	STEM: Foundations Syllabus	Teacher: Ben Di'Chiara Room: 16 & THE CUBE

STEM: an educational concept that joins multiple disciplines into a single idea.

Course Description: Students will primarily use project-based-learning and research/reporting to demonstrate foundational learning of the four disciplines of STEM (Science, Technology, Engineering, and Math). Throughout the course, students will research various STEM-related careers and will provide a written and oral report for each. Students will make models, develop prototypes, and will learn to communicate results as if in a business-like setting. For each project, students will provide an oral report and/or a set of designs that align to the specified project.

Hybrid Schedule: Students will have two in-person days and three @-home days.

In-person days: Students will physically attend class, and students will learn via student-led project-based challenges facilitated by the instructor.

@-Home days: Students will not be in physical attendance. Students will complete a series of challenges administered by Mr. Di'Chaira. These challenges will reflect concepts mastered (or in process of mastery) during in-person days. @- Home challenges be completed by the individual students at home. This will serve much like a Lab attached to a secondary course)

Topics to be covered in STEM: Foundations

- **SAFETY** in the work setting
- Proper use of basic tools
- STEM-related careers will be researched then reported
- Computer Programming using Smartbots and coding through Code.org
- Hydraulics with the use of robotic arms
- Engineering principals with a foundation of the (EDP) Engineering Design Process (Building towers and catapults)
- 3D object rendering using TinkerCAD.com
-3D printing design and principles with the use of a Makerbot 3D printer

Projects will be graded with the use of project-specific rubrics