

Cultivating Career Passions in Every Grade and Across the State

Three strategies helped Springfield Public Schools expand access to hands-on, career-oriented learning opportunities for thousands of Missouri students.

Monday: Take a virtual tour of a medical prosthetics lab.

Wednesday: Get feedback on your group's circuit designs from a professional electrical engineer.

Friday: Code a search feature in your art history app.

At Springfield Public Schools (SPS), applied learning is the norm, and it's been that way since the district—the largest in Missouri—first partnered with Project Lead The Way (PLTW) in 2008. **Today, that partnership reaches more than 350 schools and supports countless homeschool programs statewide through Launch Virtual Learning.**

The career and technical education (CTE) programs at SPS prove it's possible to scale project-based learning from just one school to every district in the state. And other districts can do the same.

With a clear vision in place, more schools across the country can expand access to unique, proven learning experiences that strengthen student engagement, learning outcomes, and local talent pipelines.



PLTW School Spotlight



Springfield Public Schools

PreK–12

An urban district of choice in Springfield, MO



Student Population

54 schools | 24,267 enrolled

- White: 69.7%
- Hispanic/Latino: 9.4%
- Black: 8.7%
- 2+ Races: 7.6%
- Asian or Asian/Pacific Islander: 3.4%
- American Indian/Alaska Native: 0.7%
- Native Hawaiian or Pacific Islander: 0.6%



Free/Reduced-Price Lunch

44% are eligible



Using PLTW Since

2008



High School Graduation Rate

99%

Source: 2025–26 school year

Strategy 1: Build On Students' Motivations with Real-World Connections

- Betsy Cannella and Jami Jansen have been part of Springfield Public Schools' journey for many years.

As veteran teachers, they've seen firsthand how integrating PLTW courses into the school's [College and Career Pathways curricula](#) supports student readiness—connecting classroom learning to real-world scenarios and career possibilities.

The biggest benefit? Student engagement.



How PLTW Works at Springfield Public Schools

In-person and virtual learning are complementary. Launch Virtual Learning (LVL) supplements seated programs, it doesn't replace them.



In-Person PLTW

Grade 5 > Choice Program Academy of Exploration (Discovery Center)

In-person, multi-year engineering & design curriculum

Grade 6–8 > Seated PLTW Gateway electives (e.g., Carver Middle School)

App Creators, Design and Modeling, Automation and Robotics, Flight and Space, Computer Science for Innovators and Makers, Energy and the Environment, Green Architecture

Grade 6–8 > Choice Program

Health Sciences Academy (8th grade, housed at Pershing Middle School via a Mercy Hospital partnership)

Grade 9–12 > Seated PLTW programs (e.g., Kickapoo High School)

PLTW courses in biomedical science, engineering, and computer science



Launch Virtual Learning (LVL)

Statewide Virtual PLTW Classes (Operated by SPS)

Used across K–12 for full-time virtual students and niche classes that lack the equipment to support in-person instruction (e.g., the Environmental Sustainability course).

968 students | 99 school districts

Source: 2025–26 school year

In-Person, Hands-On, Ready to Learn

Jansen teaches Kickapoo’s [PLTW Biomedical Sciences](#) courses. She highlights how the curriculum’s real-world scenarios generate a level of focus and excitement she hasn’t seen from students in traditional classrooms: “We discuss [real] patients every day, and students learn the content through [real] scenarios ... students want to come back to class every day.”

Cannella sees a similar excitement among her [PLTW Engineering](#) students. “This generation grew up with computers, but they don’t necessarily want to be behind that computer,” she explains. “Students want to be building ... Some days, the bell rings before we can clean up because we are so in the thick of learning.”

Passions Shine Through in Virtual Classrooms

What began as a handful of CTE courses for high school students has since expanded into a state-wide virtual learning system operated by SPS. Today, through Launch Virtual Learning (LVL), K-12 students across the state can access a variety of career-focused courses that build readiness for high-demand professions and emerging industries.

Makaela Smith teaches the virtual [PLTW Gateway](#) unit, App Creators, which introduces middle school students to the fundamentals of coding and app development. She shares one student’s journey to illustrate how the real-world connections embedded in the curriculum make learning meaningful, helping students get excited about the future.

This student struggled in traditional classrooms, but in Smith’s virtual class, something changed. “All of

a sudden [the student] is excelling in this virtual class. He is passionate about coding, video games, all of it. Apparently, he’s also passionate about teaching—his final project is to create an app that helps other people learn how to code. It’s wonderful seeing him come alive.”

