

MICHIGAN STATE
UNIVERSITY | Extension

CATALOG



of Programs and Services



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Welcome to MSU Extension

Michigan State University (MSU) Extension helps people improve their lives by bringing the vast knowledge resources of MSU directly to individuals, communities and businesses. For more than 100 years, MSU Extension has helped grow Michigan's economy by equipping Michigan residents with the information they need to do their jobs better, raise healthy and safe families, build their communities and empower their children to dream of successful futures.

Our Mission

Michigan State University Extension helps people improve their lives through an educational process that applies knowledge to critical issues, needs and opportunities.

The Cooperative Extension Network

MSU Extension is part of the national Cooperative Extension network that is housed at land-grant universities across the country. MSU Extension is funded through a partnership of federal, state and county governments, and works with individuals, businesses, organizations and communities to identify and address Michigan's existing and emerging priorities.

Explore MSU Extension

While each entry in this catalog provides a brief introduction into the core work of MSU Extension, more information about all of our program areas, research areas and events can be found on our website (msue.msu.edu). There you'll find the thousands of educational articles MSU Extension publishes each year, as well as thousands more events and helpful resources.

In 2013, more than 300,000 people participated in MSU Extension programming and over 1 million people viewed nearly 3 million pages on the MSU Extension website. While this catalog serves as an introduction to the organization, there is much more of MSU Extension to explore.



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MSU Communications and Brand Strategy*





MSU Extension District Offices

MSU Extension serves individuals, businesses and families throughout Michigan. To help coordinate our education and outreach efforts, MSU Extension has 13 district offices around the state.

msue.msu.edu

District 1

205 South Front Street, 2B
Marquette, MI 49855
Phone: 877-643-9881
Serving: Baraga, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Marquette, Menominee and Ontonagon counties

District 2

Bay Mills Community College
12214 West Lakeshore Drive
Brimley, MI 49715
Phone: 888-678-3464, ext. 25437
Serving: Alger, Chippewa, Delta, Luce and Mackinac counties

District 3

10850 East Traverse Highway,
Suite 4440
Traverse City, MI 49684
Phone: 877-643-9882
Serving: Antrim, Benzie, Charlevoix, Cheboygan, Emmet, Grand Traverse, Kalkaska, Leelanau and Manistee counties

District 4

Ogemaw County Building
205 South Eighth Street
West Branch, MI 48661
Phone: 989-345-0692
Serving: Alcona, Alpena, Arenac, Crawford, Iosco, Montmorency, Ogemaw, Otsego, Presque Isle and Roscommon counties

District 5

210 Johnson Street
Hart, MI 49420
Phone: 877-643-9883
Serving: Lake, Mason, Muskegon, Newaygo and Oceana counties

District 6

401 North Lake Street, Suite 400
Cadillac, MI 49601
Phone: 877-643-9882
Serving: Clare, Gladwin, Isabella, Mecosta, Missaukee, Osceola and Wexford counties

District 7

775 Ball Avenue, Northeast
Grand Rapids, MI 49503
Phone: 877-643-9884
Serving: Allegan, Kent and Ottawa counties

District 8

50 East Sprague Road
Ionia, MI 48846
Phone: 877-643-9884
Serving: Barry, Clinton, Eaton, Gratiot, Ingham, Ionia and Montcalm counties

District 9

1 Tuscola Street, Suite 100A
Saginaw, MI 48607
Phone: 877-643-9885
Serving: Bay, Genesee, Midland, Saginaw and Shiawassee counties

District 10

200 Grand River Avenue,
Suite 102
Port Huron, MI 48060
Phone: 877-643-9885
Serving: Huron, Lapeer, Sanilac, St. Clair and Tuscola counties

District 11

28115 Meadowbrook Road
Novi, MI 48377
Phone: 877-643-9886
Serving: Macomb, Oakland and Wayne counties

District 12

1040 South Winter Street,
Suite 2020
Adrian, MI 49221
Phone: 877-643-9887
Serving: Hillsdale, Jackson, Lenawee, Livingston, Monroe and Washtenaw counties

District 13

3299 Gull Road, Wing 2,
Room 425
Kalamazoo, MI 49048
Phone: 877-643-9887
Serving: Berrien, Branch, Calhoun, Cass, Kalamazoo, St. Joseph and Van Buren counties

(Note: When this catalog was published in mid-2014, Oscoda and Schoolcraft counties did not have service agreements with MSU Extension.)

AgBioResearch Facilities

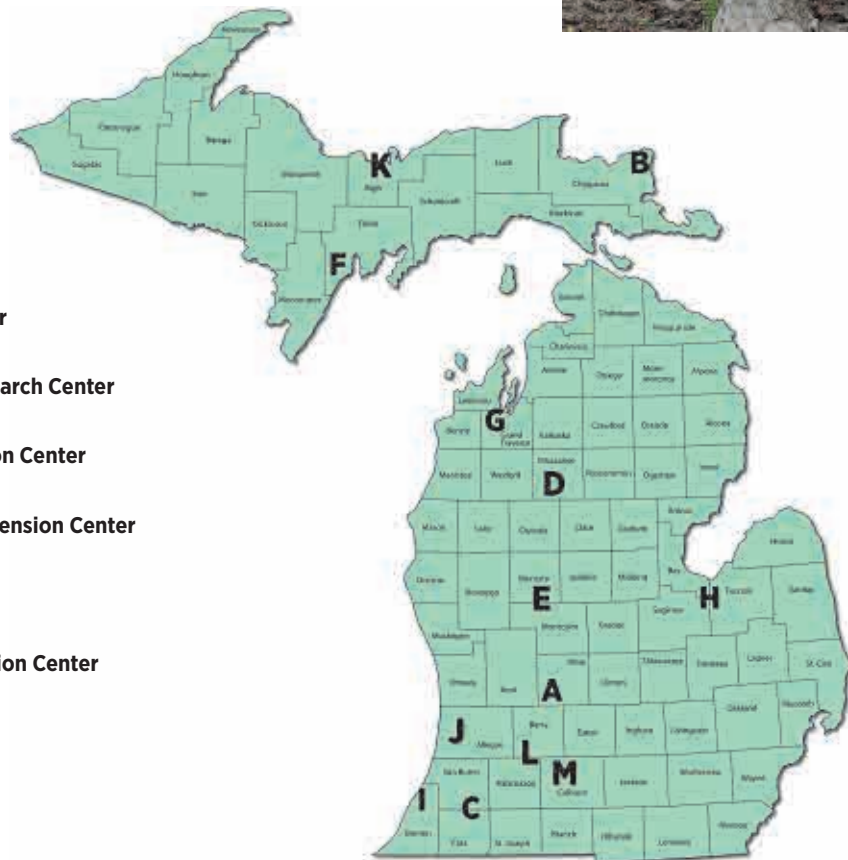
MSU Extension has a close partnership with MSU AgBioResearch, which has a network of research centers where scientists conduct research that is critical in keeping Michigan's agriculture industry competitive in the global economy. The two organizations often work together, and many researchers have dual appointments in MSU Extension and MSU AgBioResearch. Their research and outreach efforts help keep the public and farmers informed of the latest technology and management practices.

There are currently 18 MSU AgBioResearch facilities on the MSU campus and 13 research centers across the state.

agbioresearch.msu.edu



- A – Clarksville Research Center**
Clarksville
- B – Dunbar Forest**
Sault Ste. Marie
- C – Fred Russ Forest**
Decatur
- D – Lake City Research Center**
Lake City
- E – Montcalm Research Center**
Lakeview
- F – MSU Forest Biomass Innovation Center**
Escanaba
- G – Northwest Michigan Horticulture Research Center**
Traverse City
- H – Saginaw Valley Research and Extension Center**
Frankenmuth
- I – Southwest Michigan Research and Extension Center**
Benton Harbor
- J – Trevor Nichols Research Center**
Fennville
- K – Upper Peninsula Research and Extension Center**
Chatham
- L – W. K. Kellogg Biological Station**
Hickory Corners
- M – W. K. Kellogg Experimental Forest**
Augusta





Agriculture continues to be one of the fastest growing sectors of the state's economy. MSU Extension works to ensure that the industry has a thriving knowledge base to help it become more competitive in local, state, national and international markets. We work to increase farmers' success, not only financially, but also in protecting the environment, ensuring a safe food supply, reaching new markets and advancing agriculture through applied research. Making Michigan agriculture stronger makes the state's whole economy stronger.

MSU Extension educators and specialists also work with individuals and community leaders to provide customized programming and educational opportunities based on the latest evidence-based research and county-specific needs. We encourage you to contact your local MSU Extension office about crafting programming that is right for you, your family and your community.

Ag Action Days

During this event, MSU Extension staff members provide producers with updates from the most recent Southwest Michigan Research and Extension Center vegetable trials. They also review and answer questions about production problems that arose during the previous growing season.

🌿 Animal Evaluation

Young people explore animal science by learning to evaluate livestock project animals such as beef cattle, sheep and swine. They learn to select both market and breeding animals based on breed character, production factors, structure, and carcass desirability. The oral reasons portion of statewide live-animal and meats judging contests also help participants strengthen their public speaking skills.

Beginning Farmer Webinar Series

Beginning farmers improve their chances of succeeding when they base their new enterprises on thorough planning and realistic goals. This interactive webinar series provides one- to two-hour programs on various production and marketing topics for new vegetable, livestock and field crop producers.

Breakfast on the Farm

Breakfast on the Farm events give visitors of all ages a firsthand look at modern food production. They can talk with some of the farm families who work hard to produce a safe, wholesome food supply for Michigan communities and the world. And of course, a hearty breakfast featuring Michigan-made products is a highlight of the day.

🌿 Companion Animals

Young people explore veterinary and animal science by learning to feed, train and care for their companion animals (such as cats, dogs and llamas). This project is a great option for young people who don't have access to large livestock or horses but who want to learn about animals and their care, health, nutrition and welfare. Participants can take advantage of local, regional and statewide opportunities for participation and competition.



The 4-H clover



next to a program name indicates that its primary audience is 4-H.



Supporting Food & Agriculture

Michigan agriculture continues to be a growing segment of the state's economy. The production of commercial food and nonfood agricultural operations is growing rapidly. The number of households raising a portion of their own food and raising livestock or gardening for pleasure or relaxation continues to increase. When you support MSU Extension, you help participants learn profitable and efficient business and production practices. Participants also learn how to optimize and reduce the use of pesticides and fertilizers, and how to conserve and protect water resources. This education leads to better use of time, money and human capital, and helps retain and create agricultural jobs. These measures strengthen Michigan's economy while connecting farmers to local food opportunities and global markets. In this way you help MSU Extension encourage growth in a sustainable and prosperous Michigan food and agriculture system.

AGRICULTURE

Farmers Day

This annual, daylong event in Branch County is popular with agriculture industry professionals and the general public. It features a large trade show, workshops, numerous 4-H events, and other opportunities such as earning Restricted Use Pesticide (RUP) credits and sitting for commercial pesticide applicator exams.

Farming for You

This program features farmers and MSU Extension educators answering shoppers' questions about farming and food production right in the aisles of the grocery store, on social media and in other settings.

✿ 4-H Animal & Veterinary Science Camp

This weeklong camp allows young people to explore the fields of animal science and veterinary medicine as they work through a veterinary case study and participate in hands-on learning activities. Participants gain animal handling experience and explore campus farms and facilities.

Great Lakes Fruit, Vegetable & Farm Market Expo (GLEXPO)

More than 4,000 participants from the Midwest and Canada attend this unique Michigan horticultural event. Sessions on fruit, vegetable and pest management issues are delivered by MSU Extension educators and specialists and researchers from across the U.S.

Michigan UP Ag for Tomorrow Conference

This March gathering in Escanaba is an excellent learning and networking opportunity for Upper Peninsula farmers and representatives from agribusinesses and related organizations. The day includes classes on a range of topics, relevant speakers and lunch. Previous topics have included livestock, field crops, forage production, agricultural business management, and local food production and marketing.

On-Farm Education

MSU Extension works with individual producers on farm-specific issues, offering customized on-farm educational sessions to help production teams evaluate their current management practices, assess animal welfare and evaluate the environmental status of their farms.

✿ Plant Science

Youth participants explore the broad scope of plant sciences through real-life scenarios and educational opportunities related to crops, vegetables and horticulture. Participants learn about topics such as weeds, crops, fruits, vegetables, gardening, horticulture and agronomy.

✿ Rabbits & Cavies

Young people in this project explore veterinary and animal science by learning to feed, train and care for rabbits and cavies (guinea pigs) project animals. Participants also learn about rabbit and cavy breeds, animal selection, production, reproduction and health. Participating in breeding stock and market animal projects and in statewide competitions and educational events are all possibilities.

✿ Veterinary Science

Youth participants explore the broad scope of veterinary science through real-life scenarios and educational opportunities. Participants will learn about topics such as medicine, animal health, disease, animal management, feeding processes, and how animal health affects human health.

Beef

MSU Extension provides educational programs based on applied research for the Michigan beef industry. These educational resources address beef quality assurance, production, marketing, food safety and business management.

Beef Cattle Ultrasound

A field technician certified by the Ultrasound Guidelines Council is available to perform ultrasound scanning for beef cattle to evaluate carcass merit for breeding selection and market readiness.

✿ Beef Production & Management

Youth participants explore veterinary and animal science by learning to feed, train and care for beef cattle project animals. They also learn about beef cattle breeds, selection, grooming, production, marketing, reproduction and health, and agribusiness careers. Participating in breeding stock and market animal projects and in statewide competitions and educational events are all possibilities.

Beef Quality Assurance

The Beef Quality Assurance program provides guidelines for beef cattle production and outlines how to increase consumer confidence through proper management techniques and a commitment to quality. The online Animal Care Training program for beef, dairy, equine, transportation, and livestock marketers is available in English and Spanish. Topics covered include animal husbandry, animal welfare, environmental stewardship and food safety practices.

Bull Breeding Soundness Exam Clinics

MSU Extension hosts clinics that demonstrate how to identify potential fertility problems in beef bulls, giving producers the ability to reduce the risk of a less than optimum breeding season. It is recommended that a breeding soundness exam be conducted on breeding bulls every year.



MSUE PUBLICATIONS



Rabbit Fitting & Showing Member's Guide

Fitting and showing rabbits gives 4-H'ers the chance to compete with others based on the skills they demonstrate, their general knowledge of rabbits and their preparation, attitude and behavior. This bulletin contains objectives and guidelines for 4-H participants in rabbit fitting and showing contests and covers feeding, care, grooming and conditioning. The bulletin provides full-color, step-by-step photo instructions for completing the contest examination and includes a rabbit showmanship scorecard.

bookstore.msue.msu.edu



Grazing Systems

MSU Extension offers programs on how properly managed grazing and integrated cropping systems can increase the energy efficiency of beef farms and about the impact of grazing systems on soil carbon sequestration and greenhouse gas flux. Educators work with producers to develop pasture-based local beef production systems and host public field days and seasonal programs.

Great Lakes Professional Cattle Feeding & Marketing Short Course

This annual event caters to growers and agribusinesses that produce beef products for human consumption. Sessions focus on nutritional and management practices for improving cattle feeding operations in the eastern U.S. Corn Belt. The program also addresses current market outlooks and marketing strategies to optimize return on investment and minimize risk.

MCA & MSU Bull Evaluation

This cooperative effort between the Michigan Cattlemen's Association, MSU and Plank Farms provides a common environment for evaluating young bulls for rate of gain, soundness and body composition, all of which helps beef producers identify superior bulls that are all ranked and indexed based on the bull evaluation index system.

Meat Marketing & Processing

Resources and workshops are available to meat processors and direct market farms that focus on processing procedures related to the safety and quality of meat products. Training is available for meat processors who need a specialized variance from the Michigan Department of Agriculture and Rural Development and those who apply Hazard Analysis and Critical Control Points (HACCP) to their operations.

Bioeconomy

MSU Extension uses a combination of research and outreach efforts to assess the needs of Michigan stakeholders within the broad bioeconomy industry. Our programs are designed to help Michigan residents reach sustainable bioenergy and bioproduct development goals.

