

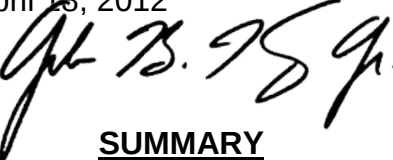


THE STATE EDUCATION DEPARTMENT / THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234

TO: P-12 Education Committee
FROM: Ken Slentz 
SUBJECT: Proposal to Create Multiple Pathways to a NYS High School Diploma

DATE: April 18, 2012

AUTHORIZATION(S):


SUMMARY

Issue for Discussion

Do the Regents wish to consider specific options to provide expanded pathways for students to meet graduation requirements and achieve college and career readiness?

Reason(s) for Consideration

Review of Policy.

Proposed Handling

This question will come before the P-12 Education Committee for discussion at the April 2012 meeting.

Background Information

The Department's Office of Assessment Policy, Development, and Administration (APDA) administers the New York State Testing Program. At the commencement level, APDA develops the following Regents exams for high school students:

- Mathematics (3): Integrated Algebra, Geometry, Algebra 2/Trigonometry¹
- English Language Arts (1): Regents Comprehensive Examination in English

¹ The Department is currently developing three new replacement Regents exams in Mathematics that are aligned to the NYS P-12 Common Core Learning Standards for Mathematics: Algebra 1, Geometry, and Algebra 2. The Board could discuss the possibility of requiring students to pass two of these Regents exams, rather than the current one, to graduate from high school. Options include requiring both Algebra 1 and Algebra 2, or Algebra 1 and Geometry.

- Social Studies (2): Global History and Geography, United States History and Government
- Science (4): Living Environment, Earth Science, Chemistry, Physics

Current regulations require that students seeking a Regents Diploma must pass the following five required Regents exams with a 65 or better: English Language Arts, 1 Mathematics, 1 Science, Global History and Geography, and United States History and Government. A local diploma is available to students with disabilities using the same examinations with a passing score of 55-64. The Regents Competency Test (RCT) safety net remains available only to students with disabilities who entered grade 9 in 2010 or prior. This option allows students to substitute an RCT for the corresponding Regents exam as long as they attempt the Regents exam. General education students continue to have a limited opportunity to earn a local diploma by passing three of the five Regents exams with a 65 or better, and by successfully appealing a score of 62-64 on the remaining two examinations.

A chart comparing required assessments in other states is provided (Attachment A).

Note that under federal law², high school students are required to take a minimum of three state assessments: one in English Language Arts, one in Mathematics, and one in Science. Use of those exams for graduation requirements is a State decision.

The Board of Regents has examined potential revision of high school graduation requirements at several meetings:

- October 2010: “Potential Revision of High School Graduation Requirements” outlined a number of reform initiatives related to graduation and testing requirements. The Board considered four possible policy directions: increasing graduation requirements; allowing flexibility in ways students can meet requirements; offering alternative or supplemental credentials; and rethinking the “safety net” for students with disabilities.
- December 2010: “Potential Changes to the High School Graduation Requirements” included additional background information and suggestions. The Department posted a College and Career Readiness Survey of approximately 25 questions seeking public comment based on this item. A series of public forums were held statewide.
- March 2011: “Potential Revision of High School Graduation Requirements” Included two reports: results of the College and Career Readiness Survey, and results of the public forums. Common threads across responses included:
 - o Call for real world/practical/applied academic experiences.
 - o Need for flexibility.

² 34 CFR Section 200.5 a (iii) and b(3), <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr;sid=3a53168c05ed830fd950ad6acd0cb94c;rgn=div8;view=text;node=34%3A1.2.2.1.1.1.149.5;idno=34;cc=ecfr>.

- o Interest in financial literacy, 21st century skills, and Science, Technology, Engineering, and Mathematics (STEM).
 - o Importance of a safety net for students with disabilities.
 - o Positive response to increasing number of integrated Career and Technical Education (CTE) credits, and for substituting a Regents exam with a CTE assessment.
- April 2011: The Board planned to discuss several items, including:
 - o Global History and Geography: Course and Exam Revisions.
 - o Earning Additional Course Credit through Integrated CTE Courses.
 - o Options for Students to Meet New York State High School Assessment Requirements.
- May 2011: “Integrated Academic Credit in Approved CTE Programs” introduced a panel of NYS CTE experts, who were asked to show the Regents how integrated CTE can work by presenting the model of how they operationalize the CTE approval process in their particular school settings.
- January 2012: Safety Net. The Board discussed the need to consider additional options for students with disabilities to earn a local diploma. The Board convened a stakeholder group to discuss safety net options, including Regents exam scoring variations, flexibility in selection of Regents exams, and substitution of required courses.
- February 2012: “Career and Technical Education and Student Achievement Measures” asked whether CTE students who earn a technical endorsement, and who earn a passing grade on all required Regents exams, could be “counted with full credit for accountability purposes” by school districts. The Board authorized an expert panel to investigate these issues over the next year.

Actions taken by the Board of Regents in the past year include:

- December 2011: Skills and Achievement Commencement Credential.
The Regents approved a change to State regulations, effective beginning with the 2013-14 school year, to replace the current individualized education program (IEP) “diploma” – which is not accepted by the military as a diploma and cannot be used for college matriculation – with a Skills and Achievement Commencement Credential for students with severe disabilities who have taken the New York State Alternate Assessment. The documentation that must accompany an award of the Skills and Achievement Commencement Credential for students with severe disabilities will include specific information documenting the youth’s level of independence and achievement, as well as strengths, on the commencement-level Learning Standards for Career Development and Occupational Studies (CDOS). In addition, the Offices of P-12 Education, CTE, and ACCES-VR are jointly working on the framework for the credential for other students, including students with disabilities who cannot earn a regular diploma. It is the Department’s goal to have this second credential available to students at the same

time as the IEP “diploma” sunsets (the 2013-14 school year). Neither of these two credentials will represent a regular high school diploma.

- March 2012: Expanding Integrated Career and Technical Education (CTE) Credits. Department staff were permitted to implement a timeline for increasing the number of integrated CTE credits in approved CTE programs. Subsequent actions will help expand the opportunity for more students to gain academic credit in a CTE context. The implementation timeline spans from June 2012 to September 2013.

Policy Directions for Consideration

The Board of Regents may wish to consider three areas in establishing specific expanded pathways for high school students to satisfy high school graduation requirements.