And these moments—when your students are “lighting up” in a learning space—are “what teaching is all about,” as Smith puts it.

Cannella, also an adjunct teacher for LVL, sees the success of PLTW through the sheer number of students who enroll: “Partnering schools see the results from others and continue to place students in this program,” she notes. “We are continuing to add classes or sections within each pathway.”

PLTW Courses Offered Via Launch Virtual Learning

 Elementary School PLTW Launch • Programming Patterns	 Middle School PLTW Gateway • App Creators • Design and Modeling • Flight and Space • Medical Detectives	 High School Multiple Career Pathways • PLTW Engineering • PLTW Biomedical Science • PLTW Computer Science
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Strategy 2: Put Learning to Practical Use

- Creating connections between classroom content and the real world is valuable, but exposure alone isn't enough.

Critical thinking, collaboration, communication, and other [higher-order skills](#) are in demand today and crucial for success in tomorrow's workforce, too.

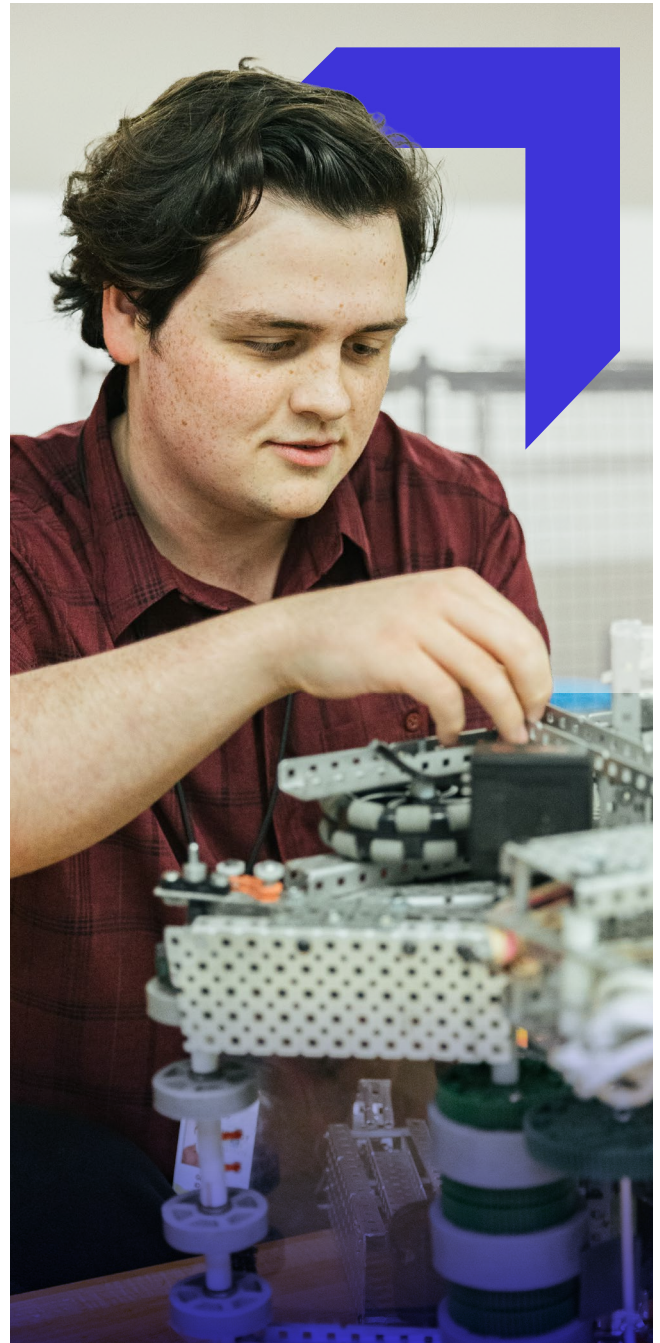
This is why SPS's CTE courses build tangible knowledge by guiding students to apply what they learn to relevant scenarios and hands-on projects.

A Safe Space to Fail (and Grow)

Students who take PLTW classes don't just get a safe space to practice applying transferable skills, they build an understanding of why those competencies matter and how they boost employability in a variety of work environments.

