



DIGITAL LEARNING NOW!

# GETTING READY FOR ONLINE ASSESSMENTS



THIS IS THE THIRD PAPER IN  
A SERIES OF INTERACTIVE  
PAPERS THAT PROVIDES  
SPECIFIC GUIDANCE  
REGARDING THE ADOPTION  
OF COMMON CORE STATE  
STANDARDS AND THE SHIFT  
TO PERSONAL DIGITAL  
LEARNING.

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December 2012



## DIGITAL LEARNING NOW! SMART SERIES

This is the third paper in a series of interactive papers that provides specific guidance regarding the adoption of Common Core State Standards and the shift to personal digital learning.

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## EXECUTIVE SUMMARY

It's just 21 months from the release of this report in December 2012 to the start of the 2014-15 school year – that's when states and districts that have adopted the Common Core State Standards (CCSS) will begin the challenging process of administering new assessments. These new K-12 assessments, led by states working with the Partnership for Assessment of Readiness for College and Careers (PARCC) and the Smarter Balanced Assessment Consortium (Smarter Balanced), are designed to provide a common assessment in English and math. These assessments will build a pathway to college and career readiness and help measure students' progress in achieving the standards. The results will help to better inform state policy decisions, provide a more accurate picture of student preparedness, and provide teachers with timely information to inform instruction and support students.

Preparing for these assessments will require an unprecedented collaborative effort to align instruction to the CCSS, prepare the community for the results, and ensure that schools have the necessary technological infrastructure to administer the assessments. PARCC and Smarter Balanced recently released minimum technology requirements to guide states and districts in assessing and closing the gaps between current technology capabilities and those required for students to participate in the new assessment programs. These technology and bandwidth specifications provide an important guideline to help schools prepare for the assessments and provide the technology environment needed to support next-generation digital learning tools and services.

## Making the Shift

This report begins by framing the shift to online assessments within the larger framework of the transition to personalized learning. Instead of striving for readiness for the assessments, leaders should instead be preparing for the [instructional shifts](#) that the CCSS and new assessments require. [Digital Learning Now!](#) (DLN) sees the 2014-15 implementation as an important catalyst to expand overall access to technology, shift to digital tools and materials, and move toward personalized learning for all students by this deadline. DLN's [10 Elements of High-Quality Digital Learning](#) and [Roadmap for Reform](#) offer policy advice around the core belief that all students must have equal access to high-quality digital learning opportunities, including both summative and formative digital assessments.

Without a plan for making these broader instructional shifts, we will miss this once-in-a-generation opportunity for systemic improvement that could meaningfully and sustainably address educational equity. If leaders instead focus only on meeting the minimum requirements, schools will suffer from instructional disruptions to accommodate testing rotations, destructive gaps in student learning experiences between instructional environments and testing environments, missed opportunities to take full advantage of online formative and diagnostic assessments to personalize instruction, and the continued inefficiencies that result from the purchase of outdated equipment and materials.

## Determining Readiness

After providing some background on the testing consortia and the current state of online assessments, this paper discusses the tools and resources available to help states and districts determine their readiness. This section begins describing test readiness by reviewing the recently released minimum technology requirements from each state testing consortium. The next section details the importance of using these minimums as the catalyst for launching a broader shift to instructional environments that expand equitable student access to online and blended learning. The "Countdown to 2014 Timeline" provides leaders with discrete action steps over the next two years to make these shifts.

## Recommendations

The paper concludes with recommendations to states, districts, and the state testing consortia. The authors offer states and districts the following advice to help them seize the opportunities for better teaching and learning that the shift to online assessment creates.

1. Match teaching and testing environments;
2. Shift to digital instructional materials;
3. Boost access;
4. Build a plan for the greater shift;
5. Support blends;
6. Boost broadband;
7. Invest in teaching training;
8. Learn from other states;
9. Use sample items; and
10. Use Core-aligned adaptive assessment.

Recommendations to PARRC, Smarter Balanced, and related parties are provided to help the consortia build continued momentum and generate on-going awareness of the instructional shifts that the assessments necessitate.

The consortia are advised to:

1. Encourage upgrades;
2. Plan versions;
3. Redefine comparability;
4. Go "on demand;"
5. Lean forward;
6. Don't phase in; and
7. Support competency-based learning.

## The Opportunity

Our nation's schools stand at an important "inflection point" in the history of education. Taken together, the implementation of CCSS, the shift to online assessments, the availability of affordable devices, and the growing number of high-quality digital instructional tools create an unprecedented opportunity to fundamentally shift the education system to personalize learning around the individual needs of every student. The 2014-15 implementation of the new tests creates a timeline. With just 21 months, states and districts must act now.

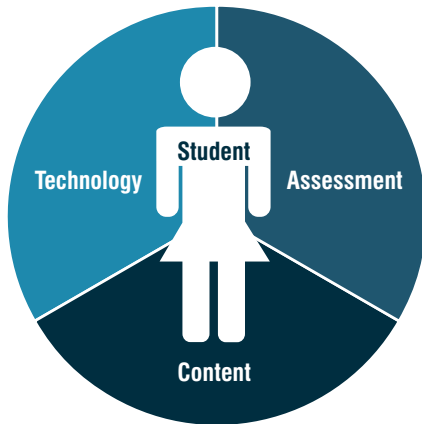


## INTRODUCTION

In most states, September 2014 is when the preparation for online assessment stops and the implementation of the next generation of online assessment begins. While more than 30 states are now using some form of online assessments with some student populations, the 2014-15 school year will mark the start of new state testing programs that (in most states) differ in form and in function from the standardized tests of the last 15 years.

The new tests will be administered digitally, marking a fundamental change from paper-and-pencil tests that sets into motion a string of infrastructure, administration, and technology issues for educational leaders. The new tests, because they are designed to measure CCSS, will also differ considerably in the nature of the questions and required student responses. Accordingly, these inter-related shifts create an unprecedented opportunity to bring together content, technology, and assessment in deeply meaningful ways that will ultimately serve to personalize teaching and learning.

States, districts, networks, and schools have just 21 months to get ready.



## The Shift to Personalized Learning

These next-generation assessments, when coupled with the implementation of CCSS, signal a broad commitment to new forms of learning – and demonstration of that learning – which is better suited to a system that prizes personalization.

