

STEM



Mineral County STEM Network
mineralstem.com

Mineral County STEM Festival

March 30, 2019

Rubik's Cubes

Presented by Amy Rice (Mineral County Schools)

Interactive

Grade Levels: 3 - 12

Hands on workshop to teach participants how to solve 2x2 and 3x3 Rubik's cubes. Competition at 2:30

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Rubik's Cube Competition

Presented by Amy Rice (Mineral County Schools)

Competition

Grade Levels: 3 - 12

2:30 Competition to showcase participants' skills in solving Rubik's Cubes.

Stream Cleaner Pinball

Presented by Connor Roessler (Cacapon Institute)

Interactive

Grade Levels: K - 12

Cacapon Institute presents Stream Cleaner Pinball, an interactive game which demonstrates the harmful effects of stormwater pollution and the real-world best management practices which act as solutions in the form of a fun pinball game for all ages.

Storm Water Management and Floodplain Simulation Model

Presented by Cristyn Bauer (Eastern West Virginia Community and Technical College)

Interactive

Grade Levels: 3 - 12

The large-scale model which allows students to create, test, and visualize how various factors within a watershed can impact storm water runoff and flooding; while exemplifying the importance of a person's role within their watershed.

Allegany Robotics Team

Presented by Dennis Dennison (Allegany Robotics) and John Wolford (Allegany Robotics)

Display

Grade Levels: K - 12

Present information about what a robotics team does and show a competition robot. Other information about robotics will be provided.

CyberKids Cryptography

Presented by Mary Moore (Potomac State College Department of Computer Information Systems)

Interactive

Grade Levels: 3 - 8

Presentation of various cybersecurity puzzles and games that can be completed as a hands-on activity. The presentation will introduce the concepts of cryptographic ciphers and show how they can be used to create and decode secret messages.

WeDo Legos

Presented by Dea Clayton (Keyser-Mineral County Public Library)

Interactive

Grade Levels: 3 - 12

The Keyser-Mineral County Public Library would like to set up again with the WeDo Legos as we did last year. The program teaches kids the basic principles of coding. Thank you for inviting us again this year!

Stormwater/Stream Table

Presented by Chad Thompson (WV Department of Environmental Protection Stormwater Education Program)

Interactive

Grade Levels: K - 12

Students will learn how the formation of the river differs if the topography of the land is changed from a flat plain to hills and valleys. Students will also learn stormwater management practices and best management practices.

Invasive Insects

Presented by Susan Parker (West Virginia Department of Agriculture- Plant Industries) and Chris Campbell (West Virginia Department of Agriculture- Plant Industries)

Interactive

Grade Levels: K - 12

WV Native insect display, Invasive insect display with information and handouts. Get to hold a hissing cockroach. Make a bug craft.

Building Structures

Presented by John Cole (RK&K) and Brandon Felton (RK&K)

Interactive

Grade Levels: K - 12

An interactive activity allowing the kids to build and test structures made out of spaghetti and marshmallows.

Demonstration of Healthy Lungs and Simulated Smoker's Lungs

Presented by Gerald Wilcox (Potomac State College of West Virginia University) and Madison Sites ()

Interactive

Grade Levels: 6 - 12

Hands-on activity that demonstrates healthy pig lungs and simulated smoker's lungs. The simulated smoker's lungs represent the lungs of a person who smoked a pack of cigarettes per day for about 20 years.

Soil Tunnel Trailer

Presented by Andrea Mongold (West Virginia Conservation Agency) and Cynthia Shreve (WVCA)
Interactive

Grade Levels: K - 12

The West Virginia Soil Trailer serves as a soil, water and agriculture specialty crops mobile learning center.

Technology to Assist the Blind and Visually Impaired

Presented by Conrad Bennett (Mountain State Council of the Blind) and Glen Pinkard (Mountain State Council of the Blind)

Interactive

Grade Levels: K - 12

Demonstrations and info given about technology that assists the blind and visually impaired.

SNAKES!! There not slimy...they're COOL!!

Presented by Jim Fregonara (WV Division of Natural Resources, Wildlife Diversity Program)

Interactive

Grade Levels: K - 12

Several live, native West Virginia snake species will be available for participants to view. Participants will also learn how to tell the difference between West Virginia's venomous and nonvenomous snakes.

Fingerprints

Presented by Christopher Bily (West Virginia University Research Corporation) and Amber Rodeheaver (West Virginia University Research Corporation)

Interactive

Grade Levels: K - 12

Fingerprints have been used as a means of personal and criminal identification for more than a century. In this interactive exhibit, participants will learn how to develop and classify fingerprints.

An Introduction To Modular Arithmetic

Presented by Richard Petersen (WVU-Potomac State College)

Display

Grade Levels: 3 - 12

Arithmetic is the study of the basic operations: addition, subtraction, multiplication, and division. We will perform these operations in a new set, denoted $Z_n = 0, 1, 2, \dots, n-1$, where n is a positive integer. We call this set the integers mod n .