- Flexibility in Required Assessments
- Safety Net Options for Students with Disabilities
- Ongoing work in middle level requirements and alternate credentials

Recommendation # 1: *The Department recommends that the Board identifies Global History and Geography as an optional assessment, thereby allowing other Regents exams or Department-approved alternative assessments to be substituted for this examination (to meet the requirement for 5 Regents exams) and creating three pathways to graduation: Traditional Pathway, the CTE Pathway, and the STEM Pathway.*

In a 2011 report entitled *Pathways to Prosperity; Meeting the Challenges of Preparing Americans for the 21st century*³, the authors issue a warning that our education system is failing to prepare droves of American students for a future of economic success and as a result, our ability to compete internationally continues to suffer. “We fail these young people not because we are indifferent, but because we have focused too exclusively on a few narrow pathways to success.” A co-chair of the Pathways project, made a more pointed accusation. “People don’t realize how far behind other nations we have fallen. Some of the international comparisons in the report will truly shock people who assume that we lead the world in education and youth development.”⁴ To address these issues, the authors further note, “It is time to widen our lens and to build a more finely articulated pathway system—one that is richly diversified to align with the needs and interests of today’s young people and better designed to meet the needs of a 21st century economy⁵.”

³ Symonds, William C., Robert Schwartz, and Ronald F. Ferguson. 2011. “Pathways to Prosperity: Meeting the Challenge of Preparing Young Americans for the 21st Century.” Cambridge, MA: *Pathways to Prosperity Project*, Harvard University Graduate School of Education. http://www.gse.harvard.edu/news_events/features/2011/Pathways_to_Prosperty_Feb2011.pdf. Accessed on April 9, 2012.

⁴ «Report Calls for National Effort to Get Millions of Young Americans onto a Realistic Path to Employability.” Summer 2011. Ed.: *The Magazine of the Harvard Graduate School of Education*. <http://www.gse.harvard.edu/news-impact/2011/02/report-calls-for-national-effort-to-get-millions-of-young-americans-onto-a-realistic-path-to-employa/>. Accessed on April 9, 2012.

⁵ Symonds, p. 11

To create pathways that are both rigorous and meaningful, the Department recommends that the Regents exam in Global History and Geography be considered an optional assessment, beginning with the entering cohort of September 2013, so that students may choose one of three possible pathways: *Traditional* (the current exam structure: ELA, 1 Math, 1 Science, U.S. History and Government, and Global History and Geography); *CTE* (ELA, 1 Math, 1 Science, U.S. History and Government, and one CTE assessment that meets the college and career ready level of rigor (see recommendation #3, below)); and *STEM* (substituting a 2nd math or science assessment for the Global History and Geography exam). Given the current college and career pathways related to both the STEM and CTE fields, it is important that the Regents provide increased opportunities to students who wish to pursue a pathway in one of these fields.

Recommendation #2: *The Department recommends that the Board directs staff to create two separate courses in Global History and Geography, each with its own final Regents exam, as early as 2013-14 (if resources are available) that are of appropriate rigor for college and career readiness.*

In 1996, the Board of Regents approved the *Social Studies Learning Standards* and in 1997, *The Social Studies Resource Guide with Core Curriculum* was published to provide core curricula guidance. This includes an outline of the content, concepts, and skills that are tied to the learning standards, their key ideas, and student performance indicators. In 1999, districts began the implementation of the two-year course in Global History and Geography for students in grades 9 and 10. In June 2000, the new Regents exam in Global History and Geography was administered.

Current Global History and Geography Course Content

Global History and Geography incorporates the five social studies standards: (1) New York State History and United States History, (2) World History, (3) Geography, (4) Economics, and (5) Civics, Citizenship, and Government. The course includes Global History from Paleolithic times through the present in the regions of Asia, Africa, Europe, and Latin America. Teachers are to incorporate methodologies of the social studies disciplines, multiple perspectives, and a variety of academic skills, including but not limited to the examination and analysis of historical documents into the course. There is no one approach that all districts use to structure the course. Three of the most common ways of organizing the two-year course of study include: chronologically, regionally, and/or thematically.

Regents Reform Agenda

The Regents Reform Agenda is centered on ensuring that all students graduate ready for postsecondary education and/or career opportunities. The Department is committed to building sequenced, content-rich statewide curriculum and revising its testing programs to ensure that all students demonstrate higher-order thinking skills on rigorous, performance-based exams. As the Department revises the current Social Studies curriculum frameworks to: align with the Common Core; better meet the needs of students; allow for more in-depth study; and improve the exam(s) by focusing on

performance-based approaches, we will also work with NYS teachers and administrators and higher education representatives to ensure course relevancy and rigor.

Recommendation #3: *The Department recommends that the Board continues to require the Regents exam in United States History and Government.*

Currently, two exams have been identified as Department-approved Alternative Examinations acceptable for meeting the United States History and Government requirement for a Regents Diploma:

- Advanced Placement United States History.
- SAT II United States History.⁶

Students' lack of knowledge and performance on social studies subject-area assessments has been well-documented nationwide over the past century. The National Council for the Social Studies (NCSS) advocates that a social studies education is about "creating effective citizens."⁷ Yet that focus is seen as diminished with national attention on accountability for other subject-area assessments (i.e., English language arts and mathematics). The Department, in partnership with the NYS Bar Association, has supported the Law, Youth, and Citizenship (LYC) Program to strengthen education in civics, citizenship, and government statewide.

While there have been some achievement gains nationwide, American students continue to demonstrate large gaps in their knowledge of United States history and government. For example, results from the 2010 National Assessment of Educational Progress (NAEP) in U.S. History found increased gains since 1994 from the lowest-performing 4th graders and in average scores for 8th and 12th graders. Scores increased since 2006 for Black, Hispanic, and male eighth-graders. Nevertheless, less than one-quarter of students performed at or above the *Proficient* level in 2010 (20 percent of 4th graders, 17 percent of 8th graders, and 12 percent of 12th graders)⁸, and there were no significant changes in percentage of students at the *Advanced* level.⁹ To put it another way, most 4th graders were unable to say why Abraham Lincoln was an important figure, fewer than one-third of 8th graders could identify an important advantage that American forces had over the British in the American Revolution, and less than one quarter of the 12th graders knew that China was North Korea's ally during the Korean War.¹⁰

⁶ In addition to achieving a passing score, students must complete a multi-source, in-depth research project that demonstrates the ability to use primary and secondary sources.

