Information Technology Cluster

This cluster prepares high school students with essential knowledge and skills for pursuing careers in the following three pathways: Database Design; Network Systems and Computer Services; and Programming and Software Development. Rigorous instruction is provided to equip learners with knowledge and skills for college and career readiness.

**Courses highlighted in yellow are shared with other clusters. See “Shared Courses” table on page 4 for additional details.**

<table>
<thead>
<tr>
<th>Career Pathway Program</th>
<th>Database Design Program (Must teach three courses from this program list within two years)</th>
<th>Career Readiness Indicator (CRI)</th>
<th>Workforce Careers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course Number</strong></td>
<td>Career Pathway Program Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10001GI000</td>
<td>Information Technology Fundamentals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10052GI013</td>
<td>Database Design I</td>
<td>Certified Internet Web (CIW) - Database Design Specialist</td>
<td>Database Administrator</td>
</tr>
<tr>
<td>10052GI023</td>
<td>Database Design II</td>
<td></td>
<td>Database Architects</td>
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<tr>
<td>10052GI033</td>
<td>Database Design III</td>
<td></td>
<td>Data Warehousing Specialist</td>
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<tr>
<td>10997GI001</td>
<td>Senior Career Pathway Project - Information Technology</td>
<td></td>
<td>Information Security Analyst</td>
</tr>
<tr>
<td>10997GI002</td>
<td>CTE Lab in Information Technology</td>
<td></td>
<td>Database Information Manager</td>
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<table>
<thead>
<tr>
<th>Career Pathway Program</th>
<th>Network Systems and Computer Services Program (Must teach three courses from this program list within two years)</th>
<th>Career Readiness Indicator (CRI)</th>
<th>Workforce Careers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course Number</strong></td>
<td>Career Pathway Program Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10001GI000</td>
<td>Information Technology Fundamentals</td>
<td></td>
<td></td>
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<tr>
<td>10101GI014</td>
<td>Networking I</td>
<td>C-Tech Copper Network Cabling Specialist</td>
<td>Information Security Analyst</td>
</tr>
<tr>
<td>10101GI024</td>
<td>Networking II</td>
<td>C-Tech Fiber Network Cabling Specialist</td>
<td>Computer Hardware Engineers</td>
</tr>
<tr>
<td>10102GI034</td>
<td>Networking III</td>
<td>Certified Network Computer Technician</td>
<td>Network Architects</td>
</tr>
<tr>
<td>10102GI044</td>
<td>Networking IV</td>
<td>Cisco Certified Network Associate (CCNA) – Routing and Switching</td>
<td>Telecommunications Engineering Specialists</td>
</tr>
<tr>
<td>10111GI000</td>
<td>Computer Management and Support</td>
<td>ComptIA A+</td>
<td>Computer Network Support Specialist</td>
</tr>
<tr>
<td>10102GI002</td>
<td>Information Technology Support and Services</td>
<td>ComptIA Network+</td>
<td>Computer and Information Research Scientist</td>
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<tr>
<td><strong>17106GI002</strong></td>
<td>Alternating Current</td>
<td>ComptIA Security+</td>
<td>Computer and Information Systems Manager</td>
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<tr>
<td><strong>17106GI001</strong></td>
<td>Direct Current</td>
<td>ComptIA IT Fundamentals</td>
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</tr>
<tr>
<td>10109GI000</td>
<td>Linux Fundamentals</td>
<td>ComptIA Linux+ Powered by LPI</td>
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<tr>
<td>10997GI001</td>
<td>Senior Career Pathway Project - Information Technology</td>
<td>Electronic Technicians Association – Certified Electronics Technician (CETa)</td>
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</tr>
<tr>
<td>10997GI002</td>
<td>CTE Lab in Information Technology</td>
<td>Microsoft Technology Associate (MTA) – 98-368 Mobility and Device Fundamentals</td>
<td></td>
</tr>
</tbody>
</table>
## Network Systems and Computer Services Program – Cyber Security Specialization
(Must teach three courses from this program list within two years)

This program is for students who are interested in careers involving cybersecurity, law enforcement, intelligence, and government. Students will learn about computer systems and networks, data protection, and the latest security technologies. They will gain knowledge in cyber security fundamentals, network security, cryptography, and incident response. This program prepares students for careers such as cyber security analyst, network administrator, and systems security engineer.