Every student should have equal access to high-quality learning that is tailored to his/her unique needs, and we believe this will not be possible without access to personal digital learning opportunities. Schools must begin with the end in mind, and make expanding access to technology for personalized instruction their first priority. The next generation of assessments, and the evolution of classroom instructional practices, must mirror and serve one another. Universal access to high-quality education is a matter of equity; it is the greatest social justice issue of our time. Therefore states must not only get ready for the online assessments, they must also modify instruction to prepare students for the demands of the new assessments.

[Digital Learning Now's 10 Elements of High Quality Digital Learning](#) is a state policy framework for the future of education based on the premise that all students have the right to a high-quality education, which in the 21st century must include digital learning.<sup>1</sup> The framework stems from the belief that all students are digital learners and should have access to quality learning experiences that are unbounded by geography or artificial policy constraints. Element 8 details Assessment and Accountability and

spells out components of a high-quality digital assessment system.

Developed in 2010 with input from more than 100 experts, the framework was extended in 2011 to include a [Roadmap for Reform](#) that provides tangible steps toward systemic change.<sup>2</sup> Specific recommendations for state policymakers on the topic of assessment include:

- States should administer assessments digitally;
- States should provide assessments when students are ready to complete the course or units;
- States should ensure a digital formative assessment system;
- States should hold school and individual providers accountable for achievement and growth;
- States should evaluate the quality of content and courses predominantly on student learning data; and
- States should ensure that local state data systems and related applications are updated and robust enough to inform longitudinal management decisions, accountability, and instruction.

Digital Learning Now! (DLN) recently released a report, [Funding the Shift to Digital Learning: Three Strategies for Funding Sustainable High-Access Environments](#), which highlights that every school can afford the shift with a solid plan and strong leadership. DLN also recently released [Data Backpacks: Portable Records & Learner Profiles](#), which illustrates how improved access and learner profiles will unlock the power of personalization.

### Why Go Online?<sup>5</sup>

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- Richer and more innovative item types;
- Opportunity for more authentic assessment;
- More efficient scoring capabilities;
- Improved test security;
- Greater equity via electronic accommodations;
- Students will know whether they are on track;
- Teachers are empowered by regular results that are available to guide learning and professional development;
- Parents are given timely information about their children's progress;
- Opportunities to personalize instruction based on more detailed and timely feedback;
- Provide comparable results across schools, districts, and states; and
- Potential cost savings.

### The Shift to Online Assessments

The State Educational Technology Directors Association (SETDA) 2011 report *Technology Requirements for Large-Scale Computer-Based and Online Assessment* indicates that 33 states currently require or make available some computer-based assessments; some use them for high-stakes statewide testing.<sup>3</sup> This report surveys the field of state deployment of online summative assessment and individual state profiles to guide other states that are just beginning the shift. The report shows that while online assessments are just now getting national attention, Oregon and Virginia launched computer-based testing in 2001 and Texas followed suit in 2002. While the number had grown to more than 30 by 2011 (and continues to grow), at the time of writing only five states required and administered all assessments online; most of the 33 states only used computer-based testing for some of their students and grade levels. Case studies from Pearson specifically highlight the transition to online assessments in [Virginia](#), [Mississippi](#), and [North Carolina](#). Education Week recently highlighted states that use adaptive testing – including Delaware, Oregon, and Hawaii – and concluded that these models result in less time devoted to testing, more accurate student information, faster results, and better testing environments for students at both ends of the achievement spectrum.<sup>4</sup>

### Background on Consortia

Two years ago, the U.S. Department of Education announced the \$4 billion Race to the Top (RttT) competition, which included an [assessment grant competition](#) for state consortia to develop new assessments to measure CCSS in English/Language Arts (ELA) and mathematics.<sup>6</sup> This was an unprecedented opportunity to systemically address the demand for assessments that could deliver a quicker turnaround of student-level data. This data can be used to guide instruction in the short term and provide more accurate and comprehensive data to better measure student achievement and provide comparable data for school accountability over time.

Specifically, the grant guidelines stipulated that the new assessments must:<sup>7</sup>

- Build upon shared standards in mathematics and ELA for college and career readiness;
- Measure individual growth as well as proficiency;
- Measure the extent to which each student is on track (at each grade level tested) toward college or career readiness by the time of high school completion; and
- Provide information that is useful in informing:
  - Teaching, learning, and program improvement;
  - Determinations of school effectiveness;
  - Determinations of principal and teacher effectiveness for use in evaluations and the provision of support to teachers and principals; and
  - Determinations of individual student college and career readiness, e.g., high school exit decisions, college course placement to credit-bearing classes, or college entrance.



In September 2010 two consortia were selected: PARCC and SMARTER Balanced. (See Appendix C for a list of membership states.) The two consortia are working with multiple providers and organizations to build the next generation of tests to measure CCSS. An important element of the program is that the federal funds are supporting state-led efforts, not a federally imposed assessment system. The federal dollars provided crucial start-up funding for states, after which sustainability becomes the state's responsibility.<sup>8</sup>

### Smarter Balanced

The [Smarter Balanced Assessment Consortium](#) received a four-year, \$175 million grant from the U.S. Department of Education's [Race to the Top assessment competition](#). Membership is open to any state, with 25 states currently participating. Collectively, these states represent about 40 percent of American students. The [governance structure](#) of the state-led consortium includes both Governing States and Advisory States. Washington is the fiscal agent and oversees all financial procurement on behalf of Smarter Balanced, and [WestEd](#) is the project manager. ([Watch an overview video here](#)).

Smarter Balanced's assessment system will include multiple choice questions, extended response, technology-enhanced items, and a performance task. ([View sample items here](#)). The assessment system components are:<sup>9</sup>

- A two-part summative assessment (a computer adaptive test and online performance tasks) that will:
  - Describe student achievement and growth of student learning;
  - Measure students' progress toward college and career readiness; and

- Capitalize on strengths of computer adaptive testing to improve precision and turnaround.
- Optional interim assessments (as determined by local leaders) will:
  - Help determine students' strengths and limitations in relation to the CCSS;
  - Be fully accessible for instruction and professional development; and
  - Support the development of state end-of-course (EOC) tests.

### PARCC

PARCC received a four-year, \$186 million grant through the U.S. Department of Education's [Race to the Top assessment competition](#) to support the development and design of the next-generation assessment system. PARCC currently consists of 22 states, plus the District of Columbia and the U.S. Virgin Islands. Taken together, these states serve 25 million students and include 10 of the 12 Race to the Top state winners. Florida is PARCC's fiscal agent, and it is managed by the nonprofit group [Achieve](#). The [PARCC Governing Board](#) consists of the K-12 chief state school officer from each Governing State.