⁷ «Toolkit: Today's Social Studies...Creating Effective Citizens.» National Council for the Social Studies. <http://www.ncss.org/toolkit>. Accessed on April 9, 2012.

⁸ National Assessment of Educational Progress, US History 2010, <http://nces.ed.gov/nationsreportcard/pdf/main2010/2011468.pdf>. Accessed on April 9, 2012.

⁹ U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1994–2010 U.S. History Assessments. Footnote on p. 22 of National Assessment of Educational Progress, US History 2010.

¹⁰ Sam Dillon, "U.S. Students Remain Poor at History, Tests Show," *New York Times*, June 14, 2011, http://www.nytimes.com/2011/06/15/education/15history.html?_r=1&scp=1&sq=NAEP%20History%20Test%20Results&st=cse and Stephanie Banchero, "Students Stumble Again on the Basics of History: National Test Shows Little Progress in Grasping Democracy, U.S. Role in World," *Wall Street Journal*, June 15, 2011, http://online.wsj.com/article/SB10001424052702303714704576385370840592218.html?mod=WSJ_hp_MIDDLENexttoWhatsNewsThru. Accessed on April 9, 2012.

Further, on the 2010 NAEP assessment in Civics, students' knowledge was also weak¹¹. Only 27 percent of 4th graders, 22 percent of 8th graders, and 24 percent of 12th graders performed at the *Proficient* level on this examination. Fewer than half of the 8th graders knew the purpose of the Bill of Rights, and three-quarters of the 12th graders were unable to name a power granted to Congress by the Constitution.¹² NAEP results for Civics are not broken down on a state level. New York's social studies standards typically receive high rankings in national publications.

In discussing Recommendation # 1, Recommendation # 2, and Recommendation #3, the following data could be considered:

- 11 of the 25 states with exit examinations for high school diplomas include a history/social studies test in exit examinations or as a required end of course ("EOC") examination.
- Texas currently implements three separate EOC examinations in social studies: U.S. History, World History, and World Geography. It is the only state besides New York with a separate EOC exam in World History and Geography.
- Massachusetts was scheduled to offer History and Social Science assessments that included world history beginning in the 2010-11 school year, but they were suspended due to a lack of funding.
- New York is the only state with a separate essay component (the Document-Based Question, or DBQ). Other state EOC exams weigh heavily on multiple-choice questions, and occasionally constructed-response questions. New York already incorporates the Common Core State Standards into the DBQ essay, which requires students to analyze a series of documents and use their knowledge of social studies in order to address a specific topic. The DBQ – a long-time feature on the Advanced Placement (AP®) examinations – is a hallmark of the New York State social studies testing program.

Recommendation # 4: *The Department recommends that the Board allows the use of an approved college and career ready CTE technical assessment in lieu of a required Regents exam, thereby allowing students to follow a CTE pathway to graduation.*

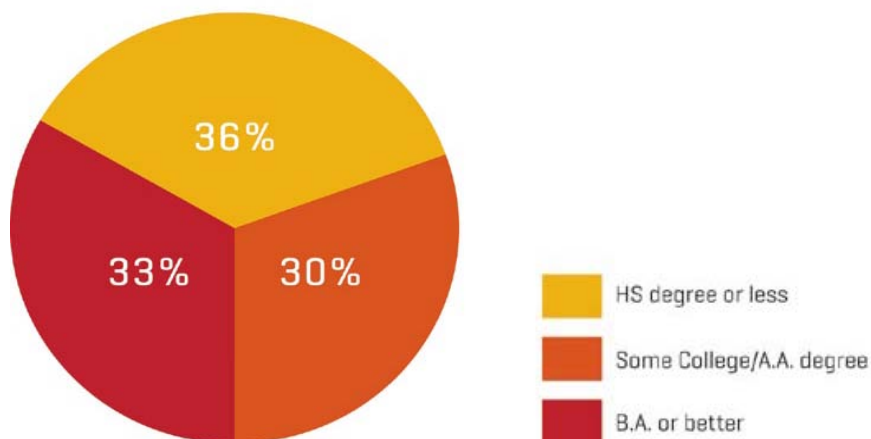
As noted above, the *Pathways to Prosperity* report issued a stark warning to the American system of education to take note of the changing labor market and to align educational opportunities and pathways accordingly. These opportunities must provide a meaningful pathway out of *and beyond* high school as the vast majority of jobs that will be created over the next decade will require a skill set beyond that of a high school graduate. Specifically, the report notes that of the 47 million job openings over the next 10 years, only 36 percent will be filled by those employees who have a high school

¹¹ National Assessment of Educational Progress, Civics 2010, <http://nces.ed.gov/nationsreportcard/pdf/main2010/2011466.pdf> . Accessed on April 9, 2012.

¹² Sam Dillon, "Failing Grades on Civics Exam Called a 'Crisis'," *New York Times*, May 4, 2011, <http://www.nytimes.com/2011/05/05/education/05civics.html?scp=2&sq=NAEP%20History%20Test%20Results&st=cse> . Accessed on April 9, 2012.

diploma and no postsecondary training.¹³ However, we cannot become so persuaded of the need for postsecondary training that we focus solely on increasing the number of our students who attend four-year colleges. The *Pathways to Prosperity* report emphasizes that a substantial number of jobs will go to those with an associate's degree and/or occupational certificate.

Degree Required for Employment in 2018 - Projected



Source: March CPS data, various years; Center on Education and the Workforce forecast of educational demand to 2018.

Further, many of these jobs will require skill sets which, according to employers, are simply lacking in today's high school graduates. This "skills gap" coupled with the dramatic increase in youth unemployment has serious implications for the future of our economy and our democracy. As educators, we know that if students are engaged in their coursework such that they find meaning in the daily tasks of that coursework, and if they see the high school diploma as but one critical stop on the way to postsecondary training, those students are more likely to work on that missing skill set and to develop a better work ethic *as they develop a better understanding of work itself*. Conversely, the report notes that under the current system, many students drop out of high school because they "can't see a clear, transparent connection between their program of student and tangible opportunities in the labor market".¹⁴