Anaerobic Digester Operator Training

Biogas produced from organic materials can help improve environmental conditions and generate renewable energy. Anaerobic digester operators need varying levels of expertise to start and operate anaerobic digesters and to troubleshoot problems with them. This training is designed to help anaerobic digester operators safely maximize biogas production with the lowest environmental impact.

Portable Biomass Pelletization Demonstrations

Plant tissues, generally referred to as *biomass*, can be processed to recover their stored energy and create biofuels. MSU Extension bioenergy educators have expertise in collecting, processing and pelletizing plant biomass to create a high-value pellet fuel product. MSU Extension educators are available to bring a mobile unit to a farm, school or business and demonstrate the process of making biomass pellets.

Dairy

MSU Extension's focus on dairy production brings together educators and researchers who are committed to enhancing the competitive advantage of Michigan dairy producers and Michigan's dairy industry. Through specialized dairy programs ranging from online resources and educational seminars to on-farm consultation from dairy educators located throughout the state, MSU Extension provides Michigan's dairy industry with easily accessible information on a consistent basis.

✿ Dairy Cattle Production & Management

Youth participants explore veterinary and animal science by learning to feed, train and care for dairy cattle project animals. They learn about dairy cattle breeds, animal selection, grooming, production, marketing dairy products, reproduction, health, cattle well-being and related agribusiness careers. Many events, such as judging, quiz bowl and skill-a-thon, don't require cattle ownership. Young people may exhibit and compete at statewide educational events such as 4-H Youth Dairy Days.

Dairy Farm Labor Management & Regulations

MSU Extension educators and specialists help dairy business owners learn sound employee management practices and identify how to stay in compliance with federal and state regulations. Workshops are available that focus on building awareness of agriculture labor issues and compliance with farm labor laws and immigration law.

Dairy Herd Management

MSU Extension works with dairy producers on farms and in classrooms and workshops to identify problems, implement research-based practices and explore alternative production practices. Extension educators help producers develop goals and standards for their operations and methods of evaluating employee management and performance. Specific dairy educational opportunities include:

- Calf care schools
- Dairy animal health
- Dairy cow nutrition and feeding
- Dairy genetic selection tools
- Reproductive management of dairy cattle
- Spartan III Ration Evaluator and Balancer



Ensuring Safe & Secure Food

When you support MSU Extension's efforts to enhance residents' access to an adequate supply of safe, affordable food, program participants will focus on food safety measures in the field and at harvest, learn proper food preparation and food preservation techniques, and bring community partners together to strengthen access to healthy food supplies. This leads to a healthy population, which in turn helps keep health care costs in check and our communities viable.



Dairy Marketing

Understanding the markets and tools that are available to manage price risk is important to dairy producers who are working to manage their cash flow and ensure profits. MSU Extension offers training on market and industry analysis of the factors that change the markets and use of commodity market tools to meet the goals of the business.

Development of Young Dairy Producer Management Skills

Transitioning dairy farms to the next generation is a critical control point for a growing dairy industry. MSU Extension professionals work with young people in dairy production to help them understand their alternatives and improve their management skills.

Farm Management

MSU Extension's agriculture and agribusiness management programs focus on farm business issues, farm labor management, farm markets, and food, agriculture, natural resources, and bioeconomy business development and expansion.

Agriculture Labor Issues

MSU Extension offers educational sessions on issues such as tax withholding, payroll requirements and disclosure, the I-9 form, custom versus employee status, unemployment and a host of other complex state and federal regulations.

Annie's Project

This program is dedicated to strengthening women's roles on modern farms. Through Annie's Project, farm women learn about financial and production records, marketing plans, risk management, communication, human resources and more. Participants share and compare life experiences and learn from other women who are living and working in a complex, dynamic agriculture business environment. An advanced Annie's Project program, Managing for Today and Tomorrow, is also available.

Business Analysis & Evaluation System

This effort helps farmers conduct detailed financial and general production evaluations. Individual farmers receive benchmark comparisons of their farm with other, similar farms across Michigan, including a detailed cost of production analysis of the farm's major production enterprises.

Commodity Marketing & Pricing Tools

Producers take part in group sessions targeted to specific commodity groups. The focus is on building a marketing plan using current market outlook data and programs that are available in their local communities.





Cropland & Building Leasing

To ensure that there are no unpleasant surprises and to avoid misunderstandings, MSU Extension recommends that landowners and farmers negotiating land leases use written lease agreements. The Michigan Cash Farmland Lease provides variations the parties can select that are appropriate to their own situation. Other resources include leasing checklists, a sample greenhouse lease, Michigan land values and lease rates, and wind energy leasing information.

Estate & Farm Succession Planning

MSU Extension teaches family farmers and other small business owners about estate tax issues and mechanisms for effective asset transfers. Our program helps operators identify the type of business structure that best fits their situation.

Farm Business Organization & Structure

Limited liability companies (LLC), partnerships, and S and C corporations are some of the multiowner organizational types to consider when establishing a farm. Each type has pros and cons that potential owners need to consider. MSU Extension advises farm and farm business owners on the organization and structure of their businesses.

Farm Financial Performance

Having accurate financial information is vital to farm and other agribusiness owners as they make business decisions, work with lenders and make farm succession plans. MSU Extension helps farm owners and managers create and assess their own financial statements (such as cost of production reports, balance sheets, and income and cash flow statements) and measure profitability and risk capacity.

Policy, Law & Regulation

The national and state policies and regulations affecting the agricultural industry are constantly changing. MSU Extension helps producers keep up with changes in the Affordable Care Act, human resources regulations, labor management and the federal farm bill.

Risk Management

MSU Extension offers programs designed to help producers evaluate their risk exposure in areas such as field crops, dairy production, commodity marketing and general financial risk. Our programs also help producers evaluate their potential need for crop insurance. Producers gain hands-on experience with tools that evaluate individual farm risk positions.

Telfarm

MSU Extension's computer-based Telfarm accounting software is specifically designed for farms, making it possible for farm managers to closely monitor the financial progress of their operations. MSU Extension educators use this system to teach producers and others good financial management concepts. Telfarm is available to users for an annual fee.





Field Crops

MSU Extension's research-based field crop production recommendations and resources are accessible through educational programs, fact sheets, bulletins, articles, websites and individual contacts. Our goal is to help producers improve their crop production efficiency through increased yields, improved quality, decreased input costs, protected yields and new technologies.

Farm Soil Analysis Services

Soil analysis through MSU's Soil and Plant Nutrient Lab allows producers to make informed decisions about nutrient management that take into consideration the agronomic, economic and environmental implications of fertilizer use.

Field Crops Webinar Series

To make field crop programming widely available, MSU Extension offers a weekly field crops webinar series each February and March. Pesticide applicator credits are available for joining the meetings online.

Great Lakes Forage & Grazing Conference

This combined annual conference and trade show blends education and networking opportunities for all types of forage producers, graziers and agribusinesses. Attendees share research-based, cutting-edge information that is pertinent to staying profitable in challenging economic times. Seminar topics include efficient production and management of alfalfa, alfalfa-grass, grass, corn silage, cover crops and alternative forage crops.

Integrated Crop & Pest Management Update for Agribusiness

Agribusiness representatives, retail sales and service professionals, private crop consultants, field crop educators and farmers attend this annual early winter event. They hear current MSU Extension recommendations for potential pest problems, fertilizer practices and weed control. The event is timed to happen as attendees are making year-end purchasing and sales decisions and preparing for the next growing season.

Integrated Pest Management (IPM) Field Crops Meetings

These annual meetings give farmers up-to-date, research-based information and recommendations from MSU field crops specialists and MSU Extension educators. Meeting topics include weed, insect and disease management for all types of field crops.

Michigan Hay Sellers List

For more than 20 years the Michigan hay sellers list has been connecting buyers and sellers of hay. The seller website, coordinated by MSU Extension with support from the Michigan Forage Council and Michigan Farm Bureau, facilitates the marketing of hay.

MSUE PUBLICATIONS



2014 Weed Control Guide for Field Crops

This guide helps field crop growers choose weed control tools for the coming growing season. It includes crop-specific information and up-to-date tips on related issues like safe use of herbicides and environmental protection.

bookstore.msue.msu.edu



Michigan Soybean Cyst Nematode Sample Analysis

The soybean cyst nematode is a major limiting factor in Michigan’s soybean production. It’s imperative that problem fields are identified for proper management. The Michigan Soybean Promotion Committee provides funding to pay for the cost of having MSU Diagnostic Services analyze up to 20 soil samples per farm.

Pesticide Applicator Core Manual Reviews

MSU Extension offers review sessions across the state to help current and potential commercial pesticide applicators prepare for the Michigan Department of Agriculture and Rural Development Core Pesticide Applicators Certification exam.

Saginaw Valley Research & Extension Center Field Day & Tour

This tour is held each August. Visitors are taken by wagon to the sites of various research trials, where they hear brief presentations from researchers and MSU Extension educators. While most of the research at the center focuses on sugar beets and dry beans, other rotational crops like corn, soybeans and wheat are studied there, too.

Soil Academy

Robust yields in field crops start with the quality of the soil in which the crops are planted. MSU Extension’s annual Soil Academy for farmers, fertilizer retailers, Extension educators and agricultural consultants covers soil fertility, nutrient management and other soil-related topics.

Soybean Harvest Equipment Field Day

MSU Extension and the Michigan Soybean Checkoff conduct this annual field day. Participants hear about management techniques for identifying and reducing soybean harvest losses. Farm equipment company representatives also demonstrate new equipment in the field.

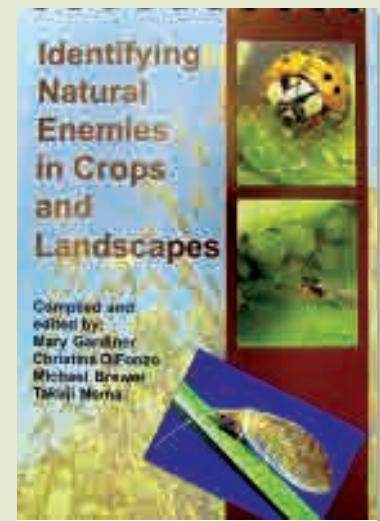
Sugar Beet Agronomy Update Sessions

Six update sessions are held in the Great Lakes sugar beet growing region every February. These daylong sessions involve in-depth reporting of research conducted by researchers from the MSU sugar beet advancement team and Michigan Sugar Company. Topics presented in the open forums include anything that can improve the yield and quality of sugar beets.

Sugar Beet Research Reporting Seminar

Michigan sugar beet producers hear about the latest sugar beet production research at this annual seminar. Researchers present 15-minute segments about sugar beet-related research on new products, disease control and crop management. The seminars are a combined effort of MSU Extension and Michigan Sugar Company.

MSUE PUBLICATIONS



Identifying Natural Enemies in Crops & Landscapes

This is a handy pocket-sized reference for identifying the beneficial insects that help control pests. Although originally written for field crop farmers, it is appropriate for use with other crops and in caring for yards and gardens.

bookstore.msue.msu.edu



Sugar Beet Seed Week

Sugar Beet Seed Week features five meetings held each December around the Great Lakes sugar beet growing area. Participants learn how sugar beet varieties perform in yield, quality and disease resistance. The program is coordinated by MSU Extension and Michigan Sugarbeet REACH (Research and Education Advisory Council), an industry consortium.

Thumb Ag Reviews

Each year, MSU Extension field crops educators in the Michigan thumb region organize this review of current research and demonstration field trials from the area. Corn hybrid and soybean variety trial results and agronomic studies for corn, soybeans, forages and wheat are presented to help producers make management decisions for the coming growing season.

Floriculture

MSU Extension's floriculture programs help improve greenhouse crop production, business management and marketing. Our educators provide unbiased, research-based information on new production techniques, crop production protocols, energy conservation strategies, insect and disease pest control methods, enhanced postharvest longevity techniques (ways to help cut flowers and other plants last longer after harvest), retail and wholesale marketing strategies, and sound business management practices.

Floriculture Education Meetings

These events, held in various locations across the state, provide greenhouse growers with timely information about crop production, pest management and business management topics related to floriculture and greenhouse operations. The meetings are typically offered several times a year and topics are chosen based on current needs and emerging issues in the industry.

Michigan Garden Plant Tour

Growers, retailers and industry professionals get a hands-on education about new and existing plant selections and how they perform in different settings during this two-week tour. Participants learn about a wide range of ornamental crops, including popular commercial brands of annuals, perennials and shrubs.





Michigan Greenhouse Growers Expo

This conference includes a large, three-day trade show and a variety of educational sessions. Floriculture growers and retailers learn about the latest research on cost-effective and environmentally friendly greenhouse production techniques; trends in marketing, technology and business; and current information on pathogen, insect and crop height control.

The Online College of Knowledge

This online, self-paced course provides basic training to floriculture growers in Michigan and beyond in an efficient and cost-effective manner. Each section consists of brief recorded lectures, self-assessment quizzes and links to more information.

Fruit & Nut

The Michigan fruit and nut industry is a large and important part of Michigan agriculture. MSU Extension fruit educators provide statewide and regional programming, and MSU Extension specialists often serve as resource people at organizational meetings and on the farm. MSU Extension offers education on issues such as pest management, food safety, business management, horticultural practices, irrigation and weed management. During the growing season we provide weekly updates on crop and pest conditions in the major fruit growing regions of the state, as well as updates and information on emerging issues in the Michigan fruit and nut industry.

Grape Days

This event, more formally known as Southwest Michigan Horticulture Days, is an annual educational meeting and trade show at Lake Michigan College in Benton Harbor. The two-day meeting focuses on grapes, tree fruit, blueberries and vegetables. Participants learn about research-based pest control and horticultural production methods that help increase yields.

Michigan Spring Peach Update

This conference is held in March of odd-numbered years at the Southwest Michigan Research and Extension Center. Participants learn about the newest varieties of peaches, pest management and horticultural techniques from researchers and growers based in Michigan and around the country.

Northwest Orchard & Vineyard Show

This two-day education meeting and trade show is held every January near Traverse City. The meeting features two days of tree fruit programs and a concurrent wine grape session on the second day.

MSUE PUBLICATIONS



Greenhouse Energy Conservation Strategies

After labor expenses, energy is typically the largest overhead cost in the production of greenhouse crops in temperate climates. Of the total energy consumed, roughly 65 to 85 percent is for heating, and the remainder is for electricity and transportation. This bulletin discusses equipment and infrastructure investments and crop management strategies to reduce heating and electrical costs.

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Statewide & Regional Fruit Meetings

Regular winter meetings are held in areas of Michigan with high concentrations of fruit farms. Sessions led by MSU Extension fruit educators are designed to help growers learn about and use the most efficient, environmentally sustainable methods to maintain and increase production on their farms. Key meetings include:

- **Regional preseason meetings.** These meetings for tree fruit growers are scheduled just before the start of the growing season and focus on early spring tasks and emerging issues that are relevant to tree fruit growers. The meetings are held in several locations in southwest, southeast, west and northwest Michigan.
- **Strawberry preseason meeting.** Participants at this meeting learn about strawberry horticultural practices, and weed and insect control. They also share their production experiences with other strawberry growers.
- **Blueberry preseason meetings.** This five-session series focuses on emerging issues for blueberry growers. The meetings are attended by about 150 blueberry growers from Michigan, Canada, Indiana and Ohio. The meetings focus on horticultural topics and insect, disease and weed control.
- **Grape preseason meetings.** Grape management meetings are held each year in southwest and northwest Michigan during the preseason, prebloom and preharvest periods. Sessions focus on viticulture and insect and disease control, and feature specialists in each discipline. Participants also learn about current pest conditions and critical control windows during the season.
- **Weekly tree fruit integrated pest management (IPM) updates.** These meetings often start in April and continue until the cherry harvest begins in July. Participants learn from local MSU Extension fruit educators about pest conditions, crop development and other emerging issues during the season. The weekly updates cover tree fruit, grapes, blueberries and other small fruit.