WVU Presents: The Science Behind Cycling

Presented by Andrew Hoover (WVU Science Behind the Sport)

Interactive

Grade Levels: 3 - 12

So you can ride a bike, but do you know how you do it? The WVU Science Behind the Sport will host several hands-and-feet-on STEM activities involving cycling. Activities include: bike display, helmet design, gyroscope, and pedal power bike.

It's an Outbreak! Solving a Biosecurity Crisis

Presented by Callie Daugherty (WVU Extension Service)

Presentation

Grade Levels: 3 - 12

Participants will simulate an outbreak, diagnose, and test for an unknown contagious disease. Participants will identify patient zero and develop a plan to stop the spread of the disease in future situations.

The River Continuum

Presented by Jessica Bryzek (Trout Unlimited)

Interactive

Grade Levels: K - 12

From small headwater streams in your backyard to powerful rivers like the Potomac, a river acts as a continuum through time and space. Come explore how our waterways are connected and how biological communities change as a river continues downstream!

The Human Body

Presented by Viktor Frazier (Potomac State College)

Interactive

Grade Levels: K - 12

I will have my class create presentations on the various body systems covered in their course (Biol 231) that will educate visitors on the body, how it functions, and provide interactions in the form of questions, dissections, and models.

Leaf an Impression

Presented by Rheachel Ferguson (West Virginia Division of Forestry/AFHA AmeriCorps)

Interactive

Grade Levels: K - 12

Little display of how leaves breathe using clear bowl of water and leaf to show importance of leaves visually. Tree bottles labeled by tree variety w/leaves and fruits inside. Match leaf to name game. Leaf rubbings art that can be taken home.

SUGO

Presented by Steven Kimble (4-H Rambunctious Robotics) and Julie Burns (4-H Rambunctious Robotics)

Interactive

Grade Levels: K - 12

When sumo wrestling meets LEGO, what happens? SUGO! Come by and choose a robot, whose robot will be left on the ring? Best out three, fun for all!

Interactive Robotics Experience

Presented by Steven Kimble (4-H Rambunctious Robotics) and Julie Burns (4-H Rambunctious Robotics)

Interactive

Grade Levels: K - 12

Come see what the club has been working on as robots navigate challenges on our board, interacting with obstacles and solving missions. See how sensors can detect change to affect the robots!

Planting, Growing and Transplanting Vegetables

Presented by Patty Leasure (Mineral County Master Gardeners)

Interactive

Grade Levels: 3 - 5

The participant will learn the process for planting, growing and transplanting a vegetable plant into biodegradable pots to put into the garden. They can grow their plants and enter them into the Mineral County Fair's Flower Show.

Robotics team

Presented by Cynthia Alderman (Hampshire High School Robotics Team) and Nancy Lease (Hampshire High School Robotics Team)

Interactive

Grade Levels: K - 12

We would like to introduce the community to our robot and demonstrate what it can do and what we had to do in order to be able to compete. We would like for East Hardy to join us and be able to show what an actual competition looks like

Sphero Coding

Presented by Samantha Leput (Mineral County Alternative School) and Sarah Malone (Frankfort Middle School)

Interactive

Grade Levels: K - 12

Participants will interact with Spheros while utilizing the Sphero Edu app. Participants will have an opportunity to drive the robot, complete a maze by programming the robot with the draw feature or block coding feature, and complete other tasks!

AGsploration

Presented by Karen Wood (University of Maryland Extension - 4-H Youth Development) and Michelle Harman (University of Maryland Extension - 4-H Youth Development)

Interactive

Grade Levels: K - 12

Join us for a hands-on session participating in Ag-Science activities. Using AGsploration, an award winning curriculum created by the University of Maryland Extension, youth will learn the science of agriculture in this fun and engaging program.

Engineering Design & Projects

Presented by Mohammad Saifi (Engineering)

Interactive

Grade Levels: 3 - 12

Students and I will Present Mechanical and Electrical Projects built by PSC freshman and sophomore Engineering Students only for the Stem Festival .

First Tech Challenge robot demonstration

Presented by Rich Bender (Extreme STEAM FTC 13975) and Emily Jackson (Extreme STEAM FTC 13975)

Interactive

Grade Levels: K - 12

Extreme STEAM FTC 13975 will be bringing their robot(s) to demonstrate and talk about the FIRST Tech Challenge. Attendants will be able to try driving the robot and attempt completing a task with the robot.

Lego Robotics - Sumo and robot demonstrations.

Presented by Charles Engle (Berkeley County 4-H STEM program)

Interactive

Grade Levels: K - 12

Youth members and adult mentors of the Berkeley County 4-H STEM program would bring finished and unfinished Mindstorm robots to demonstrate capabilities and programming of robots. A Lego Sumo board would be available to test and build Sumo Bots.

