

Natural Resources & Conservation/Horticultural Studies
CASE Curriculum: Level IV Unit Outline

Unit 1: Agenda Book Review/Classroom Rules

- Class discussion of student agenda book
- Review of classroom rules
- School safety protocols, district drills and emergency evacuations, behavior and meeting locations
- Review expectations and school policies for electronic devices

Unit 2: Safety, First Aid, Personal Protective Equipment and Shop Attire

- Identify, discuss, locate first aid and blood borne kits
- Identify, locate and demonstrate function and purpose of the Emergency Eye Station
- Identify, discuss, locate fire extinguisher
- Identify, distribute and discuss function and uses of protective eyewear, appropriate personal protective equipment (PPE) required in shop, and acceptable shop attire
- Identify, show location and discuss function and uses of the SDS (Safety Data Sheets) and how to interpret the information about paints and aerosols, content precautions, material labeling
- Equipment safety protocols
- Identify, demonstrate shop ventilation systems where applicable
- Identify locate and discuss function of shop flammable cabinet where applicable
- Discuss and demonstrate shop housekeeping of supplies, work stations and room maintenance
- Discuss and identify electrical safety considerations in the shop area
- Compile a safety section in the student shop notebook
- Identify, demonstrate air gauge function and operation where applicable
- Completion of online safety course and successful passing of safety test(s)

Unit 3: Defining Agricultural Research and Development (ARD)

- Research and development of new ideas and innovations are used to solve problems, provide goods, and increase productivity in agriculture
- Documentation of plans and processes is used by students in the development of new ideas and products
- Solving complex, real-world problems includes defining the problem, proposing a solution, developing a protocol, collecting and analyzing data, and communicating results
- Efficient project management is based on an awareness of personal strengths
- Project management requires planning, scheduling, self-motivation, and prioritization skills

Unit 4: ARD: Problems and Solutions

- Students will learn to identify agricultural problems
- Brainstorming will be explored and developed to pinpoint specific topics/problems
- Students will learn to consider all extenuating circumstances when selecting a problem to solve
- Students will learn to write problem statements to aid research and help in the solution/problem process
- Students will consider all factors (social, legal, financial, environmental) when seeking solutions
- Students will incorporate a feasibility study to determine the viability of new ideas and innovations
- A proposed solution will be written to be testable or solvable
- Students will learn that partnering with professionals in the field can validate and guide research when solving a problem

Unit 5: ARD: Methodology

- Students will learn to plan step-by-step instructions to guide the problem solving process
- Available resources will determine the project scope
- Topic information will be organized using proven standards
- Data will be collected as the problem dictates using appropriate data collection instruments
- An ongoing evaluation process will be implemented to monitor the validity of the solution

Unit 6: ARD: Reporting Data

- Students will use graphs and charts to interpret, analyze, and organize data
- Students collect and analyze data to solve a problem
- Conclusions of research are derived from data
- Project reflection will be utilized to encourage expansion and continuation

Unit 7: ARD: Communication

- Students will learn to communicate results to a target audience in order to circulate their research for further use
- Students will know that researchers use various media to communicate results professionally
- Society is impacted by new solutions to problems
- Students will understand that a portfolio of work communicates all aspects of research

Unit 8: Portfolio IV

- Career portfolios
 - Professional requirements

- Resume
- Cover letter
- Attendance for success form
- Certificates of achievements
- Six certificates
- Academic artifacts
 - 48 academic achievements
 - Tests
 - Quizzes
 - Projects
- Performance artifacts
 - 48 Practical achievements
 - Labs
 - Practical assignments

Natural Resources & Conservation/Horticultural Studies
New Jersey Student Learning Standards

NJ Learning Standards 9.3

CONTENT AREA:	<i>21st Century Life and Careers</i>
AGRICULTURE, FOOD & NATURAL RESOURCES CAREER CLUSTER®	
Number	Standard Statement
<i>By the end of Grade 12, Career and Technical Education Program completers will be able to:</i>	
CAREER CLUSTER®:	AGRICULTURE, FOOD & NATURAL RESOURCES (AG)
PATHWAY:	PLANT SYSTEMS (AG-PL)
9.3.12.AG-PL.1	Develop and implement a crop management plan for a given production goal that accounts for environmental factors.
9.3.12.AG-PL.2	Apply the principles of classification, plant anatomy and plant physiology to plant production and management.
9.3.12.AG-PL.3	Propagate, culture and harvest plants and plant products based on current industry standards.
9.3.12.AG-PL.4	Apply principles of design in plant systems to enhance an environment (e.g., floral, forest, landscape and farm).