MSUE PUBLICATIONS



2014 Fruit Management Guide

This guide is designed to help fruit growers choose pest control tools for the coming growing season. It includes crop-specific information and up-to-date tips on related issues like safe use of pesticides, environmental protection, integrated pest management practices, and new and emerging pests.

bookstore.msue.msu.edu

Tree Fruit Integrated Pest Management School

This two-day program focuses on current issues in tree fruit pest management. Participants learn how to identify and control insect and disease pests in their orchards using the latest IPM techniques, about new pesticides, and about the most economically and environmentally sustainable practices available to protect their fruit crops.

Horses

MSU Extension provides equine enthusiasts, allied industry representatives and decision-makers with relevant, unbiased, research-based information about all aspects of equine management, care and use. Using a multidisciplinary approach, MSU Extension works with youth and adult volunteers, amateur owners and recreational riders, professional horse people and others to enhance equine management in an environmentally, economically and socially responsible manner. MSU Extension has both local and campus-based staff with expertise in diverse areas of equine production and management, including:

- Health
- Nutrition
- Animal behavior and welfare
- Judging and evaluation
- Equine-assisted activity
- Pasture and forage management (including toxic plants, farm safety, mortality issues, environmental management, and siting and developing new and expanded equine facilities)

Horse Welfare

MSU Extension provides training for law enforcement agencies and other allied industry representatives on best practices for evaluating equine health, body condition, management and behavior, and on handling and haltering horses safely.

🌿 Horses & Ponies

Youth participants explore veterinary and animal science by learning to feed, train and care for equine project animals. They compete in events such as endurance, trail, gymkhana and shows, and can exhibit at statewide events such as the State 4-H Horse Show. Many projects, such as horse science, horse quiz bowl and horse judging, don't require horse ownership and offer statewide competitions and participation opportunities.

🌿 Multistate Horse Judges & Show Managers Conference

Adequate training of horse show judges in working with youth exhibitors, as well as judging and placing horses, is an important part of creating a positive learning experience for 4-H members. Extension specialists from Indiana, Illinois, Kentucky, Michigan, Ohio and Pennsylvania combine their efforts to create an effective judges' training seminar that meets the needs of 4-H members, judges and Extension staff.



MSUE PUBLICATIONS



One Horse or a Hundred series

Many horse owners don't understand how the Right to Farm Act protects them from nuisance lawsuits as long as they are following Michigan's manure management practices. This series of fact sheets outlines how horse owners, whether they own one horse or a hundred, are affected by Michigan's Right to Farm Act.

bookstore.msue.msu.edu



My Horse University

My Horse University brings research and knowledge from world-renowned experts to online courses and products. My Horse University's courses provide a comprehensive and convenient learning experience for horse enthusiasts throughout the world.

✿ Proud Equestrians Program

This therapeutic horseback riding program for people with disabilities helps riders improve balance, coordination, posture and muscle tone. Other benefits of the program include self-esteem, self-confidence, discipline, and growth in knowledge and skills. Opportunities to participate exist for riders, volunteers, instructors and horse owners.

✿ Youth Competitive Horse Judging Clinic

This workshop gives youth judging teams and their adult coaches the chance to gain experience and get an idea of what being part of a judging team is about. Participants judge high-quality quarter horses and deliver a set of oral reasons about a class they have judged. They receive feedback on their efforts and pick up tips on ways to improve.

Nursery & Christmas Trees


Climate, soils and a centralized location combine to make Michigan a national leader in the production of landscape nursery stock and Christmas trees. MSU Extension offers timely and relevant educational programming for the nursery and Christmas tree industries. The goal of our educators, specialists and researchers is to deliver the latest science-based information to keep Michigan producers competitive and profitable.

Best Management Practices

This collection of programs, videos and field demonstrations highlight and help growers understand best management practices for nurseries and Christmas tree plantations. The programs focus on managing water quality, irrigation and nutrition, and help growers develop a systems approach to protecting their operations from invasive pests, those requiring a quarantine and other pests.

Integrated Pest Management (IPM) for Christmas Trees

One- to two-day IPM workshops are held in the winter and field tours take place during the growing season to help participants learn about key insects, diseases, nematodes and weeds that affect conifers. Attendees learn the latest IPM strategies and hear current pest management information from MSU Extension experts. Pesticide recertification credits are offered for people who attend the workshops.



“4-H has given our son and our family the opportunity to participate at the level that met our abilities. It has challenged our son and helped him integrate into the community. Inclusion is a big part of our philosophy and 4-H has done that!”

– Parent of a Proud Equestrian Program (PEP) 4-H member



Nursery Winter Update Conference

This daylong program provides nursery growers with the latest university research-based production information that will help them maintain plant quality and profitability. Attendees can receive RUP (restricted use pesticides) credits for their pesticide applicator licenses.

Soil Management for Sustainable Christmas Trees

This in-depth seminar focuses on proper soil fertility management and sustainable Christmas tree production. Taught by MSU Extension educators and specialists, the workshop provides growers, consultants and agency staff with current recommendations and information on growing high-quality Christmas trees.

Summer Nursery Updates

These timely educational programs are offered during the growing season to update participants on production-related issues. Topics include pest management, plant nutrition, water use and regulatory issues affecting nursery crops.

Organic Agriculture

MSU Extension provides technical information through outreach and educational programs. We help farmers who are seeking information and guidance about organic practices in any area of crop production. Assistance is also available for farmers and food processors who are in the process of becoming organically certified through the USDA National Organic Program.

Organic Reporting Session

This annual meeting is for farmers, practitioners and researchers who are interested in or engaging in organic production and related research. MSU Extension educators and specialists provide research-based information on organic production. The meeting links farmers and researchers and includes information on state and federal programs related to organic agriculture.





Pest Management

MSU Extension offers pest management resources and programming designed to maintain or improve the environmental and economic sustainability of commercial agriculture in Michigan. MSU Extension pest management programming serves growers of field crops, specialty crops, and the landscape and turf “green” industries. Our cross-commodity programming addresses universal issues facing agriculture, including pesticide application and safety, pesticide resistance, invasive pests, and pollinator and beneficial insect conservation. We encourage commercial producers and home gardeners alike to incorporate integrated pest management (IPM) principles and practices into their operations.

Enviro-weather

Enviro-weather is a sustainable weather-based information system that helps users make pest, plant production and natural resource management decisions in Michigan. The service is online at enviroweather.msu.edu.

Integrated Pest Management Academy

At the IPM Academy, growers can learn how to improve their IPM practices and take advantage of the expertise of MSU faculty members and researchers and MSU Extension educators and specialists. The academy offers a rare opportunity to hear from experts working in a variety of disciplines and across cropping systems. The event is also available online.

Pesticide Safety & Education

The MSU Extension Pesticide Safety and Education program offers commercial pesticide certification training and updates for pesticide applicators seeking recertification credits. It also provides education and information for applicators and the general public about pesticide safety.



MSUE PUBLICATIONS



Ornamental Plant Pest Management for Commercial Applicators in Category 3B

This 132-page book contains basic scientific information and practical solutions to pest control problems. It provides the information readers need to become Michigan certified commercial applicators in Category 3B, Ornamental Plant Pests. It's also useful to homeowners and others who are interested in learning more about managing ornamental plant pests.

bookstore.msue.msu.edu



Pork

MSU Extension provides pork producers, allied industry representatives and decision-makers with relevant, unbiased, research-based information about all aspects of pork production. Using a multidisciplinary approach, MSU Extension works with all interested parties, including farms using intensively managed pork production systems, to enhance the production of safe, nutritious and high-quality pork products in an environmentally, economically and socially responsible manner. Our local and campus-based staff have expertise in diversified areas of pork production and swine management including swine health, nutrition, genetics, reproduction and mortality management; animal behavior and welfare; meat science; air quality; environmental management; siting new and expanding livestock facilities; and livestock marketing.

Green & White Show

This annual youth educational program includes a live hog show, showmanship and educational events at the MSU Livestock Pavilion.

Midwest Swine Nutrition Conference

This annual conference in Indianapolis helps feed-industry specialists, consulting nutritionists, swine veterinarians and producers learn cutting-edge swine nutrition and feeding practices.

Pork Quality Assurance Programs & Certifications

MSU Extension helps producers obtain National Pork Board Pork Quality Assurance (PQA) Plus certification. The certification provides a framework for significant, relevant food safety standards and improved animal well-being. Other assistance and information is available for the National Pork Board Youth PQA and the National Pork Board Transport Quality Assurance programs.

Professional Pork Producers Symposium

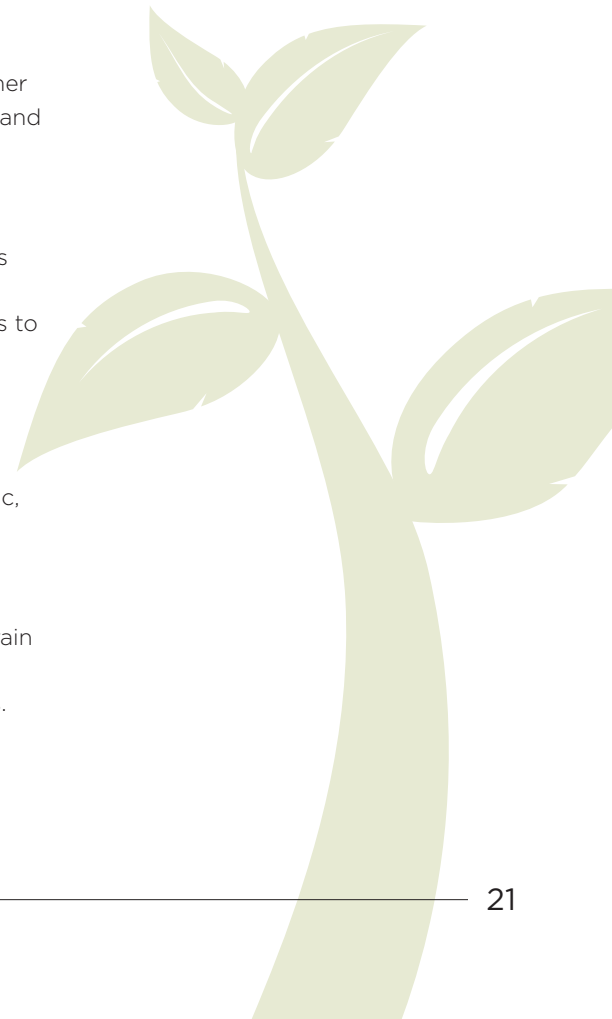
MSU Extension, in conjunction with Michigan Pork Producers Association, holds this annual producer-focused event to discuss and present timely information about the pork industry. Topics range from new housing options and feed plans to disease management.

Statewide Pork Industry Information Meetings

These meetings for swine farm owners and employees present information about new technologies, updated production practices, and changing economic, environmental and social considerations.

✿ Swine Production & Management

Youth participants explore veterinary and animal science by learning to feed, train and care for swine project animals. They also learn about swine breeds, animal selection, production, marketing, reproduction, health and agribusiness careers. Participating in breeding stock and market animal projects and in statewide competitions and educational events are all possibilities.





Poultry

The diversity of poultry production in Michigan requires programming that is tailored to both backyard and hobby producers and to commercial producers. Most Extension programming geared toward commercial producers is multistate or national and requires travel outside of Michigan. Programs for backyard and hobby poultry producers are held in Michigan and are open to people at all levels of expertise.

Midwest Poultry Federation Educational Seminars

The educational seminars during the Midwest Poultry Federation tradeshow are focused on poultry production in the Midwest. Participants can choose from several seminars held over a two-day period on topics such as turkey growing, litter and environmental management, egg and meat processing, and poultry nutrition.

Multistate Poultry Feeding & Nutrition Conference

This is a premier poultry nutrition conference. Participants learn cutting-edge information that addresses significant issues that will affect poultry nutrition today and in the future.

National Egg Quality School

The school, held each May, trains participants in shell egg quality and safety throughout the food system. Experts from universities and industry, along with federal and state regulatory officials, provide a comprehensive, three-and-a-half-day program related to all things eggs. The school consists of lecture periods, small-group discussions and laboratories.

National Poultry Waste Management Symposium

This symposium communicates the latest technology and research about the by-products from producing and processing poultry. The information provided helps midlevel managers and decision-makers understand and manage the challenges associated with concentrated animal production facilities.

Poultry Health & Management School

At this two-day school in early May, participants attend either meat bird or laying hen school. They learn about changes in management practices and disease issues within the commercial industry through lectures and laboratory periods.

✿ Poultry Production & Management

Youth participants explore veterinary and animal science by learning to feed, train and care for bird project animals such as chickens, turkeys and ducks. They also learn about poultry breeds, animal selection, production, marketing, reproduction, health and agribusiness careers. Participating in breeding stock and market animal projects and in statewide competitions and educational events are all possibilities.



Small Flock Poultry Workshop

This workshop is held during Agriculture and Natural Resources (ANR) Week each March. Sessions cover basic information for first-time producers and introduce more complex topics for more experienced backyard hobbyists. Topics include brooding, nutrition, management practices and incubation.

Winter Poultry Seminar

The Winter Poultry Seminar is held each February in western Michigan. Participants learn about practices related to the management and production of meat birds and laying hens that they can quickly implement in their commercial poultry operations. MSU Extension hosts the seminar with the Michigan Allied Poultry Industries.

Sheep & Goats

MSU Extension performs applied research and develops educational programs and materials to address the emerging needs of Michigan’s diverse small ruminant industry. Michigan is unique in the Upper Midwest in that it has large commercial farms focused primarily on meat production, along with a growing small-farm segment engaged in purebred, niche fiber and artisan cheese production. MSU Extension offers programming and partners with state and national production organizations to address industry challenges. We also provide one-on-one help to producers in all areas of small ruminant production, including preventive health, disease management, nutrition, marketing and land management.

Forage Management Program

Participants in this program learn how to evaluate, develop and manage their land to produce the forage their animals need. The three-day program provides comprehensive training in farm resource assessment, land improvement, forage budgeting, grazing management, strategic use of annual crops and machine harvest strategies for small ruminant production.

✿ Goat Production & Management

Youth participants explore veterinary and animal science by learning to feed, train and care for dairy, meat and hair goat project animals. They also learn about goat breeds, animal selection, production, marketing, reproduction, health and agribusiness careers. Participating in breeding stock and market animal projects and in statewide competitions and educational events are all possibilities.

Integrated Parasite Management Program for Small Ruminants

Participants in this online seminar series learn about parasite biology, grazing management and infection monitoring plans that are critical in creating a sustainable parasite control program. This program has evolved in response to the documentation of extensive dewormer resistance in Michigan flocks and herds.





Michigan Shepherd's Weekend

MSU Extension develops the educational content for this three-day event that is sponsored by the Michigan Sheep Breeders Association. It includes a young producer's discussion forum, a meat goat production education series and a dynamic youth education program.

✿ Sheep Production & Management

Youth participants explore veterinary and animal science by learning to feed, train and care for sheep project animals. They also learn about sheep breeds, animal selection, grooming, production, marketing, reproduction, health and agribusiness careers. Participating in breeding stock and market animal projects and in statewide competitions and educational events are all possibilities.

Small Ruminant Birth Management Program

In this program, which combines discussion and hands-on activities, participants explore flock and herd management approaches, maternal and newborn assessment skills and treatment procedures that will help them and their flocks and herds make it through the birthing season safely and successfully.

Small Ruminant Field Days

These field days are presented around the state each year. Participants learn about innovative production practices in seminars and also see them demonstrated on the farm. Previous field day topics have included cover crop grazing, accelerated production, modern forage feeding systems, using brassicas (herbs in the mustard family, such as broccoli and cabbage) in pasture renovations and advances in pasture infrastructure.

Vegetables

Michigan is home to one of the most diverse vegetable industries in the nation. MSU Extension helps growers reduce their risk of yield loss due to pests, reduce input costs, increase yields, extend the growing season through hoophouse production and conserve natural resources. During the growing season, MSU Extension educators visit farms to help growers address emerging issues and provide weekly electronic updates that reach a large number of growers.

New & Emerging Commercial Vegetable Producer Support

MSU Extension provides support to new and emerging commercial vegetable producers whether they're producing for a farmers market, roadside stand, community-supported agriculture program or contract production. MSU Extension educators provide expertise and link producers to support tools for their operations.





