

The Career and Technical Education (CTE) Department in the Austin Independent School District (AISD) administers a national engineering program in middle schools, called Gateway, and in high schools, called Project Lead the Way (PLTW). The Gateway program was designed to ignite students' passion for discovery, as the program engaged students in hands-on, collaborative problem-solving activities; focused on real-world challenges; and connected what students learn to their everyday life (Gateway, 2018). By introducing students to engineering concepts in middle and high schools, the CTE program provided students with an opportunity to be familiar with fields of study that can result in high-wage jobs that were currently and projected to be in high demand in the local and global economies.

In this summary, the PLTW courses taken during high school were examined for two cohorts of students who participated in the Gateway program at some point in their middle school years. Specifically, these two cohorts were eighth graders in 2011–2012 and 2012–2013, and thereafter high school seniors in 2015–2016 and 2016–2017, respectively. Schools that provided the Gateway and PLTW programs are listed in Table 1.

Figure 1.
Between 70% and 88%

More than 50% of Gateway 8th

Overall, between 17% and 20% of all Gateway 8th graders who attended a PLTW high school took at least one PLTW course during their high school years. The percentage of 8th grade Gateway participants from each middle school who took a PLTW course in high school ranged from 30% to less than 1% for the 2011– 2012 cohort and from 55% to 5% for the 2012– 2013 cohort. The percentage of the 2012– 2013 cohort in Garcia who took a PLTW course in high school was significantly greater than the percentage of the 2011– 2012 cohort who did so.

Even though Pearce fed into LBJ, a PLTW high school, none of the Pearce 8th grade students in 2011– 2012 took a Gateway course at any time during their middle school years. Therefore, newh

More than 80% of Gateway students who took PLTW course(s) earned credits. The percentages of 8th grade Gateway students from the 2011– 2012 and 2012– 2013 cohorts who earned credit in one or more PLTW courses varied, based on their former middle school campuses. For Gateway participants who attended the Ann Richards School for Young Women Leaders, all students from both cohorts who took PLTW course(s) earned credits

Overall, more than half of Gateway 8th grade students in 2011–2012 (57%) and 2012–2013 (56%) attended a PLTW high school. Of Gateway 8th graders who attended a PLTW high school, the percentage of students who took at least one PLTW course during their high school years decreased from 20% in 2011–2012 to 17% in 2012–2013. However, of the Gateway 8th graders who took at least one PLTW course, the percentage of students from both cohorts who earned course credits remained high (>80%).

Multiple factors may have influenced PLTW course enrollment. Between 2009–2010 and 2010–2011, Gateway students typically enrolled in only two or three Gateway courses (out of 11 Gateway courses) in their middle schools. This may have limited the opportunities for PLTW course enrollment in high schools, and consequently, the percentage of Gateway students enrolling in high school PLTW courses. Also, a couple of the high school PLTW courses were not taken by any of the students between 2014–2015 and 2016–2017.

Although the percentage of Gateway students from some middle schools who attended a PLTW high school appeared to be high, the percentage of those Gateway students taking PLTW courses in high school was low. This might be related to the years of PLTW implementation in the high school. For example, Small Middle School offered Gateway courses from 2009–2010 through 2012–2013 for both cohorts, however, its feeder high school, Austin High School, did not offer PLTW courses until 2014–2015. Further investigation is needed to identify the barriers to middle school Gateway and high school PLTW course enrollment.

Gateway. (2018). *Curriculum*. Retrieved from <https://www.pltw.org/our-programs/pltw-gateway-curriculum>

Across two years, the number of Gateway 8th-grade students attending eight middle schools increased by 33%, from 531 middle school students in 2011–2012 to 704 in 2012–2013 (Tables 1 and 2).

Ann Richards	130	106	82%	23	22%	23	100%

Ann Richards	113	82	73%	12	15%	12	100%
Bailey	57	20	35%	3	15%	3	100%
Bedichek	116	33	28%	8	24%	6	75%
Garcia	38	33	87%	18	55%	17	94%
Martin	35	20	57%	3	15%	0	0%
Paredes	49	39	80%	13	33%	11	85%
Pearce	138	108	78%	5	5%	3	60%
Small	158	61	39%	7	12%	6	86%

Source. AISD district enrollment and course records

Note. Pearce did not become Sadler Means YWLA until 2014- 2015.

