



Agriculture, Food, and Natural Resources

Marquand-Zion High School Career Cluster Program of Study

This Program of Study Template can serve as a guide, along with other career planning materials, as you continue your career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. **Ask your high school counselor to help you fill in the required courses you need to graduate.**

Grade	English 8 semesters	Math 6 semesters	Science 6 semesters	Social Studies 6 semesters	Other Required Courses, Recommended Electives	Career & Technical Courses and/or Degree Major Courses @ Unitec	SAMPLE Occupations Relating to this Pathway
9	Comm Arts I	High School Math	High School Science Course	High School S.S. Course	Personal Finance Computer Science Ag electives	See high school counselor for course offerings	<p>Occupations Requiring Postsecondary Education</p> <ul style="list-style-type: none"> ▶ Agricultural Communications Specialist ▶ Agricultural Salesperson ▶ Food & Drug Inspector ▶ Food Meal Supervisor ▶ Food Processor ▶ Meat Cutter-Meat Grader ▶ Meat Processor ▶ Produce Buyer <p>Occupations Requiring Baccalaureate Degree & Beyond</p> <ul style="list-style-type: none"> ▶ Agricultural Educator ▶ Bacteriologist ▶ Biochemist-Nutritionist ▶ Bioengineer ▶ Dietician ▶ Food & Fiber Engineer ▶ Food Scientist ▶ Meat Science Researcher ▶ Microbiologist ▶ Quality Control Specialist
10	Comm Arts II	High School Math	High School Science Course	High School S.S. Course	Personal Finance Computer Science Ag electives	See high school counselor for course offerings	
11	Comm Arts III & Comm Arts elective *English Comp I *Public Speaking	Pre-College Algebra or high school math course *College Algebra	High School Science Course *MFH General Biology	High school S.S. Electives – History & Government *American History I & II *Political Systems	*Anatomy & Physiology *Ag electives online *Zoology *General Chemistry *Botany (Available for Dual Enrollment)	See high school counselor for course offerings *Check with school counselor for dual enrollment classes available on the MAC on the web or on one of the MAC campuses	
12	Senior Comm Arts & Comm Arts elective *English Comp II *Intro to Literature	Pre-College Algebra high school courses *College Algebra	High School Science Course *MFH Intro to Chem *Gen Chem	High school S.S. Electives –History & Government *American History I & II *Political Systems	*Anatomy & Physiology *Ag electives online *Zoology *General Chemistry *Botany (Available for Dual Enrollment)	See high school counselor for course offerings *Check with school counselor for dual enrollment classes available on the MAC on the web or on one of the MAC campuses	

***Dual Credit College courses can often be substituted for high school credit. Check with your Counselor.**

***Dual Enrollment courses – MAC campus or Online.**

Assessments/Certifications: College Placement Assessments, Compass, ACT, SAT

Clubs/Extracurricular Activities: CTSO(s): FBLA FCCLA FFA ***Ask your Counselor what is available at your school.**

Work-Based Learning: After School Employment Internship/Mentorship Job Shadowing Service Learning Supervised Business Experience