Online Production Updates

MSU Extension works to provide the latest up-to-date, research-based vegetable production information in a convenient and efficient way. MSU Extension educators and specialists provide weekly updates on emerging issues in the different vegetable production regions of Michigan. The updates are posted online and distributed by email in some areas.

Statewide & Regional Vegetable Meetings

MSU Extension delivers education at various industry and organizational meetings and other important industry and consumer events to inform growers and the public about emerging and important issues in vegetable production.

- **Asparagus Education Day.** This is one of the largest asparagus educational events in North America, drawing attendees from across the U.S. and Canada. MSU researchers and other presenters update participants on the latest research in asparagus production, asparagus markets, integrated pest management (IPM) techniques, advances in asparagus cultural practices and more.
- **MSU Weed Tour.** MSU faculty host a tour of research plots devoted to studying weed control in field and horticultural crops.
- **Oceana Research Tour.** MSU and industry researchers showcase on-farm research in this annual event. Growers see firsthand the results of ongoing crop research on the farms where the research findings can be implemented.
- **Onion Twilight Meeting.** This annual meeting provides a chance for onion growers to examine the latest onion varieties in demonstration plots and hear about the latest MSU research on onion crop management.
- **Southwest Horticulture Days.** Session topics vary by year, but can include general vegetable disease and insect control in specific crops and efficient irrigation and nutrient applications.





Successful and thriving communities combine knowledgeable and engaged legislators, businesses, community groups and residents. By connecting these groups with the best research-based tools and information possible, MSU Extension enhances the quality of life for Michigan residents. Our programs help communities create and retain jobs and improve their social and economic appeal. Community leaders are given the tools they need to have a positive effect on their cities, towns, townships – and the whole state. Through good governance, building stronger leaders, fostering a positive business climate and enacting sensible, sustainable policies, Michigan can lead the way in the 21st century.

MSU Extension educators and specialists also work with individuals and community leaders to provide customized programming and educational opportunities based on the latest evidence-based research and county-specific needs. We encourage you to contact your local MSU Extension office about crafting programming that is right for you, your family and your community.

Community Food Systems

A sustainable community food system integrates food production, processing, distribution, consumption, and waste management to enhance the environmental, economic and social health of residents. MSU Extension helps farmers, consumers and communities partner to create locally based, self-reliant food economies that improves access to an adequate, affordable, nutritious diet for all community members.

MSU Extension supports the development of sustainable community food systems in Michigan in many ways, including serving as the state coordinating agency for the FoodCorps program, partnering with local agencies on grant proposals and projects, building community collaborations, creating and sustaining local food policy councils, sponsoring local food conferences, engaging university specialists, and offering relevant educational programs. MSU Extension is also a state leader in culinary tourism development and hops research, education and outreach, which continues to fuel Michigan's growing craft brewing industry. MSU Extension educators working in community food systems play leadership roles with many university and nonprofit local food organizations at the state and national levels.

Center for Regional Food Systems

The MSU Center for Regional Food Systems works to advance people's understanding of and engagement with regional food systems throughout Michigan and the world. MSU Extension partnered with the center to launch a statewide local food purchasing campaign targeted at K-12, early child care, hospital, and college and university food service directors. MSU Extension also partnered with the center to implement effective farm-to-school food programs.

The 4-H clover



next to a program name indicates that its primary audience is 4-H.



MSU Extension at Farmers Markets

The interest in healthy, locally grown food is greater than ever, and MSU Extension works to educate Michiganders wherever they live and shop. MSU Extension has office space in the Grand Rapids Downtown Market, Detroit’s Eastern Market and the new Flint Farmers Market, thereby bringing Michigan Fresh and other educational information directly to markets that attract more than 50,000 people every week.

Understanding Food Hubs

Many farmers are challenged by a lack of access to appropriately scaled distribution and processing infrastructure. Participants will learn how food hubs’ production, aggregation, distribution and marketing services make it possible for producers to enter new markets that would be difficult or impossible for them to access on their own. They’ll also learn about MSU Extension research and education efforts designed to help small- and medium-sized farms meet food safety standards.

Understanding Sustainable Community Food Systems

Sustainable community food systems help local agriculture industries, boost local businesses, increase community vitality and economic health, and promote healthy food choices for individuals and families. This 20- to 60-minute presentation, which can be localized and is available on request, covers the basics of establishing sustainable community food system networks.

Food Business & Regulation

Aquaculture Development

Michigan Sea Grant Extension and MSU Extension are active participants in the Aquaculture in Michigan (AIM) committee. The group is working with state agencies and associations to develop a streamlined roadmap through regulations to foster new aquaculture development in Michigan and the Great Lakes region. Sea Grant also provides technical support for Michigan’s commercial fishing industry, including marketing and processing siscowet (a type of lake trout) from Lake Superior.

Making It in Michigan

Entrepreneurs attend the Making It in Michigan conference to determine whether their products can pass the virtual market validation test by putting their products in front of hundreds of key food and agricultural buyers at the conference’s trade show. They also attend educational sessions covering strategies in recipe expansion, choosing the right contract packer, improving food safety, marketing techniques and finding the ideal customer.

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Michigan Fresh

What’s the best way to cook those vegetables you bought last week at the farmers market? How do you select annuals that will make your yard pop with color? Learn about the best that the Great Lakes State has to offer when it comes to things that grow with help from MSU Extension’s Michigan Fresh program. Michigan Fresh helps people explore how to grow, cook and preserve the state’s bounty of fresh, locally grown fruits, vegetables, flowers and ornamentals.

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MSU Product Center – Food, Ag, Bio

The Product Center helps Michigan entrepreneurs develop and commercialize high-value, in-demand products and businesses in food, agriculture, natural resources and bioeconomy. The Product Center offers standard and customized services to its clients. Product Center counselors work with entrepreneurs to help determine potential customers for a product or service and provide ideas on how to finance the concept. The Product Center can also connect entrepreneurs with experts within or outside MSU for advanced marketing or feasibility studies, assistance with nutrition labeling or processing to meet U.S. Food and Drug Administration requirements. Specific Product Center services include:

- How to start a home-based food business
- How to start a commercial food business
- Free business counseling
- Recipe commercialization
- Product testing for shelf life
- Food safety plan development
- Label design and nutrition labeling for food products
- Feasibility studies
- Market studies
- Help meeting regulatory requirements

Seafood HACCP & Value-Added Fisheries

Michigan Sea Grant Extension supports Michigan businesses by organizing an annual Seafood Hazard Analysis Critical Control Point (HACCP) training course with the Great Lakes Indian Fish and Wildlife Commission. All fish processors are required to take this training to earn or maintain HACCP certification.

Government

With its education program for new and veteran elected officials, MSU Extension helps provide Michigan's 1,858 local governments and 12 federally recognized tribal nations with strong, evidence-based information that helps in sound governance and management. MSU Extension has educators with expertise in issues such as economics, fiscal management, boardsmanship, parliamentary procedure and public policy. By working together with elected and appointed local officials, MSU Extension is able to provide education on critical local government operations.

Building Strong Sovereign Nations: Anishnaabek Leadership for Seven Generations

The Building Strong Sovereign Nations program supplies elected and appointed tribal officials with information that is critical to their ability to provide effective tribal governance. The program intersects traditional and contemporary leadership teachings and is designed to meet the specific needs of elected and appointed tribal officials and the tribal staff who interact with them.



“I take away the realization that this opportunity at Meijer significantly grew my customer base, which makes me more determined than ever to work even harder to create my own opportunities such as this one you have provided.”

– Product Center client on the Meijer Made in Michigan/Product Center collaboration





Keeping Businesses Strong

MSU Extension and the MSU Product Center help Michigan entrepreneurs develop and commercialize high-value, consumer-responsive products and businesses in the food, agriculture, natural resources and bioeconomy sectors. When you support MSU Extension, you help participants understand the economic, environmental and social benefits of purchasing local and regional foods. You also help young people develop business skills that will help them succeed as adults and help communities capitalize on their ecological, social and cultural assets. This fuels the economy by creating and retaining jobs, and helps ensure a healthy tax base.

✿ Citizenship & Tribal Citizenship Academies

Participants take a hands-on approach to learning about democracy at the local level by seeing firsthand how local, county and tribal governments work during these academies for high school-aged young people. They attend board or commission meetings and visit with department heads and court officials. They work as a team to identify a community issue that's important to teens, then prepare and present an action plan about it to a local or county commission or a tribal council.

✿ Fiscal Management & Technical Assistance

Local governments in Michigan continue to struggle with stagnant revenues and rising costs. MSU Extension offers fiscal sustainability training to local governing boards and other elected and appointed officials. Our services can include working with local officials to analyze revenue and policy options, spending controls and the management of long-term liabilities such as pensions and retiree health care costs. MSU Extension can also assist in preparing for and hiring key employees and submitting requests for proposal preparation.

✿ 4-H Capitol Experience

High school-aged young people explore the process of democracy through a mock legislative experience at this annual, four-day event in Lansing. They research and propose bills, participate in committee meetings, debate and vote on legislation and sign bills into law. Participants also attend a legislative session and meet with legislators, lobbyists and representatives from various state agencies.

Infrastructure

Infrastructure needs often outstrip municipalities' ability to pay for improvements. This may be due to factors such as poor planning, lack of priority setting and over-building (both of infrastructure and commercial and residential development). This daylong training program covers sizing and designing infrastructure appropriately, planning for replacement and regular maintenance and operating costs, identifying who should pay for infrastructure work, understanding government bonding and other borrowing, and the process of applying for grants.

Intergovernmental Cooperation

While many officials are in favor of the theory of intergovernmental cooperation, putting it into practice is often difficult. This program discusses the different levels of intergovernmental cooperation, from the easiest to the most difficult. The reasons for cooperating, the legal and statutory basis for doing so, and the social and psychological aspects of intergovernmental cooperation are also covered in the workshop.



Leadership Through Effective Meetings: Parliamentary Procedure Basics

Understanding a few basic principles of parliamentary procedure can improve the productivity of government meetings. Elected and appointed government officials learn how to develop basic meeting rules and rules for the public to follow in open meetings, make motions and deliberate efficiently in small board meetings. Another MSU Extension program called Effective Meetings, Hearings and Minutes is also available for planning commissions and zoning boards of appeal.

Local Government Benchmarking Consortium

This consortium brings together representatives from municipal governments across the state to help them compare their performance and benchmarking measures. The most-studied municipal services tend to be those with significant budgetary implications and direct effects on residents.

New County Commissioner Training

MSU Extension supports those who want to serve their communities and make Michigan stronger through a series of New County Commissioner workshops that are offered at multiple locations every two years. Commissioners learn how to succeed in their new roles by studying how to hold effective meetings and manage county budgets and finances. The training includes two sessions:

- Effective Meetings
- County Budget and Finance

Training Officials on Statutory Requirements & Governing Skills

Good governance and strong communities require officials to understand how to comply with existing laws and policies and follow established best practices. MSU Extension holds workshops on effective meetings, parliamentary procedure and intergovernmental cooperation. Other, customized training programs and technical assistance are also available for local governments.

Tribal Governance Training

The Michigan Tribal Governance program is part of an ongoing effort to build strong collaborative relationships with tribal nations and to increase tribal access to MSU resources and other statewide networks. Participants learn about participatory government, transparency, responsiveness and inclusion of tribal residents in decision-making processes.



“The Benchmarking Consortium has encouraged the City of Petoskey to start thinking about the delivery of services quantitatively, and has allowed us to easily compare our services with communities across Michigan.”


- Dan Ralley, City Manager,
City of Petoskey





Leadership & Facilitation

One of the core functions of MSU Extension is increasing the leadership skills of individuals and organizations. Positive leadership can help individuals, organizations and communities achieve long-term prosperity and success. Our programs help people of all ages and experience levels develop skills in facilitating productive meetings and dealing with conflict. We work to enable every Michigan resident and community group to participate fully in the life of our democracy. Our classroom-based leadership development training programs and a variety of educational resources are available for those wishing to enhance their leadership skills. We prepare Michigan youth for a lifetime of civic responsiveness and global interconnectedness. MSU Extension resources and opportunities help all Michiganders develop the skills they need to be effective leaders and the commitment to be active and responsible citizens throughout their lives.



“The workshop was extremely useful to me and I have used many of the techniques. It was, perhaps, one of the most useful trainings I have attended in preparing me to work with groups.”

– Facilitative Leadership participant

Conflict, Collaboration & Consensus in Natural Resources

This two-session course is designed to help natural resource professionals increase their confidence and competence in helping groups and communities address contentious natural resource issues. Participants learn about and practice conflict-resolution skills and explore approaches to synthesizing and incorporating public input in their decision-making.

Conflict Smoothies

Communication is the key to success on the personal and professional levels. Conflict Smoothie workshops focus on helping participants improve their interpersonal and intergroup conflict-resolution skills in an engaging and interactive format. The program is available both online and face-to-face.

Facilitative Leadership

This three-day workshop focuses on building the skills people need to lead and facilitate productive meetings that motivate and energize attendees. Workshop participants learn the techniques and verbal skills they need to lead group discussions, to help groups reach consensus and set outcome-based goals, and to use flip charts and other tools effectively. They'll also pick up best practices for leading the processes of brainstorming, analyzing ideas, decision-making and planning. A six-hour version of this training is also available.

✿ 4-H Advisory Group Support

Providing high-quality and effective youth development programming consistent with the theory, policies and practices of Michigan 4-H Youth Development is a priority of MSU Extension. To accomplish this, training and technical assistance on issues such as 4-H structure, by-laws and best practices is available to community and county 4-H advisory groups across the state.

✿ Leadership Education

Through any number of county and club or group 4-H experiences, young people can lead their peers and hold positions of authority and responsibility. MSU Extension offers resources and training on club or group officer roles, facilitation, group decision-making, communication and conflict that help prepare youth for success in these roles.

✿ National 4-H Congress

This is a premier event for 4-H members across the country. Michigan 4-H'ers are eligible to attend this conference through MSU Extension. The five-day conference in Atlanta, Georgia, offers workshops on topics such as diversity, cultural experiences, leadership and team development. In addition to attending the conference as delegates, 4-H'ers can also apply to be on the leadership and design teams that develop and conduct the event.

Real Colors Personality Instrument

The Real Colors program is a user-friendly, practical way for participants to better understand their own personalities and the most important traits they possess. Just as important, they gain insight into the characteristics of others and why individuals might react to the same situation differently. Participants also learn skills that allow them to better communicate their thoughts and ideas to clients, friends and family.

✿ Teen Leadership & Community Change Conference

Teens and adults learn how to create positive community change at this two-day conference by participating in sessions that build their skills, knowledge and commitment to citizenship, leadership and community service. Attendees also develop plans of action for addressing issues in their own communities and enhance their appreciation for diversity and multiculturalism.

✿ Youth-Adult Partnerships

Programs, organizations and communities benefit when the enthusiasm and fresh perspective of youth is coupled with the wisdom and experience of adults. MSU Extension helps organizations incorporate young people into their governance and decision-making processes, with helpful strategies and best practices for building successful and sustaining youth-adult partnerships.

Planning

MSU Extension offers courses, information and presentations on topics such as local planning and zoning tools, techniques and best practices; planning policy options; land-use and environmental issues; public participation programs; leadership development; and community and economic development. We're available to work with Michigan's 1,858 local governments, 14 multicounty regions, 12 federally recognized tribal nations, and interested residents and activist groups. We can also work with you to conduct applied research on innovative planning and zoning techniques, approaches and projects.



MSUE PUBLICATIONS



YEA! Youth Experiencing Action – A Community Service-Learning Guide

Geared toward young people ages 14 to 19, YEA activities can be used by any group interested in community service-learning. YEA projects can be led by older teens and adults with both community service-learning and facilitation training, or by those who are interested in acquiring those skills. This packet includes a leader's guide and four modules with activities. Use this guide to start a service learning project with young people in your community.

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Advanced Zoning Board of Appeals Training

This is an advanced training program for members of local government zoning boards of appeals. The training covers what Michigan law requires of board members, best practices for serving on an appeals board, processes and checklists to help board members make solid decisions, and meeting how-to's, including taking minutes and creating an official record.