PARCC's assessment system will include a mix of constructed-response items, performance-based tasks, and computer-enhanced, computer-scored items ([see prototype items here](#)). The program will consist of:<sup>10</sup>

- Two summative, required assessment components - and end of year assessment and a performance assessment - designed to:
  - Measure the full range of standards and full performance continuum;

For details and updates related to the consortia and their assessment program plans, visit [parcconline.org](#) and [smarterbalanced.org](#). For a comprehensive overview of the consortia and their plans, check out the [ETS Consortia Guide](#).

The Hewlett Foundation-funded [Automated Student Assessment Prize \(ASAP\)](#) was constructed to support the aims of the state testing consortia – better tests of higher-order skills at a lower price. Meeting these objectives will require automated scoring of constructed-response tasks. In a February demonstration, nine testing companies showed that “machine scoring engines did as well as or better than the human graders,” as reported by Dr. Mark Shermis, author of the study summarizing the demonstration, [Contrasting State-of-the-Art Automated Scoring of Essays](#). ASAP is planning a math prize, an innovative item prize, and classroom trials of online writing assessment platforms.

- Measure students’ progress towards “college and career readiness;” and
- Provide data for accountability uses, including measures of growth.
- Two optional non-summative assessment components - a flexible diagnostic assessment and a midyear interim assessment - designed to generate timely information for informing instruction, interventions, and professional development during the school year; and
- A third non-summative component in ELA/literacy will assess students’ speaking and listening skills.
- PARCC will also develop flexible formative tools for students in grades K-2.

The Smarter Balanced and PARCC approaches are similar in key ways; they feature a mix of item types and technology-enhanced and performance-based tasks. Both consortia will use both computer scoring and expert graders, with a quick results turnaround of approximately two weeks. Both plan to employ an online reporting system and digital resource library. And while PARCC will use fixed-form tests and Smarter Balanced will use adaptive testing, both consortia have committed to moving their assessment systems online.

The new tests will reflect the deeper learning aspirations of the CCSS, and the evolution to digital assessments will harness the potential of technology to construct new ways for students to interact with questions through

simulations, games, and digital manipulations that are more engaging. These assessments will offer more detailed and meaningful student data, and with the improved timeliness of results, the data can be used to make instructional modifications by matching student needs to targeted professional development and by creating a system that allows for more personalized learning. These tests will also decrease costs in most cases<sup>11</sup> and provide vastly improved test security.<sup>12</sup>

Developments in intelligent scoring have also made it possible to include a significant amount of writing on these new tests, as well as constructed-response items and innovative performance tasks.<sup>13</sup> With the employment of adaptive testing technology (in Smarter Balanced states), students will be presented with test items that are matched dynamically to their ability levels.<sup>14</sup> In sum, online assessments will power the future of customized learning – the best chance we have to dramatically boost achievement levels and better prepare students for college and career.

Linda Darling-Hammond, Senior Research Advisor for Smarter Balanced, speaks to this point when describing students’ opportunity for performance tasks under the next-generation assessments: “Performance tasks ask students to research and analyze information, weigh evidence, and solve problems relevant to the real world, allowing students to demonstrate their knowledge and skills in an authentic way.”<sup>15</sup>

## Other Assessment Consortia

In addition to the two main testing consortia funded by the Race to the Top competition, a few others have emerged that target special student populations; they are expected to coordinate with the PARCC and Smarter Balanced assessments. These include the [Dynamic Learning Maps \(DLM\) Consortium](#), the [National Center and State Collaborative \(NCSC\) Consortium](#), the [Assessment Services Supporting English learners through Technology Systems \(ASSETS\)](#) and the English Language Proficiency Assessment for the 21st century (ELPA21). The U.S. Department of Education awarded \$22 million to DLM (through the Office of Special Education Programs), \$45 million to NCSC, \$10.5 million to ASSETS, and \$6.3 million to ELPA21. These consortia plan to implement both formative and summative assessments as well as teacher resources. DLM, led by the University of Kansas Center for Research, is a coalition of 13 original states. NCSC, led by the National Center on Educational Outcomes at the University of Minnesota, is a coalition of 19 states. ASSETS is led by the Wisconsin Department of Public Instruction and has 29 member states. The assessments are scheduled to be ready for use in the 2014–15 school year, when the comprehensive assessment systems are due to become operational. (See Appendix C for more details.)

## A Closer Look at New Assessments

During the 2012-13 school year, the consortia are conducting initial test item tryouts and pilots. Next year, they will move on to large-scale field tests and further development of achievement and

reporting standards. The consortia are on track to make online assessments fully operational by the 2014-15 school year, with final achievement standards verified and adopted by participating states.

As part of the test development, PARCC and Smarter Balanced both recently released sample assessment items and tasks to provide a glimpse into the future assessments in order to guide planning and serve as a resource for implementing the CCSS and preparing the new tests. Both consortia intend to release additional items over the coming months to create a more comprehensive picture of the new assessments, with the goal of informing changes in instructional practices. Of the [50 representative items and tasks](#) provided by Smarter Balanced, ELA lead Barb Kapinus said the items provide a glimpse of the importance of text complexity. Shelbi Cole, math lead, said the items will include graphical manipulation (e.g., empty the water from this container to fill the other container) that for many students should make the questions more clear and for some reduce the language barrier.

The Smarter Balanced assessment system includes a variety of item types: selected-response items prompt students to select one or more responses from a set of options; technology-enhanced items take advantage of computer-based administration to assess a deeper understanding of content and skills than would otherwise be possible with traditional item types; constructed-response items prompt students to produce a text or numerical response in order to collect evidence about their knowledge or understanding of a given

## What do the new assessments mean to me?<sup>16</sup>



Student

*“I am challenged to complete complex tasks and apply my knowledge in order to stay on track toward college and career readiness.”*



Parent

*“I feel better knowing my child’s class time is spent on learning rather than testing, so that my child has more opportunities to improve.”*



Teacher

*“I’ll get the support I need to help my students with assessments that measure what I need to know, when I need to know it.”*



Policymaker

*“We’ll feel confident about a test we helped to build that can compare our performance and growth against world-class standards.”*

assessment target; and performance tasks measure a student’s ability to integrate knowledge and skills across multiple standards – a key component of college and career readiness.<sup>17</sup>

PARCC’s [item and task prototypes](#) reveal similar shifts.<sup>18</sup> Mitchell Chester, chair of the PARCC Governing Board, stated “the prototypes are a first step in demonstrating what is possible with new assessment technology that captures students’ application of knowledge and skills that are essential to success in the 21st century.”<sup>19</sup> PARCC’s release of sample items was accompanied by an explanation of the tight alignment between the CCSS and PARCC assessments in order to ensure that

the assessments mirror classroom expectations. These six shifts, three in mathematics and three in ELA, reveal a greater emphasis on complexity, evidence, knowledge in ELA, and more focus, rigor, and coherence in mathematics.

