



Belmont High School
Year 7 STEAM Day
(Science Technology Engineering Arts Mathematics)
2019

On **Tuesday 26th March** students will engage in STEAM activities. This day is designed to bring together bright minds to consider how Science, Technology, Engineering, Arts and Mathematics (STEAM) can be used to solve some of the greatest issues we face in the future.

Activities include drones, robotics, digital creative design, building challenges, coding, virtual reality, aerodynamics — these all have roots in STEAM subjects and combine multiple disciplines.

This **free** event provides participants with the opportunity to explore some of the latest interdisciplinary fields.

Event Highlights:

- Students participate in three **free** workshops choosing between specific areas of focus.
- Students have a chance to meet and mingle with current students who have a similar desire to explore areas of interest
- Students explore and work in using current and emerging technologies at no cost
- Students have an enhanced opportunity to engage in Science, Technology, Engineering, Arts and Mathematics through fun and interactive activities.

Important information:

- No specific materials are required
- All activities are held on school grounds
- Drone students will need to complete a 'Consent to be photographed form'
- School uniform with covered shoes must be worn (hair restrained if long)

Activities:

Exploring Drones provided by Youth Express (Sponsored by Aurizon Community Giving)

Students will gain an understanding of the drone industry, career pathways, safety protocols and experience piloting UAVs in a secure and safe environment.

Students will use Parrot Mambos. The classes are gender specific with the emphasis on providing STEAM opportunities for girls. The program involves: introduction to drones, educational and career pathways, rules and regulations and free fly.

Robotics- Lego Mindstorms NXT

Students will explore Robotics using Lego Mindstorms NXT. Lego Mindstorms is a programmable robotics construction series that gives students the power to build and program their own LEGO robots. Students will have the capacity to create robots that walk, talk, move and do almost whatever they want them to. Students will create using the intuitive software program.

Art Creations through Photoshop and more

Digital art is an artistic work or practice that uses digital technology as part of the creative or presentation process. The Adobe suite will be used to deliver exceptional creative digital experiences. Photoshop will enhance image editing to apply various effects easily and get consistent results to create an individual creative image. Students will gain transferable skills through exploring these forms of digital media.

Engineering Challenges

Working on solutions to real-world problems is the heart of any STEAM investigation. These solutions may include devices and designs that improve our lives, fulfill our needs or wants, and make our world better. Students will be given an Engineering design challenge to solve a problem. The opportunity to search for solutions to real-world problems fuels students' curiosity and sparks their investigative interests.

Coding with Micro:bits

Students will code with the Micro:bits. The BBC Micro:bit is a pocket sized codeable computer for schools. It is jam packed with motion detection, a built-in compass, LED display and Bluetooth. It is a creative and awesome device for making all sorts of cool creations from robots to musical instruments – the possibilities are endless. This little device is crammed full of features like LED lights, programmable buttons, motion detection and even Bluetooth connection to interact with other devices and the Internet – clever!

Virtual Reality

Students will explore the educational applications of Mixed Reality using the STEM SHARE Mixed Reality set. Mixed reality (MR), is the merging of real and virtual worlds to produce new environments and visualizations where physical and digital objects co-exist and interact in real time.

Aerodynamics-How Long will it stay in the air?

Students will work in teams to collaboratively create solutions to this design challenge: Make, measure and rate flying craft by experiment. Students will have the opportunity to explore, communicate, test, evaluate and redesign.

STEAM Coordinator

Suzanne Ross