 for unit description.
- 8-05** *“Beef and It’s By-Products” by Ed Kerr (98)*
See OR-03 for unit description.
- 8-06** *“Water for the World of Agriculture” by Susie Swope (99)*
See OR-07 for unit description.
- 8-07** *“Wetlands” by Charlanne Cooper (00)*
See OR-13 for unit description.
- 8-08** *“Groundwater and Surface Water” by Charlanne Cooper (00)*
See OR-14 for unit description.
- 8-09** *“A River Simulation” by Charlanne Cooper (00)*
See OR-15 for unit description.

Ninth Grade

- 9-01** *“The Scientific Method and Agriculture” by Lindy Kerr (96)*
See 7-01 for unit description.
- 9-02** *“Insects” by Susie Swope (96)*
See 8-02 for unit description.
- 9-03** *“Easy Lab Exercises for High School Biology Teachers” by Mary Beth Atwood (96)*
Every biology teacher knows that agriculture IS biology. Agriculture is LIFE! This manual contains short paragraphs which help students link abstract concepts of biology to more concrete examples in agriculture. The labs contained in this lesson are simple, with easily obtainable materials. Topics cover enzymes, cells, algae, fungi, leaves, earthworms, crayfish, grasshopper dissection and more! This lesson also has an additional optional component, “Biology Lesson Plans with Ag

Exercises” - unit 9-04.

9-04 “Biology Lesson Plans with Ag Exercises” by Mary Beth Atwood (97)

This unit provides a day by day lesson plan for a high school biology class. It follows the text book Biology Today and is designed to accompany unit 9-03 in this catalog.

9-05 “Beef, It’s What You Want” by Karen Buchman (97)

This unit is designed to teach students about beef and its place in the food pyramid in addition to providing additional interesting information. Students will learn facts, explore myths, observe, discover, and participate in activities that will enable them to purchase, prepare, and explain to others facts about beef.

9-06 “The Functions of Water in Plants” by Joel Wood (99)

See 6-04 for unit description.

9-07 “Landscape Design” by Pam Valdes (00)

This unit follows the textbook Landscaping, by Jack Ingels. Lessons include careers in landscape design and construction, using drawing instruments, developing drawing skills, design concepts, and developing a residential landscape design.

9-08 “The Importance and Formation of Soils” by Justin Knight (99)

What exactly IS soil? How are soils formed, how do they affect us, what are they made of and how are they classified? All this and more are explored in this unit. Students will examine the effect of soil compaction on water infiltration and will learn how to determine soil texture by feel.

9-09 “Beef and It’s By-Products” by Ed Kerr (98)

See OR-03 for unit description.

9-10 “NM Agriculture: How Big is it?” by Ed Kerr (98)

See OR-04 for unit description.

9-11 “Hidalgo County Agriculture” by Ed Kerr (98)

See OR -05 for unit description.

9-12 “Herpetology” by Ed Kerr (98)

See OR-06 for unit description.

9-13 “Water for the World of Agriculture” by Susie Swope (99)

See OR-07 for unit description.

9-14 “Introduction to Agriculture Biotechnology” by Lynda Ray (01)

What is agriculture biotechnology? This unit addresses this question as well as discussing plant and animal biotech, regulating biotechnology and the future of biotechnology. This is a power point presentation, on CD Rom, designed to accompany the *Complete Set- Agriscience 338, Agriculture Biotechnology*, published by Instructional Materials Service, Texas A & M University.

9-15 “Careers in Biotechnology” by Lynda Ray (01)

This unit covers many careers available in agricultural biotechnology. Some of those include, waste management, law enforcement, energy production, production agriculture, regulatory officials, public relations, and sales. This power point presentation on CD Rom, is designed to accompany the *Complete Set- Agriscience 338, Agriculture Biotechnology*, published by Instructional Materials Service, Texas A & M University.