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Career Pathway Program Courses</th>
<th>Career Readiness Indicator (CRI)</th>
<th>Workforce Careers</th>
</tr>
</thead>
<tbody>
<tr>
<td>10020G1001</td>
<td>Foundations of Informational Security</td>
<td>• CompTIA IT Fundamentals</td>
<td>• Chief Information Security Officer</td>
</tr>
<tr>
<td>10020G1002</td>
<td>Principles of Informational Security</td>
<td>• CompTIA Network+</td>
<td>• Forensic Computer Analyst</td>
</tr>
<tr>
<td>10020G1003</td>
<td>Cyber Forensics</td>
<td>• CompTIA Security+</td>
<td>• Information Security Analyst</td>
</tr>
<tr>
<td>10020G1004</td>
<td>Advanced Cyber Forensics</td>
<td></td>
<td>• Cryptographer</td>
</tr>
<tr>
<td>10997G1001</td>
<td>Senior Career Pathway Project - Information Technology</td>
<td></td>
<td>• Security Architect</td>
</tr>
<tr>
<td>10997G1002</td>
<td>CTE Lab in Information Technology</td>
<td></td>
<td>• Penetration Tester</td>
</tr>
</tbody>
</table>

*NOTE: LEAs must contact TEALS for additional information prior to utilizing the course code listed above, as it does require submission of an application, an interview, and a signed partnership agreement.

## Programming and Software Development Program
(Must teach three courses from this program list within two years)

This program is for students who are interested in careers involving software development, website design, and web applications. Students will gain knowledge in computer science, programming, and software development. This program prepares students for careers such as web developer, software developer, and applications developer.

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Career Pathway Program Courses</th>
<th>Career Readiness Indicator (CRI)</th>
<th>Workforce Careers</th>
</tr>
</thead>
<tbody>
<tr>
<td>10001G1000</td>
<td>Information Technology Fundamentals</td>
<td>• Certified Internet Web (CIW) - JavaScript Specialist</td>
<td>• Software Engineer</td>
</tr>
<tr>
<td>10154G1000</td>
<td>Software Development</td>
<td>• Microsoft Technology Associate (MTA) - 98-375 HTML5 Application Developer Fundamentals</td>
<td>• Applications Software Developer</td>
</tr>
<tr>
<td>10155G1000</td>
<td>Java Programming</td>
<td>• Microsoft Technology Associate (MTA) - 98-361 Software Development Fundamentals</td>
<td>• Game Developer</td>
</tr>
<tr>
<td>10157E1000</td>
<td>AP Computer Science A</td>
<td>• Microsoft Technology Associate (MTA) - 98-383 Introduction to Programming using HTML &amp; CSS</td>
<td>• Computer Engineer</td>
</tr>
<tr>
<td>10019E1000</td>
<td>AP Computer Science Principles</td>
<td>• Oracle Certified Associate (OCA) - Java Programmer</td>
<td>• Programmer Analyst</td>
</tr>
<tr>
<td>10012G1001</td>
<td>Exploring Computer Science</td>
<td>• Microsoft Technology Associate (MTA) - 98-388 Introduction to Programming using Java</td>
<td>• Project Manager</td>
</tr>
<tr>
<td>10152G1000</td>
<td>Programming with Robots</td>
<td>• Microsoft Technology Associate (MTA) - 98-381 Introduction to using Programming using Python</td>
<td>• Programmer Analyst</td>
</tr>
<tr>
<td>10012G1002</td>
<td>*Introduction to Computer Science – TEALS</td>
<td>• Microsoft Technology Associate (MTA) - 98-382 Introduction to Programming using JavaScript</td>
<td>• Project Lead Specialist</td>
</tr>
<tr>
<td>10156G0500</td>
<td>Introduction to Python – MSIA (one-half credit)</td>
<td></td>
<td>• Administrator Test Engineer</td>
</tr>
<tr>
<td>10156G1000</td>
<td>Introduction to Python – MSIA (one credit)</td>
<td></td>
<td>• System Administrator</td>
</tr>
<tr>
<td>10997G1001</td>
<td>Senior Career Pathway Project - Information Technology</td>
<td></td>
<td>• Computer Science Teacher</td>
</tr>
<tr>
<td>10997G1002</td>
<td>CTE Lab in Information Technology</td>
<td></td>
<td>• Information Security Analyst</td>
</tr>
</tbody>
</table>