The sample items and tasks prototypes released by the consortia underscore the importance of coordinating instructional and assessment practices. Shifts in both arenas necessitate an in-depth analysis of current practices to determine how existing systems stack up against future needs. The move to online assessments is an important pivot point, and states and districts must begin now.

**Watch the Video** *AEE Webinar on PARCC & SBAC*

**The Comprehensive Assessment Consortia:  
A Progress Update**  
October 2, 2012 - Washington, DC



- Bob Wise**  
President, Alliance for Excellent Education
- Laura Slover**  
Senior Vice President, PARCC
- Sue Gendron**  
Policy Advisor, SMARTER Balanced
- Pascal D. Forgione,**  
Executive Director, K-12 Center at ETS
- Robert Rothman**



## DETERMINING READINESS

When it comes to determining readiness, states and districts must consider a number of factors, ranging from measurable variables (such as how existing technology stacks up against minimum requirements) to more complex factors (such as staff and community readiness, professional development needs, and plans for overall instructional shifts and technology integration).

### Readiness Factors

In January 2012, PARCC and Smarter Balanced awarded a contract to Pearson to develop and administer a [Technology Readiness Tool](#). SETDA has been working in partnership with both major consortia to address the issue of readiness by serving an advisory role on the consortia's activities, including the development of the Technology Readiness Tool.

The tool, the first iteration of which was launched in spring 2012, is meant to be used as an inventory to take stock of current devices, operating systems, and infrastructure. The tool is intended to evolve over the years to assist in on-going planning. Data can be entered at any time so that states and districts can assess readiness and the consortia can periodically collect "snapshots" of the overall data. Collected data will be shared with state education stakeholders and used for analysis alongside minimum and recommended requirements. While there was limited participation in the first collection period, the results of the first Technology Readiness Tool uncovered enough information to help guide the creation of minimum technology requirements from each consortia.<sup>20</sup>

[Considerations for Next-Generation Assessments: Data, Technology & Online Testing: A Roadmap to 2014](#) provides guidance and five action steps for making a smooth transition to online assessments.<sup>21</sup>

**SMARTER BALANCED MINIMUM TECHNOLOGY REQUIREMENTS<sup>23</sup>**

Operating system	Minimum Smarter Balanced requirements for current computers	Recommended Smarter Balanced minimum for new purchases
Windows	Windows XP (service pack 3) Pentium 233 MHz processor; 128 MB RAM, 52 MB hard drive free space	Windows 7+1 GHz processor; 1 GB RAM, 80 GB hard drive
Mac OS X	Mac OS X 10.4.4 Macintosh computer with Intel x86 or PowerPC G3 (300 MHz) processor; 256 MB RAM, 200 MB hard drive free space	Mac OS X 10.7+1 GHz processor; 1 GB RAM, 80 GB hard drive
Linux	Linux (Ubuntu 9-10, Fedora 6) Pentium II or AMD K6-III 233 MHz processor; 64 MB RAM, 52 MB hard drive free space	Linux (Ubuntu 11.10, Fedora 16) 1 GHz processor; 1 GB RAM, 80 GB hard drive
iOS	iPads 2 and 3 running iOS6	iPads running iOS6
Android	Android-based tablets running Android	Android-based tablets running Android 4.0+

**Additional purchasing guidelines<sup>24</sup>**

1 GHz processor, 1 GB RAM, 9.5-inch screen (10-inch class); screen resolution of 1024 x 768; network: must be able to connect to the Internet; form factors: desktops, laptops, netbooks, virtual desktops, and thin client tablets (iPad, Windows, and Android) and hybrid laptop/tablets that meet the above specifications; and additional accessories: headphones may be required for audio support, and physical keyboards

**PARCC MINIMUM TECHNOLOGY REQUIREMENTS<sup>25</sup>****Desktop, Laptop, Netbook, and Thin Client/VDI Computers**

Operating system	Minimum Specifications	Recommended Specifications
Windows	Windows XP3 – Service Pack 3	Windows 7 or newer
Mac OS X	Mac OS 10.5	Mac OS 10.7 or newer
Linux	Ubuntu 9-10, Fedora 6	Linux: Ubuntu 11.10, Fedora 16 or newer 11.10, Fedora 16 or newer
Chrome OS	Chrome OS 19	Chrome OS 19
<b>Additional Guidelines</b>		
Memory	512 MB of RAM	1 GB RAM or greater
Screen Requirements	9.5 inch screen size or larger 1024 x 768 resolution or better	
Connectivity	Computers must be able to connect to the Internet via wired or wireless networks.	
Security	Eligible devices of any type or operating system must have the administrative tools and capabilities to “lock down” the device to temporarily disable features, functionalities, and applications that could present a security risk during test administration.	

**Tablets**

Operating system	Minimum Specifications	Recommended Specifications
Android	Android 4.0	Android 4.0 or newer
Apple iOS	iPad 2 running OS 6	iPad 2 or 3 running iOS6
Windows	Windows 8	Windows 8 or newer
<b>Additional Guidelines</b>		
Memory	1 GB RAM	1 GB RAM or greater
Connectivity	Must be able to connect to the Internet via wired or wireless networks.	
Screen Requirements	9.5 inch screen size or larger 1024 x 768 resolution or better	
Input Device Requirements	External Keyboard (mechanical or physical keyboard)	
Security	Eligible devices of any type or operating system must have the administrative tools and capabilities to “lock down” the device to temporarily disable features, functionalities, and applications that could present a security risk during test administration.	
Additional	Smaller tablets (screen size less than 9.5”), e-readers, and smart phones will not be supported and will not be compatible with PARCC assessments for 2014-2015.	