9-16 “Plant Biotechnology” by Lynda Ray (01)

In the age of scientific research, it is important to know how plants are genetically engineered and what products are available through this process. This unit discusses plant reproduction, tissue cultures, hydroponics/aquaponics, improving plants with genetic engineering, types of plants invented through genetic engineering and why they are beneficial. This power point presentation on CD Rom, is designed to accompany the *Complete Set- Agriscience 338, Agriculture Biotechnology*, published by Instructional Materials Service, Texas A & M University.

Tenth Grade

10-01 “Easy Lab Exercises for High School Biology Teachers” by Mary Beth Atwood (96)

See 9-03 for unit description.

10-02 “Biology Lesson Plans with Ag Exercises” by Mary Beth Atwood (97)

See 9-04 for unit description.

10-03 “Beef, It’s What You Want” by Karen Buchman (97)

See 9-05 for unit description.

10-04 “Landscape Design” by Pam Valdes (00)

See 9-07 for unit description.

10-05 “The Importance and Formation of Soils” by Justin Knight (99)

See 9-08 for unit description.

10-06 “Beef and It’s By-Products” by Ed Kerr (98)

See OR-03 for unit description.

- 10-07 ***“NM Agriculture: How Big is it?” by Ed Kerr (98)***
See OR-04 for unit description.
- 10-08 ***“Hidalgo County Agriculture” by Ed Kerr (98)***
See OR -05 for unit description.
- 10-09 ***“Herpetology” by Ed Kerr (98)***
See OR-06 for unit description.
- 10-10 ***“Water for the World of Agriculture” by Susie Swope (99)***
See OR-07 for unit description.
- 10-11 ***“Introduction to Agriculture Biotechnology” by Lynda Ray (01)***
See 9-14 for unit description.
- 10-12 ***“Careers in Biotechnology” by Lynda Ray (01)***
See 9-15 for unit description.
- 10-13 ***“Plant Biotechnology” by Lynda Ray (01)***
See 9-16 for unit description.

Eleventh Grade

- 11-01 ***“Easy Lab Exercises for High School Biology Teachers” by Mary Beth Atwood (96)***
See 9-03 for unit description.
- 11-02 ***“Biology Lesson Plans with Ag Exercises” by Mary Beth Atwood (97)***
See 9-04 for unit description.
- 11-03 ***“Beef, It’s What You Want” by Mary Beth Atwood (97)***
See 9-04 for unit description.
- 11-04 ***“Landscape Design” by Pam Valdes (00)***
See 9-07 for unit description.
- 11-05 ***“The Importance and Formation of Soils” by Justin Knight (99)***
See 9-08 for unit description.
- 11-06 ***“Beef and It’s By-Products” by Ed Kerr (98)***
See OR-03 for unit description.
- 11-07 ***“NM Agriculture: How Big is it?” by Ed Kerr (98)***

See OR-04 for unit description.

- 11-08 ***“Hidalgo County Agriculture” by Ed Kerr (98)***
See OR -05 for unit description.
- 11-09 ***“Herpetology” by Ed Kerr (98)***
See OR-06 for unit description.
- 11-10 ***“Water for the World of Agriculture” by Susie Swope (99)***
See OR-07 for unit description.
- 11-11 ***“Introduction to Agriculture Biotechnology” by Lynda Ray (01)***
See 9-14 for unit description.
- 11-12 ***“Careers in Biotechnology” by Lynda Ray (01)***
See 9-15 for unit description.
- 11-13 ***“Plant Biotechnology” by Lynda Ray (01)***
See 9-16 for unit description.

Twelfth Grade

- 12-01 ***“Easy Lab Exercises for High School Biology Teachers” by Mary Beth Atwood (96)***
See 9-03 for unit description.
- 12-02 ***“Biology Lesson Plans with Ag Exercises” by Mary Beth Atwood (97)***
See 9-04 for unit description.
- 12-03 ***“Beef, It’s What You Want” by Mary Beth Atwood (97)***
See 9-04 for unit description.
- 12-04 ***“Landscape Design” by Pam Valdes (00)***
See 9-07 for unit description.
- 12-05 ***“The Importance and Formation of Soils” by Justin Knight (99)***
See 9-08 for unit description.
- 12-06 ***“Beef and It’s By-Products” by Ed Kerr (98)***
See OR-03 for unit description.
- 12-07 ***“NM Agriculture: How Big is it? by Ed Kerr (98)***

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12-08 “Hidalgo County Agriculture” by Ed Kerr (98)

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12-12 “Careers in Biotechnology” by Lynda Ray (01)

See 9-15 for unit description.