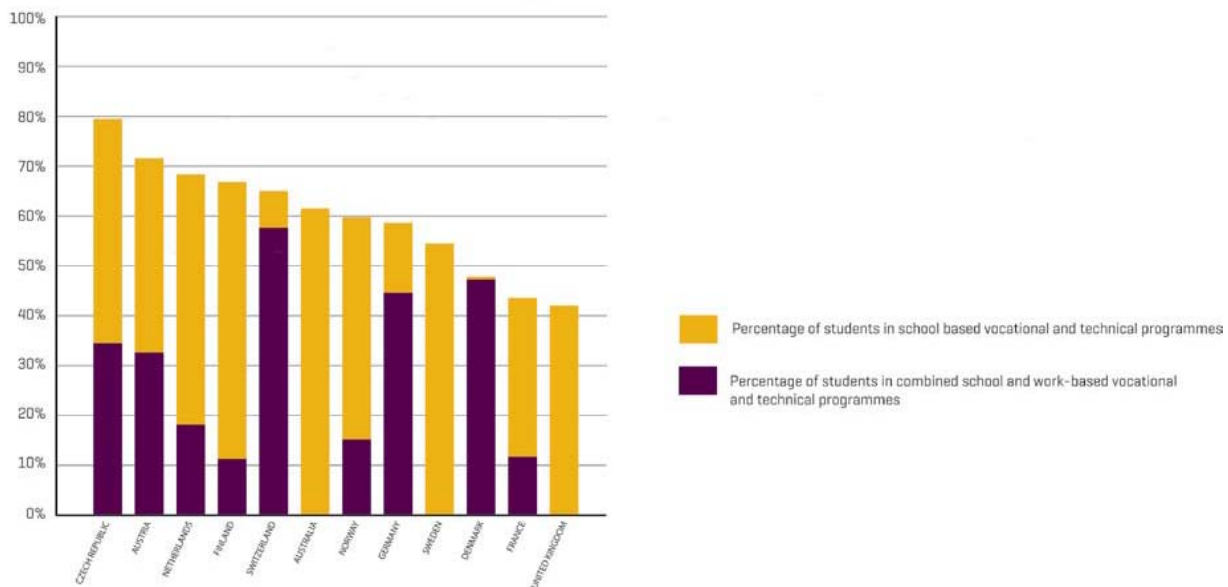
To find solutions to these increasingly threatening problems, not only should we be creating additional pathways, but we should also look to our international competition to see how those with prospering economies are educating their students. In reviewing the data, one trend that the report notes is the number of students who are enrolled in career and technical/vocational education training. While we are cautious and rightly anxious about the risk of "tracking" our students into any one path at too early an age, the lessons that we can learn from those nations that are – or are beginning to – out compete us are worthwhile.

¹³ Symonds, p. 2.

¹⁴ Symonds, p. 11

One such lesson is that we cannot simply link the education of our students to an economic outcome. Instead, we must continue to educate the whole child in such a way as to better ensure that, upon entering the postsecondary pathway of their choice, our students are truly ready for the world of work and citizenship. To this point, the report notes that, “The most intensive forms of workplace learning – apprenticeships and sustained internships – are especially effective in meeting the developmental needs of young people”.¹⁵ To provide students with increasing opportunities to engage in these career-oriented experiences, it is important for them to see that CTE is a viable alternative to the traditional pathway to a high school diploma.

Selected European Countries Secondary Students Enrolled in Vocational Education and Training Programs



Source: OECD (2008), Education at a Glance 2008, OECD indicators, Table C1.1, OECD, Paris

With this information in mind, should the Board support this pathway, the Department will address the following as next steps:

- Establish a process by which the CTE Advisory Group will evaluate technical assessments for inclusion on the approved list (CTE programs range from advertising arts to medical assisting and from graphic arts to aviation).
- Establish a process by which CTE technical assessments will be determined to meet the College and Career Readiness level of rigor¹⁶ established by the Department and can therefore be approved as substitutions for an optional Regents exam for students in a CTE graduation pathway.

¹⁵ Symonds, p. 20

¹⁶ Career Readiness is defined by the Department as a student's readiness to secure a postsecondary credential linked to a career that is likely to provide a family- (of 4) sustaining wage, health insurance, and the opportunity for advancement via a career ladder or career lattice.

- Establish a process by which to use student performance on selected College and Career Ready CTE technical assessments as an acceptable measure for accountability purposes.

The following is a timeline for implementing CTE Technical Assessments in place of selected Regents exams:

May 2012

- Advisory group members are chosen from districts, BOCES, charters schools, higher education, the business community, and professional organizations.

June 2012

- School Districts and BOCES propose which of their integrated courses/programs and technical assessments have Regents exam comparability.

July-August 2012

- CTE Advisory Group begins review of submissions based upon guiding frameworks provided by the Department, experts in assessment, and CTE research consultants.

September 2012

- Course and Assessment Registry system established, baseline data collected.
- CTE Advisory Group recommends to BOR which programs and technical assessments have Regents exam comparability.
- SED staff recommend revisions to Commissioners Regulations pertaining to integrated courses and technical assessments.

October-November 2012

- Board of Regents review regulation changes needed.

December 2012

- Board of Regents vote on regulation changes pertaining to assessment substitution to apply to the entering cohort of September 2013.

June 2014

- Approved CTE technical assessments are used as Regents exam proxy for accountability purposes as well as equivalent to an aspirational performance measure for career readiness.

September 2014

- Initial report to BOR with data on student performance in courses, programs and approved technical assessments.

Ongoing Work in Middle Level Requirements

To further enhance the integrated academics pathway encompassed in the CTE approach, at the March meeting the Department discussed the need to review the current structure of middle school programs. Two of the key components of this review would be to determine if the Department should:

- Create CTE programs of study that begin in middle school and continue to high school solidifying the connections between grade levels and articulating a roadmap to college and career.
- Develop greater opportunities for middle level CTE acceleration in grades 7 and 8 so more students enter high school with diploma credit.

Therefore, in addition to the work noted above, the Department will ask the CTE Advisory group to consider these options as well and to provide recommendations to the Board at the September 2012 meeting.

Next Steps

At the direction of the Board, the Department will:

1. Provide opportunity for public feedback on these recommendations via posting on the Department website, as well as soliciting feedback from key stakeholder groups including teachers, principals and superintendents.
2. Use the May meeting for the Board to hear from a regional sample of districts, BOCES, institutions of higher education, etc. to solicit additional feedback.
3. Provide recommendations for the Board's consideration at the June 2012 meeting.
4. Work with districts to identify existing funding sources that could be leveraged to support new CTE and STEM pathway programs (including the Race to the Top School Innovation Fund, Round II).

