2020 Summer STEM Virtual Institute Course Descriptions

7th and 8th Grade Course Options. These options are available to students enrolled in 7th or 8th grade during the 2019-2020 school year.

M3. Digital Media and Journalism – Kristy Nyp
This class is an introduction to the Digital Media pathway classes at MHS. This pathway includes training in journalism and media technology. We will cover activities like presentation skills, digital storytelling and content development, and publishing. Activities can include digital photography, audio and video editing, podcasting and print design for presentations.

M5. Scratch to Python: Moving from Block Coding to Basic Python Programming – Samantha Roberts
Students will take what they already know about block coding (using Scratch, Tynker, or a similar app), and learn how to apply those tools in the programming language, Python. This course will begin with a review of Scratch and block coding and transition to an introduction to Python.

M6. Adaptation – Alexis McCormick
This class is about the adaptation of different species to explore how any why different animals and climates are changing to match their environment. We will explore different adaptation and end the unit with the students doing a project and adapting something. As well with this project, I would incorporate coding and how we make small changes to adapt to different programs and how they differ from one another.

M7. Fill your head with Tech Ed – Kelli Ireton / MATC Faculty
Students will explore and take part in activities that highlight science and technical education programs. This session will allow students to work alongside faculty from Manhattan Area Technical College to learn more about what STEM careers exist and what it takes to become involved in those areas.

M8. Stop-Motion Animation and Tynker Time – Rachel Asbury
Let’s have tons of fun creating Stop-Motion Animations! Students will use their creative minds to design, develop and create stories using the Stop-Motion Studio App on their tablet. For the 2nd half of the unit, we will code games and applications using the Tynker coding app. If you’re ready for some super fun times, sign up here!

M9. Thinking Through Games II– Brad Burenheide and Meshell Thornley
In this class students will analyze the intellectual skills used when playing games. This year we will delve into board games and video games alike, but the theory will be the same. The class aims to expose students to games they have never played and cause them to think differently the next time they play their usual games. There are two levels of this class. The second level builds upon the knowledge gained in the first level.

M10. THE DAILY ENGINEERING DESIGN CHALLENGE – James Alberto
STEM’ers will face a daily engineering design task that will engage them in a challenging and fun way geared toward developing their ability to think both creatively and critically. Each day, STEM’ers will create and upload a video explaining and demonstrating their solution to the design challenge for the day. All challenges can be completed at home, and iPads will be supplied to all USD 383 students who need one for use in completing the daily challenges and videos. Fun will be had by all!
This session will integrate science, technology, engineering, and math on a daily basis through sports and activities. We will conduct daily experiments with equipment used in sports or activities and research and identify how equipment in sports has changed with new technology and engineering. We will visit the team who does video productions for K-State football to see how technology is used to help teams improve. Students will also learn how to enter data into a spreadsheet to easily calculate averages when doing an experiment.

M13. Mars Town – Erica Ortiz
We will first investigate Mars – the good, the bad, the ugly. We will then learn about the Engineering Design Process in a creative way. Then, we will have everyone look at their materials and decide what building off of our class brainstorm list, they want to build. We will have them plan their design and draw it out on a piece of paper. We will tell them to keep in mind what shapes, sizes, colors, etc. they can use while planning. Students will individually share their drawings and we will positively critique each piece of work. By the end of the 4 weeks, we should have a thriving Mars city on our landscape poster.

M15. Explore the Beauty of Math Art – Jancy Radke
Join me as we create 2D and 3D art by exploring Math Concepts. Topics for the week include the creation of 2D Spirals by using the Pythagorean Theorem and/or Parabolic Lines. We will also be creating Spirograph Pattern Art from 2D shapes like Triangles, Squares and Hexagons. We will finish off our work with 2D art by looking at some of Escher’s Tessellations and students will create a tessellation of their own. 3D art will focus on the creation of Geometric Solids through Origami and finally a Mobius Strip Exploration Project.

M20. Survivor! – Snyder/Brunson
When the town shuts down, learn how to fend for yourself! Students will learn outdoor survival and camping skills including map & compass, knot tying, proper campfire care and techniques, how to protect your food from wildlife, and other essential outdoor skills. Learn fun and creative ways to explore and enjoy the outdoors during troubled times (or anytime)!