## *SREB AC Health Informatics Program
(Must teach three courses from this program list within two years)

This program merges information science, computer science, and health care. Students use information technology, data analysis software, and statistics to address a range of health-related topics. Through real-world projects, students use information technology, data analysis software and statistics to address a range of health-related topics. Knowledge and skills are reinforced and enhanced through participation in SkillsUSA and/or HOSA – Future Health Professionals and project-based learning opportunities that are age and grade appropriate.

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Career Pathway Program Courses</th>
<th>Career Readiness Indicator (CRI)</th>
<th>Workforce Careers</th>
</tr>
</thead>
<tbody>
<tr>
<td>14155G1001</td>
<td>Data and Use</td>
<td>• Certified Internet Web (CIW) - Database Design Specialist</td>
<td>• Chief Medical Information Officer (CMIO)</td>
</tr>
<tr>
<td>14155G1002</td>
<td>Transforming Data into Information</td>
<td>• Microsoft Technology Associate (MTA) - 98-364 Database Administration Fundamentals</td>
<td>• Director of Clinical Information Systems</td>
</tr>
<tr>
<td>14155G1003</td>
<td>Transforming Information into Knowledge</td>
<td>• Oracle Certified Associate, Database LEAs may contact the IT Cluster Manager for additional CRI options.</td>
<td>• Data Scientist</td>
</tr>
<tr>
<td>14155G1004</td>
<td>Problems and Solutions</td>
<td></td>
<td>• Health Informatics Consultant</td>
</tr>
</tbody>
</table>

*NOTE: LEAs must contact SREB for additional information prior to utilizing any of the course codes listed above, as it does require commitment to the conditions in a MOU and participation in mandatory training provided by the provider.*
**SREB AC Informatics Program**
(Must teach three courses from this program list within two years)

This program merges information science, computer science, and health care. Students use information technology, data analysis software, and statistics to address a range of health-related topics. Through real-world projects, students use information technology, data analysis software and statistics to address a range of health-related topics. Knowledge and skills are reinforced and enhanced through participation in SkillsUSA and project-based learning opportunities that are age and grade appropriate.

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Career Pathway Program Courses</th>
<th>Career Readiness Indicator (CRI)</th>
<th>Workforce Careers</th>
</tr>
</thead>
<tbody>
<tr>
<td>10054G1014</td>
<td>Computers, Networks and Databases</td>
<td>• Certified Internet Web (CIW) - Database Design Specialist</td>
<td>• Bioinformaticist</td>
</tr>
<tr>
<td>10054G1024</td>
<td>Design for the Digital World</td>
<td>• CompTIA Security+</td>
<td>• Data Mapper</td>
</tr>
<tr>
<td>10054G1034</td>
<td>Databases in the Cloud</td>
<td>• Microsoft Technology Associate (MTA) - 98-364 Database Administration Fundamentals</td>
<td>• Chemical Informaticist</td>
</tr>
<tr>
<td>10054G1044</td>
<td>Developing a Cloud Presence</td>
<td>• Oracle Certified Associate, Database</td>
<td>• Database Designer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• TestOut Network Pro</td>
<td>• Digital Artist</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>• Human-Computer Interface Designer</td>
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<td></td>
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<td></td>
<td>• Information Architect</td>
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<td></td>
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<td></td>
<td>• Usability Analyst</td>
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<td></td>
<td></td>
<td></td>
<td>• Interaction Designer</td>
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<td></td>
<td></td>
<td></td>
<td>• System Integrator</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Web Designer</td>
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<td></td>
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<td></td>
<td>• Software Engineer</td>
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<td></td>
<td></td>
<td></td>
<td>• Project Manager</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Many Careers Not Yet Created</td>
</tr>
</tbody>
</table>

*NOTE: LEAs may contact the IT Cluster Manager for additional CRI options.