Attachments:

Attachment A: Credit and exit exam requirements for a standard high school diploma

Attachment B: CTE Program Options

Attachment C: Sample Technical Assessments for CTE Students

**Credit requirements and exit exam requirements for a standard high school diploma
and the use of other high school completion credentials, by state: 2008 and 2010**

State	Course credits (in Carnegie units), 2008						High school exit exams, 2010				Other completion credentials, 2010	
	Tot required credits for standard diploma, all courses	Required credits in selected subject areas					exam required for standard diploma	Characteristics of required exams			Advanced recognition for exceeding standard requirements	Alternative credential for not meeting all standard requirements
		ELA	Social studies	Science	Mathematics	Other credits		Subjects tested ^{\1\}	Exam based on standards for 10th grade or higher	Appeals or alternative route to standard diploma if exam failed		
Alabama	24.0	4.0	4.0	4.0	4.0	8.0	Ye	EMSH	Yes	Yes	Yes	Yes
Alaska	21.0	4.0	3.0	2.0	2.0	10.0	Ye	EM	Yes	Yes	No	Yes
Arizona	20.0	4.0	3.0	2.0	3.0	8.0	Ye	EM	Yes	Yes	Yes	No
Arkansas	22.0	4.0	3.0	3.0	4.0	8.0	Ye	M	No	Yes	No	No
California	13.0	3.0	3.0	2.0	2.0	3.0	Ye	EM	Yes	Yes	Yes	Yes
Colorado	† ^{\2\}	† ^{\2\}	† ^{\2\}	† ^{\2\}	† ^{\2\}	† ^{\2\}	No	†	†	†	No	No
Connecticut	20.0	4.0	3.0	2.0	3.0	8.0	No	†	†	†	No	No
Delaware	22.0	4.0	3.0	3.0	3.0	9.0	No	†	†	†	No	Yes
District of Columbia	24.0	4.0	4.0	4.0	4.0	8.0	No	†	†	†	No	Yes
Florida	24.0 or ^{\3\}	4.0	3.0	3.0	4.0 or 3.† ^{\3\}	10.0 or 5. ^{\3\}	Ye	EM	Yes	Yes	No	Yes
Georgia	23.0	4.0	3.0	4.0	4.0	8.0	Ye	EMSH	Yes	Yes	Yes	Yes
Hawaii	22.0	4.0	4.0	3.0	3.0	8.0	No	†	†	†	Yes	Yes
Idaho	42.0 ^{\4\}	9.0 ^{\4\}	5.0	4.0	4.0	20.0 ^{\4\}	Ye	EM	Yes	Yes	No	No
Illinois	18.0	3.0	2.0	1.0	3.0	9.0	No	†	†	†	No	No
Indiana	40.0 ^{\4\}	8.0 ^{\4\}	6.0 ^{\4\}	6.0 ^{\4\}	6.0 ^{\4\}	14.0 ^{\4\}	Ye	EM	No	Yes	Yes	No
Iowa	† ^{\2\}	† ^{\2\}	1.5	† ^{\2\}	† ^{\2\}	† ^{\2\}	No	†	†	†	No	No
Kansas	21.0	4.0	3.0	3.0	3.0	8.0	No	†	†	†	No	No
Kentucky	22.0	4.0	3.0	3.0	3.0	9.0	No	†	†	†	Yes	Yes
Louisiana	23.0	4.0	3.0	3.0	3.0	10.0	Ye	EMSH ^{\5\}	Yes	Yes	Yes	Yes
Maine	16.0	4.0	2.0	2.0	2.0	6.0	No	†	†	†	No	Yes
Maryland	21.0	4.0	3.0	3.0	3.0	8.0	Ye	EMSH	Yes	Yes	Yes	Yes
Massachusetts	† ^{\2\}	† ^{\2\}	† ^{\2\}	† ^{\2\}	† ^{\2\}	† ^{\2\}	Ye	EMS	Yes	Yes	Yes	Yes
Michigan	† ^{\2\}	4.0	3.0	3.0	4.0	† ^{\2\}	No	†	†	†	No	Yes
Minnesota	21.5	4.0	3.5	3.0	3.0	8.0	Ye	EM ^{\6\}	Yes	Yes	No	No
Mississippi	20.0	4.0	3.0	3.0	3.0	7.0	Ye	EMSH	Yes	Yes	No	Yes
Missouri	22.0 ^{\7\}	4.0 ^{\7\}	2.0 ^{\7\}	2.0 ^{\7\}	2.0 ^{\7\}	12.0 ^{\7\}	No	†	†	†	Yes	No
Montana	20.0	4.0	2.0	2.0	2.0	10.0	No	†	†	†	No	No
Nebraska	200.0 ^{\8\}	† ^{\2\}	† ^{\2\}	† ^{\2\}	† ^{\2\}	† ^{\2\}	No	†	†	†	No	No
Nevada	22.5	4.0	2.0	2.0	3.0	11.5	Ye	EMS	Yes	Yes	Yes	Yes
New Hampshire	20.0	4.0	2.5	2.0	3.0	8.5	No	†	†	†	Yes	Yes
New Jersey	22.0	4.0	3.0	3.0	3.0	9.0	Ye	EM	Yes	Yes	No	No
New Mexico	24.0	4.0	3.0	3.0	4.0	10.0	Ye	EMSH	No	Yes	No	Yes
New York	22.0	4.0	4.0	3.0	3.0	8.0	Ye	EMSH	Yes	Yes	Yes	Yes
North Carolina	20.0	4.0	3.0	3.0	4.0	6.0	Ye	EMSH	Yes	Yes	Yes	Yes
North Dakota	21.0	† ^{\2\}	† ^{\2\}	† ^{\2\}	† ^{\2\}	† ^{\2\}	No	†	†	†	No	No
Ohio	20.0	4.0	3.0	3.0	3.0	7.0	Ye	EMSH	Yes	Yes	Yes	No
Oklahoma	23.0	4.0	3.0	3.0	3.0	10.0	No ^{\9\}	†	†	†	Yes	No
Oregon	22.0	3.0	3.0	2.0	2.0	12.0	No	†	†	†	No	Yes
Pennsylvania	† ^{\2,7\}	† ^{\2,7\}	† ^{\2,7\}	† ^{\2,7\}	† ^{\2,7\}	† ^{\2,7\}	No	†	†	†	Yes	No
Rhode Island	20.0	4.0	3.0	3.0	4.0	6.0	No	†	†	†	No	Yes
South Carolina	24.0	4.0	3.0	3.0	4.0	10.0	Ye	EM	Yes	No	Yes	Yes
South Dakota	22.0	4.0	3.0	3.0	3.0	9.0	No	†	†	†	Yes	No
Tennessee	20.0	4.0	3.0	3.0	3.0	7.0	Ye	EMS	Yes	No	Yes	Yes
Texas	24.0	4.0	5.0	3.0	3.0	9.0	Ye	EMSH	Yes	No	Yes	Yes
Utah	24.0	3.0	2.5	2.0	2.0	14.5	No	†	†	†	No	Yes
Vermont	20.0 ^{\7\}	4.0 ^{\7\}	3.0 ^{\7\}	3.0 ^{\7\}	3.0 ^{\7\}	7.0 ^{\7\}	No	†	†	†	No	No
Virginia	22.0	4.0	3.0	3.0	3.0	9.0	Ye	EMSH ^{\10\}	Yes	Yes	Yes	Yes
Washington	20.0	3.0	2.5	2.0	3.0	9.5	Ye	E ^{\11\}	Yes	Yes	No	No
West Virginia	24.0	4.0	4.0	3.0	4.0	9.0	No	†	†	†	Yes	Yes
Wisconsin	21.5 ^{\12\}	4.0	3.0	2.0	2.0	10.5	No	†	†	†	No	Yes
Wyoming	22.0	4.0	3.0	3.0	3.0	9.0	No	†	†	†	Yes	Yes