## Formative Assessments to Improve Instruction

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Teachers are being asked to learn and implement new college- and career-ready standards and prepare students for the next generation of tests. Formative assessment can help guide teachers in these pursuits. New classroom tools make it easier for teachers to check for understanding and personalize instruction. Web-based tools like [MasteryConnect](#), [ASSISTments](#), and [Naiku](#) make it easy for teachers to find and use standards-aligned formative assessments to check progress towards college- and career-readiness standards. Adaptive instructional systems like [Dreambox](#), [i-Ready](#), and [CompassLearning](#) combine the diagnostic power of adaptive assessment with

The Technology Readiness Tool provides just one example of tools available to help district and state leaders evaluate current technology capabilities, identify gaps, target assistance, build awareness, and inform planning. Tools such as [Education Super Highway](#) and Smarter Balanced's own [Bandwidth Analyzer](#) provide states and districts with the ability to determine their current broadband capabilities and where additional investment might be needed. Efforts such as [Louisiana's Technology Footprint](#) provide a model for a statewide support system to assist districts in evaluating, planning, and implementing the shift to CCSS and the related assessments.

### Technology Guidelines

Both testing consortia recently released the minimum technology requirements for participating states. The consortia provide a set of testing requirements for current computers and a set of requirements for new purchases. The recommendations are intended to guide implementation of online testing environments in the 2014-15 school year and do not imply that meeting the minimums for testing are sufficient to ensure high-quality instructional environments.<sup>22</sup>

### Moving Beyond Compliance

Balancing test design considerations and information from a survey of technology readiness in American schools, the state testing consortia published minimum guidelines for online testing. To avoid triggering new hardware purchases just for testing purposes, the consortia have agreed to support old operating systems and to provide a long testing window for schools with few computers. These

minimum guidelines do not represent recommended testing conditions, and certainly do not reflect recommended instructional settings.

Minimum requirements are just that – the bare minimum technical specifications needed for the technology to work. It is critical that districts plan not for the minimum, but for what is needed to deliver a high-quality learning experience for students and teachers.

The 12-week testing window may accommodate student-to-computer ratios as high as 4:1 with multiple shifts in a testing lab, but that would fundamentally disrupt the instructional program for several weeks at the end of the year. Low student-to-computer ratios would also highlight the difference between the no/low-tech instructional environment and the online testing environment.

Relying on old operating systems and limited computer access also limits teachers' ability to take advantage of online formative and diagnostic assessments, and students' ability to benefit from personalized and adaptive instruction. Older systems can actually increase overall technology costs due to their lack of integration with other systems, devices, software, and services. Older systems and limited computer access perpetuates a system of "both, but not enough of either" – schools struggle to buy enough textbooks and workbooks as well as computer technology. Device prices have dropped sufficiently that it is cheaper to give students a tablet with digital content than a backpack of textbooks. It's time to make the shift.



The introduction of online assessment in the 2014-15 school year provides a useful impetus to develop high-access instructional environments. Countries around the world, and districts around the nation, have made the shift with great results. There is no rational justification for implementing online testing in a low-access environment – it is conceivable; it is just a bad idea and a missed leadership opportunity.

The consortia are leading the shift to online assessment because the new assessments will be better demonstrations of student learning, provide quicker feedback to students and teachers, and will be less expensive to administer. Schools can take advantage of these benefits every day in a high-access environment. The shift to online assessment is a good opportunity for an instructional update and a computer upgrade.

Advice from SETDA further expands on this notion. Geoffrey Fletcher notes that evaluating a district's readiness for online assessment includes "ensuring that the technology required for testing does not make instructional testing obsolete, coordinating online assessment initiatives and digital content and online professional development to leverage a single infrastructure, and ensuring that teachers and students are sufficiently prepared for online assessments."<sup>27</sup> SETDA's recently released [\*Technology Readiness for College and Career Ready Teaching, Learning and Assessment\*](#) advises policymakers and educational leaders to consider minimum technology specifications "in the context of the full range of technology issues schools are addressing today" and strongly encourages them to "undertake a proactive systems approach to addressing school technology needs for the long-term, explicitly considering the present and future technology needs to meet curricular, instructional, assessment, professional development and school operations goals."<sup>28</sup>

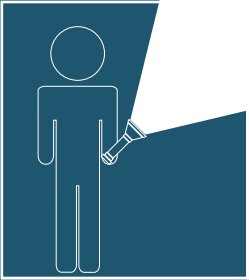
## The Case for High-Access Environments

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The introduction of tablets in 2010 and the drop in laptop prices make devices for every student affordable. The use of open resources could make it cheaper to provide a tablet than a backpack full of books.

12 benefits of high-access environments:

- Leverage content-embedded assessments (e.g., learning games, simulations);
- Allow frequent, free, and easy-to-administer formative and benchmark assessments;
- Power adaptive instruction (i.e., adaptive assessments linked to units of instruction);
- Encourage more student writing and more structured feedback;
- Can extend the learning day and year, and allow students to learn anywhere, any time;
- Expand access to great teachers and great learning opportunities;
- Connect parents and siblings to learning opportunities;
- Make it easier to differentiate instruction;
- Help students move at their own pace (i.e., competency based);
- Leverage teacher talent in many ways (e.g., [OpportunityCulture.org](http://OpportunityCulture.org)); and
- Match testing environments.



**EXHIBIT:**  
**Which states are lighting the path to the next generation of assessments?**

States across the country are making the shift to online assignments, and some states are much further along than others. The policy landscape is rapidly changing, with more states coming on board every day as the 2014-15 implementation date nears. This list, drawn from SETDA's [State Education Policy Center](#), provides an overview of current state policies related to online assessments.



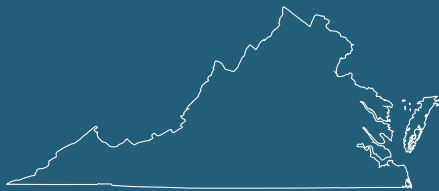
**DELAWARE** has a law that requires all state-mandated assessments – including summative annual assessments, EOC exams, and/or high school exit exams – to be administered digitally. The Delaware Comprehensive Assessment System consists of online testing in reading and mathematics for grades 3-8 and EOC online testing for high school students in ELA,

mathematics, and science. Delaware has developed criteria for implementing mandated summative online assessments. Criteria have also been established in the following areas: bandwidth capacity, hardware requirements, software requirements, length of testing window, and budgetary support for state-mandated online summative testing.



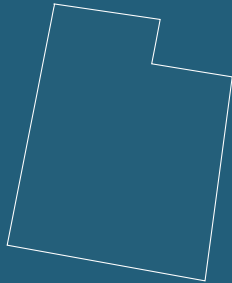
**GEORGIA** offers online administrations of its EOC tests and criterion-referenced competency tests (retests are only online). Georgia has developed criteria for

implementing mandated summative online assessments. Criteria have also been established in the following areas: bandwidth capacity, hardware requirements, software requirements, length of testing window, and flexibility in allowing testing on demand for those ready to demonstrate mastery.



