



## Potential K-12/16 STEM Education Pipelines Utilizing PLTW Curricula

	<b>Launch (K-5)</b> 10 Hr. APP-Based* Modules	<b>Gateway (6-8)</b> Independent 9 Week Units	<b>High School (9-12)</b> 4 Yr. Programs of Study
<b>Engineering</b>	<p><b>K-1 Exploring Design</b>  <b>K.2 Push &amp; Pulls</b>            1.1 Light &amp; Sound - 1            1.2 Light &amp; Sound - 2            2.2 Properties of Matter            2.2 Form &amp; Function            3.1 Science of Flight            3.2 Forces &amp; Interactions            4.1 Energy: Collisions            4.2 Energy: Conversions            5.1 Robotics &amp; Automation -1            5.2 Robotics &amp; Automation -2</p>	<p><b>Required Foundation Units:</b></p> <ul style="list-style-type: none"> <li>• Design &amp; Modeling</li> <li>• Automation &amp; Robotics</li> </ul> <p><b>Optional Specialization Units:</b></p> <ul style="list-style-type: none"> <li>▪ Energy &amp; Environment</li> <li>▪ Flight &amp; Space</li> <li>▪ Science of Technology</li> <li>▪ Magic of Electrons</li> <li>▪ Green Architecture</li> </ul>	<p><b>Required Foundation Courses:</b></p> <ul style="list-style-type: none"> <li>• Introduction to Engineering Design</li> <li>• Principles of Engineering</li> </ul> <p><b>Specialization Courses:</b></p> <ul style="list-style-type: none"> <li>▪ Aerospace Engineering</li> <li>▪ <b>New!</b> Biological Engineering</li> <li>▪ Civil Engineering &amp; Architecture</li> <li>▪ Computer Integrated Manufacturing</li> <li>▪ Digital Electronics</li> <li>▪ <b>New!</b> CS and Software Engineering</li> </ul> <p><b>Capstone Course:</b></p> <ul style="list-style-type: none"> <li>• Engineering Design &amp; Development</li> </ul>
<b>Biomedical Science</b>	<p style="text-align: center;"><b>(New Fall 2015)</b></p> <p><b>K.1 Structures &amp; Function: Human Body</b>            1.3 Health &amp; Wellness            2.3 Animal Adaptations            3.3 Variations of Traits            5.3 Infection: Detection            5.4 Infection: Modeling &amp; Simulation</p>	<p><b>Optional Specialization Unit:</b></p> <ul style="list-style-type: none"> <li>• Medical Detective (More BMS units to be developed)</li> </ul>	<p><b>Required Foundation Courses:</b></p> <ul style="list-style-type: none"> <li>• Principles of Biomedical Science</li> <li>• Human Body Systems</li> <li>• Medical Interventions</li> </ul> <p><b>Capstone Course:</b></p> <ul style="list-style-type: none"> <li>▪ Biomedical Innovations</li> </ul>
<b>Computer Science</b>	<p style="text-align: center;"><b>(New Fall 2015)</b></p> <p><b>K.4 Animals &amp; Algorithms</b>            1.4 Animated Storytelling            2.4 Grids &amp; Games            3.4 Technology Toolbox            4.3 Input/Output: Computer Systems            4.4 Input/Output: human Brain</p>	<p style="text-align: center;"><b>(New Fall 2015)</b></p> <p><b>Optional Specialization Units:</b></p> <ul style="list-style-type: none"> <li>• Intro. to Computer Science - 1</li> <li>• Intro. To Computer Science - 2</li> </ul>	<p><b>Required Foundation Courses:</b></p> <ul style="list-style-type: none"> <li>• CS &amp; Software Engineering</li> <li>• CS Applications</li> </ul> <p><b>Specialization Courses:</b></p> <ul style="list-style-type: none"> <li>• Intro. to CS (Optional 0.5 Year)</li> <li>• Simulation &amp; Modeling (0.5 years)</li> <li>• Artificial Intelligence (0.5 years)</li> <li>• Cybersecurity (0.5 years)</li> </ul> <p><b>Capstone Course:</b></p> <ul style="list-style-type: none"> <li>• Computational Problem Solving</li> </ul>

\* Activity-, Project-, Problem-Based