

Mr. Matt Kirkpatrick

Science

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4 Year Planning

Graduation Requirements

- Science
 - Two Years/4 Credits with 2 Credits coming from a Lab Science Course
- Applied Art (Technology)
 - One Semester/1 Credit

College Admission Considerations

- Illinois Public Universities Require Three Years of Lab Science for Admission
- Students Interested in a Post-Secondary Program Related to Science Should Plan for 4+ Years.
- Some University Engineering Programs Give Preferred Application Consideration for PLTW Engineering Course Completion

Next Generation Science Standards

Use Science Concepts as context to help students develop in the following practices:

1. Ask Questions/Define Problems
2. Develop and Use Models
3. Plan and Carry Out Investigations
4. Analyze and Interpret Data
5. Construct Explanations and Design Solutions
- 6. Engage in Argument from Evidence**
7. Obtain, Evaluate, and Communicate Information

9th Grade Science

Biology

- Enters Students into our traditional Biology, Chemistry, Physics sequence.
- Vocabulary and reading intensive
- Hands on work reinforces understandings of course concepts acquired through readings and teacher lectures.

Models of Physics

- Enters Students into our Physics, Chemistry, Biology sequence.
- Applied Algebra intensive
- Hands on work begins each unit and facilitates discovery of important course concepts.
- Full Class Discussions in which students present and defend ideas occur almost daily
- All teachers trained in constructivist teaching methods.

**Recommended for students at grade level for Reading and Math. **

Option for Support

Biology E

- Aligned to the same NGSS standards that our other Biology courses follow.
- Intentional instructional support for reading, writing, and executive functioning is delivered by our teachers in this course.
- Many sections are co-taught

**Recommended for students reading below grade level. **

Options for Enrichment

Biology A

- Includes both a more in depth look at the NGSS concepts covered in other Biology courses and additional concepts not covered in those courses
- Independence and initiative from students to learn difficult course concepts inside and outside of class is expected.
- Students are sectioned into classes with other Biology A students only.
- Must earn a B for overall course grade to earn Honors Credit.

Models of Physics

- Earned Honors Credit available to all students who enroll.
- All students complete a research project related to, but beyond a traditional course curriculum.
- Project completion occurs in class and through normal homework assignments.
- Students present their work at our year-end symposium.
- Honors credit earned by attaining a B or above on both the research project and overall class grade.

**Recommended for students above grade level for both reading and math. **

EXPLORE A CAREER STEM CAREER PATHWAY

ENGINEERING

- Take the nationally recognized Project Lead the Way- *Intro to Engineering Design Course*
- Provides pre-requisite skills for future PLTW Engineering courses here at OPRF:
 - Principles of Engineering
 - Civil Engineering and Architecture
 - Digital Electronics
 - Computer Integrated Manufacturing
 - Engineering Design and Development

Manufacturing/Architecture

- Take our **Intro to Woodworking** course next year
- Follow that up with any of the following courses in future years at OPRF:
 - Advanced Woodworking
 - Principles of Engineering
 - Computer Integrated Manufacturing
 - Civil Engineering and Architecture

EXPLORE A CAREER STEM CAREER PATHWAY

HEALTHCARE

- Take our *Intro to HEALTH CAREERS AND MEDICAL TERMINOLOGY* next year.
 - Pending student interest- available in summer school 2017
- Follow that up with our *Fundamentals of Nursing* course in future years at OPRF
 - Dual Credit Class with Triton College.
 - Students take the Illinois certified nursing assistant exam upon completion of the course
- Follow that up with another specialty course like *Phlebotomy* at Triton College during senior year.

Extracurricular Enrichment

- The Huskie Robotics Team
- Science Olympiad Team
- Presentation of independent projects at our annual Percy Julian STEM Showcase
- Astronomy Club
- Chemistry Club
- Biology & Environmental Science Club