"In all of the PLTW pathways, students can see they're learning this right now in school, but they also get to do this in real life," Cannella shares. She emphasizes that, for her engineering students, "it's okay to fail and to learn," as long as they find a way to resolve that problem quickly and effectively. That matters for real-world engineering jobs and, really, any kind of employment. Cannella proudly reflects, "Our students graduate already knowing how to problem-solve."

The best part is that these courses build skills that translate across career paths, including ones unrelated to a PLTW or other LVL course a student takes. "I have a graduating student [who] has taken every single engineering and computer science course," Cannella recounts. "And he's going to be a broadcast journalist! But he loves the push; the constant challenges that [PLTW courses] give him. And he knows that he has the background and skills that were taught in high school."



// Our students graduate already knowing how to problem-solve."

— Betsy Cannella, Kickapoo High School,
PLTW Engineering Teacher

Learning by Doing, Together

Collaboration and teamwork underpin nearly all aspects of PLTW courses. Though “working with others is difficult, even for adults,” Jansen points out that this skill is essential when addressing big, complex problems in the workplace. And students see the value of these skills first-hand. “With guidance, students realize, ‘I’m not on an island. I can put my head together with others and we can come up with a pretty good solution.’ You don’t see that in most classrooms.”

Smith experiences the same impact among her students in the virtual setting, explaining, “The hands-on learning [in [App Creators](#)] underpins a level of student engagement necessary to not only develop these skills, but also to retain them.”

For Jansen, creating opportunities to fail and learn is crucial for her biomedical students; but she

emphasizes the importance of her biomedical science students understanding the real-world stakes of what they learn—and the value of how they’re learning it. Because as Jansen shares, “In the other classes, students are not asked to memorize things. But when they visit the hospital, they quickly realize that they’ll have to memorize content to succeed ... Doctors and nurses aren’t looking up stuff. They’re jumping in and doing what they need to keep somebody alive.”

“The hands-on learning [in App Creators] underpins a level of student engagement necessary to not only develop these skills, but also to retain them.”

**— Makaela Smith, LVL (Middle School),
PLTW Gateway Teacher**

Strategy 3: Sustain Multi-Level Investments and Partnerships

➤ This final element is what makes SPS’s career and technical education efforts truly stand out.

The entire community—from teachers and district administrators to local organizations and state leaders—has invested in ensuring Missouri students can access applied learning programs anchored in real-world career readiness.

Below are just a few of the long-term measures that help sustain PLTW pathways and the LVL initiative:



Dedicated district support: SPS staffs a district-level CTE team as a designated resource for PLTW and LVL teachers, minimizing workload on classroom educators.



Strategic funding: The district leverages multiple funding sources to ensure classrooms have the materials they need and high-quality instruction continues to expand.



State-level alignment: Opportunities created by Missouri’s 2025 Workforce of the Future initiative provide a path to strengthen workforce alignment and broaden career learning.



Community and industry partnerships: Partnerships with Mercy Hospital, Drury University, Missouri S&T, and others connect students with professionals, workplaces, and authentic career experiences.

Adding Value for Teachers, Too

As it relates to their courses, Cannella, Jansen, and Smith all appreciate how thoroughly the organization's training prepared them to guide collaborative student learning using these unique experiences.

For Smith, PLTW's training gave her the confidence she needed to take on an unfamiliar topic: "Because of the intensive one-week training with PLTW, I felt capable of teaching App Creators, even with zero background experience in coding."

Jansen also praises PLTW's Master Teacher model, which ensures trained teachers receive personal support for at least a year after the initial professional development: "You just don't get that in any other part of teaching at all."

In the End, It's All About the Students

➤ These three strategies—real-world connections, practical skill application, and strategic investment—propel SPS forward.

The district continues to add PLTW curriculum, reaching students in over 350 schools and many homeschool programs through the LVL initiative.

But the real victory isn't the numbers. It's the impact on students' confidence and preparedness to enter life after the classroom.

Smith summarizes, "I often tell my students, 'You might not know exactly what you want to do, but I know that you're going to want to have options. You are going to want to have a choice [in careers]. Now is a great time to start' ... PLTW designed these courses to show kids that they do have such options, and they are capable of doing these things that would have possibly been considered too hard."



Using Doppler ultrasound to take an ankle brachial index to assess blood flow

Are you a Missouri educator? Explore Launch Virtual Learning courses at launchvirtuallearning.com. To learn more about Project Lead The Way, visit pltw.org.