

## Student Testimonial

“...After working with a chemist and researcher, at the Missouri University of Science and Technology, I found that I preferred a more research-focused career. I know that I want to work towards discovering new and better ways of getting chemotherapy drugs to where they can do their work, and the future of metal organic frameworks (MOFs) could possibly lead to this discovery...”

*-Jon Zielke, '14*

“This job shadow of a pediatric heart doctor not only showed me the value of STEM, but also the value of life and what it means to be truly thankful for what you are given in your life.”

*-Mikayla Smalley, '15*

“On February 12, I shadowed a Pediatric Bone Marrow Transplant Hospitalist at Children’s. She is a very dedicated and hard-working doctor who helped me learn more about what doctors do. She also helped me confirm my desire to become a doctor after graduating high school. She has created a significant impact in my decision to work in medicine. “

*-Robert Specht, '15*

I never expected my view on my own plan for life to change in a single day.... Working with the eye doctors... taught me that being in the medical field is not solely about what you learned in medical school. Being a doctor is also about being able to connect with your patients as well as show a great amount of care for the people you’re working with, really establishing a relationship with them.

*-Alyssa Gilmore, '15*

“I’ve had my mind set on becoming an engineer since about freshman year, and after this day of shadowing the real work environment of an engineer, I’m even more confident in my choice of profession.”

*-Nick Benz, '15*

## STEM Committee

Jason Hall, Science Department Chair

Lee Jones, Science Teacher

Malia Lahr, Science Teacher

Donna Poshusta, STEM Coordinator

Lindsay Stone, Math Teacher

Ann Marie Thomas, Engineering

Professor, University of St. Thomas

Heidi Foley, Principal



Contact us at

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**STARS**



ACADEMY OF  
HOLY ★ ANGELS

# STEM Program

Science · Technology · Engineering · Mathematics



## The STEM Diploma

The STEM diploma recognizes those students who have dedicated themselves to mastery of this rigorous course of study and who can demonstrate and apply 21<sup>st</sup> Century Skills in Critical Thinking, Creativity, and Collaboration in the curricular and co-curricular areas.

### Learner Outcomes

#### Science

By completing four years of core science courses, inclusive of biology, chemistry, and physics, students will be prepared to enter an advanced college science program.

#### Technology

By completing courses in fine arts and computer science, students will be able to use and apply computer software skills in CAD, Word and Excel and be able to use industrial equipment to design and build 3D objects, model building, or robots.

#### Engineering

By learning and applying the Engineering Design Process, in mathematics and science courses, students will be able to identify a problem, create a solution, and test it.

#### Mathematics

By completing four years of core mathematics courses, including advanced pre-calculus, or AP calculus, students will be able to enter Calculus I or Calculus II in first year college programs.

## STEM Course Requirements

### SCIENCE

Four years of science including one AP science course (AP Biology, AP Chemistry, AP Physics 1, or AP Physics 2) with a minimum grade of C.

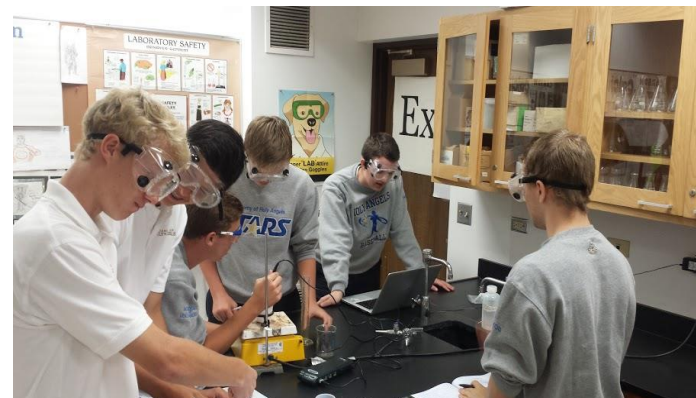
### TECHNOLOGY/ENGINEERING

Completion of at least two trimesters from any of the following technology courses with a minimum grade of C:

- AP Computer Science
- Environmental Engineering
- CAD
- Computer Art
- Web Page Design
- Studio Digital Media
- Theater Design and Technical Production
- Architectural Model Building
- Woodworking I/II

### MATH

Four years of math including the completion of pre-calculus or higher with a minimum grade of C.



## STEM Experience Requirements

1. Job Shadow with a scientist, engineer, dentist, physician, or similar professional in the area of science, mathematics, or technology (6 hour minimum)

2. All students must complete two additional STEM experiences from the following list:

- Research Project
- Summer Internship
- Job Shadow (must be different from first job shadow experience)
- Volunteer in a lab.
- Participation in a STEM activity/club (Robotics, Math STARS, Knowledge Bowl or other similar group) for two years.
- Other project approved by the STEM coordinator.
- Presentation of STEM Diploma at STEM Fair.

## STEM Communication Requirements

It is important that all STEM students be able to communicate their experiences to others.

- Letter of Intent for STEM Diploma completed by May 31 of 11th grade
- Completion of Internship /Job Shadow(s) log and reflection essay.
- Submit the STEM Diploma Application and supporting paperwork to STEM coordinator.

*(Due April 15th of 12th grade)*