Issue-Specific Planning & Zoning Training

MSU Extension offers a variety of programs related to planning and zoning that are designed to help the public and government officials better understand how to build and maintain successful, thriving communities.

- Accumulated Junk (Community Cleanup)
- Conflict of Interest, Incompatible Office, Ethics
- How to Stay Out of Court (or, 28 Ways to Stay Out of Trouble)
- Joint Planning Act
- Kyser v Kassen Mining: "No Serious Consequences" Restrictions on Zoning Authority
- Land Division Reviews
- Modern Planning Procedure (or, Planning Under the Michigan Planning Enabling Act)
- Planning and Zoning for Parks, Recreation and Tourism
- Right to Farm Act - Local Jurisdiction
- Right to Farm Act - Farm Markets
- Role of County Planning and Its Relationship to Municipalities
- Septic Storage and Zoning
- Site Plan Review and Standards for Home-Based Renewable Energy: Wind, Solar, Wood
- Zoning for Surface and Groundwater Protection



✿ Junior Citizen Planner

This program teaches third- to eighth-graders about making effective land-use decisions in their communities. The curriculum touches on facets of social studies, civics, geography, environmental science, and land-use planning and technology.

Land-Use Technical Assistance

MSU Extension offers technical assistance related to land-use planning that could include reviewing: office organization, case management, forms and procedures, and legal compliance. Background research and issue analysis are available for complex planning problems, as is help choosing planning consultants and hiring planning and zoning administrators. Applied research partnerships, internships and practicums with MSU are also possible.



Michigan Citizen Planner

Understanding the long-term outlook of a community is essential for leaders working to attract businesses, add jobs and strengthen Michigan’s cities and towns. The Michigan Citizen Planner program offers land-use education and training to local planning officials. MSU Extension’s Citizen Planner programming includes:

- Practice of Planning and Zoning, Online Citizen Planner
- Master Citizen Planner
- Michigan Citizen Planner Advanced Academy

Placemaking

This program covers every aspect of the concept of *placemaking* in community and economic development and improved quality of life. Placemaking can be a cornerstone of Michigan’s economic recovery, and is a strategy led by local governments and planning commissions. MSU Extension’s placemaking program consists of six modules (one, three or six hours each) that focus on the basics, economics, community design, form and planning, public involvement and application.

Planning & Zoning*A*Syst: Community Planning & Zoning Audits

MSU Extension can conduct performance audits of local government planning and zoning programs. Such audits generally focus on some or all of the following topics: basic setup, master plans, planning coordination, zoning ordinances, administration, special land uses, planned unit development, site plan review, capital improvement programs, subdivision and land split reviews, and capital improvement reviews.

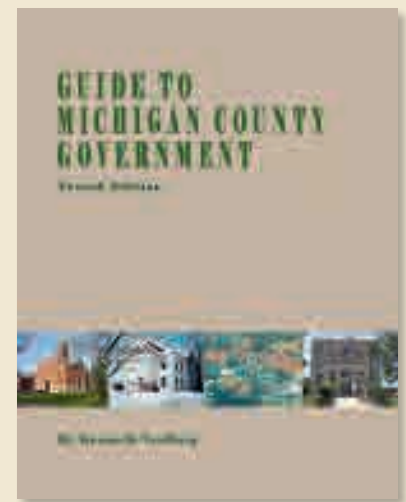
Small Town Design Initiative

This program helps small communities with their efforts to address physical planning, design and land-use issues. A graphic visioning process provides residents with a set of images to help guide community improvements. Consensus is achieved by having community-driven input and decision-making in open public meetings.

Smart Growth Readiness Assessment Tool

This set of online assessments rates how well a community is prepared to develop using Smart Growth (sustainable planning and development) principles. The tool provides communities with a baseline score, and can be used to measure progress. One program module is designed specifically for waterfront communities.

MSUE PUBLICATIONS



Guide to Michigan County Government

This book outlines the legal framework in which Michigan counties operate. It looks at the constitutional provisions, state statutes, court decisions and legal opinions that generally encompass the rules county governments must live by. The authors discuss common practices of Michigan county governments and how county politicians relate to state government agencies and to their official counterparts in the cities and townships within their counties.

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Sustainable Communities Course

This course consists of eight core sessions in which participants learn about community sustainability through the lens of common topics communities are facing today. Sessions cover community sustainability, energy, the new economy, natural resources, the local food movement, the built environment, mobility and community capacity. The program is available online or in person.

Training Officials on Planning Statutes & Policies

Strong communities need officials who understand how to comply with existing statutes and policies, and know how to implement the current best practices in planning. MSU Extension sponsors individual workshops on Michigan laws such as the Open Meetings Act, the Freedom of Information Act, the Joint Planning Act of 2004, the Zoning Enabling Act of 2006, the Planning Enabling Act of 2008 and the Right to Farm Act.

Understanding & Influencing Your Local Government Planning & Zoning Decisions

MSU Extension sponsors training programs for civic groups, activist organizations, neighborhood associations and interested people on how planning and zoning works and the most effective ways to influence a local government's planning and zoning decisions. These programs, the Planning and Zoning Primer and How to Influence Zoning Decisions, can be taken individually or together.

Urban & Regional Planning Practicum

This program connects some of the state's brightest urban and regional planning students with communities that need planning and development help. The students are guided by faculty members and work with MSU Extension educators as they apply their evolving skills and knowledge to the real-world challenges of researching, creating, preparing and presenting a professional planning project.

Zoning Administrator Certification

A zoning administrator is often the first or only contact a developer or new business has with local government. That makes the zoning administrator important to a community's development and its public image. This series of eight 3-hour classes cover the technical, legal, pragmatic and organizational aspects of zoning administration. The program includes a final exam and graduates receive a certificate of completion.



Sustainable Community & Economic Development

Strong communities require a healthy and growing business and social climate. MSU Extension is an educational leader in providing support to communities in green and sustainable economic development. We can provide vital education to the public, community organizations and officials that can lead to economic opportunity and growth. MSU Extension educators help counties work together in developing strong economic blueprints that strengthen relationships, build trust and capacity, and strengthen social capital.

✿ Capacity Building for Youth Development Programs

MSU Extension provides a variety of capacity-building tools and services to 4-H and other youth development programs in an effort to prepare Michigan's children for future educational, career and life success. We provide training (delivered through webinars and face-to-face workshops), curricula and other materials for volunteer managers, youth development staff, and adult and teen volunteers.

Clean Marinas

The health of the Great Lakes and other waterways is vitally important to Michigan's future. In the Michigan Clean Marina Program, marina operators voluntarily pledge to maintain and improve Michigan's waterways. They agree to reduce or eliminate releases of harmful substances and phase out practices that can damage aquatic environments.

Connecting Entrepreneurial Communities Conference

This conference doesn't bring business owners to a conference, it brings a conference to business owners. Each year, the conference is hosted in a new city, with breakout sessions held inside area businesses. Participants explore entire communities from session to session. This popular approach offers plenty of opportunities for networking and chances to see entrepreneurial community work firsthand.

Firewise

Between 8,000 and 10,000 wildfires occur in Michigan each year, making wildfire a significant risk to homes, property and safety. The Firewise program educates private citizens, business owners and employees, the agricultural community and local officials about steps they can take to protect themselves and their property from wildfires. Firewise presentations, print materials and educational exhibits address specific audiences in high-risk areas of the state. Firewise programming also includes:

- Firewise community support
- Firewise on the Farm
- Addressing Wildfire Hazards Through Zoning: A Firewise Approach



Ensuring Strong Communities

When you support MSU Extension, participants learn how to implement best practices in good governance that keep communities solvent, productive and engaged; learn effective conflict management skills that help leaders and residents work collaboratively on complex issues; and engage youth leaders in decision-making. In the personal finance area, MSU Extension helps youth and adults alike learn the skills they need to increase their savings, manage their spending, avoid predatory lending and reduce mortgage defaults. All of these outcomes help lower the cost of governmental services and lead to personal and community stability, strong neighborhoods and safe communities.



Greenways & Water Trails

Michigan is rich in water trail opportunities, with more than 4,000 miles of Great Lakes coastline and countless miles of rivers. Michigan Sea Grant Extension provides technical assistance and expertise to communities around the state that are interested in developing and enhancing their greenways (undeveloped land set aside for recreation and environmental protection) and water trails.

Habitat Restoration

Michigan residents, businesses and communities, along with federal and state resource managers, are working to preserve and reestablish fish and wildlife habitat for future generations of Michigan residents and visitors to enjoy. MSU Extension supports those efforts with educational programs that first explain the importance of protecting, enhancing and restoring ecosystems and habitats, and then show people how to go about it.

Michigan Prosperity Initiative

The goal of the Michigan Prosperity Initiative is to help return economic prosperity to the state. The program is divided into four modules:

- New Economy 101: How Michigan's present economic circumstances developed
- New Economy 201: Michigan's critical assets
- New Economy 301: How assets can be used to create regional place-based strategies
- New Economy 401: Planning for the Global Economy - What is the role of your local government?

Waterfront Smart Growth

MSU Extension is helping local leaders revitalize Michigan's riverfronts and coastal areas to attract businesses and enhance residents' quality of life. Our educational materials about soft engineering and habitat protection and restoration give community leaders the information they need to develop and implement solutions that recognize the close ties between a healthy ecosystem and a vital economy.



Tourism

Tourism is one of Michigan's largest industries, adding billions of dollars a year to the state's economy and providing nearly 200,000 jobs. From hunting and fishing to winery and lighthouse tours, MSU Extension's focus on year-round tourism brings educators and researchers together with communities and businesses to develop and enhance each community's uniqueness as a tourist destination. Michigan has more freshwater coastline than any other state. To protect that valuable natural resource, Michigan agencies and MSU Extension collaborate to help build healthy inland and coastal economies that include working waterfronts, an abundance of recreation and tourism opportunities, and access to natural resources. In addition to the programs listed in this section, MSU Extension can tailor services to specific local tourism educational needs.

Michigan Catch & Cook

Launched in 2012, this interagency collaboration promotes and encourages creative, safe marketing of Michigan Great Lakes sport fish through partnerships between participating charter fishing captains and local restaurants. Charter fishing clients may take their fresh catch to a participating and licensed Michigan restaurant that will cook and serve those fish to those clients.

Sense of Place: The Importance of Knowing Your Story

Knowing what makes a community unique is the most important step in establishing a thriving tourism industry. This workshop looks at the importance of providing an authentic experience to visitors and clearly communicating your message to them. Participants learn about the concept of place, how visitors and locals define *authentic*, and how to find the story of their town.

Understanding Tourism for Michigan Communities

Tourism sustains the social and economic well-being of many Michigan communities. Continued growth and diversification of tourism means new opportunities for Michigan communities, especially in niche areas such as culinary tourism and ecotourism. This program explores niche tourism and terminology, offers examples from Michigan and around the world, discusses potential relationships between tourism and industries, and suggests collaborative steps for moving forward. Specific programming is available in heritage and cultural tourism and agritourism.





MSU Extension programs help families deal with important issues across the lifespan, including staying healthy, understanding the developmental stages from birth through adulthood and strengthening relationship skills. Through our programs, parents and other caregivers learn ways to support loved ones while tending to their own well-being. MSU Extension also offers personal financial management strategies and home ownership education to help with a wide range of issues such as creating a budget and dealing with foreclosure or bankruptcy. MSU Extension educators and specialists also work with individuals and community leaders to provide customized programming and educational opportunities based on the latest evidence-based research and county-specific needs. We encourage you to contact your local MSU Extension office about crafting programming that is right for you, your family and your community.

Breastfeeding

Many new mothers know the value of breastfeeding, but run into barriers during the breastfeeding experience. In partnership with WIC, MSU Extension's Breastfeeding Initiative (BFI) empowers mothers to overcome any barriers they encounter so they can breastfeed throughout their infants' first years.

✿ 4-H Military Programs

MSU Extension is committed to supporting the more than 20,000 military children and families across the state. We connect military youth and their families with a variety of programming and community education resources that enhance their well-being regardless of their duty or deployment status. MSU Extension staff also work to develop community support for military children and families during family members' deployments.

Nurturing Families

This evidence-based program is designed to help parents and caregivers strengthen and build their parenting skills to promote positive family relationships. Participants learn how to be nurturing parents, discipline without spanking, and handle stress and anger. The program covers children's growth and development and brain development in children and teens.

Bullying

MSU Extension teaches Michigan kids and parents the skills they need to nurture positive relationships and create safe settings where young people live, work, play and learn. Our bullying and violence prevention programming focuses on creating safe, affirming and fair environments that are free from bullying, bias, harassment and other negative behaviors that can affect the healthy physical, social and emotional development of young people. MSU Extension programs stress the importance of young people working in partnership with adults to address these critical issues.



The 4-H clover



next to a program name indicates that its primary audience is 4-H.



ABCs of Bullying Prevention

This workshop is for adults who live with, care about and work with young people. Participants explore the types of bullying affecting their communities; bullying, bias and harassment through the lens of differences; strategies for addressing these complex issues at multiple levels; and resources that can be used in community settings.

Be SAFE: Safe, Affirming & Fair Environments

Every day young people are faced with feeling unsafe, disconnected, unsupported and harmed because of bullying, harassment and other forms of violence. Be SAFE is designed to help communities learn about and address these issues. Participants learn ways to foster environments that are physically and emotionally safe.

Early Childhood Development

There is no more important time in a person's development than the formative years from birth through age 5. During those years, parents and caregivers have the greatest influence on children's development and, therefore, their future academic success. Even as a child's world expands, parents and caregivers continue to play critical roles. Our early childhood programs focus on equipping parents and caregivers of children from birth to age 8 with the tools and knowledge they need to become the child's best resource and advocate. Our early childhood education covers an array of important topics, including social and emotional health, literacy development, life skill development, positive discipline, school readiness, science literacy, and child and youth development.

The ABCs of Early Literacy

This training is designed to help parents and caregivers give young children a jump start on reading. Parents learn easy ways to help their children acquire essential prereading skills that prepare them for learning to read.

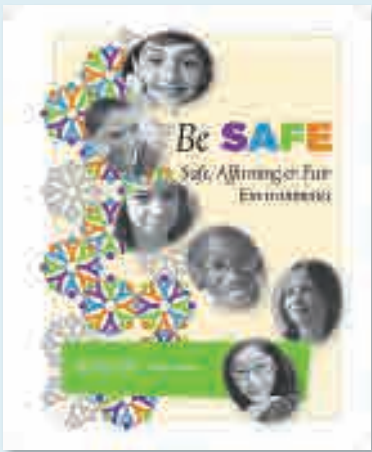
Early Childhood Reading & MI Stronger Family Book Sheets

Early childhood is a critical time to develop a love of reading. MSU Extension has created a series of family book sheets that help parents and caregivers make the most of reading time with their children. The sheets are designed to accompany a set of beloved and highly recommended children's books. They support and enhance book reading in seven areas of school readiness: math and science, reading readiness, music and movement, motor skills, thinking skills, art, and pretend play.

Inquiring Minds Want To Know

This program teaches adults how the scientific process of observing, predicting, experimenting and interpreting enhances the development of young children by building self-confidence, stimulating curiosity and developing language skills. It helps adults build the foundation children will need to understand more complex science concepts in the future.

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Be SAFE: Safe, Affirming and Fair Environments

Be SAFE is designed to help young people ages 11 to 14 and adults work in partnership to create environments that are physically and emotionally safe. The curriculum includes engaging activities that promote social and emotional learning and development, address and prevent bullying, and foster positive relationships with peers and adults. Designed for use in out-of-school time settings (such as 4-H, Boys and Girls Clubs, Scouts and after-school programs), Be SAFE also applies to middle school settings.

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Parenting Education Classes

MSU Extension offers a variety of research-based parenting education programs across the state. These classes provide current information on child development from infancy through the teen years, including ways to nurture attachment, support growth and use positive discipline.

Positive Discipline

These workshops are designed to help adults learn how they can create appropriate environments and experiences to strengthen the development of discipline and self-control in young children.

Raising Young Readers

These workshops and resources provide adults with the knowledge and skills they need to help children build their reading abilities and make the connection between learning to read and achieving academic goals and future success.

