



*Fall color along the Milk River, by Shelley Mills.*

**M**SU Extension provides unbiased, science-based education to the residents of Valley County to improve their lives and enhance their livelihood. The Extension educators provide programming, resources, and outreach in the areas of youth development, agriculture, family and consumer sciences, natural resources, and community health and development.

Carved from territorial Dawson County in 1893, Valley County boasts a population of 7,369 individuals on over 5,000 square miles. Approximately one-third of the county lies within the confines of the Fort Peck Indian Reservation. The county seat, Glasgow has been identified as the official “middle of nowhere,” a source of pride for residents.

Tourist highlights include the Fort Peck Summer Theater, built in the 1930s during the construction of Fort Peck Dam; The Pioneer Museum; the Northeast Montana Children’s Museum; C.M. Russell Refuge; Fort Peck Reservoir; and the Fort Peck Interpretive Center with dinosaur displays, dam construction exhibits, and an observation beehive.

## **Beekeeping Learning Laboratory – An Innovative Approach to Learning Beekeeping**

Agent Shelley Mills is working closely with the US Army Corps of Engineers (USACE) Interpretive Center Director Sue Dalbey and Natural Resource Specialist Patricia Gilbert-Ball to develop and locate a beekeeping learning laboratory within a 23-acre pollinator plot.

The plot will be comprised of both mesic and xeric areas that play host to the native and introduced flowers, shrubs and trees that support pollinators. They are working with Sandi Blake of Blake Nursery in Big Timber, Montana, to develop pods of flowering plants that will provide pollinator foliage all season long. The plot has a projected timeline of three years and will incorporate the help of Master Gardener and Junior Master Gardener students, along with local Garden Club members, volunteers, and 4-H youth.

The bee learning laboratory is the brainchild of Mills work with local hobbyist and commercial beekeepers over the past six years. While evaluating her programming for bee enthusiasts, she determined that participants were missing key elements of cognitive learning in the traditional classroom setting. Mills



received an Instructional Innovation grant from MSU to develop and build the learning laboratory. The lab will consist of five hives added to the existing nurse hive located in the pollinator plot. The hives will allow Mills to teach hands-on classes in small groups where the students can open a hive and learn by doing. In the first workshop, Mills demonstrated how to do an alcohol mite roll for Varroa mites, a destructive pest, followed by a new method of treating for mites. Mite populations exceeded the economic threshold of ten per 250 bees in the nursery by four times that level. The attendees were astounded by the number and learned a valuable lesson – that just because you can't see mites, doesn't mean you don't have them. One attendee stated, "I believe you now!"

### Drought and Stress Response

Exceptional drought was the theme for Valley County in 2021, having received less than half its normal precipitation in the last 12 months and marking the driest year since 1894. The lack of moisture reduced crop production to a fraction of normal and resulted in extensive culling of cattle herds due to lack of feedstuffs. MSU Extension has worked diligently to provide resources and guidance to beleaguered producers. MSU Extension conducted 67 forage nitrate analysis in response to farmers looking to find a use for their droughted crops and for cattle producers looking for anything to feed their cattle. Evaporation of stock ponds and reservoirs has intensified salts and brought nitrate and sulfate concentrations to dangerous levels, triggering water quality testing. Extension publications and resources concerning stress and mental health were made available through the office, online and in person. Outreach and education on drought mitigation measures, livestock nutritional care methods, pest management strategies, and producer financial and emotional resilience were offered through MSU Extension.

