

DESIGN & MODELING

AUTOMATION & ROBOTICS

MEDICAL DETECTIVES

COMPUTER SCIENCE

APP CREATORS

AUTOMATION & ROBOTICS

WCS Middle-School PLTW Engineering Courses Guide

STEM ROCKS!

- PROJECT-BASED
- COLLABORATIVE
- EXPLORATORY
- INTERDISCIPLINARY
- CHALLENGING
- FUN!

HANDS-ON LEARNING



MEDICAL DETECTIVES

**LEARN MORE ABOUT OUR MIDDLE-SCHOOL
ENGINEERING CLASSES IN THIS GUIDE OR
CONTACT US:**

EDGEWOOD: ARICHCREEK@WARSAWSCHOOLS.ORG

LAKEVIEW: JWEAVER@WARSAWSCHOOLS.ORG

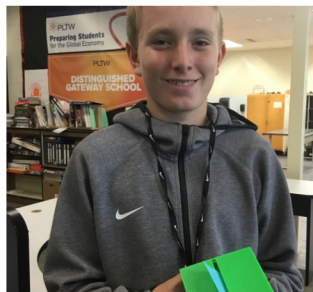


DESIGN & MODELING

WHAT ARE MIDDLE-SCHOOL PLTW CLASSES LIKE?

PROJECT LEAD THE WAY

DESIGN & MODELING



THINK LIKE AN ENGINEER!

IN PLTW DESIGN & MODELING

Students in a PLTW Design & Modeling class
creating a model animal habitat in MinecraftEDU

In this 9-week course, students explore the problem-solving process from identifying project requirements to sketching ideas, measurement, computer modeling, 3D-printing prototypes, and testing their solutions.

- ✓ SKIMMER CAR TESTING
- ✓ SKETCHING TO COMMUNICATE
- ✓ AUTODESK INVENTOR
- ✓ 3D PRINTER IN THE CLASSROOM
- ✓ CREATE YOUR OWN PUZZLE CUBE

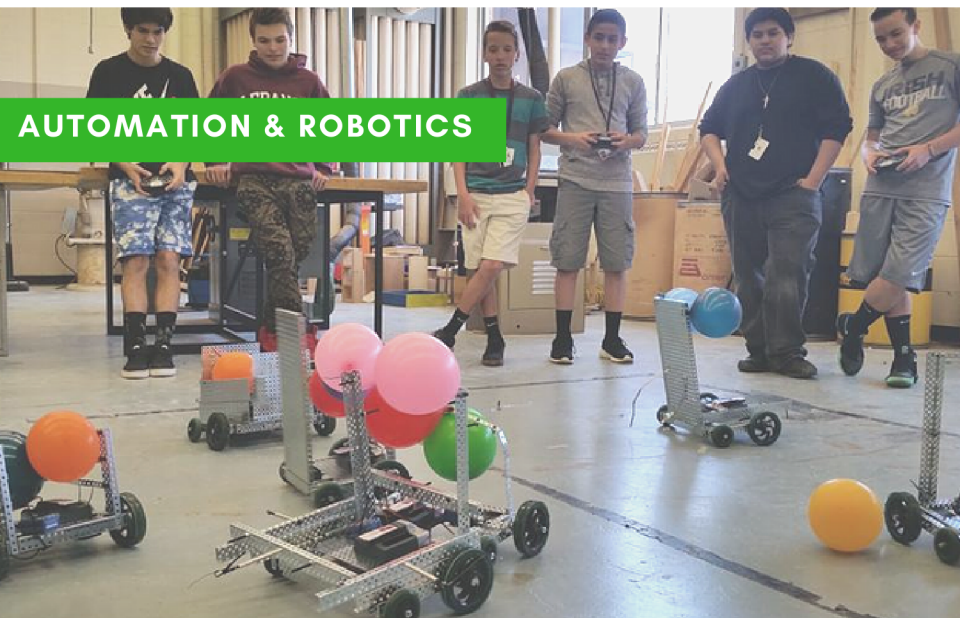


TALK TO YOUR GUIDANCE COUNSELOR TODAY!

PLTW

PROJECT LEAD THE WAY

AUTOMATION & ROBOTICS



BUILD A ROBOT!

IN PLTW AUTOMATION & ROBOTICS

Students in a PLTW Automation and Robotics class build demo-derby bots and compete to pop their opponents' balloons.

In this 9-week course, students identify careers in robotics, build from a technical specification, utilize the design process to solve problems, explore a variety of mechanisms, and learn how to program a VEX cortex to process various types of sensor inputs.

- ✓ ROBO BALLOON DERBY
- ✓ ROBOT C PROGRAMMING
- ✓ VEX ROBOTICS KITS
- ✓ MECHANISMS
- ✓ DRAGSTERS (GEAR RATIOS)



PLTW COURSES ARE OPEN TO BOTH 7TH AND 8TH GRADE

OBJECT LEAD THE WAY

MEDICAL DETECTIVES



INVESTIGATE DISEASE!

