AGRISCIENCE LESSON PLAN LIBRARY

Listing of Units, Problem Areas, and Lessons

UNIT A: AGRICULTURAL LITERACY

1. Identifying Careers in Agriculture/Horticulture

Lesson 1 — Determining the Nature of the Agriculture/Horticulture Industry

Lesson 2 — Selecting an Agriculture/Horticulture Occupation

Lesson 3 — Determining Needs and Competencies

Lesson 4 — Determining Working Conditions and Earning Potential

Lesson 5 — Determining Individual Agriculture/Horticulture Interests

2. Recognizing the Role of Agriculture in Society

Lesson 1 — Determining the History of Agriculture

Lesson 2 — Understanding the Importance of Agriculture to Society

Lesson 3 — Determining Trends in Agriculture

3. Identifying the Relationship Between Agriculture and the Environment

Lesson 1 — Determining the Kinds and Importance of Natural Resources

Lesson 2 — Understanding Ecosystems

Lesson 3 — Determining Sources of Environmental Pollution

Lesson 4 — Selecting Methods of Waste Disposal

Lesson 5 — Determining How to Prevent Agricultural Pollution

4. Using Agricultural Organizations, Agencies, and Sources of Information

Lesson 1 — Using Private Organizations in Agriculture/Horticulture

Lesson 2 — Using the Internet and World Wide Web

5. Describing the World Food and Fiber System

Lesson 1 — Understanding World Agricultural Production

Lesson 2 — Determining the Use of Technology in World Food and Fiber Production

Lesson 3 — Determining the Role of Consumers in World Agriculture

6. Determining the Role of Research and Development in Agriculture/Horticulture

Lesson 1 — Understanding Agriscience and Technology

Lesson 2 — Conducting Agricultural Research

Lesson 3 — Determining the Role of International Development in Agriculture

7. Recognizing the Impact of Technology on Agriculture

Lesson 1 — Determining the Nature of Biotechnology

Lesson 2 — Understanding the Basis for Biotechnology Research

Lesson 3 — Recognizing the Agricultural Applications of Biotechnology

Lesson 4 — Determining Future Impacts of and Concerns Brought About by Agricultural Biotechnology Research

Lesson 5 — Identifying Career Opportunities in Agricultural Biotechnology

Lesson 6 — Determining the Role of Science and Technology in Agricultural Production

Lesson 7 — Determining the Role of Electronics in Agricultural Technology

Lesson 8 — Determining the Role of Precision Technologies

UNIT B: EMPLOYABILITY IN AGRICULTURAL/HORTICULTURAL INDUSTRY

1. Developing Personal Skills

Lesson 1 — Self-Understanding and Assessment

Lesson 2 — Developing Human Relations Skills in the Workplace

2. Developing Communication Skills

Lesson 1 — Introduction to Communication

Lesson 2 — Understanding Effective Communication Techniques

Lesson 3 — Identifying Effective Speaking Techniques

Lesson 4 — Developing Listening Techniques

Lesson 5 — Organizing and Presenting a Persuasive Message

Lesson 6 — Using Communication Skills in Appropriate Situations

3. Using Mathematics Skills

Lesson 1 — Using English and Metric Measurements

Lesson 2 — Determining Area and Volume

Lesson 3 — Calculating Interest Rates

4. Demonstrating Problem-Solving Skills

Lesson 1 — Understanding Problem Solving

Lesson 2 — Understanding the Problem-Solving Method of Learning (Teaching)

5. Developing Transition Skills

Lesson 1 — Developing Transition Skills in Agricultural/Horticultural Occupations

6. Exploring Ethical Issues

Lesson 1 — Describing Ethics in Agribusiness

7. Gaining Employment

Lesson 1 — Developing Goals

Lesson 2 — Obtaining Education for a Job

Lesson 3 — Identifying Occupational Competencies

Lesson 4 — Finding a Job

Lesson 5 — Applying for a Job

Lesson 6 — Writing a Résumé and Letter of Application

Lesson 7 — Succeeding in a Job Interview

Lesson 8 — Understanding Conflicts and Their Resolution

8. Developing Safety Skills

Lesson 1 — Understanding Where Accidents Occur and Agencies Associated with Workplace Safety