LASER Demonstration

Presented by Brent Felton (Northrop Grumman) and Dylan Abe (Northrop Grumman)

Interactive

Grade Levels: K - 12

Participant's will learn the theory of Optics and LASERs through a hands-on demonstration. Real-world applications of LASERs will be demonstrated and discussed.

Electronics Circuit Demo/Build

Presented by Bret Ridgel (NGC) and Justin Hardinger (NGC)

Interactive

Grade Levels: K - 12

Please locate next to the Laser Demonstration in basement of Science hall.

Drone Obstacle Course! Stop by and Fly in the Library!

Presented by David Miller (WVU - Potomac State) and Nick Gardner (WVU - Potomac State)

Interactive

Grade Levels: 3 - 12

See how many targets you can fly through in two minutes!

The Brown Cow Chow Down!

Presented by David Miller (WVU - Potomac State) and Stacey Huffman (WVU - Mineral County Extension)

Interactive

Grade Levels: K - 12

Strap on your boots and get ready to feed the cows! Watch and learn as Eugene the Mechanical Cow eats bucket after bucket of feed and turns it into energy so he can grow big and strong!

Girls can do STEM

Presented by Kathy Cheshire (Girl Scouts) and Liberty Cheshire (Girl Scouts)

Interactive

Grade Levels: K - 12

STEM related activity.

Paper Rockets

Presented by Thomas Farabaugh (Northrop Grumman)

Interactive

Grade Levels: K - 12

Build and launch Paper Rockets

Video Production Technology

Presented by Ryan Brenneman (Allegany Media)

Display

Grade Levels: 3 - 12

We will discuss video technology related to live video streaming. Some ideas will be related to IP video, wireless video, drones, and green screens.

Man vs. Machine: Rubik's Cube Solving Robot

Presented by Amy Bloch (IBM) and Chase Kirby (IBM)

Interactive

Grade Levels: K - 12

Who will be faster, man or machine? Take the challenge to see if you can beat a LEGO Mindstorm EV3 robot at solving a Rubik's Cube. Or, come see how the robot does it!

Human Body Puzzle

Presented by Teresa White (WVU Medicine Potomac Valley Hospital) and Stephanie Ervin (WVU Medicine Potomac Valley Hospital)

Interactive

Grade Levels: K - 12

Participants will be able to put together a puzzle of the human body.

How To Heal

Presented by Diana Niland (WVU Medicine Potomac Valley Hospital) and Sue Wells (WVU Medicine Potomac Valley Hospital)

Interactive

Grade Levels: K - 12

Presenter will create make-up wounds and educate on how to help them heal correctly.

Operation Big Time

Presented by Dee Smith (WVU Medicine Potomac Valley Hospital)

Interactive

Grade Levels: K - 12

Life-size operation game.

Sink or Swim

Presented by Kellon Smith (WVU Medicine Potomac Valley Hospital) and Kaitlyn Taylor (WVU Medicine Potomac Valley Hospital)

Interactive

Grade Levels: K - 12

Oobleck station and insta-snow.

Vein Visualization

Presented by Pam Poland (WVU Medicine Potomac Valley Hospital)

Interactive

Grade Levels: K - 12

Demonstrating the AccuVein - allowing kids to be able to see surface veins.

Math is FUNctional

Presented by Tricia Barbarito (WVU Medicine Potomac Valley Hospital)

Interactive

Grade Levels: K - 8

Various activities to get kids moving, and incorporate math.

Sink or Swim

Presented by Kellon Smith (WVU Medicine Potomac Valley Hospital) and Kaitlyn Taylor (WVU Medicine Potomac Valley Hospital)

Interactive

Grade Levels: K - 12

Oobleck station and insta-snow.

Green Bank Observatory Radio Demonstration

Presented by Amanda White (Green Bank Observatory) and Andrew Seymour (Green Bank Observatory)

Interactive

Grade Levels: 3 - 12

Green Bank Observatory staff will teach students about radio astronomy and the invisible universe! Using infrared camera and faraday cage demos, participants will learn about the properties of radio waves!

Edible Aquifer

Presented by Whitney Nester (WVU Extension Service) and Margaret Miltenberger (WVU Extension Service)

Interactive

Grade Levels: K - 12

Water is an essential resource. An aquifer is an underground reservoir of water. You will use food items to construct your own model underground aquifer to learn how an aquifer stores ground water and how pollution can seep into our drinking water.

Manufacturing Processes

Presented by Jim Spurling (Mineral County Technical Center)

Presentation

Grade Levels: 6 - 12

I will be demonstrating our 3D Printer and CNC Router to promote our PLTW program.

Potomac State College Main Campus

