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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
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