School Readiness

Many parents and caregivers have questions about whether their children are prepared to start school. MSU Extension provides a variety of tools and programs to help adults make these important decisions and offers resources for helping children build communications, math, science and reading skills.

What Children Need to Know to Start School

Designed to help parents and caregivers decide whether their child is prepared to start kindergarten, this program provides a better understanding of what kindergarten readiness is. It also presents information on what skills schools expect children to have when they begin kindergarten.

Home Ownership

Sustainable home ownership strengthens the economic outlook for individuals and communities. As a HUD- and MSHDA-certified counseling agency, MSU Extension helps potential homeowners understand the complex home-buying process and learn the true costs of responsible home ownership. Our programs also help households that have been through foreclosure learn how to reestablish their financial futures.

eHome America

Research shows that people who take part in homebuyer education are more confident and make better decisions when considering home ownership options than those who receive no homebuyer education. By completing the online eHome America course and learning about local, state and federal housing financing programs, participants can take positive steps toward reaching their goal of home ownership.

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Communications Toolkit: Fun, Skill-Building Activities to Do With Kids

Designed for individuals who work with young people ages 12 and up, this toolkit provides fun, easy and meaningful communication activities for use with clubs, classrooms, camps, after-school programs and other settings where kids come together. It includes background information for leaders, skill sheets, icebreakers, hands-on activities, handouts and other resources that will help kids build key skills.

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Foreclosure Education & Counseling

The foreclosure process is stressful for individuals and families and can have a big impact on nearby property values in communities. MSU Extension staff members are available to help homeowners understand the process of foreclosure, identify the information they must gather to assess their situation and learn how to work with lenders to obtain loan modifications.

Home Ownership Education

First-time home buyers and longtime homeowners learn key aspects of this important and complex financial transaction in this MSU Extension program. Consumers develop the skills they need to successfully navigate the home purchase process, including selecting, financing and closing on a home. How to spot predatory lending and fraudulent practices is also covered.

Managing Healthy Relationships

MSU Extension helps young people, parents, other caregivers, and community members develop and sustain healthy relationships through increased understanding of the social, emotional and spiritual aspects of an individual's life. Our educational programs promote positive peer interactions, strengthen communication skills and demonstrate methods of managing stress that help reduce negative, harmful behaviors.

Building Strong Adolescents

This program for parents and caregivers of teens focuses on the external and internal assets teens need to succeed. The program presents information on preventing aggression and violence to help adults model positive relationships and provide opportunities for growth to the adolescents in their lives.

RELAX: Alternatives to Anger

The discussion and skill-building activities that are part of RELAX guide participants' exploration of what anger is and what triggers it. This interactive program teaches participants techniques for calming down and de-stressing, the principles of problem-solving, effective communication skills, and ways to forgive and let go of the past.

Safe Dates

This evidence-based dating violence prevention program is designed to help middle and high school-aged youth recognize the differences between healthy and abusive dating relationships. Participants also learn how to help themselves and their friends deal with abusive relationships.



"I now use the 'proper' techniques for preserving all my food. I am much more aware of the importance of correct times and temperatures. I follow directions in tested recipes exactly and I use the resources given to us."

- Food Preservation participant



Social & Emotional Health of Young Children

The social and emotional development of humans begins at birth and is the foundation for our overall brain development and future success in school, relationships and life. MSU Extension provides a variety of resources and workshops to support the development of both social and emotional skills in young children.

Personal Finance

In our current economic climate, many Michigan families are finding it difficult to make ends meet. Reviewing their assets and liabilities and developing a plan to change their financial habits can lead individuals and families toward a more sustainable existence. MSU Extension helps consumers set personal and financial goals, assess their income and spending patterns, and develop and maintain spending plans. Our programs help individuals review and correct credit reports, better use financial systems, avoid costly and predatory lending practices, and become confident investors.

eHome Money

Do you ever wish your money came with a user's manual? Now it does. The fun, informative eHome Money course is a personal guide to financial health. You can take it online at your own pace, on your own schedule. You'll learn steps to reduce debt, raise your credit score and improve your overall financial picture.

🌿 Financial Education & Entrepreneurship Resources

MSU Extension provides a variety of tools, resources and programs to help young people learn the basics of personal finance, practice responsible financial behaviors and explore their entrepreneurial potential.

Financial Health Index Self-Assessment

A financial health survey on the MI Money Health website (www.mimoneyhealth.org/) offers Michigan consumers a way to evaluate their current financial situation, provides feedback about how to improve their finances and connects them with local resources. The site provides helpful financial information in a rapidly changing economy.

Money Management

The more people know about credit, banking services and money management, the more likely they are to increase their savings, successfully buy and maintain homes, and improve their financial health and well-being. This program teaches basic economic concepts that strengthen consumer skills in managing finances, making informed decisions with money and increasing long-term financial stability.

“As a result of your program, our adults are more open to understanding young people, and the youth seem to better recognize how much concern and care the adults have for their safety.”

– Leader of a youth program



MSU Extension's high-quality and affordable educational opportunities promote healthy lifestyles and empower Michigan residents to take control and manage their personal health. In our programs, participants learn to consume nutritious diets on a budget; improve personal, family and community relationships; reduce the spread of foodborne disease; and become leaders in the food industry. MSU Extension food and health programs serve the needs of children, youth, families and communities in urban, rural and suburban areas.

MSU Extension educators and specialists also work with individuals and community leaders to provide customized programming and educational opportunities based on the latest evidence-based research and county-specific needs. We encourage you to contact your local MSU Extension office about crafting programming that is right for you, your family and your community.

✿ Food, Health & Well-Being

In MSU Extension programs, young people learn about healthy lifestyles and prepare to make their own healthy lifestyle choices. We offer them a variety of educational resources and tools related to nutrition, fitness and health.

Diabetes

MSU Extension diabetes programming provides the practical knowledge and skills needed to improve the healthy behaviors of Michigan residents who are at risk of diabetes and people who care for loved ones with diabetes. Participants improve their behavior related to food consumption, physical activity, self-management, self-efficacy, health status and health care use. People who are prediabetic learn how to help prevent or delay the onset of Type 2 diabetes. Those who are already living with Type 2 diabetes learn to successfully manage their condition.

Diabetes Prevention Program

This program is for people who have been diagnosed with prediabetes or who have risk factors for Type 2 diabetes. They learn to incorporate structured, healthy lifestyle habits that will help them reduce their risk of actually developing diabetes. Participants attend 16 weekly sessions focusing on nutrition, physical activity and environmental changes, followed by six to eight monthly follow-up sessions.

Dining With Diabetes

Participants learn to make healthy food choices and incorporate balanced menus into the family dining experience. The workshops are targeted toward people who have been diagnosed with Type 2 diabetes and members of their support systems. The five-session series includes research-based education, food preparation demonstrations and healthy recipe tastings.

The 4-H clover



next to a program name indicates that its primary audience is 4-H.





Food Budgeting

Food budgeting programs teach families and individuals about financial planning and ways to stretch their food dollars. MSU Extension connects Michigan residents to community resources that can help ensure they and their families have nutritionally balanced diets.

Personal Action Toward Health (PATH)

PATH is for people living with chronic conditions such as diabetes, heart disease, asthma, arthritis and chronic pain. Participants learn important skills such as goal-setting, dealing with pain and fatigue, communicating with health care professionals and managing medications. These skills better equip them to face the daily challenges of living with chronic conditions. Two specialized PATH workshops are also available:

- PATH: Diabetes
- PATH: Chronic Pain

Senior Project FRESH & Market FRESH

This program is for seniors aged 60 and up with total household incomes of 185 percent of the poverty level or less. After attending nutrition lessons, participants receive coupons for buying unprocessed, Michigan-grown products from authorized farmers markets and roadside stands. The program helps seniors buy the fresh produce (such as berries, lettuce, tomatoes, onions, beans and honey) they need for healthy aging.

Nutrition & Physical Activity

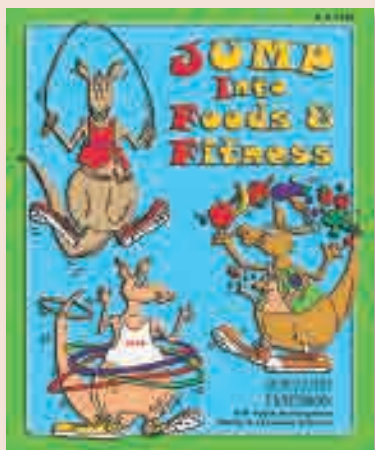
MSU Extension programs are designed to help people increase their knowledge and improve their nutrition-related skills, attitudes and behavior. Our goal is to help program participants better understand the value of a balanced, healthy lifestyle. MSU Extension also teaches Michigan residents the importance of physical activity in their everyday lives. We work with diverse audiences at local, county and state levels to help them implement everyday changes to their own and their family diets and physical activity levels. This leads to healthier lifestyles and increased nutritional well-being.

Cooking Matters

Participants learn important skills and gain the knowledge and confidence they need to provide themselves and their families with meals that are both nutritious and wallet-friendly. Cooking Matters participants learn how to select and prepare nutritious foods, choose budget-friendly ingredients, and use a variety of cooking techniques to prepare healthy meals for their families. These Cooking Matters variations are available:

- Cooking Matters for Adults and Teens
- Cooking Matters at the Store
- Cooking Matters for Child Care Providers

MSUE PUBLICATIONS



Jump Into Foods and Fitness

This research-based curriculum helps kids ages 8 to 11 learn the importance of nutrition, increased physical activity and food safety. Through the program's eight "Kangaroo Jumps" or sessions that are led by JIFF the Joey, young people participate in physical fitness and nutrition activities while increasing their strength, flexibility and endurance, tasting and preparing foods, and learning how to keep foods safe.

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Eat Healthy, Be Active

This evidence-based series of lessons is designed to improve participants' health and reduce the risks associated with obesity and major chronic diseases. The Eat Healthy, Be Active program helps adults learn the skills they need to make healthy eating and regular physical activity part of their lifestyle.

Eat Smart Live Strong

This program is designed to help adults who are aged 55 and up adopt health and nutrition behaviors that will improve their quality of life. The six-session series helps older adults improve their health by increasing their fruit and vegetable intake and becoming more physically active.

Healthy Harvest

Growing your own vegetables has many benefits, including healthier eating and reduced stress. The Healthy Harvest program is designed to help participants learn basic gardening skills and use what they grow to prepare healthy and tasty meals. The program is a partnership of MSU Extension's health and nutrition and Master Gardener programs.

My Way to Wellness

This online, interactive workshop promotes healthy life habits. Participants learn about goal-setting, their own nutritional and physical activity needs, making healthy food choices, reading food labels, understanding fat and sugar facts, planning meals, incorporating fruits and vegetables into their meals and snacks, and balancing their energy use with their calorie intake.

Project FRESH

Through this program, people who are eligible for federal WIC benefits receive coupons that allow them to buy fruits and vegetables from local farmers markets. Participants learn how to choose produce that is locally grown, prepare fruits and vegetables, store and preserve fresh fruits and vegetables, and increase their fruit and vegetable intake.

Show Me Nutrition

This evidence-based curriculum provides young people in prekindergarten to eighth grade with age-appropriate nutrition and physical activity education. Participants receive handouts and engage in activities designed to help them learn how to incorporate good nutrition, food safety, physical activity and positive body image into their lives. They also learn to recognize and resist inappropriate media influences on their healthy choices.



Keeping People Healthy

When you support MSU Extension, you help participants learn safe food handling practices, increase their physical activity and improve the quality of their diets. Extension programming also helps decrease incidents of violence and bullying. Encouraging these healthy behaviors helps reduce food and health care costs by helping prevent chronic health conditions and providing safe environments throughout a person's life span.



Safe Food & Water

MSU Extension offers high-quality and affordable programs that help Michigan residents learn the importance of safe food and clean water to their everyday lives. Our high-quality, research-based programs help community food handlers learn safe food-preservation skills and techniques. Michigan consumers and their families learn up-to-date techniques for canning, freezing, dehydrating and storing food following U.S. Department of Agriculture guidelines. Programs also cover topics such as personal hygiene, transportation, unsafe environments and cross-contamination to help reduce the risk of foodborne illness.

Communicating Fish Consumption Advisories

Michigan Sea Grant Extension helps shape the way fish consumption advisories for Michigan waters – particularly along the Detroit River – are communicated to the general public. This Extension program has helped develop signage along the Manistee River and facilitated the creation of the Detroit River Citizens Fishery Advisory Council.

Consumer Seafood Education

Michigan's lakes, rivers and streams are home to some of the most delicious fish in the world. Michigan Sea Grant Extension has formed key partnerships with federal and state agencies, scientists and universities to educate consumers about the seafood they eat. We offer information on the health benefits of seafood and how to evaluate the safety and sustainability of the seafood residents buy or catch.

Cooking for Crowds

Participants learn how to prevent the unsafe conditions that may cause foodborne illnesses when they're planning, purchasing, storing, preparing and serving food for crowds. Workshop participants receive a manual and a certificate signifying they've completed training on how to prevent foodborne illnesses.

Cottage Food Law

Many Michiganders want to start food businesses, but are held back because they don't have access to commercial kitchens. This program helps residents become certified to prepare and store particular foods in home kitchens and get their businesses off the ground. The workshops cover the food safety aspects of preparing cottage foods for sale, including preparing, packaging, labeling, storing and transporting foods.

MSUE PUBLICATIONS



Cottage Food Law Online Training

The Michigan Cottage Food Law allows Michigan residents to manufacture and store particular foods in an unlicensed kitchen, such as a residential home. This online training program covers how to prepare, produce, package, label, store, transport and sell safe food products under the law.

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Food Preservation

The growing local food movement has renewed consumer interest in safe food-preservation techniques. In this workshop, participants learn how to provide safe, high-quality products for their families using the latest research findings on food preservation. The food preservation methods covered include freezing, boiling water bath canning, pressure canning and dehydrating.

Good Agricultural Practices

Participants in this workshop will learn about: produce safety, responsibility in food safety, good agricultural practices and how to implement changes in their operations that can enhance the quality and safety of the food they produce. The program prepares farmers to sell produce in retail markets and ensure that their produce is safe to eat.

ServSafe

More than four million foodservice professionals have been certified through ServSafe in the U.S., and MSU Extension is a key partner in delivering the education necessary for Michigan residents to become certified. ServSafe teaches foodservice managers and other professionals how to train employees about and prevent issues with emerging food safety issues related to foodborne illness and safe food facilities.



“Since December, I lost 20 pounds and my A1C* dropped from 8.9 to under 7. I feel much better and my doctor is ecstatic!”

- Dining With Diabetes participant

** A measure of the three-month average of blood-glucose levels that medical professionals consider more accurate than a single blood-glucose reading.*





*Photo courtesy of
MSU Communications and Brand Strategy*

National gardening statistics reveal that nearly 70 percent of adults participate in some form of gardening. Lawns and vegetable, fruit and flower gardens dot the landscape of residents young and old. Michigan gardeners work to create diverse, lush landscapes while employing the environmentally savvy skills that they learn through MSU Extension consumer horticulture programs and services such as the Master Gardener program.

MSU Extension educators and specialists also work with individuals and community leaders to provide customized programming and educational opportunities based on the latest evidence-based research and county-specific needs. We encourage you to contact your local MSU Extension office about crafting programming that is right for you, your family and your community.

Garden Hotline

Each year, thousands of Michigan gardeners use the MSU Extension Garden Hotline, 888-MSUE-4MI (888-678-3464), to help them make wise decisions about their garden, lawn and landscape problems. The toll-free number directs callers to a specialized team of Advanced Master Gardeners who can answer questions, identify plants and pest problems, and help callers understand their pest control options.

MSU Extension Master Gardener Program

The MSU Extension Master Gardener program is a horticulture education and volunteer leader training program that connects gardeners across the state to MSU's faculty and resources. Participants have access to information generated at one of the nation's top plant science teaching and research universities, and as part of the program, can use this knowledge to improve their communities and enrich their lives.