**VIRGINIA** has a law that requires any state-mandated assessments – including summative annual assessments, EOC exams, and/or high school exit exams – to be administered digitally, either online or on a computer. Virginia state law requires state-mandated assessments, including annual assessments and EOC exams (some required for high school graduation) to be administered online or on a computer unless a student has a documented need for a paper/pencil test. The state

supports school districts in providing digital formative assessments (there is no current plan to implement this at the state level). State-mandated assessments include: reading and EOC reading, grades 3-8; mathematics and EOC algebra I, EOC geometry, and EOC algebra II, grades 3-8; writing and EOC writing, grades 5 and 8; science and EOC Earth science, EOC biology, and EOC chemistry, grades 3, 5, and 8; grade 3 history, Virginia studies, U.S. history to 1865, U.S. history from 1865, and EOC world history to 1500, EOC world history from 1500 to the present, EOC world geography, and EOC Virginia and U.S. history. Virginia has developed criteria for implementing mandated summative online assessments. Hardware requirements include a minimum processor of Windows P III 733 MHz and Macintosh G3 500 MHz for TestNav and Intel Core 2 or i5 for Proctor Caching. Software requirements include Pearson TestNav and Proctor Caching. The length of the testing window is approximately four weeks, which is selected by each school division from within the wider state testing window. Virginia provides three annual test administrations (fall, spring, and summer). Financial support for technology hardware and infrastructure includes \$50,000 per division and \$26,000 per school in the division annually (statewide annual total is approximately \$59 million).

**Which states are lighting the path to the next generation of assessments?** *(continued)*

**UTAH** has a law that requires all state-mandated assessments – including summative annual assessments, EOC exams, and/or high school exit exams – to be administered digitally, either online or on a computer. State-mandated assessments include: direct

writing assessment, grades 5 and 8; ELA CRTs, grades 3-11; mathematics CRTs, grades 3-8 (algebra and geometry); science CRTs, grades 4-8 (Earth systems science, biology, chemistry, and physics). Utah has developed criteria for implementing mandated summative online assessments. Criteria have also been established in the following areas: bandwidth requirements, hardware requirements, software requirements, length of testing window, and budgetary support. Utah provides multiple testing windows to accommodate instruction ending at various points during the school year.



**FLORIDA** has a law that requires any state-mandated assessments – including summative annual assessments, EOC exams, and/or high school exit exams – to be administered digitally, either online or on a

computer. FCAT 2.0 and Florida EOC assessments are the current statewide tests and are now being transitioned to online. Florida has developed criteria for implementing mandated summative online assessments. Criteria have also been established in the following areas: bandwidth capacity, hardware requirements, software requirements, and length of testing window.



**LOUISIANA** has a law that requires any state-mandated assessments – including summative annual assessments, EOC exams, and/or high school exit exams – to be administered digitally, either online or on a

computer. Current online EOC tests are given to high school students in the following subjects: algebra I, English II, geometry, biology, English III, and American history. Student scores are used for making graduation and course grade decisions. Louisiana has developed criteria for implementing mandated summative online assessments. Criteria have also been established in the following areas: bandwidth capacity, hardware requirements, software requirements (partial), length of testing window for online EOC tests, and budgetary support criteria (under development). (Note: [Louisiana's Technology Footprint initiative](#) provides an outstanding model of a statewide strategy for planning, implementation, and execution of the shift to CCSS and online assessments.)



**MARYLAND's** online testing is optional. High school assessments (EOC exams in algebra/data analysis, English, biology, and government) have been available online for students since 2009. Online versions of the Maryland School Assessment (MSA), given to all students in grades 3-8, are currently being phased in. The MSA in reading is being offered online for the first time in 2012-13, but only in grades 5 and 7. The MSA for science, given to grades 5 and 8, has been available since 2007.]



## RECOMMENDATIONS

Online assessment creates the opportunity for better and less expensive state tests with rapid results. The 21-month timeline before the 2014-15 school year provides the perfect incentive to phase in better access to technology, shift to digital instructional materials, incorporate powerful digital tools, and create efficient blended school models. While there may be an urge to set the bar low with minimum requirements and protect legacy systems, this is the time to seize the opportunity for broad and systemic updates to American education. This section provides advice to states and districts in the form of specific recommendations and top considerations.

### Advice to States and Districts

- 1 Match the teaching and testing environments.** Recognize that the consortia are attempting to accommodate limited access and old technology, but don't use these minimums as ideal recommendations. A long testing window (12 weeks before the end of school) and shifting kids through a computer lab with a computer for every four students may be logistically conceivable for testing, but it would pose a huge instructional disruption. Schools should make testing environments as close to learning environments as possible. Schools should plan for what type of technology they need to deliver the digital

learning experience students are demanding. Plan to match instructional environments with testing environments with time online every day for every student. Ideally, students will take the test on the same devices they use every day for learning. Combine the assessments with other tools that link adaptive assessment to instructional units to give students regular CCSS-aligned feedback and instruction. Phase in instructional technology. Encourage students to bring their own devices and support equitable access.<sup>30</sup> Rotate students (in class or in lab) through an online environment daily. The new assessments will require teachers to teach differently and students to learn differently. The daily experiences of teachers and students must evolve to match the way both will be evaluated.

**2 Shift to digital instructional materials.** States and districts should follow Florida's lead to make a commitment to transition to digital instructional materials by 2015. Where instructional materials are referenced in state law, they should include digital textbooks and content the way [Indiana](#) does. In addition to including digital content as part of their legislative definitions, states like Indiana and Texas have provided school districts with monetary flexibility to allow "textbook money" to be used to purchase devices such as tablets and laptops to expand teacher and student access to digital content.

SETDA's [Out of Print: Reimagining the K-12 Textbook in the Digital Age](#) highlights states that are leading the way in adopting digital materials and providing recommendations, determining success factors, and sharing guiding questions for making the shift.<sup>31</sup>

**3 Boost access.** DLN recently released a paper, [Funding the Shift to Digital Learning: Three Strategies for Funding Sustainable High-Access Environments](#), which outlines how school districts can afford the shift – it just takes leadership over a couple of years of transition. Focus on test-ready devices (e.g., be cautious of purchasing 7-inch tablets that won't be supported by the assessment consortia) that have the added benefit of improving the learning experience. States should consider ways to contribute to the approximately \$250 cost per student per year to sustain a high-access environment. Explore ways to maximize E-rate funding and consider forming a bulk-purchasing agreement with partner districts or through state efforts like [Pennsylvania's PEPPM](#). States should consider joining the joint [procurement effort being led by the State of Maine Department of Education in coordination with the National Association of State Procurement Officials](#) to lower the cost of devices for their schools.