†Not applicable.

^{\1\}Exit exam subjects tested: E = English (including writing), M = Mathematics, S = Science, and H = History/social studies.^{\2\}Graduation requirements are determined locally.^{\3\}Florida offers three graduation programs: one 4-year, 24-credit program, and two 3-year, 18-credit programs. The 4-year program requires 4 credits of mathematics, and both 3-year programs require 3 credits of mathematics.^{\4\}Expressed in semester credits instead of Carnegie units.^{\5\}Students must pass either the science or social studies components of the Graduation Exit Examination (GEE) to receive a standard diploma.

⁶ For the graduating classes of 2010 through 2014, students can graduate by passing statewide reading and writing assessments and either passing mathematics assessments or meeting other requirements.

⁷ State did not participate in the 2008 online survey; data are from 2006.

⁸ Expressed in credit hours instead of Carnegie units.

⁹ Requirement takes effect for class of 2012.

¹⁰ To receive the standard diploma, students must earn at least six verified credits by passing end-of-course assessments. One of those credits may be earned by passing a student-selected test in computer science, technology, career and technical education, or other areas.

¹¹ For the graduating class of 2010, students must pass an exit exam in reading and writing. Students in the class of 2013 will be required to pass reading, writing, math, and science assessments.

¹² Determined locally, but state encourages school boards to adopt this requirement.

NOTE: Local school districts frequently have other graduation requirements in addition to state requirements. The Carnegie unit is a standard of measurement that represents one credit for the completion of a 1-year course. Some data have been revised from previously published figures.

SOURCE: Council of Chief State School Officers, Key State Education Policies on PK-12 Education, 2008, table 7, retrieved October 6, 2010, from

http://www.ccsso.org/Documents/2008/Key_State_Education_Policies_2008.pdf; Education Week and Editorial Projects in Education Research Center, Diplomas Count 2008, Graduation Briefs, retrieved October 6, 2010, from <http://www.edweek.org/ew/toc/2008/06/05/index.html>; and Diplomas Count 2010, "Graduation Policies" table, retrieved August 9, 2010, from <http://www.edweek.org/ew/toc/2010/06/10/index.html>. (This table was prepared October 2010.)

General CTE Program Options

Attachment B

A+ Computer Repair	Auto Body
Academy for Information Technology	Auto Body Collision Repair
Academy of Hospitality and Tourism	Auto Body Collision Technology
Accounting	Auto Body Refinishing
Accounting and Finance	Auto Body Repair
Accounting/Law	Auto Body Repair and Collision
Administrative Assistant & Secretarial Science	Auto Body Repair and Refinishing
Administrative Office Assistant	Auto Body Technology
Advanced Manufacturing/Machining	Auto Body/Auto Collision
Advertising and Illustration	Auto Body/Collision and Repair Technology
Advertising Art	Auto Collision
Advertising Art and Design	Auto Collision Repair
Advertising Art/Graphic Design	Auto Collision Repair/Refinishing Technology
Advertising Design and Production	Auto Mechanic/Technician
Advertising Design/Multi Media Productions	Auto Mechanics
Ag Engineering and Mechanics/Heavy Equipment	Auto Tech
Ag Mechanics/Gas and Diesel	Auto Tech/Mechanics
Agricultural and Applied Science	Auto Technician
Agricultural Education	Auto Technology
Agricultural Mechanics	Auto Trades Technology
Agricultural Production-General	Automotive Aftermarket Accessory Installation
Agricultural Science & Technology Program	Automotive Body Repair
Agriculture	Automotive Collision Repair/Refinishing Technology
Agriculture Production	Automotive Mechanics
Agriculture Production and Science	Automotive Service Center Technician
Agri-Science	Automotive Service Technology
Aircraft Maintenance Technology	Automotive Services
Allied Health	Automotive Technician
Allied Health Assistant	Automotive Technology
Allied Health/PCT	Aviation
Alternative Energy and Advanced Construction Technology	Aviation Airframe Mechanic
Animal Science	Aviation Maintenance Technology
Animation & Motion Graphics	Aviation Maintenance Technology
Applied Business Technology	Aviation Operations
Applied Horticulture/Horticulture Operations	Aviation Science and Flight
Aquatic Ecology	Aviation Studies
Architectural Design	Aviation Technology
Architectural Design/CAD	Aviation/Professional Pilot
Architectural Drafting	Baking
Architectural Drafting/CADD	Basic Office Applications
Architecture	Broadcast Occupations
Architecture and Construction - Carpentry	Broadcast Technology
Architecture and Construction - Electricity	Broadcast TV and Video Production
Art Design and Visual Communications	Building Construction
Audio Media Design	Building Construction Trades
Audio Production	Building Technology
Audio Production Technology	Building Trades
Building Trades: Carpentry	Building Trades: Building Maintenance
Building Trades: Electrical Design	Building Trades-Plumbing
Building Trades-Carpentry	Business - Administrative Assistant
Building Trades-Electrical	Business - Financial Management
Building Trades-HVAC	Business - General
	Business & Computer Technology