- **Master Gardener Volunteer Training.** MSU Extension Master Gardener volunteers start by completing a practical, 13-session curriculum grounded in university research. The training consists of about 45 hours of classes on plant science, soil science, integrated pest management, plant diagnostics, annuals and perennials, woody ornamentals, lawns, vegetables, small fruits, tree fruits, household and nuisance pests, and gardening practices to protect water quality.
- **An Opportunity to Help Others.** After completing the training, Master Gardener trainees must complete at least 40 hours of volunteer, horticulture-related community service within one year to earn their MSU Extension Master Gardener certification. Their volunteer service could include activities such as drawing on what they learned in class to teach other gardeners; planning, planting and maintaining the gardens at a Michigan freeway rest stop; working with a 4-H club or group on gardening projects; or managing the activities at a community garden.





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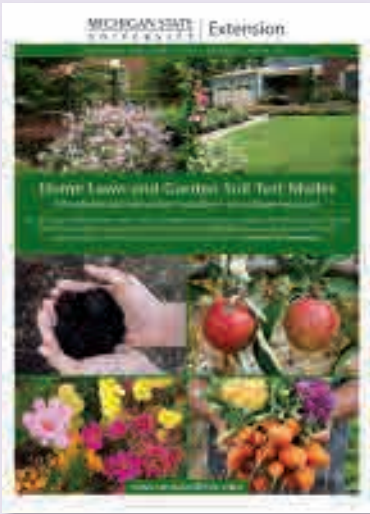
Smart Gardening

Many people tend gardens and care for their lawns, but not everyone knows how to approach these tasks in an environmentally friendly fashion that saves time and money. The MSU Extension Smart Gardening initiative connects people to simple messages that focus on these objectives. Smart Gardening resources include the tip sheets and videos available online at www.migarden.msu.edu, public outreach events, and daylong conferences on current gardening topics that are research-based, simple and earth-friendly.

Soil Testing

By having your soil tested through MSU's Soil and Plant Nutrient Lab, you can learn which nutrients are present at adequate levels for the plants you want to grow and which nutrients you'll need to add. MSU Extension's *Soil Test Kit Self-Mailer* and soil test interpretation website make it easy for you to be a great gardener while being environmentally responsible.

MSUE PUBLICATIONS



Soil Test Kit Self-Mailer

Soil testing is a recommended practice to avoid over-fertilizing plants. Applying the correct amount of fertilizer can save consumers money and protect Michigan's water resources. This kit comes complete with everything you'll need to submit a soil sample for testing by the MSU Soils Laboratory. Simply follow the instructions, put the completed form and soil sample in the postage-paid envelope and your results will be sent to you by email.

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Photo courtesy of MSU Communications and Brand Strategy

Turf

MSU Extension performs applied research and develops educational programs and resources to address the needs of turfgrass professionals and homeowners. Michigan has a diverse turfgrass industry that includes golf courses, athletic fields, sod farms, residential lawns, commercial landscapes and school grounds. MSU Extension works seamlessly with several allied industry partners, including the Michigan Turfgrass Foundation (MTF), to deliver educational programs to turfgrass professionals.

Michigan Turfgrass Conference

The Michigan Turfgrass Conference, held annually in cooperation with the MTF, offers more than 20 hours of educational programming directed at golf course superintendents, professional lawn care operators, athletic field managers, sod growers and grounds managers.

Michigan Turfgrass Field Day

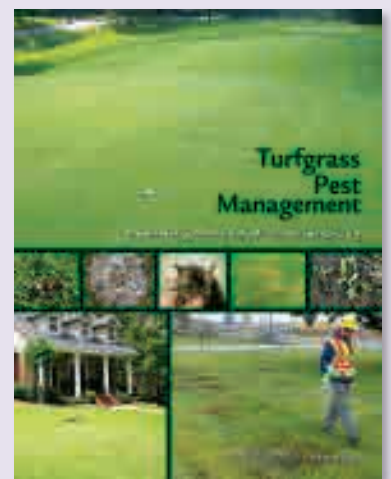
This event is held in cooperation with the MTF and the Hancock Turfgrass Research Center on the MSU campus. The one-day program held each August highlights ongoing turfgrass research projects being conducted by the turfgrass faculty at MSU and includes hands-on pest identification.

Turf School

Turf School is a four-day basic course for people who are new to the turfgrass industry. Turf School educates attendees on turfgrass selection, soils, nutrition, fertilizers, and pest identification and management. Turf School is held every other year.



MSUE PUBLICATIONS



Turfgrass Pest Management for Commercial Applicators in Category 3A

This 144-page book contains basic scientific information and practical solutions to pest control problems. It provides the information readers need to become Michigan certified commercial applicators in Category 3A, Turfgrass Pests. It's also useful to homeowners and others who are interested in learning more about managing turfgrass pests.

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*Photo courtesy of
MSU Communications and Brand Strategy*

MSU Extension programs improve public understanding and knowledge of Michigan's natural resources, help landowners and communities use those assets for sustainable long-term social and economic development, conserve our natural resources base for future generations, and broaden stakeholder engagement in natural resources decision-making.

Together with key partners such as Michigan Sea Grant and the Michigan Natural Features Inventory (MNFI), MSU Extension educators and specialists also work with individuals and community leaders to provide customized programming and educational opportunities based on the latest evidence-based research and county-specific needs. We encourage you to contact your local MSU Extension office about crafting programming that is right for you, your family and your community.

🌿 Environmental & Earth Science

Youth participants explore the broad scope of environmental and earth science through real-life scenarios and educational opportunities related to natural resources and wildlife in this project area. Participants can explore topics such as environmental resource management, entomology, outdoor recreation and education, soils, wildlife, fisheries and marine life.

Energy

The growing traditional and renewable energy industries in the state have tremendous potential to expand Michigan's economy. MSU Extension educators and researchers work with landowners to produce green energy crops sustainably and with local and state officials to develop energy policies.

Biodiesel Demonstrations

MSU Extension offers hands-on demonstrations of how to produce biodiesel fuel from oilseed crops and used vegetable oil. Researchers have developed a biodiesel conversion unit that allows them to do mobile demonstrations on farms. The mobile unit is also a great resource for teaching students at technology centers and community colleges the process of making biodiesel.

Energy Conservation: Impact on the Bottom Line

MSU Extension hosts an annual four-phase program designed to help people become certified farm energy auditors. Individuals can become certified to complete dairy, greenhouse, irrigation, grain dryer, poultry, swine and rural business audits. On average, dairy farms that have implemented the energy conservation practices recommended in energy audits have seen 46-percent reductions in their energy costs.



The 4-H clover next



to a program name indicates that its primary audience is 4-H.





✿ 4-H Renewable Energy Camp

During this weeklong 4-H precollege program, youth participants explore how ideas, research and opportunities in Michigan's agriculture and natural resources sectors can be used to create renewable energy. Participants tour a power plant, an ethanol facility and a wind farm, and visit the Kellogg Biological Station and MSU campus labs. They also conduct experiments and create their own biofuel.

Oil & Gas Leasing

Many Michigan landowners don't understand the fundamentals of oil and gas leasing rights when they are first approached by an oil and gas company representative. MSU Extension educators help translate contract terms about negotiating royalty percentages, postproduction costs, pooling, protecting land and water resources, and land damage reimbursement. Similar information is available on wind farm leasing.

USDA REAP Grant & Loan Preparation Workshops

This annual workshop helps small businesses, farmers and ranchers work through the Rural Energy for America Program (REAP) loan and grant application process. REAP offers grants and loan guarantees for the purchase and installation of renewable energy generating systems.

Wind Farm Turbine Siting

While wind energy isn't subject to some of the environmental concerns associated with use of fossil fuels, it's not without its own environmental risks, including bird and bat mortality at wind farms. MSU Extension's Michigan Natural Features Inventory helps decision-makers assess the potential for turbine interactions with animals and provides useful information on siting wind turbines.

Fisheries & Wildlife

MSU Extension works with fisheries and wildlife agencies, stakeholder organizations and landowners to protect and enhance the state's fish and wildlife populations and habitats. We offer a variety of up-to-date resources in everything from human-wildlife interactions and animal damage control to commercial and recreational fishing and invasive species identification and control.

Regional Fisheries Workshops

Michigan Sea Grant Extension annually hosts regional public workshops for lakes Huron, Michigan and Erie. The workshops are free and provide valuable information for anglers, charter captains, natural resources professionals and other community members. Topics covered in the workshops include the status of fish populations, angler catch data, the resurgence of native species, results from forage fish surveys, results from an ongoing predator diet study and updates on fisheries management activities.

Support of Charter Fishery & Fisheries Stakeholders

Michigan Sea Grant Extension works closely with the state's charter fishing industry to develop and propose resource management policies and regulations that achieve a balance between the economic benefits of charter fishing and the state's natural resources and conservation goals. We provide technical support in areas like increasing business opportunities and obtaining and maintaining licenses and certifications.

Wildlife Management

MSU Extension bridges the science-policy interface by disseminating knowledge intended to improve understanding of complex wildlife-related issues. By delivering this evidence-based education on wildlife conservation policies, MSU Extension helps decision-makers become better informed about wildlife populations and habitats and the importance of wildlife to the social and economic vitality of Michigan.

Forestry

Michigan's forests support more than 125,000 jobs and contribute more than \$17 billion to Michigan's economy annually. MSU Extension forestry programs help landowners become effective stewards, managing their forests for today while preserving future economic, environmental and communal benefits.

Forest Health

MSU Extension's network of faculty and educators host classroom and outdoor workshops on topics related to forest health such as identifying and managing invasive species, diseases and pests. Workshops may also focus on management activities forest landowners can undertake to improve the health of their land and forests.

Forest Investment Analysis

Forest land investment is a long-term enterprise that helps secure Michigan's natural resources and boost the state's economic outlook. MSU Extension offers intensive workshops on how to use widely available software to perform investment analyses for private forest land managers and forest owners.

Forestland Taxation

It's common for private forest landowners to go for years between sales of timber and other forest products from their land. The long intervals between sales often mean that landowners aren't familiar with the pertinent federal income tax and Michigan property tax provisions. MSU Extension timber tax workshops for forest landowners and forestry and tax professionals provide tax law updates and help forest landowners identify ways to minimize their tax burden from timber sales.



Making the Most of Our Natural Assets

When you support MSU Extension's natural resources education programs, participants learn about income-generating opportunities, ecological principles, natural resource issues and the role of natural resource professionals. They also explore public policy issues related to environmental stewardship. Our programs can lead to increased income for families that retain their natural resource assets, help landowners become better stewards of their land, and protect land management opportunities for future generations. Better land stewardship benefits communities by protecting and enhancing Michigan's natural resource assets.



Master Woodland Steward Program

This intensive training course helps those who own or are interested in wooded lands and want to become better stewards of forest resources. Participants learn about forest ecology, goal-setting, and woodland and wildlife management techniques in classroom and outdoor settings.

Natural Resource Enterprises

Natural resources enterprises such as growing Christmas trees, tapping trees to make maple syrup and growing wild mushrooms all help landowners generate income from their property. MSU Extension delivers evidence-based information on how individuals can create profitable enterprises based on resources available on their private land. This information helps landowners and community leaders make better informed decisions.

Ties to the Land

Michigan boasts more than 20 million acres of forestland, and more than 40 percent of it is owned by private individuals. This workshop helps forest landowners learn how to pass their forest lands to the next generation, focusing on the interpersonal and legal issues related to succession and estate planning.

Timber Marketing

Harvesting timber is one of the primary ways landowners derive income from their forest land. When done correctly, timber harvests can help ensure a sustainable forest and financial returns for generations. MSU Extension timber marketing workshops help landowners understand the basic steps involved in planning and executing timber sales that meet their stewardship objectives.

Invasive Species

Invasive plant and animal species pose an enormous threat to Michigan's biodiversity and economic well-being. Emerald ash borers, garlic mustard and zebra mussels are notable examples of invasive species that harm our state's land and water resources. MSU Extension provides educational resources to help landowners and natural resources professionals identify, assess and control invasive species.

AIS Awareness & Response

The total economic losses to aquatic invasive species (AIS) were estimated at \$5 billion a year in 2005. MSU Extension works to raise public awareness of AIS in the Great Lakes region. We partner with volunteer organizations on preventing the introduction of new species, developing rapid response programs, controlling the spread of established species, and mitigating invasive species' ecological and socioeconomic impacts. We help create and educate volunteer networks whose work can increase community pride and leverage funding to maximize control of invasive species at the minimum cost.



Erin Lizotte, MSU Extension



AIS-HACCP & Aquaculture Biosecurity

Controlling the spread of invasive species is as important to the aquaculture and baitfish industries as it is to other sectors of the Great Lakes ecosystem. The AIS-HACCP (Aquatic Invasive Species – Hazard Analysis and Critical Control Point) program helps prevent the spread of aquatic invasive species. Regular workshops offered by Michigan Sea Grant Extension help businesses understand AIS-HACCP principles. Participants study practical examples and work through hands-on exercises to help them develop plans specific to their aquaculture operations.

Asian Carp

The possibility of Asian carp reaching the Great Lakes is a major threat to the health of the entire Great Lakes ecosystem. The Michigan Sea Grant Extension program works to keep Michigan residents, scientists, and representatives from federal and state agencies and natural resources organizations informed of the threat and about efforts to stop the spread of the Asian carp.

Lakes, Streams & Watersheds

MSU Extension’s focus on lakes, streams and watersheds brings together educators and researchers with local, state, regional and federal agencies and stakeholder organizations to protect and promote the sustainable use of the state’s distinctive aquatic resources. MSU Extension educators also consult with contractors working on inland lake shorelines. Michigan Sea Grant Extension educators provide programming for students and families and offer online resources that help incorporate Great Lakes data into science and math curricula.

Clean Boats, Clean Waters

Destructive aquatic invasive species like zebra mussels and hydrilla can easily hitch rides on recreational boating equipment. Through this program, local volunteers teach boaters about the damage invasive species can cause. They demonstrate how to inspect and clean boating and fishing gear to avoid unintentionally giving rides to any invasive hitchhikers.

CoastWatch

The CoastWatch system for reporting Great Lakes surface water temperatures is a cooperative project between the NOAA CoastWatch Great Lakes regional node and the Great Lakes Sea Grant Extension Network. It was created and is maintained by Michigan Sea Grant Extension and the MSU Remote Sensing and GIS Research and Outreach Services program.

Dangerous Currents & Recreational Water Safety

Identifying and knowing what to do about dangerous currents on a local waterfront enables communities to be proactive in offering waterfront safety education. Michigan Sea Grant coordinates a series of such workshops with regional partners. The workshops teach local, state and federal parks personnel, emergency responders, volunteers, researchers, educators and others about Great Lakes beach hazards.





🌿 4-H Great Lakes & Natural Resources Camp

Science doesn't get any more fun than 4-H GLNRC. Campers explore dunes, hike forest trails, wade through wetlands, fish, snorkel and sail on Lake Huron while educators and scientists teach them about the Great Lakes ecosystem. The weeklong camp for young people aged 13 to 15 is held near the northern shores of Lake Huron in Presque Isle.

🌿 Great Lakes Education Program

This weeklong 4-H precollege program integrates elements of geography, history, biology and physical sciences to stimulate participants' interest in their role in protecting our freshwater resources. The program, conducted in cooperation with the Huron-Clinton Metropolitan Authority, introduces fourth-graders to various features of the Great Lakes through classroom learning and hands-on experiences.

Great Lakes Literacy

Many residents of Michigan are unaware of the economic, environmental and social value of the Great Lakes. Michigan Sea Grant Extension believes that an informed public makes informed decisions. That's why we provide a variety of lifelong learning opportunities focused on the Great Lakes that are designed to enhance science education and encourage stewardship.

Introduction to Lakes Webinars

This six-module webinar series is for lakefront residents, lake association and lake improvement association members, elected officials and natural resource professionals. It's designed to increase participant understanding of lakes, lake ecology, the importance of sound lake and shoreline management practices, and a variety of lake management issues.

Lake & Stream Leaders Institute

Michigan's lakes and streams are valuable environmental, cultural and economic resources. The Lake and Stream Leaders Institute develops the skills and knowledge base that participants need to become local water resource leaders. They learn about the ecology of lakes and streams, develop leadership skills and gain an understanding of the legal frameworks that guide water protection and management efforts in Michigan.