Lesson 2 — Understanding Why Accidents Occur and How to Prevent Them

UNIT C: BASIC PRINCIPLES OF AGRICULTURAL/HORTICULTURAL SCIENCE

1. Using Basic Soil Science Principles

Lesson 1 — Determining the Nature of Soil

Lesson 2 — Understanding Soil Texture and Structure

Lesson 3 — Explaining a Soil Profile

Lesson 4 — Understanding Moisture Holding Capacity

Lesson 5 — Understanding Soil Degradation

Lesson 6 — Understanding Soil Erosion and Management Practices

2. Identifying and Using Agriscience Tools and Equipment

Lesson 1 — Practicing Safety in the Lab

Lesson 2 — Identifying Agriscience Lab Tools

Lesson 3 — Using the Microscope

3. Understanding Cells, Genetics, and Reproduction

Lesson 1 — Exploring Cells

Lesson 2 — Exploring Genetics

Lesson 3 — Examining Mitosis and Meiosis

Lesson 4 — Using Crossbreeding and Hybrids

4. Identifying Basic Principles of Plant Science

Lesson 1 — Classifying and Naming Plants

Lesson 2 — Examining Plant Structures and Functions

Lesson 3 — Examining Flowers and Fruits

Lesson 4 — Identifying Plant Types and Uses

Lesson 5 — Determining the Importance of Photosynthesis and Respiration

Lesson 6 — Managing Plant Pests

Lesson 7 — Using Soils and Growing Media

Lesson 8 — Determining Plant Nutrients and Fertility

Lesson 9 — Propagating Plants Sexually

Lesson 10 — Propagating Plants Asexually

5. Identifying Basic Principles in Animal Science

Lesson 1 — Identifying Differences Between Plants and Animals

Lesson 2 — Determining the Anatomy and Physiology of Animals

Lesson 3 — Understanding Animal Reproduction

Lesson 4 — Understanding Blood

Lesson 5 — Understanding Animal Life Span

Lesson 6 — Exploring the Animal Industry

6. Understanding and Using Pesticides

Lesson 1 — Determining the Kinds of Pesticides

Lesson 2 — Using Pesticides Safely

Lesson 3 — Interpreting Pesticide Labels

Lesson 4 — Applying Pesticides

Lesson 5 — Managing Environmental Impact of Pesticides

7. Identifying Basic Principles of Electricity

Lesson 1 — Introducing Electricity and Electrical Safety

Lesson 2 — Exploring the Science of Electricity

Lesson 3 — Measuring and Calculating Electricity

Lesson 4 — Identifying Electrical Tools and Equipment

Lesson 5 — Comparing Single-Phase and Three-Phase Systems

Lesson 6 — Preparing and Using Schematics For Wiring Applications Using Cable

Lesson 7 — Wiring Circuits

8. Identifying Basic Agricultural Mechanics Principles

Lesson 1 — Identifying Basic Areas of Agricultural Mechanization

Lesson 2 — Describing the Basic Skills Used in Agricultural Mechanization

Lesson 3 — Recognizing the Impact of Technological Advances in Agricultural Mechanics

Lesson 4 — Describing Basic Physical Science Laws Applied in Agricultural Mechanics

9. Conserving Natural Resources

Lesson 1 — Determining the Importance of Natural Resource Conservation

Lesson 2 — Conserving Soil

Lesson 3 — Conserving Water

Lesson 4 — Conserving Wildlife

Lesson 5 — Conserving Forests

10. Using Energy Efficiently

Lesson 1 — Understanding Energy as a Resource

Lesson 2 — Conserving Energy

11. Understanding Food Science Technology

Lesson 1 — Exploring Food Science and Its Benefits

Lesson 2 — Exploring Food Preservation

Lesson 3 — Preventing Food Spoilage

Lesson 4 — Food Safety and Sanitation

Lesson 5 — The Business of Food Science

Lesson 6 — Food Science and World Food Supply

UNIT D: BASIC AGRIBUSINESS PRINCIPLES AND SKILLS

1. Managing Personal Finances

Lesson 1 — Understanding Personal Finances and Goals

Lesson 2 — Understanding the Concept of Borrowing Money

Lesson 3 — Determining Sources of Credit

2. Understanding Business Management and Structures

Lesson 1 — Understanding Principles of Business Management

Lesson 2 — Using Sole Proprietorships

Lesson 3 — Using Partnerships

Lesson 4 — Using Corporations and Cooperatives

3. Keeping and Using Records in Agricultural Occupations

Lesson 1 — Understanding Record Keeping

Lesson 2 — Understanding Net Worth, Cash Flow, Income Statements and Computerized Record Keeping

Lesson 3 — Understanding Budgets and Financial Analysis Ratios

4. Applying Basic Economic Principles in Agribusiness

Lesson 1 — Understanding Basic Economics Principles

Lesson 2 — Understanding Depreciation, Fixed, and Variable Costs

Lesson 3 — Understanding the Value of Time and Money

5. Developing Basic Computer Skills

Lesson 1 — Computer Terminology and Equipment

Lesson 2 — Introduction to Computers in Agriculture

Lesson 3 — Using the Internet

UNIT E: DEVELOPING LEADERSHIP SKILLS IN AGRICULTURE

1. Understanding the History and Organization of FFA

Lesson 1 — Exploring the History and Organization of FFA

2. Recognizing Opportunities in FFA

Lesson 1 — Discovering Opportunities in the FFA

Lesson 2 — Determining FFA Degrees, Awards, and CDEs

3. Developing Leadership Skills

Lesson 1 — Understanding FFA Officer Duties and Responsibilities

Lesson 2 — Planning and Organizing an FFA Meeting

4. Participating in Community and Government Organizations

Lesson 1 — Understanding Youth Clubs and Organizations

Lesson 2 — Developing an Awareness for Your Community

UNIT F: SUPERVISED EXPERIENCE IN AGRICULTURE/HORTICULTURE

1. Determining Purposes and Procedures of SAE

Lesson 1 — Determining the Benefits of an SAE

Lesson 2 — Determining the Kinds of SAE

2. **Planning and Developing SAE Programs**

Lesson 1 — Researching Possible SAE Programs

Lesson 2 — Planning Your SAE Program

Lesson 3 — Implementing SAE Programs

3. **Expanding My SAE**

Lesson 1 — Keeping and Using SAE Records

Lesson 2 — Making Long Range Plans for Expanding SAE Programs

INDEX/GLOSSARY

Matrixes Correlating Lessons to Learning Standards