Business Accounting/Finance	Computer Information Technology
Business Administration	Computer Network Engineering
Business Administration and Management	Computer Network Technician Career Training
Business and Marketing	Computer Network Technology
Business Computer Applications	Computer Networking - CISCO
Business Computer Technology	Computer Programming
Business Education - Accounting	Computer Repair
Business Education Career Academy	Computer Repair and Networking
Business Finance	Computer Repair Technician
Business Information Systems	Computer Repair/Networking
Business Information Technology	Computer Service Technology
Business Management	Computer Software and Media Applications
Business Management and Computer Careers	Computer Systems & Network Administration
Business Marketing	Computer Systems and Networking
Business Marketing and Marketing Management	Computer Systems and Networking-A+ Computer Repair
Business Marketing/Management	Computer Systems Technology
Business Ownership/Accounting	Computer Technician/Networking
Business Technology & Web Animation Design	Computer Technology
Career Pathways/Food Services	Computer Technology for Business
Career Pathways/Health Services	Computer/Electronics/Robotics/Networking
Carpentry	Computerized Business Technology
Carpentry and Building Construction	Conservation
Carpentry Career Academy	Conservation and Equipment Technology
Carpentry/Masonry	Construction
Cartooning and Animation	Construction and Facilities Management
Certified Nurse Aide	Construction Core Carpentry
Certified Nursing Assistant	Construction Core Electricity
Certified Personal Trainer	Construction Electricity
Child Care	Construction Technology
Child Care Provider/Assistant	Construction Technology-Carpentry
Child Development	Construction Technology-Carpentry
Children and Education Career Academy	Construction Technology-Electrical
CISCO Networking Academy	Construction Technology-HVAC
Clinical Medical Assisting	Construction Technology-Plumbing
Collision Repair Technology	Construction Trades
Commercial Art	Construction/Building Technology
Commercial Art and Advertising Design	Cosmetology
Commercial Art Career Academy	Criminal Justice
Commercial Art Production	Criminal Justice and Security
Commercial Arts	Criminal Justice Services
Commercial Offset Printing	Criminal Justice/Police Science
Commercial Photography	Criminal Justice/Public and Private Security
Commercial Construction/Heavy Equipment	Culinary Arts
Communication and Media	Culinary Arts and Hospitality
Computer Aided Design	Culinary Arts and Hospitality Technology
Computer Aided Design and Manufacturing	Culinary Arts and Related Services
Computer Aided Drafting	Culinary Arts and Restaurant Management
Computer and Information Sciences	Culinary Arts/Restaurant Operations Management
Computer and Office Technology	Culinary Food Trades
Computer Applications	Culinary Professions
Computer Assisted Design	Culinary Skills
Computer Assisted Design & Drafting	Culinary/Hospitality
Computer Graphics	Custom Fabrication and Metalworking
Computer Information Systems	

Dental Assisting Dental Laboratory Technology Desktop Publishing Diesel Equipment Technology Diesel Maintenance Equipment and Repair Diesel Mechanics Digital Communications/Media Production Digital Design Media Digital Film and Post Production Digital Media Arts Digital Media Technology Digital Multimedia Drafting, Computer Aided and Manual Drafting/Computer Aided Design Drafting/Pre-Engineering Drama Early Child Care Early Childhood Early Childhood Care and Education Early Childhood Development and Care Early Childhood Education Early Childhood Occupations Early Childhood/Elementary Education Early Childhood/Human Development E-Business and Microsoft Applications Education and Management Electrical Electrical and Electronic Equipment Installation Electrical Construction Technology Electrical Installation and Design Electrical Pre-Engineering Electrical Systems Electrical Technology Electrical Trades Electrical Wiring Electrical/Electronics Technology Electrical/HVAC Electricity Electronic Engineering Electronic Technician with A+ Computer Repair Electronics Electronics - A+ CISCO Electronics and Computer Circuitry Electronics and Computer Technology Electronics Technician Electronics Technology Emergency Medical Services Emergency Services Emerging Careers in Commerce Engineering/CAD Entrepreneurship and Business Management Entrepreneurship and Business Management Career Academy Entrepreneurship/Management	Entrepreneurship/Virtual Enterprise Environmental Conservation Environmental Conservation and Forestry Environmental Technology Equine and Animal Science Equine Science Equine Studies Equipment Operation and Repair Esthetics Family and Consumer Sciences: All Aspects of the Industry Family and Consumer Sciences: Fashion/Interior Design Family and Consumer Sciences: Food and Nutrition Family and Consumer Sciences: Human Development Fashion and Interior Design Fashion Design Fashion Design and Merchandising Fashion Design and Retail Fashion Design Technology Fashion Merchandising Fashion Technology Film/Video and Photographic Arts Finance Fire Science Floral Arts Floral Design Floral Design and Greenhouse Technology Floriculture Future Teacher's Academy Gaming, Multimedia, Web Design General Automotive and Recreational Vehicle Services General Service Technician Global Fashion Marketing Graphic Arts Graphic Arts/Design Graphic Arts/Print Production Graphic Communications Graphic Design Graphic Design and New Media Graphic Design Technology Graphic Technology Greenhouse and Floral Technology Health Assisting Health Assisting/Nurse Assisting Health Careers Health Careers/Introduction to Nursing Health Dimensions Health Occupations Health Occupations Technicians Health Professions Health Related Occupations Heating, Ventilation and Air Conditioning Heating/Air Conditioning/Refrigeration
---	--