In "[Start Your Online Testing Engines](#)," three principals share their experiences with preparing for and transitioning to online assessments. Geoff Fletcher, Deputy Executive Director for SETDA and the article's author, indicates that "none of the principals interviewed got online assessment right the first time. Few will."<sup>29</sup> Fletcher also offers two big questions that school leaders must answer as the new assessments quickly approach:

1. Do I have enough (and the right kinds of) hardware to administer online tests to all the appropriate students?
2. Do I have enough bandwidth and Internet access to have a large number of students taking these tests online simultaneously?

- 4 Plan for the greater shift.** Coordinate technology planning within and across states by leveraging the expertise and forums of [SETDA](#) and the Council of School Networking ([CoSN](#)). “The shift to computer-based and online assessment is only one part of a larger and longer-term shift in K-12 education toward digital instructional materials, online learning, data systems, formative assessment, online professional development, and school communications tools,” [says SETDA](#). “Planning, deploying, and managing these investments (increasingly being made at the scale of the state) and ensuring that they can become part of a single, interoperable system will be vital to both their being cost effective and easy to use.”<sup>32</sup> Overall, states and districts should work to create a flexible system now that can pave the way for further changes later – facilitating the evolution to competency-based learning, blended learning, etc.
- 5 Support blends.** Create incentives for blended school models to improve the return on investment of improved access. Use the [Next General Learning Challenge](#) as a grant-making template. Use [FSG’s Blended Learning guide and case studies](#), funded by the Michael and Susan Dell Foundation, to develop your own blended learning model. The Innosight Institute also has a [number of guides, whitepapers, and case studies](#) to help identify the model that best meets your needs.
- 6 Boost broadband.** Districts should test broadband access against [SETDA recommendations](#) (which are adequate for most instructional models and more than enough for test administration). By the end of the school year, states should have had all school districts run a gap analysis using tools such as the [Technology Readiness Survey](#), [Education Super Highway](#), or Smarter Balanced’s [Bandwidth Analyzer](#) to determine their current broadband capabilities and where additional investment might be needed.
- 7 Invest in teaching training.** States and districts should sponsor a variety of Common Core and online assessment learning opportunities for teachers. Teachers and school leaders must have meaningful practice – in both formal professional development sessions and informally through regular application in the classroom setting – in order to become comfortable with these shifts before the full implementation of the assessments. PARCC released an [implementation guide](#) and will have Professional Development Modules and Online Professional Learning Modules available in spring 2013. Smarter Balanced will convene teacher cadres from member states in summer 2013, in addition to launching professional development materials and a full digital library of best practices and professional learning resources. CCSS professional development resources are also available from

sources such as the American Federation of Teachers on [Share My Lesson](#), and the [Council of Chief State School Officers](#) released a [variety of resources](#) including a framework for English Language Proficiency Development Standards.

- 8 Learn from other states.** States that are at the earliest stages of the shift to online assessments should learn from pioneering states (See exhibit on pages 14 and 15). States can save time by adapting existing legislation and learning from the experiences of states that are farther along the path to equitable student access to high-quality digital learning. A few statewide examples include [Maine's Learning Technology Initiative](#) and its new [Request for Proposals](#) to negotiate lower device prices, [Pennsylvania's Act 183 E-fund](#), which is designed to accelerate broadband deployment to the state's schools, [North Carolina's School Connectivity Initiative](#) that was created to boost access and connectivity, and [Louisiana's Technology Footprint](#) that aims to support districts on their path to readiness.
- 9 Use sample items.** Use Common Core examples and consortia-released items in class ([sample Smarter Balanced items here](#) and [PARCC items here](#)). These

samples can be enormously helpful in helping teachers shift their instruction and orient themselves to the new assessments. Schools should give students performance tasks that require research, judgment, summarization, and writing with evidence.

- 10 Use Core-aligned adaptive assessment.** Elementary schools should use Core-aligned adaptive assessment to diagnose needs and target instruction (e.g., NWEA+Compass, i-Ready, Dreambox). High schools should use online writing assessment to significantly increase the amount of student writing and structured feedback.

### Advice to Consortia and Related Parties

Halfway into their journeys, both PARCC and Smarter Balanced have made great progress but face a tough climb on the road to full implementation. Since the consortia balance the best interests of states, teachers, and students within existing state and federal guidelines, we offer the following recommendations to help them maintain a clear focus and continue the momentum to generate on-going awareness of the instructional shifts that the assessments necessitate.

- 1 Encourage upgrades.** We understand that a significant percentage of computers in U.S. schools run Windows XP, the

### Online Assessments and Student Data

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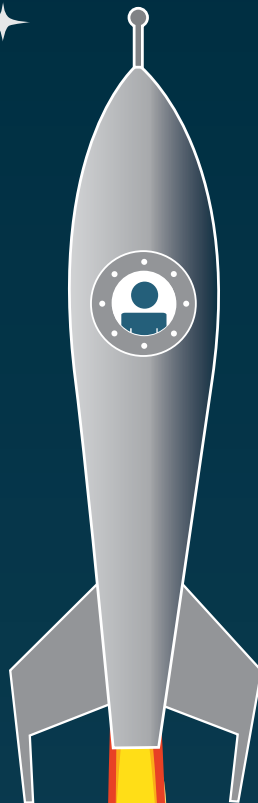
Student data comparability is an important issue. The DLN Smart Series paper, [Data Backpacks: Portable Records & Learner Profiles](#), explores how new and expanded student records can power personalized learning by employing existing tools that tailor and track student learning experiences according to student needs. PARCC researchers have estimated that their new summative assessment will yield twice as many score points as the current battery of state tests. Their online Interactive Data Tool will allow users to access results to create custom reports and data visualizations that can guide instruction and be matched to individual professional development tools for teachers. Smarter Balanced plans to launch a comprehensive electronic platform that will contain a portal, educator dashboard, and digital library to help teachers collect and analyze achievement information. The consortia's development of common performance standards and grading rubrics for the next generation of assessments is another step in the right direction, because this common set of tools will allow for better comparability across states and systems.

operating system that Microsoft introduced in 2001, but it is time for an upgrade. [Microsoft confirms](#) that after April 8, 2014, there will be no new security updates, non-security hotfixes, free or paid assisted support options or online technical content updates. Running Windows XP SP3 and Office 2003 in your environment after their end of support date may expose your company to potential risks such as security and compliance risks and lack of vendor support. Testing in XP could pose a security risk and limit item types by not supporting HTML5 and touch. If Version 1 in 2015 does run on XP, Version 2 in 2016 should incorporate features of fully supported newer operating systems.