12-13 “Plant Biotechnology” by Lynda Ray (01)

See 9-16 for unit description.

Websites

Web 01 “WWW.Ranching” by Mary Beth Atwood (98)

What can you learn from a rancher? If you listen and watch, you may learn real respect and responsibility for the environment. You may learn that solitude does not mean loneliness and that you don't get paid for the most rewarding things in life. This web page is a glimpse into the life of a rancher and his son who live and ranch in eastern New Mexico. Topics include: a cowboy and his equipment, branding, ranch rodeo, and ranch life. An e-mail address is also included for questions to the author. Web site address is:

www.nmmi.cc.nm.us/~atwood/ranching.html

Web 02 “Agriculture in Our Backyard: Chaves County” by Holly Tipton (00)

Chaves County is full of agriculture! This web page is designed to allow students and teachers alike to find out more about the diverse agriculture in Chaves County. Topics include: Roswell agriculture - ag facts from the Chamber of Commerce, Kids and Kows, Mobile Dairy Classroom, Pecans, Leprino Foods, Roswell Auction, Dairies, farming and ranching. Web site address is:

www.nmmi.cc.nm.us/~tipton/aginchavescounty.html

Cooperative Projects and Mini- Lessons

OR-01 “Greenhouse Curriculum” by Ft. Sumner School Teachers (98)

This unit is a guide for elementary teachers at Ft. Sumner School’s greenhouse. The greenhouse was a result of a grant written by the local Soil and Water Conservation Board in conjunction with the school. Students will be involved in plant activities that will promote cooperative interaction with other students and community members the curriculum incorporates the Seven Multiple Intelligences into lessons for students K-4 grades.

OR-02 “The Giving Tree” by Sharon West and Joel Wood (98)

This unit is designed as a cooperative project between 4th and 8th grade classes. It is based on the book The Giving Tree by Shel Silverstein. The students will gain an understanding of and appreciation for agriculture’s role as a caretaker of the environment, specifically with trees, among other lessons. This unit can accompany the “Greenhouse Curriculum” above, or stand alone.

OR-03 “Beef and It’s By-Products” by Ed Kerr (98)

This lesson is written for a single class session. It is designed for grades 4-12 and teaches how we use cattle in our everyday lives from meat to marshmallows and medicines.

OR-04 “NM Agriculture: How Big is it?” by Ed Kerr (98)

This lesson is written for a single class session. It is designed for grades 9-12. Livestock production in NM is big business, providing income and support for many facets of our economy. This lesson contains statistics on this vital industry.

OR-05 “Hidalgo County Agriculture” by Ed Kerr (98)

This lesson is written for a single class session. It is designed for grades 9-12. This lesson introduces agriculture on the county level: its impact, scope, and size with respect to the county’s economy and importance as an industry to the people and culture of Hidalgo County.

OR-06 “Herpetology” by Ed Kerr (98)

This lesson is written for a single class session. It is designed for 9-12 grades. This lesson discusses the types of amphibians and reptiles located in New Mexico. Predator/prey relationships are also part of the lesson, and other topics are suggested for further extension.

OR-07 “Water for the World of Agriculture” by Susie Swope (99)

This lesson is written for single class sessions. Designed for grades K-12. These lessons are adapted from the national Project Wet curriculum, with an emphasis on agriculture. Some lessons include: “Just Passing Through” where students describe differences in water movement on a slope with and without vegetation, and “Aqua Bodies”, where students learn that water is the main portion of living

organisms.

OR-08 “Windmills” by Ginger Shafer (00)

In this lesson, students will learn how a windmill works and the uses for water that comes from a well. Designed for K-2 and 3-6 grades. This lesson is designed to be used with the NM Association of Conservation Districts ** “Rolling Rivers Water Trailer”, but could be modified for stand alone use. Also available on computer disk, in Microsoft Word.

