



## Westview Summer STEAM Academy 2019

### Course Descriptions

Session 1 June 3-7 8:30 - 11:30 AM

Session 2 June 3-7 12:30 - 3:30 PM

Session 3 June 10-14 8:30 - 11:30 AM

Session 4 June 10-14 12:30 - 3:30 PM

### **Courses**

#### **Summer STEM Film Making - Both sessions (all day for 5 days)**

Students will work together to make a short film. They will learn the basics of pre-production, filming and post production work. Students will perform various roles in front of the camera and behind the scenes. The final product will be a short comedy set at Westview's Summer STEM Academy. No experience is required and we will provide all the equipment (we might need help with some costumes and props). If you are curious about what kind of film we will make, please look on the Westview Vimeo page for last year's Halloween film: "Scary Movie Part 2" (<https://vimeo.com/297147608>). Please contact Mr. Kline with any questions.

#### **Rocketry - Session 4**

Do you like to shoot for the stars? Come explore the physics of rocketry! You will have the chance to engineer your own rocket and build a prototype via the Kerbal Space Program. We will also have rocket kits ranging in skill level. During our launch days, you will get to see all of your hard work and research in action! 10, 9, 8, 7....2, 1 - BLAST OFF!

#### **Westview Garden - Session 3**

Westview is building a garden! If you enjoy gardening, being outside, or being an architect.....come join us! We are engineering, building, and planting a garden. We will discuss native and invasive species, as well as necessities for plant life. We will be using numerous tools and moving soil and compost. Come be a part of the sustainable Westview garden!

#### **Art - Paper Mache Figure and Creative Mask Making**

When you think of a figure, what comes to mind? The Venus of Willendorf? Action figures? Strange creatures? Anime? Come and set your imagination free as we build movable, posable figure sculptures from the inside out with upcycled materials!

Whether you wear it or hang it, masks transform us in ways that inspire the imagination. In this class you get to design your own mask and use upcycled materials to build a truly unique mask that will impress. Let your creativity run wild as you discover how to turn commonly recycled materials into a true work of Art!

### **The Art of Writing - Sessions 1 and Session 4**

The design process is at the heart of any writing project, from poetry to novels. Students will learn how to generate writing ideas, play with words, and use feedback and conferencing to increase reader empathy and build writing projects.

### **Introduction to Robotics : VEX Robotics Engineering - Session 1 and Session 3**

In this class we will begin by investigating the uses of robots in our world. We will then learn the basics of quality build processes to engineer and build a robot for a variety of competitions. We will work in design teams to build a robot from a kit or as an original design to drive and compete using the VEX EDR Robotics platform. We will explore strategies that will improve the effectiveness of the robot and team interactions as we compete. After our first competition, if time allows, we will work together within our teams to redesign and modify the robot to improve a specific function. Beyond science and engineering principles, a VEX Robotics project encourages teamwork, leadership and problem solving among groups. Students will also be working to meet a deadline so time management and efficiency will be key components to their team's success.. All materials are included in this course and no experience is needed. We will accommodate for any experience level from no experience to competitive robotics experience.

### **Competitive Robotics (invite only) - Session 2 and Session 4**

**\*\*For current St. Vrain VRC Robotics Team Members that have received an invite email from Coaches \***

This 2 week class will be designed collectively by the Westview Robotics Team. The class will be an opportunity for competitive teams from across the district to gather in one place and begin designing prototypes for the new game that will be unveiled on April 27th at the VEX Robotics World Championship. During Summer STEAM we will work with students on the Engineering Design Process as they build and test different subsystems that may work for the new game. **\*\*\*Students, we will be mixing up the teams and you will spend some time working with others who are not a part of your team and/or school.\*\*\*** So if all of your team can not attend the class it is ok as we WILL NOT be building your actual competition robot. If you can only make 1 of the 2 weeks then just sign up for one of the sessions. Limited to 40 students.