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Sample Career Specialties / Occupations</p>	<p>Agricultural Communication Specialists Agricultural Educators Agricultural Sales Bacteriologists Biochemists Bioengineers Cheese Makers Fieldmen Food & Drug Inspectors Food & Fiber Engineers Food Brokers Food Meal Supervisors Food Processors Food Scientists Meat Cutters Meat Graders Meat Processors Meat Science Researchers Microbiologists Nutritionists/Dieticians Produce Buyers Quality Control Specialists Storage Supervisors Toxicologists</p>	<p>Agricultural Educators Agricultural Journalists Aquaculturalists Bioinformatics Specialists Biotechnology Lab Technicians Botanists Commodity Marketing Specialists Crop Farm Managers Custom Hay/Silage Operators Education & Extension Specialists Farmers Forest Geneticists Golf Course Superintendents Grain Operations Superintendents Greenhouse Mangers Growers Plant Breeders and Geneticists Plant Pathologists Ranchers Sales Representatives Soil & Water Specialists Tree Surgeons</p>	<p>Agricultural Educators AI Technicians-Aquaculturalists Animal Caretakers Poultry Managers Animal Health Salespersons Animal Nutritionists Animal Scientists Dairy Producers Embryo Technologists Embryo Transfer Technicians Equine Managers Feed Sales Representatives Feed Sales Specialists Feedlot Specialists Livestock Buyers Livestock Geneticists Livestock Inspectors Livestock Producers Meat Science Researcher Pet Shop Operators Reproductive Physiologists USDA Inspectors Veterinarians Veterinary Assistants Vivarian Technicians Wildlife Biologists</p>	<p>Agricultural Applications Software Developers Agricultural Educator Agricultural Engineers Agricultural Extension Communication Technicians Computer Service Technical Support Technicians Database Administrators Electronics Systems Technicians Engineering Specialists Equipment/Parts Managers GPS Technicians Heavy Equipment Maintenance Technicians Information Lab Specialists Machine Operators Machinists Recycling Technicians Remote Sensing Specialist Waste Water Treatment Plant Operators Welders</p>	<p>Agricultural Educator Cartographers Commercial Fishermen Ecologists Park Mangers Environmental Interpreters Fish and Game Officers Fish Hatchery Manager Fisheries Technicians Fishing Vessel Operators Forest Technicians Geologists Hydrologists Log Grader Loggers Mining Engineers Pulp and Paper Manager Soil Geology Technician Range Technicians Vessel Crew Water Monitoring Technician Wildlife Managers</p>	<p>Agricultural Educator Environmental Sampling and Analysis Scientists And Technicians Hazardous Materials Handlers Hazardous Materials Technicians/ Managers Health and Safety Sanitarians Environmental Compliance Assurance Managers Pollution Prevention and Control Managers/Technicians Solid Waste Disposers/ Recyclers Solid Waste Managers/ Specialists/Technicians/ Toxicologists Waste Water Managers Water Environment Managers Water Quality Managers</p>	<p>Ag Lenders Agricultural Chemical Dealer Field Service Representative Chemical Sales Representative Agricultural Commodity Broker Agricultural Economist Agricultural Educator Agricultural Products Buyer Animal Health Products Distributor Banker/Loan Officer Farm Investment Manager Farm Manager Farmer /Rancher/Feedlot Operator Feed and Supply Store Manager Field Representative for Bank, Insurance Company or Government Program Livestock Rancher / Breeder Dairy Herd Supervisor (DHIA) Livestock Seller Produce Commission Agent Sales Manager Salesperson</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Path-ways</p>	<p>Food Products and Processing Systems (Food Processing and preserving, Packaging, Distribution, Government monitoring & regulation)</p>	<p>Plant Systems (Agronomic, Horticulture, Forestry, Turf, Viticulture, Soils, etc.)</p>	<p>Animal Systems (Large animals, small animals, wildlife animals, and research animals)</p>	<p>Power, Structural & Technical Systems (Power, Structures, Controls, Geospatial Technology, Computer Systems, Electronics, Hydraulics, Pneumatics, etc.)</p>	<p>Natural Resources Systems (Habitat Conservation, Forest Products, Parks and Recreation, Mining, Environmental Services, Fisheries, Soil Conservation, etc.)</p>	<p>Environmental Service Systems (Pollution Prevention, Water & Air Quality, Hazardous Materials, Solid Waste Management, Health & Safety Sanitation, etc.)</p>	<p>Agribusiness Systems (Sales, Service, Farm and Ranch Management, Entrepreneurship, Economics, etc.)</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Cluster K&S</p>	<p style="text-align: center;">Cluster Knowledge and Skills • Premier Leadership • Personal Growth • Career Success • Organizations and Associations • Organizational Structures and Processes • Safety, Health, and Environmental Management • Health and Safety Procedures • Tools, Equipment, Machinery and Technology • Issues • Technology and Globalization • Scientific Inquiry</p>						