



## **Science Department Courses**

### **Honors 5<sup>th</sup> Grade Science: PLTW Launch**

**2 semesters | 1 credit**

ICMS has adopted Project Lead the Way's innovative project-based learning curriculum for our science program. Students are naturally wired for discovery and PLTW is designed to immerse students in hands-on activities, projects, and problems that upon each other and relate to the real world. Students experience integrated learning that blends computer science, engineering, biomedical science, and more. In fifth grade, students study Robotics and Automation, Infectious Disease modeling, the properties and reactions of matter, the flow of matter and energy in ecosystems, patterns in the Universe, and the Earth's water and interconnected systems. Students will be challenged to push themselves academically, think creatively, and develop a deeper understanding of the complex relationships that exist in nature. Students who successfully complete this course are prepared to confidently pursue learning in Honors 6<sup>th</sup> Grade Science: PLTW Design and Modeling.

### **Honors 6<sup>th</sup> Grade Science Fall: PLTW Design and Modeling**

**1 semester (Fall) | .5 credit**

ICMS has adopted Project Lead the Way's innovative project-based learning curriculum for our science program. Students are naturally wired for discovery and PLTW is designed to immerse students in hands-on activities, projects, and problems that upon each other and relate to the real world. In Design and Modeling, students apply the design process to creatively solve problems. Students learn and utilize methods for communicating design ideas through sketches, solid models, and mathematical models. Students understand how models can be simulated to represent an authentic situation and generate data for further analysis and observations. Students work in teams to identify design requirements, research the topic, and engage stakeholders. Teams design a toy or game for a child with cerebral palsy, fabricate and test it, and make necessary modifications to optimize the design solution. Students will be challenged to push themselves academically, think creatively, and develop a deeper understanding of the complex relationships that exist in nature. Students who successfully complete this course are prepared to confidently pursue learning in Honors 6<sup>th</sup> Grade Science: Energy and the Environment.

### **Honors 6<sup>th</sup> Grade Science Fall: PLTW Energy and the Environment**

**1 semester (Spring) | .5 credit**

In Energy and the Environment, students are challenged to think big and toward the future as they explore sustainable solutions to our energy needs and investigate the impact of energy on our lives and world. They design and model alternative energy sources and evaluate options for reducing energy consumption. Students will be challenged to push themselves academically, think creatively, and develop a deeper understanding of the complex relationships that exist in nature. Students who successfully complete this course are prepared to confidently pursue learning in Honors 6<sup>th</sup> Grade Science: Energy and the Environment.



### **Honors 7<sup>th</sup> Grade Science Fall: PLTW Medical Detectives**

**1 semester (Fall) | .5 credit**

ICMS has adopted Project Lead the Way's innovative project-based learning curriculum for our science program. Students are naturally wired for discovery and PLTW is designed to immerse students in hands-on activities, projects, and problems that upon each other and relate to the real world. In Automation and Robotics, students explore robotics and automation as they take on the role of interns and work in teams to create prototypes to meet the needs of clients. They build and analyze mechanical systems and automate them with programmed input and output devices. Students will be challenged to push themselves academically, think creatively, and develop a deeper understanding of the complex relationships that exist in nature. Students who successfully complete this course are prepared to confidently pursue learning in Honors 8<sup>th</sup> Grade Science: Energy and the Environment.

### **Honors 7<sup>th</sup> Grade Science Fall: PLTW Medical Detectives**

**1 semester (Spring) | .5 credit**

In Medical Detectives, students play the role of real-life medical detectives as they collect and analyze medical data to diagnose disease. They solve medical mysteries through hands-on projects and labs, measure and interpret vital signs, dissect a sheep brain, investigate disease outbreaks, and explore how a breakdown within the human body can lead to dysfunction. Students will be challenged to push themselves academically, think creatively, and develop a deeper understanding of the complex relationships that exist in nature. Students who successfully complete this course are prepared to confidently pursue learning in Honors 8<sup>th</sup> Grade Science: Magic of Electrons.

### **Honors 8<sup>th</sup> Grade Science Fall: PLTW Magic of Electrons**

**1 semester (Fall) | .5 credit**

ICMS has adopted Project Lead the Way's innovative project-based learning curriculum for our science program. Students are naturally wired for discovery and PLTW is designed to immerse students in hands-on activities, projects, and problems that upon each other and relate to the real world. In Magic of Electrons, students explore electricity, the behavior and parts of atoms, and sensing devices. They learn knowledge and skills in basic circuitry design and examine the impact of electricity on the world around them. Students will be challenged to push themselves academically, think creatively, and develop a deeper understanding of the complex relationships that exist in nature. Students who successfully complete this course are prepared to confidently pursue learning in Honors 8<sup>th</sup> Grade Science: Flight and Space.

### **Honors 7<sup>th</sup> Grade Science Fall: PLTW Flight and Space**

**1 semester (Spring) | .5 credit**

In Flight and Space, the exciting world of aerospace comes alive through. Students become engineers as they design, prototype, and test models to learn about the science of flight and what it takes to travel and live in space. They solve real-world aviation and space challenges and plan a mission to Mars. Students will be challenged to push themselves academically, think creatively, and develop a deeper understanding of the complex relationships that exist in nature. Students who successfully complete this course are prepared to confidently pursue learning in Honors 8<sup>th</sup> Grade Science: Flight and Space.