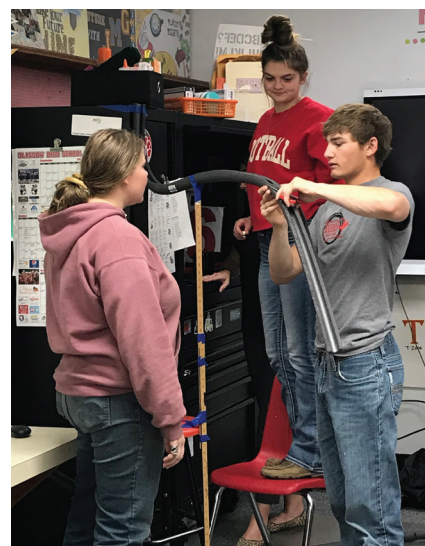
### Positive Youth Development is Enhanced By Experiential Learning Experiences

Positive youth development occurs through an intentional process that provides opportunities, choices, relationships, and the support necessary for youth to fully reach their potential. Experiential learning enhances the concepts presented by engaging youth in the activity, encouraging them to reflect on the experience followed by sharing what they have learned with others.

Through this process, Valley County youth gain confidence, enjoy a feeling of belonging, achieve mastery, become more independent and apply these skills through increased generosity or service to others. The youth pictured are traditional 4-H members learning life skills through their experiences







**Previous Page: (top)** Testing Mars Landing Devices, by Roubie Younkin; **(bottom)** Making Cheese at Valley County Teacher Workshop by Roubie Younkin; **Top:** Daily feeding and stock watering during exceptional drought conditions in Valley County, by Sue DalbeyShelley Mills; **Bottom Row: (left)** MSU Agent Shelley Mills demonstrating the oxalic dribble method of treating honeybees for varroa mites, by Sue Dalbey; **(center)** 4-H members experiencing chemical reactions making Elephant Toothpaste, by Roubie Younkin; **(right)** Jobs for Montana Graduates students engineering a marble roller coaster, by Roubie Younkin

at District 4-H Camp. Campers and counselors each gain leadership skills, applied knowledge and teamwork through their 4-H experiences.

## Life Skills Through School Enrichment

Schools are places where students go to gain knowledge and skills, but schools are also places where young people form their identities and see themselves in their futures. Young people learn best and thrive in environments where they can explore new interests and know that their contributions and perspectives are valued. MSU Extension plays a role in this development by bringing some “out of the box” experiences to the classroom. Students also become certified Food Handlers through a series of ServSafe lessons presented in Family and Consumer Science classes. Students learn to effectively lead a meeting by learning the basics of parliamentary procedure. They polish their communication skills through intentional activities and build teamwork effectively through group challenges and projects. These achievements are the stepping stones to success as an adult where they are able to form relationships, cultivate a sense of identity, self-worth and belonging.

The developmental achievements they care most about are the stepping stones to a successful adult life: relationship formation; cultivating a sense of identity, self-worth, and belonging; and discovering interests and building mastery of them. MSU Extension provides positive youth development efforts which focus on these achievements.

## Friday Funday: Focus on STEM

STEM (Science, Technology, Engineering, and Math) education provides students with a well-rounded foundation of skills to help them understand a wide range of concepts and thrive in many environments. Friday Funday, hosted by MSU Extension Agent Roubie Younkin, incorporated

activities to show real-life implication of STEM knowledge for approximately 26 youth ages 5-14.

Exploring Mars using a Rover, they incorporated technology in the world of space and engineering as youth designed and built landing devices and pathways “on” Mars. The science of Embryology was enhanced through candling eggs growing in an incubator, and the Rolling River trailer provided hands-on learning about erosion and forces of water concepts. These programs pulled together ideas presented in school and impressed upon students that what they are learning is applicable to everyday life, and pertinent to their futures.

## Valley County Offers Teacher Training

Inviting teachers to enhance their classrooms by creating a more effective learning environment has become a tradition in Valley County. Educators have the opportunity to earn renewal units or undergraduate/graduate college credits through their participation in this annual “teacher workshop.” Extension Agents Roubie Younkin and Shelley Mills work together to design a creative venue made up of innovative classroom ideas, unique presentations, education techniques and the opportunity to network with other professionals. Teachers from across Northeastern Montana have confidence that they can meet their continuing education requirements locally while gaining insight into innovative approaches to classroom education.

## Valley County Staff



Montana State University Extension is an ADA/EO/AA Veteran's Preference Employer and provider of educational outreach.

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