

## Standards and Competencies for Digital Electronics (PLTW) (Course # 5792)

	Begin-End Yr
Standard 1 - Students will demonstrate the use of gates and counters in logic circuits	2009 -
1.1 - Construct logic circuits using gates.	2009 -
1.2 - Construct logic circuits using flip-flops, counters, and gates	2009 -
Standard 2 - Students will demonstrate the use of oscillators in logic circuits	2009 -
2.1 - Examine the functions of RC (resistor and capacitor) and crystal-controlled oscillators	2009 -
2.2 - Construct RC and crystal-controlled oscillators.	2009 -
Standard 3 - Students will demonstrate the functions of and be able to operate switches and multiplexers in signal distributio	2009 -
3.1 - Use digitally controlled analog switches to control analog and digital signal distribution	2009 -
3.2 - Use analog switches to perform multiplexing functions.	2009 -
Standard 4 - Students will demonstrate the functions of and be able to operate analog and digital convertors	2009 -
4.1 - Compare and contrast analog and digital data.	2009 -
4.2 - Determine sampling rates required for input signals	2009 -
4.3 - Interpret and create block diagrams of D/A (digital/analog) and A/D convertors	2009 -
Standard 5 - Students will program and modify microcontrollers	2009 -
5.1 - Use and modify microcontroller features.	2009 -
5.2 - Explore microcontroller support devices.	2009 -
5.3 - Program microcontrollers.	2009 -
Standard 6 - Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community, and workplace.	2009 -
6.1 - Demonstrate dignity in work.	2009 -
6.2 - Participate in SkillsUSA as an integral part of classroom instruction	2009 -
6.3 - Evaluate school, community, and workplace situations by applying problem-solving and decision-making skills.	2009 -
6.4 - Demonstrate the ability to work professionally with others	2009 -
Standard 7 - Students will perform safety examinations and maintain safety records	2009 -
7.1 - Pass with 100 % accuracy a written examination relating to safety issues	2009 -
7.2 - Pass with 100% accuracy a performance examination relating specifically to tools and equipment	2009 -
7.3 - Maintain a portfolio record of written safety examinations and equipment examinations for which the student has passed an operational checkout by the instructor.	2009 -