IN PLTW MEDICAL DETECTIVES

Students in a PLTW Medical Detectives learn about vitals, diseases, and brain dissection.

In this 9-week course, students learn how vital-signs like temperature and blood pressure are used to diagnose disease, defend their reasoning, dissect and label the parts of a real brain, and design a toy for Cerebral Palsy therapy.

- ✓ LEARN ABOUT BACTERIA & VIRUSES
- ✓ TEST VITAL SIGNS
- ✓ TAKE BLOOD PRESSURE READINGS
- ✓ DESIGN A THERAPY TOY
- ✓ DISSECT A BRAIN!



COMPUTER SCIENCE COURSES ARE GREAT FOR 8TH GRADERS

PROJECT LEAD THE WAY

COMPUTER SCIENCE INNOVATORS



MAKE A PINBALL MACHINE!

IN PLTW COMPUTER SCIENCE INNOVATORS

Students in a PLTW Computer Science Innovators building a prototype pinball machine.

In this 9-week course, students learn how about microcontrollers, sensors, buzzers, servos, and sensors to create programmable devices that interact with the real world.

- ✓ BLOCK PROGRAMMING
- ✓ WIRING SCHEMATICS
- ✓ TROUBLESHOOTING
- ✓ CIRCUIT-BOARDS
- ✓ PINBALL MACHINE

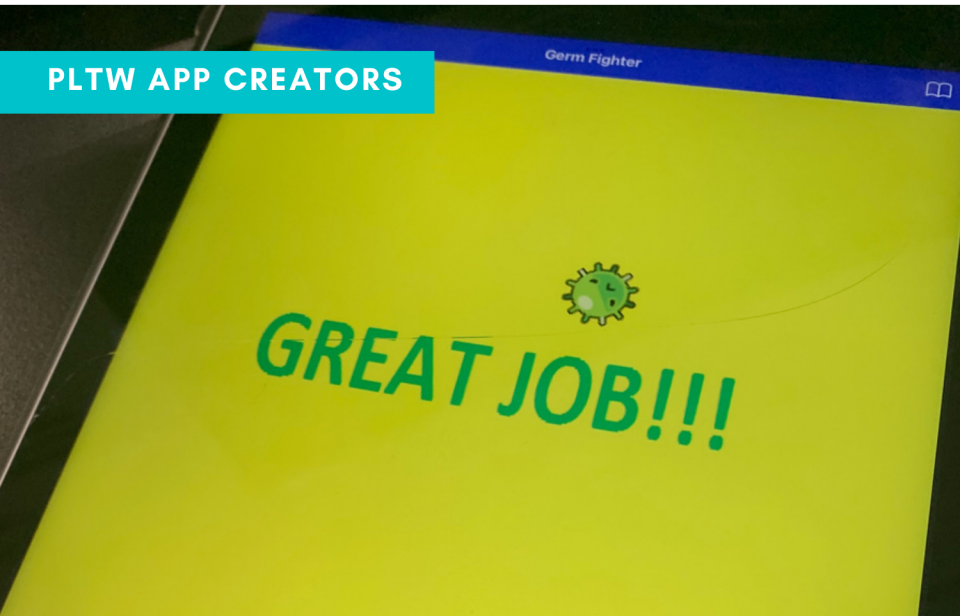


PLTW COURSES CHALLENGE ALL LEARNERS

PLTW

PROJECT LEAD THE WAY

PLTW APP CREATORS



CREATE YOUR OWN APPS!

IN PLTW APP CREATORS

In this 9-week course, students learn how about emulation, code planning, and troubleshooting through the creation of apps for reference and games!

Students in a PLTW App Creators test out the Germ Fighter game, which teaches them about sprite-collisions.

- ✓ BLOCK PROGRAMMING
- ✓ FLOWCHARTING
- ✓ TROUBLESHOOTING
- ✓ ANDROID AND IOS
- ✓ SHARE YOUR GAMES WITH FRIENDS!



ABOUT THE INSTRUCTORS

PLTW

PROJECT LEAD THE WAY

LAKEVIEW: MR. WEAVER

Mr. Weaver comes to our program with a background in Computer Graphic Arts from Taylor University. Mr. Weaver's aim is to provide fun projects that challenge students to reach further than they thought possible, preparing them for the challenges of high school, college, and future careers.



EDGEWOOD: MRS. RICHCREEK

Robotics, engineering, design, and investigating are just a few of the terms that Mrs. Richcreek uses to describe what goes on in her courses. After majoring in both Engineering/Technology and Japanese at Ball State University, she continued on to earn her masters at Colorado State University in Manufacturing Tech. & Construction Management. Mrs. Richcreek wants to inspire and make an impact on students, helping them to become problem solvers and life-long learners.