SVVSD Robotics coaches that would like to join at no cost may contact Mr. Hernandez for space availability.

### **CSI/Biotechnology - Session 3**

Have you ever wondered how law enforcement uses technology to help solve cases? Is what I see on TV real? Is criminal justice the only place these technologies are used? In this hands-on introduction to these topics students will build our own gel electrophoresis chambers and then learn about what we can do with technologies such as DNA fingerprinting and genetic testing - including solving crimes and helping endangered species survive.

### **Comparative Anatomy - Session 1**

How do our bodies work? What systems work together? Are animals the same as us? These are the types of questions we will explore as students dissect 3 different animals (fetal pig, frog, shark) and compare and contrast their findings. Students will discuss form and function as it relates to body systems in the different animals. Students will present their findings on the last day.

### **Medieval Siege Weapons - Session 2**

Students explore Newton's laws, projectile motion, simple machines, speed, and mass - all while building and testing model catapults, trebuchets and/or torsion ballistas. Each student will construct and keep working models of the medieval siege weapons to facilitate understanding various topics in physics, and, of course, we will end with a medieval warfare tournament.

#### **Geocaching, GPS, and GIS - Session 4**

Treasure hunting in the digital age. In this class we'll practice gathering information, making maps, and of course finding some geocaches. We'll talk about navigation techniques, how we can use GIS mapping to help make better decisions, and have some fun on treasure hunts of our own. We'll also design and place a cache or two of our own.

#### **Summer Running with Coach Collier and Coach Ferrara**

June 3-7 and June 10-14 7:30-8:15 AM

June 16th-August 2nd 8-9:30 Locations to be announced, otherwise plan on meeting at Westview.

Westview Wild Cat Runners club will meet throughout the summer with Coach Collier and Coach Ferrara. This club is designed for runners who want to train or cross-train throughout the summer for other sports. We will spend time working on endurance and speed training to run a 3K and 5K at our best time by the Rogers Grove Run. Our schedule will be Monday-Friday June 3-7 and June 9-14 at Westview for an early run 7:30-8:15 AM before normally scheduled STEAM classes begin.

Beginning Monday, June 16th - Friday, August 2, the club will meet 3 days a week from 8-9:30. There will be 2-3 weeks we do not meet due to vacations and traveling, those days will be announced in the future. Some days we will run from Westview and other days we may run from an alternate location. We will run in the Rogers Grove Glow race as a final event for the summer. All runners are encouraged to Join the Happy Snackah Race as a pre-season warm-up run. Get signed up soon so we can begin to plan Summer Running.

#### **How to Survive a Zombie Apocalypse - Session 3**

In this course, students will learn how to survive a zombie apocalypse through participating in a variety of low ropes, challenge activities and obstacle courses. Skills such as communication, problem-solving and team building will be essential in your survival. Students reported last years summer STEAM class "...is the best. I loved all the people and activities." A parent reported that their child "actually learned something..." about communication and problem-solving. Come join Mr. Collier in protecting Westview from the onslaught of a zombie apocalypse.

#### **\*Beginning Orchestra(violin, viola, cello, bass) EVENING CLASS**

Get a head start on new instruments, experience your new school, make new friends, and have a fun time!

#### **\*Intermediate Orchestra EVENING CLASS**

Any orchestra students that have played for at least one year. We will explore fun new music and stay in musical shape over the summer.

#### **Modern Band - Session 1 and Session 2**

Have you always wanted to be a Rock Star? Learn or improve your skills on the electric guitar, or bass, or drums. In this class you will learn and play contemporary pop music using the traditional instruments of a rock band. You will even get to perform live at the school at the end of the class.

\*= evening only classes

### Summer STEAM Planning Sheet

Use this chart to schedule your day during Summer STEAM

Session 1 (June 3-7 8:30 - 11:30)	Session 2 (June 3-7 12:30 - 3:30)
Session 3 (June 10-14 8:30 - 11:30)	Session 4 (June 10-14 12:30 - 3:30)