**Project Lead The Way (PLTW) – Computer Science**
(Must teach three courses from this program list within two years)

Whether building apps to meet client needs or exploring cybersecurity, PLTW Computer Science engages students in interdisciplinary activities that not only build knowledge and skills in computer science, but also empower students to develop essential skills such as problem solving, critical and creative thinking, communication, collaboration, and perseverance. The program’s courses empowers students with in-demand knowledge and skills they will use in high school and for the rest of their lives, on any career path they choose.

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Career Pathway Program Courses</th>
<th>Career Readiness Indicator (CRI)</th>
<th>Workforce Careers</th>
</tr>
</thead>
<tbody>
<tr>
<td>10013G1000</td>
<td>Computer Science Essentials – PLTW</td>
<td>• Certified Internet Web (CIW) - Database Design Specialist</td>
<td>• Software Engineer</td>
</tr>
<tr>
<td>10157E1000</td>
<td>AP Computer Science A</td>
<td>• Microsoft Technology Associate (MTA) - 98-375 HTML5 Application Developer Fundamentals</td>
<td>• Applications Software Developer</td>
</tr>
<tr>
<td>10019E1000</td>
<td>AP Computer Science Principles</td>
<td>• Microsoft Technology Associate (MTA) - 98-361 Software Development Fundamentals</td>
<td>• Game Developer</td>
</tr>
<tr>
<td>10016G1000</td>
<td>Cybersecurity – PLTW</td>
<td>• Microsoft Technology Associate (MTA) - Software Testing Fundamentals</td>
<td>• Computer Engineer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Oracle Certified Associate (OCA) - Java Programmer</td>
<td>• Programmer Analyst</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Project Manager</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Programmer Analyst</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Project Lead Specialist</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Administrator Test Engineer</td>
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<td></td>
<td></td>
<td></td>
<td>• System Administrator</td>
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<tr>
<td></td>
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<td></td>
<td>• Computer Science Teacher</td>
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<tr>
<td></td>
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<td></td>
<td>• Information Security Analyst</td>
</tr>
</tbody>
</table>

*NOTE: This is a purchased curriculum. LEAs must contact PLTW for additional information prior to utilizing the course codes listed above with a PLTW suffix, as it does require submission of a signed copy of the Terms and Conditions, participation in mandatory training and payment of a participation fee to the provider.

**Project Lead The Way (PLTW) – Gateway Computer Science Units**
Grades 6-8

PLTW Gateway’s units empower students to lead their own discovery. As students engage in PLTW’s activities, they see a range of paths and possibilities they can look forward to in high school and beyond.