OR-09 “Nature’s Way” by Ginger Shafer (00)

This lesson teaches students how unclean water is naturally filtered as it passes through the layers of the earth and returns to the underground water table. Designed for K-6 students. The lesson includes a vocabulary list, puzzle, and instructions for building a working model of a natural filtration system. It is designed to be used in conjunction with the NM Association of Conservation Districts ** “Rolling Rivers Water Trailer”, but could be modified for stand alone use. Also available on computer disk, in Microsoft Word.

OR-10 “Water Cycle” by Carol Gutierrez (00)

Water constantly changes it’s shape on Earth. This lesson will teach students how the water cycle flows by making a diagram of the water cycle, and then observing it in the ** “Rolling Rivers Water Trailer”. Designed for grades 1-5. Also available on computer disk, Microsoft Word-97.

OR-11 “Land forms of New Mexico” by Carol Gutierrez (00)

Earth is not smooth and level. The landscape is varied. New Mexico’s landscape includes most of the Earth’s features, from mountains, valleys, canyons, lakes, plains, to deserts. In this lesson, students will learn about physical features of the Earth, make a booklet model of physical features of New Mexico, and form physical land forms using the ** “Rolling Rivers Water Trailer”. It is designed for grades 1-5. Also available on computer disk, Microsoft Word-97.

OR-12 “Watersheds” by Carol Gutierrez (00)

A watershed is the land that water flows across or under on its way to a stream, lake, or river. Water runs to the lowest point. On its way, it may travel across many surfaces like farms, city streets, forest floors, lawns, schoolyards, etc. In this lesson, students in grades 1-5 will learn the definition of a watershed, identify the watershed in which they live, and will track water as it travels in a model watershed in the ** “Rolling River Water Trailer”. Also available on computer disk, Microsoft Word- 97.

OR-13 “Wetlands” by Charlanne Cooper (00)

Wetlands are essential for the survival of many animals. They are one of the richer environments, providing food, water, and shelter for a variety of species. This lesson is designed to demonstrate the concept of wetlands. Students will build a model wetlands showing its relationship to a watershed. They will observe some of the

benefits of a wetland zone and record the results in a river journal. Designed for grades 6-8. It is designed to be used in conjunction with the NM Association of Conservation Districts ** "Rolling Rivers Water Trailer", but could be used for stand alone use. Also available on computer disk, in Microsoft Word -00.

OR-14 "Groundwater and Surface Water" by Charlanne Cooper (00)

This lesson is designed for 6-8 grade students. Students will do experiments to discover the definition of ground water and surface water. They will study the relationship between ground water and surface water; how they interact; how depletion of one affects the other; how different soil types can affect the relationship between two; and how pollution can migrate through water sources. It is designed to be used in conjunction with the NM Association of Conservation Districts ** "Rolling Rivers Water Trailer", but could be used for stand alone use. Also available on computer disk, in Microsoft Word - 00.

OR- 15 "A River Simulation" by Charlanne Cooper (00)

This lesson, designed for grades 6-8, will help students understand the diversity of self-interests relative to water and land use on a river system. Students are to analyze individual and group roles to determine concerns relative to water and land use on a river system. Students are asked to analyze common interests relative to the future well being of a river system. It is designed to be used in conjunction with the NM Association of Conservation Districts ** "Rolling Rivers Water Trailer", but could be used for stand alone use. Also available on computer disk, in Microsoft Word - 00.

OR- 16 "Using Agriculture to Vertically Align a School System" by Linda Alaniz (99)

This is a guide which demonstrates how, using science and math, the curriculum at Wagon Mound Schools can be vertically aligned from K-12 grades. Ideas for math, science, English, art, reading, history, business, and physical education activities are included. In addition, resources, bibliography, websites and plan for implementation is included.

** To reserve a Rolling Rivers Water Trailer, contact Debbie Hughes 505-981-2400 or E-mail her at: nmacd@dellcity.com



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