🌿 The Life of Lake Superior

Youth participants in this program discover the varied opportunities that exist in the arts, natural resources, history, culture, recreation and careers along the Lake Superior shoreline. The program, offered through the Alger County MSU Extension outdoor education program, gives young people ages 9 to 14 a taste of some of the many ways Lake Superior affects their lives.

Michigan Certified Natural Shoreline Professional Program

Landscapers, marine contractors and other participants in this intensive four-day classroom and field training program can earn certification as natural shoreline professionals through the Michigan Natural Shoreline Partnership. Sessions cover topics such as the relationship between lakes and shorelines, the role and use of native plants in natural shoreline landscaping, bioengineered shoreline erosion control and shoreline permits.

Natural Shoreline Educational Workshops for Homeowners

These workshops are designed to help inland lakefront residents understand the importance of natural shoreline landscaping. Participants learn about bioengineering techniques that use natural materials and native vegetation to help control erosion, create and preserve fish and wildlife habitat, and maintain the aesthetic quality of the lakefront.

Northern Lake Huron Shipboard Education

Educators who participate in this Michigan Sea Grant Extension workshop aboard a research vessel learn about the Great Lakes and the many ways humans interconnect with the lakes. They return to their classrooms ready to employ a variety of hands-on techniques to increase their students' Great Lakes literacy.

Summer Discovery Cruises

Young people and adults in urban areas of Michigan can cruise and explore Lake Erie, the Detroit River and Lake St. Clair in this program. Participants are out on the water while learning about lighthouses, bootleggers, sturgeon, the environment and much more. With more than 20 themes to choose from, each cruise is unique, interesting and engaging.

Vessel-Based Education

MSU Extension's vessel-based workshops are designed to help teachers combine Great Lakes science with more traditional classroom lessons. Educators go through hands-on and feet-wet opportunities to learn about the Great Lakes, work with leading research scientists and prepare to use what they've learned and experienced back in their classrooms.

Natural Resources Conservation

Michigan is blessed with an abundance of natural resources, including forests, wetlands, lakes, streams, thousands of species of plants and animals, and of course, four of the five Great Lakes touch the state's borders. To ensure that future generations can enjoy and use these resources, we must manage them sustainably. This requires conservation policies and practices based on a firm understanding of the resources. MSU Extension works with the public, public officials and resource managers to put sustainable practices based on that knowledge into action. MSU Extension also conducts applied research on key and emerging issues related to the conservation of natural resources.



MSUE PUBLICATIONS



Natural Shoreline Landscapes on Michigan's Inland Lakes

This 70-page book provides lakefront property owners a broad understanding of healthy inland lake ecosystems and why natural shorelines are important for lakes. It offers ideas for creating attractive, more natural shorelines and provides soft shoreline alternatives to hard shoreline structures in low-energy conditions. It also discusses regulatory requirements affecting work done at the shoreline.

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Climate Change Planning & Adaptation

Michigan is part of a dynamic coastal ecosystem. It's not clear how climate change might affect that ecosystem and the state's weather, but some of the possibilities include more frequent and stronger storms, heavier stormwater runoff, and wider, faster and more frequent fluctuations in water levels than we've experienced before. Michigan Sea Grant Extension lends its expertise to help state residents plan how to thrive in the midst of climate extremes.

Climate Literacy

MSU Extension's climate literacy programs are designed to help Michigan residents learn more about climate literacy principles, particularly as they relate to the Great Lakes region. Michigan Sea Grant Extension educators, climate scientists, and formal and informal educators developed the research-based science curriculum that serves as the backbone of Michigan Sea Grant's climate literacy outreach and education efforts.

Conservation Planning & Education

To ensure that Michigan's natural resources are available for future generations, conservation measures must be undertaken today. Youth and adults, the novice and the knowledgeable, can benefit from and expand their skills and understanding through systematic exposure to conservation principles. MSU Extension educators guide local planners and other officials through the complex process of conservation planning.

Geographic Information Services

Knowing and understanding the spatial patterns underlying possible courses of action is critical to providing adequate and cost-effective programmatic services to landowners, local officials, agencies and conservation organizations. MSU Extension's Michigan Natural Features Inventory provides a range of geographic information services, from basic mapping to complex spatial analysis, with a focus on natural systems.



Michigan Conservation Stewards Program

Participants in this program undergo intensive classroom and field training in natural resource ecology and conservation and ecosystem-based management. They learn how to promote, support, actively contribute to and lead significant volunteer conservation management activities on public and private lands.

✿ Michigan 4-H Youth Conservation Council

Designed for young people with an interest in environmental stewardship and conservation, this precollege program group is formed annually with youth ages 13 to 19 from across the state. Collectively, council members research a natural resources-related issue they've chosen and develop a plan for addressing the issue on a statewide basis. The capstone of the group's year of service is presenting their plan to a Michigan Senate committee, which considers putting the recommendations into a bill to be considered by the full Senate.



Natural Features Inventories

Conservation efforts must start with good baseline information about an area's natural resources. MSU Extension's Michigan Natural Features Inventory helps planners assess the quality and distribution of natural assets that are essential to conservation-related efforts. Such efforts include park planning, green infrastructure planning, community development and comprehensive conservation planning.

Threatened & Endangered Species Conservation

As private citizens and local governments plan, they must consider the potential effects of their activities on threatened and endangered species in the area and decide how to protect those species. MSU Extension's Michigan Natural Features Inventory maintains the most comprehensive database on the location of rare species in the state. State and federal agencies charged with protecting vulnerable species rely on the MNFI database during their regulatory reviews of proposed development activities.

Water Conservation Program

Michigan Sea Grant Extension provides educational outreach for this classroom-based program, which is designed for first- through third-graders. The children explore water conservation topics such as where water comes from, how to use water wisely, and how to protect and conserve this precious resource.



Water Quality

Protecting and improving the quality of Michigan's water resources is critical for our state's future. MSU Extension educators and researchers work with community leaders to create water-protection strategies, with landowners and industry to reduce the risks of water pollution, and with state agencies to develop water-quality information systems.

Comprehensive Wastewater Management Education

This educational initiative is designed for homeowners and wastewater system designers, fabricators and operators. It covers topics related to onsite and cluster wastewater systems (including their design and operation), and water conservation and reuse.

Landscaping for Water Quality

Stormwater carries excess nutrients and other contaminants across impervious surfaces and directly into Michigan's valuable water resources. This program introduces landscaping techniques designed to collect and process stormwater onsite to prevent runoff to nearby water bodies. The presentation covers stormwater basics, low-impact development and ways to protect water through smart landscaping techniques.





MSU Extension provides learning opportunities and programs from birth to age 19. Our early childhood education programs help build literacy skills and improve school readiness for kids from birth to age 5. Michigan 4-H provides enriching experiences for young people ages 5 to 19.

Michigan 4-H offers a variety of programs designed to help young people learn the critical life skills they will need in order to contribute to their communities as children and adults. It is the largest youth development organization in the state. 4-H provides more than 200,000 young people with experiential learning opportunities that enable them to explore new interests, gain knowledge, enhance their expertise and discover their passion. At the same time they're building confidence, learning the importance of civic engagement, gaining leadership skills and developing a sense of responsibility.

More than 20,000 caring adult and teen volunteers give their time to the Michigan 4-H program.

From after-school programs to summer camps, from short-term special interest groups to yearlong clubs or groups, and from one-on-one mentoring to large group events, there is a 4-H experience for every youth and volunteer. To explore the many Michigan 4-H programs designed specifically to help young people "learn by doing," look for the green four-leaf clover throughout this catalog. (**Note:** While programs not marked with clovers aren't specifically designed for a 4-H audience, they may be open to young people.)

Kettunen Center

Kettunen Center is a full-service conference facility near Tustin, Michigan, that is owned by the Michigan 4-H Foundation. Each year the center hosts a variety of statewide 4-H workshops and events for young people, volunteers and staff. The workshops include arts camp, 4-H volunteer training workshops and project-specific one- to two-day workshops for 4-H youth. In addition to a wide range of 4-H programming, many other MSU Extension retreats, camps, conferences and events are held at Kettunen Center.

Michigan 4-H Children's Garden

Families and young people can explore all that 4-H has to offer through the year-round, hands-on events at the Michigan 4-H Children's Garden on the MSU campus. Events focus on the science of plants and gardening and showcase the diversity of Michigan 4-H programming areas.

Tollgate Education Center

The Tollgate Education Center in Novi is home to many MSU and MSU Extension educational programs, classes and camps. Summer camp offerings include Bees, Bats and Butterflies; Green Science; and Outdoor Adventure. Many one-day workshops and family events are also available. Owned jointly by the MSU College of Agriculture and Natural Resources and the Americana Foundation, Tollgate boasts a working farm, conference facilities, horticulture and natural resources research fields, and a garden.



The 4-H clover next



to a program name indicates that its primary audience is 4-H.



Developing Youth & Communities

When you support MSU Extension 4-H programs, youth participants learn life skills that prepare them for the workforce – especially for highly sought after jobs in science, technology, engineering and mathematics (STEM). Extension programs help children develop early literacy skills that support school readiness. They learn leadership and decision-making skills in 4-H that increase their likelihood of becoming civically active. 4-H'ers demonstrate reduced high-risk behaviors such as drug use, and learn to complete tasks, solve problems and seek any help they might need from peers and adults. 4-H involvement also helps participants avoid or reduce involvement with the court system. This helps ensure more young people succeed in school, attend college and contribute to their communities. More successful young people in communities results in greater tax revenues and consumer spending and increases the likelihood that young people will stay in, or return to, their communities.

Career Preparation

✿ Career Preparation

Young people can explore potential career and educational opportunities through MSU Extension's career preparation activities. MSU Extension also provides educational resources that help young people create plans for reaching their professional goals.

✿ 4-H Exploration Days

This precollege program allows young people ages 11 to 19 to learn new skills and explore career possibilities by participating in a variety of action-filled, hands-on educational sessions and field trips. The three-day conference allows attendees to experience college life on the MSU campus while meeting peers from across the state.

Environmental & Outdoor Education

✿ 4-H Outdoor Adventure Challenge

Young people in this program experience the outdoors through adventures such as hiking, backpacking and canoeing. They also discover their mental, physical and emotional capabilities; build their self-confidence, decision-making, problem-solving and coping skills; and enhance their appreciation for the outdoors. Comprehensive training and leadership development materials are available for adult volunteer leaders.

✿ 4-H Shooting Sports

Youth participants in the 4-H shooting sports program learn firearm safety and responsibility while developing their shooting technique. Participants practice on targets while learning about hunting, natural resources, conservation and outdoor education. They can also compete in statewide competition in many divisions, including target archery, 3-D archery, air rifle, field rifle and skeet shooting.

Global & Cultural Education

✿ Clothing & Textiles

Michigan 4-H'ers explore the world of wardrobes and fashion through clothing and textile projects. They may design their own clothing, use basic sewing skills, develop good consumer skills by making and purchasing clothes, and explore careers in fashion design and clothing manufacturing, marketing and retailing.

✿ Folkpatterns

This program is for young people who are interested in traditions, history, traditional crafts, foods and their own heritage. Folkpatterns participants can explore the culture and history of their families and communities. The word *folkpatterns* was invented to describe the traditions or life patterns of people – the *folk*.

✿ 4-H China Project

This global education program is valuable for both in-school and after-school learning. One popular component of the program is the children's art exchange, in which children from Michigan and Shandong Province in the People's Republic of China trade visual letters (their original artwork). In the process they explore each other's cultures and learn to appreciate diversity. Teaching kits are available to facilitate teaching about China and about making art.

✿ 4-H Interstate Exchanges

As part of interstate exchanges, Michigan 4-H'ers may visit another state to experience the lives of other 4-H members and learn about communities and cultures different from their own. They may also host 4-H'ers from another state who are seeking similar experiences. Through such exchanges, youth participants learn to appreciate diversity while they meet new people and explore the United States.

✿ International Exchanges

International exchanges allow Michigan 4-H'ers to either host or visit a young person from another country. Either way, they have the chance to experience the lives of other global citizens and learn about communities and cultures different from their own. Exchange participants learn to appreciate diversity, meet new people and explore the world. International exchanges range from monthlong to yearlong opportunities.

✿ Performing Arts

Performing art activities allow young people to express their creative side while gaining valuable life skills and confidence in themselves. MSU Extension provides a variety of resources and opportunities to support these activities, which include projects such as dance, theater, music and poetry.

✿ Visual Arts

Visual art activities allow young people to express their creative side while gaining valuable life skills and self-confidence. MSU Extension provides a variety of resources and opportunities to support these activities, which include projects such as photography, woodworking, crafts, filmmaking and other fine arts.

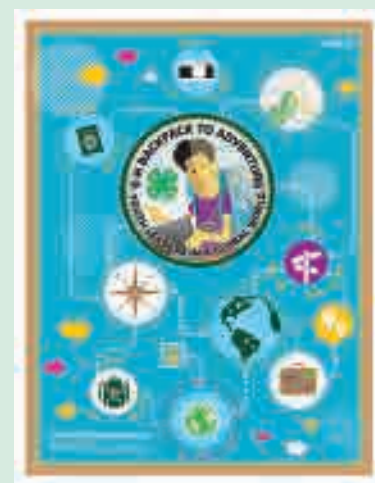
Mentoring

✿ 4-H Mentoring Weekend

A three-day workshop for adults and youth in formally matched mentoring relationships, this event provides an opportunity for mentors and mentees to learn together, further develop their mentoring bonds and have fun. The workshop is held at Kettunen Center and features a variety of educational and recreational sessions for youth mentees. It also offers structured training for adult mentors.



MSUE PUBLICATIONS



4-H Backpack to Adventure: Youth Leaders in a Global World

Designed for adults working with 9- to 19-year-olds, this curriculum helps young people develop the skills and knowledge they need to become leaders in a global environment. Focused on developing character, citizenship, communication, creativity and culture competencies, this resource is appropriate for formal and nonformal educational settings.

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MSUE PUBLICATIONS



Ready to Go: Mentor Training Toolkit

This toolkit is designed to help youth mentoring and other youth development programs in training new and existing mentors and other volunteers who will work with young people. The research-based and extensively piloted curriculum contains a highly customizable menu of training activities that can be used to tailor trainings to specific program needs.

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✿ 4-H Youth Mentoring

Young people are matched with trained mentors who provide friendship and support to help them navigate life and make healthy life choices. MSU Extension's structured mentoring relationships occur in both one-on-one, peer and group mentoring scenarios and are supported by professional mentoring curricula. Professional development is also available for youth mentoring professionals.

Science Literacy

✿ Biological Science

Youth participants explore the broad scope of biological science through real-life scenarios and educational opportunities about life and living processes. They learn about topics such as aquatic science, entomology, apiculture (beekeeping), meat and food science, poultry science, embryology and veterinary science.

✿ Engineering & Technology

Participants explore the broad scope of engineering and technology through real-life scenarios and educational opportunities that allow them to invent, design, create and operate objects. They explore topics such as aerospace, computer and digital technologies, engines, transportation, global positioning systems, geographical information systems, mechanics, robotics and electronics.

✿ 4-H Science Blast in the Class

A curriculum for use in classrooms, after-school programs and clubs or groups, "Blast" offers hands-on lessons on a variety of science topics that will excite young learners. The curriculum features activities related to animal, environmental and plant science, and provides support materials that allow educators to enrich the science learning process.

✿ 4-H Tech Wizards

This program offers small-group mentoring experiences with a focus on science, technology, engineering and math (STEM) skills. In addition to building positive relationships with their mentors, young people learn about STEM topics such as robotics, video editing and rocketry. They apply what they learn by conducting a service project of their choice.

✿ Science for Young Minds

This series of activity sheets and lesson plans is designed to help adults foster interest in and enthusiasm for science in young children. The program equips children with skills such as critical thinking, problem-solving and decision-making.

✿ TechXcite

TechXcite is an after-school or summer program in which youth participants explore engineering, mathematics, science and technology using learning modules that focus on transportation, biomedical technology, green building and solar energy. The program offers hands-on learning opportunities as participants create projects such as bionic arms, solar ovens, solar-powered cars and rain barrels.

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