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Courses</th>
<th>Career Readiness Indicator (CRI)</th>
<th>Workforce Careers</th>
</tr>
</thead>
<tbody>
<tr>
<td>10099G6806</td>
<td>App Creators – PLTW</td>
<td>• Certified Internet Web (CIW) - Database Design Specialist</td>
<td>• Software Engineer</td>
</tr>
<tr>
<td>10099G6801</td>
<td>Computer Science for Innovators and Makers – PLTW</td>
<td>• Microsoft Technology Associate (MTA) - 98-361 Software Development Fundamentals</td>
<td>• Applications Software Developer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Microsoft Technology Associate (MTA) - Software Testing Fundamentals</td>
<td>• Game Developer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Oracle Certified Associate (OCA) - Java Programmer</td>
<td>• Computer Engineer</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Programmer Analyst</td>
</tr>
<tr>
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<td></td>
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<td>• Project Manager</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>• Programmer Analyst</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Project Lead Specialist</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Administrator Test Engineer</td>
</tr>
<tr>
<td></td>
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<td>• System Administrator</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Computer Science Teacher</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>• Information Security Analyst</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Cluster(s)</th>
</tr>
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<tbody>
<tr>
<td>10001G1000</td>
<td>Information Technology Fundamentals</td>
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</tr>
<tr>
<td>10052G1013</td>
<td>Database Design I</td>
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<td>10052G1023</td>
<td>Database Design II</td>
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<tr>
<td>10052G1033</td>
<td>Database Design III</td>
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<tr>
<td>10101G1014</td>
<td>Networking I</td>
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</tr>
<tr>
<td>10101G1024</td>
<td>Networking II</td>
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</tr>
<tr>
<td>10102G1034</td>
<td>Networking III</td>
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<tr>
<td>10102G1044</td>
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<tr>
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<td>Foundations of Informational Security</td>
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<tr>
<td>1002G1002</td>
<td>Principles of Informational Security</td>
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</tr>
<tr>
<td>1002G1003</td>
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<td>1002G1004</td>
<td>Advanced Cyber Forensics</td>
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<td>Software Development</td>
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<td>Java Programming</td>
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</tr>
<tr>
<td>10157E1000</td>
<td>AP Computer Science A</td>
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</tr>
<tr>
<td>10019E1000</td>
<td>AP Computer Science Principles</td>
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</tr>
<tr>
<td>10012G1001</td>
<td>Exploring Computer Science</td>
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</tr>
<tr>
<td>10152G1000</td>
<td>Programming with Robots</td>
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</tr>
<tr>
<td>10012G1002</td>
<td>Introduction to Computer Science – TEALS</td>
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</tr>
<tr>
<td>10156G0500</td>
<td>Introduction to Python - MSIA (one-half credit)</td>
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<tr>
<td>10156G1000</td>
<td>Introduction to Python-MSIA (one credit)</td>
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</tr>
<tr>
<td>10997G1001</td>
<td>Senior Career Pathway Project – Information Technology</td>
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</tr>
<tr>
<td>10997G1002</td>
<td>CTE Lab in Information Technology</td>
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</tr>
<tr>
<td>1415G1001</td>
<td>Data and Use</td>
<td></td>
</tr>
<tr>
<td>1415G1002</td>
<td>Transforming Data into Information</td>
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<tr>
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<td>Transforming Information into Knowledge</td>
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</tr>
<tr>
<td>1415G1004</td>
<td>Problems and Solutions</td>
<td></td>
</tr>
<tr>
<td>10054G1014</td>
<td>Computers, Networks and Databases</td>
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<tr>
<td>10054G1024</td>
<td>Design for the Digital World</td>
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<tr>
<td>10054G1034</td>
<td>Databases in the Cloud</td>
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<tr>
<td>10054G1044</td>
<td>Developing a Cloud Presence</td>
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</tr>
<tr>
<td>10013G1000</td>
<td>Computer Science Essentials – PLTW</td>
<td></td>
</tr>
<tr>
<td>10016G1000</td>
<td>Cybersecurity – PLTW</td>
<td></td>
</tr>
<tr>
<td>10099G6806</td>
<td>App Creators – PLTW</td>
<td></td>
</tr>
<tr>
<td>10099G6801</td>
<td>Computer Science for Innovators and Makers – PLTW</td>
<td></td>
</tr>
<tr>
<td>10012G6008</td>
<td>Computer Science Discoveries</td>
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</tr>
<tr>
<td>10013G6008</td>
<td>CS Makers</td>
<td></td>
</tr>
<tr>
<td>1002G0808</td>
<td>Introduction to Cybersecurity</td>
<td></td>
</tr>
</tbody>
</table>

### Middle School Courses

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Cluster(s)</th>
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<td>App Creators – PLTW</td>
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### Shared Courses

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