Ann Richards	Design and Modeling/Science of Technology/Automation and Robotics (018855R) Magic of Electrons/Automation and Robotics/Energy and the Environment (018857R)	Magic of Electrons/Automation and Robotics/Energy and the Environment (018857R) Magic of Electrons/Energy and the Environment (018859R)	Introduction to Engineering Design (8760.HT0C.Y) Principles of Engineering (8762.HT0C.Y) Digital Electronics (8764.HT0C.Y) Aerospace Engineering (8766.HT0C.Y) Computer Integrated Manufacturing (8770.HT0C.Y) Engineering Design and Development (8772.HT0C.Y)	Introduction to Engineering Design (8760.HT0C.Y) Principles of Engineering (8762.HT0C.Y) Digital Electronics (8764.HT0C.Y) Engineering Design and Development (8772.HT0C.Y)
Bailey	Design and Modeling/Science of Technology/Automation and Robotics (018855R)	Design and Modeling/Science of Technology/Automation and Robotics (018855R) Magic of Electrons/Automation and Robotics/Energy and the Environment (018857R) Magic of Electrons/ Energy and the Environment (8856.RJC00.X)	Introduction to Engineering Design (8760.HT0C.Y) Principles of Engineering (8762.HT0C.Y) Digital Electronics (8764.HT0C.Y) Computer Integrated Manufacturing (8770.HT0C.Y) Engineering Design and Development (8772.HT0C.Y)	Introduction to Engineering Design (8760.HT0C.Y) Principles of Engineering (8762.HT0C.Y) Aerospace Engineering (8766.HT0C.Y)
Bedichek	Design and Modeling/Science of Technology/Automation and Robotics (018855R) Magic of Electrons/	Design and Modeling/Science of Technology/Automation and Robotics (018855R) Magic of Electrons/	Introduction to Engineering Design (8760.HT0C.Y) Principles of Engineering	Introduction to Engineering Design (8760.HT0C.Y) Principles of Engineering (8762.HT0C.Y)

	Automation and Robotics/Energy and the Environment (018857R) Energy/Flight and Space (018865R)	Automation and Robotics/Energy and the Environment (018857R) Flight and Space/Science of Technology (018864R) Design and Modeling/ Automation and Robotics (8852.RJC00.X) Magic of Electrons/ Energy and the Environment (8856.RJC00.X)	(8762.HT0C.Y) Digital Electronics (8764.HT0C.Y) Aerospace Engineering (8766.HT0C.Y) Civil Engineering and Architecture (8768.HT0C.Y) Computer Integrated Manufacturing (8770.HT0C.Y) Engineering Design and Development (8772.HT0C.Y)	Digital Electronics (8764.HT0C.Y) Aerospace Engineering (8766.HT0C.Y) Computer Integrated Manufacturing (8770.HT0C.Y) Engineering Design and Development (8772.HT0C.Y)
Garcia	Design and Modeling/ Automation and Robotics (018852R) Design and Modeling/Science of Technology/Automation and Robotics (018855R)	Design and Modeling/ Automation and Robotics (018852R) Design and Modeling/ Automation and Robotics (018853R) Design and Modeling/Science of Technology/Automation and Robotics (018855R) Electrons/Energy and the Environment (018859R) Design and Modeling/ Automation and Robotics (8852.RJC00.Y) Magic of Electrons/ Energy and the Environment (8856.RJC00.Y)	Introduction to Engineering Design (8760.HT0C.Y) Principles of Engineering (8762.HT0C.Y) Digital Electronics (8764.HT0C.Y)	Introduction to Engineering Design (8760.HT0C.Y) Principles of Engineering (8762.HT0C.Y) Digital Electronics (8764.HT0C.Y)

Martin

Design and Modeling/Science of Technology/Automation and Robotics (018854R)

Design and

	Energy and the Environment (018866R)	Modeling/Science of Technology/Automation and Robotics (018855R) Magic of Electrons/Automation and Robotics/Energy and the Environment (018857R) Design and Modeling/Automation and Robotics (8852.RJC00.Y)	Engineering (8762.HT0C.Y)	

Paredes

Design and Modeling/Science of Technology/Automation and Robotics (018855R)
Magic of Electrons/Automation and Robotics/Energy and the Environment (018857R)

Design and Modeling/Automation and Robotics (018852R)
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Magic of Electrons/Automation and Robotics/Energy and the Environment (018857R)

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