Heavy Equipment	Medical Office Assisting
Heavy Equipment Operation	Medium/Heavy Duty Truck Repair
Heavy Equipment Operation and Maintenance	Metal Trades
Heavy Equipment Repair	Metalworking Technology
Heavy Equipment Repair & Operation	Microcomputer Technology
Heavy Equipment/Diesel	Microcomputer Technology Career Academy
Heavy Equipment/Diesel Repair	Microsoft Expert
Home Health Aide	Motorcycle Outdoor Power
Horse Care	Motorcycle Repair
Horse Science and Management	Motorcycle Technology
Horticulture	Motorsports Fabrication/Precision Machining
Horticulture and Plant Science	Multi/Interdisciplinary Studies-YAP
Horticulture/Landscaping	Multimedia
Hospitality and Culinary Technology	Nail Specialty
Hospitality and Resort Services	Nail Technology
Hospitality/Culinary and Food Service	Natural Hair Styling
Hotel & Restaurant Management	Natural Resource Conservation
Human Services	Natural Resource Management
HVAC and Refrigeration	Natural Resource Management/Development
HVAC/Plumbing	Natural Resource Occupations
HVAC/R	Natural Resources
Illustration and Graphic Design	Network Technician
Industrial and Residential Electricity	Networking Technology
Information Technologies/Computer Careers	New Media
Information Technology	New Media/E-Commerce
Information Technology/Computer Systems	Nurse Assisting
International Virtual Business	Nurse Assisting/Health Occupations
Internet Business Application and Design	Office Management Program
IT Systems/CISCO	Office Technology
Landscape Design	Office Technology Program
Landscape/Greenhouse Management	Offset Lithography/Printing
Law Enforcement	Ornamental Horticulture
Law Enforcement Career Academy	Outdoor Power
Legal Office Assisting	Outdoor Power and Marine Technology
Licensed Practical Nursing	Outdoor Power Equipment
Lodging Management	Outdoor Power Equipment and Landscape Operations
Machine Shop/Welding	Outdoor Power Equipment and Powersports
Machine Tool Technology	Technology
Machining & Welding-CAM	Outdoor Power Equipment Technology
Management Information System, General	Pastry Arts
Manufacturing Technology	PC Repair/Network Technology
Marine and Outdoor Power Equipment	Photography
Marketing	Physical Therapy Aide
Marketing and Entrepreneurship	Plant Science
Marketing and Marketing Management	Plant, Animal & Life Sciences (Ag Sciences)
Marketing/Marketing Management	Plumbing
Masonry	Plumbing and Heating
Mechanical Science	Plumbing Career Academy
Mechanical Technology	Plumbing/HVAC
Media Communications Technology	Police Science
Medical Assisting	Police Science and Law
Medical Laboratory	Power Equipment Technology
Medical Laboratory and Assisting Program	Power Mechanics/Conservation
Medical Laboratory Technician	Power Sports Equipment Technician

- Practical Nursing - Precision Machine Technology - Precision Machining - Precision Manufacturing - Pre-Nursing - Preservation Arts Technology - Print Media - Professional Health Careers - Professional Photography/Digital Photography - Public Safety and Justice - Public Safety Services - Radio and Television Broadcasting - Recreational Outdoor Power Equipment-ROPE - Residential Construction/Heavy Equipment - Residential Energy Conservation - Residential, Industrial, Commercial Electricity - Sales, Marketing and Retail Training - Security and Law - Security and Law Enforcement - Security Law and Policing - Small Animal Care - Small Animal Science - Small Business Administration/Management - Small Engine - Small Engine Repair - Small Engine Technology - Spa Specialty - Technical Electronics/Computer Networking and Repair - Technical Theatre and the Performing Arts - Technology Education - Architectural Design - Technology Education - Architectural Drafting - Technology Education - Automotive Engineering - Technology - Technology Education - CAD - Technology Education - CAD Drafting and Design - Technology Education - Carpentry and Construction - CTP - Technology Education - Computer Aided Design - Technology Education - Computer Aided Design and Drafting - Technology Education - Construction Engineering - Technology - Technology Education - Information Technology - Technology Education - Manufacturing Systems - Technology Education - Manufacturing Technology - Technology Education - Pre-Engineering - Technology Education - Visual Communications - Technology Education - Visual - Communications/Multimedia Design - Telecommunications - Television and Sound Production - Television Production - Television Production and Digital Film Production - Television/Video Production	- Theatre Arts Technology - Trade Electricity - Transit Technician - Travel and Tourism - TV Production - TV/Video Production - Urban Forestry - Vehicle Body Technology - Veterinary Assisting - Veterinary Science - Video Production - Video Production and Communications - Video Production/Media Arts - Virtual Business - Vision Care Technology - Vision Technology - Visual and Graphic Communications - Visual Arts Media - Visual Communications - Visual Communications and Graphic Arts - Visual Communications/Graphic Design - Visual Merchandising - Web and Internet Technology - Web Design - Welding - Welding and Fabrication - Welding and Metal Fabrication - Welding Career Academy - Welding Technology - Welding/Metal Fabrication
---	--

Descriptions of Sample Technical Assessments for CTE Students

Aviation

Federal Aviation Administration (FAA) Certification

Students in the two-year Ulster BOCES aviation program complete the classroom and air flight hours required by the Federal Aviation Administration to qualify for the FAA Private Pilot examination. The FAA private pilot examination fulfills two of the three required parts of a technical assessment in a CTE approved program. The FAA private pilot examination consists of a written test (written requirement), an oral test, and a flight test (student performance of skills). Once an FAA inspector has examined the student's proof of experience and deemed it adequate, the student is able to take the online written exam. The oral exam and the flight test are given by an FAA examiner. Aviation students prepare individual career portfolios to complete the third required part of a technical assessment (student project) required in this approved CTE program.

Computer Systems and Networking

Cisco Certified Entry Networking Technician (CCENT)

Students in many of the CTE approved computer systems and networking programs, such as at Tompkins-Seneca-Tioga BOCES, may take Cisco Career Certification Exam in CCENT as the technical assessment for their program. The two-hour online CCENT exam consists of objective questions and simulations and satisfies the written and student performance of technical skills requirements for a technical assessment. Successful completion of the CCENT exam certifies the student as an entry-level networking technician. This is the first level of CISCO certification and leads to eight different career pathways, such as network design and network security, and to 4 additional levels of certification. Networking students at Tompkins-Seneca-Tioga BOCES complete a project developed with input from local business partners as the "student project" part of their technical assessment.

Medical Assisting

National Occupational Competency Testing Institute (NOCTI) Job Ready Assessment - Medical Assisting

NOCTI Job Ready assessments are widely used as the technical assessments for approved CTE programs as CTE administrators statewide select NOCTI Job Ready assessments in over 80 different titles annually. NOCTI Job Ready assessments are designed to ascertain whether a student has the knowledge and skills necessary to perform job duties in a safe and effective manner on his or her first day of work. The Levittown School District has selected the NOCTI Medical Assisting Job Ready assessment for its medical assisting program. Typical of the NOCTI Job Ready assessments, medical assisting requires students to complete a three-hour written exam and a two-hour performance exam. The written component can be administered online, or schools can order it in hardcopy. The performance component is evaluated by trained external evaluators and requires students to demonstrate technical skill competency for six different medical assisting tasks. Students who meet or exceed the cut scores for the written and performance components are issued a NOCTI Job Ready Certificate for Medical Assisting. Levittown students complete a consortium-developed final project to accomplish the third part of their technical assessment.