- 2 Plan versions.** As access and computing power increase, the consortia should introduce new testing versions at least every other year. Items in development are a step forward, but with touch computing and simulation there is a world of possibility when it comes to innovative tasks.
- 3 Redefine comparability.** We know you're worried about comparability and the related legal ramifications. By 2015, the days of administering the same instrument under the same conditions at the same time will be long gone. It's time for a new definition of comparability. The Data Backpack concept forces a similar need for a new approach to comparability; the good news is that we'll be defining comparability using an abundance of data, not a few end-of-year bubble sheet items.
- 4 Go "on demand."** You can facilitate competency-based learning (at least at the secondary level) with assessments that can be given on demand or on a frequently scheduled basis. Cisco offers about 40,000 simulation-based exams for certification every week – this is very doable!
- 5 Lean forward.** We appreciate the cost pressures states face, but we need better tests more than cheaper tests. You can't pander to the lowest common denominator and advance the sector.
- 6 Don't phase in.** With two years left to prepare, the combination of a long test window and supporting outdated operating systems allows almost all schools to support online testing now. Going further to support paper-and-pencil testing in and past 2015 is unnecessary, expensive, and reduces comparability.
- 7 Support competency-based learning.** Both consortia have set up Proficiency-Based Learning Workgroups to explore how assessment design can support competency-based learning models. It is critical for the consortia to not just deploy the new assessments but also to build in the flexibility and innovation to allow the assessments to support next generation models of learning where students earn credit based on demonstrated proficiency, not just seat time.





# The COUNTDOWN to Next Generation Assessments



At the start of the 2014-15 school year, partner states in the two testing Consortia - PARCC & Smarter Balanced - will begin implementation of the next generation of student assessments. The two Consortia have released their timelines. States and districts can use the assessment requirements as a pivot point to make instructional shifts to advance personalized learning.

Recommendations with the  will take schools beyond minimum guidelines and launch them on the path to personalized learning.

 Partnership for Assessment of Readiness for College and Careers (PARCC)

 Smarter Balanced Assessment Consortium

## Consortia

## Timeline

## States & Districts

### 2012-13:

First year pilot/field testing, related research and data collection

### Winter/ Spring 2013:

Pilot test of summative/interim items/tasks

### Early 2013:

Begin development of online PD materials

### Early 2013:

Begin development of Exemplar Instructional Modules in ELA

### Winter 2012/ 2013:

Sign up for your Consortia newsletter, check the website, join webinars

Identify resources from CCSSO, SETDA, CoSN, Consortia, other states

Determine instructional PD needs for shift to Common Core

## 2013

Review Achievement Level Descriptors for Smarter Balanced & Performance Level Descriptors for PARCC, comment through Jan 2013

Sign up to participate in field tests

Research [blended learning](#) and [device strategies](#)

Launch a statewide effort for district participation in [Tech Readiness Tool](#) (early 2013) and set a goal for 100% participation by Summer 2013

Test broadband speeds against [SETDA recommendations](#) with tools from Education Superhighway, SETDA or Smarter Balanced

Host at least quarterly PD sessions to guide instructional strategies

Survey teachers and administrators on professional development needs

Evaluate minimum specs against current technology available

Consider statewide device purchasing agreements (e.g. MLTI)

Determine policy changes needed to support implementation

**Spring 2013:**  
Pilot test scoring

**Spring 2013:**



Form a strategic plan to match the teaching and testing environments



Commit to conversion to digital instructional materials by 2015



Pick blended learning and device strategy

Participate in PD for shift to Common Core and assessment pilots tests

Report PD needs to Consortia to inform creation of PD materials



Plan multi-year device purchases based instructional needs



Create incentives for blended learning to leverage improved access to technology

Coordinate tech planning within/across states by leveraging SETDA & CoSN

Create and publicize state and district implementation timelines

**Summer 2013:**

**Summer/Fall 2013:** Field test items/tasks are reviewed for content and bias

Achieve 100% district participation in Tech Readiness Survey

Sponsor PD opportunities adding modules from the consortia



Develop a plan to implement Core-aligned adaptive or diagnostic assessment



Screen materials, OER, services for alignment with CCSS and assessments

**Fall 2013:**

**2013-14:**  
Second year pilot/field testing, related research and data collection



Launch first phase of improved access to technology



Develop a BYOD plan to create high access environments



Launch blended learning pilots

Develop 12 month countdown to implementation with monthly benchmarks

Participate in field tests



Expand blended learning opportunities for students



Use [sample SBAC items](#) here and [PARCC items](#) to inform instruction; assign tasks that require research, judgment, summarization, and writing with evidence



Implement Common Core-aligned adaptive or diagnostic instruction in grades 3-8

Boost assessment awareness with parent/community

Propose policy changes needed to support implementation

Continue to vet CCSS-aligned materials

# 2014

**Winter 2013/2014:**

Continue to make state and district implementation timelines publicly available



Phase in instructional technology & rotate students through online environments daily

Begin parent education and community outreach using sample items and prototypes

**Spring 2014**

Develop summer professional development institute

**Summer 2014:**

Host state and district PD sessions using consortia training materials

Make policy changes needed to support implementation

**Fall 2014:**

Begin implementation of assessments



Launch second phase of improved access to technology



Expand blended learning programs

**Winter 2014 / 2015:**

Continue use of formative assessments in prep for summative assessments

**Spring 2015:**

Administer summative assessments during the last 12 weeks of the school year

**Spring 2014:**  
Field test scoring

**Spring 2014:**  
Field test of summative/interim assessment items/tasks

**Summer/Fall 2014:**  
Training materials available on interpreting assessments

**Fall 2014:**  
Assessments and digital library ready for use by states

**Spring 2015:**  
States administer assessment during last 12 weeks of the school year

**Summer 2015:**  
Final achievement standards verified and adopted

**2014-15:**  
Full operational administration of PARCC assessments

**Summer 2015:**  
Set achievement levels, including college-ready performance levels

# 2015



**Download Report**

*Getting Ready for Online Assessments*

<http://digitallearningnow.com/dln-smart-series/>



Digital Learning Now! (@DigLearningNow)

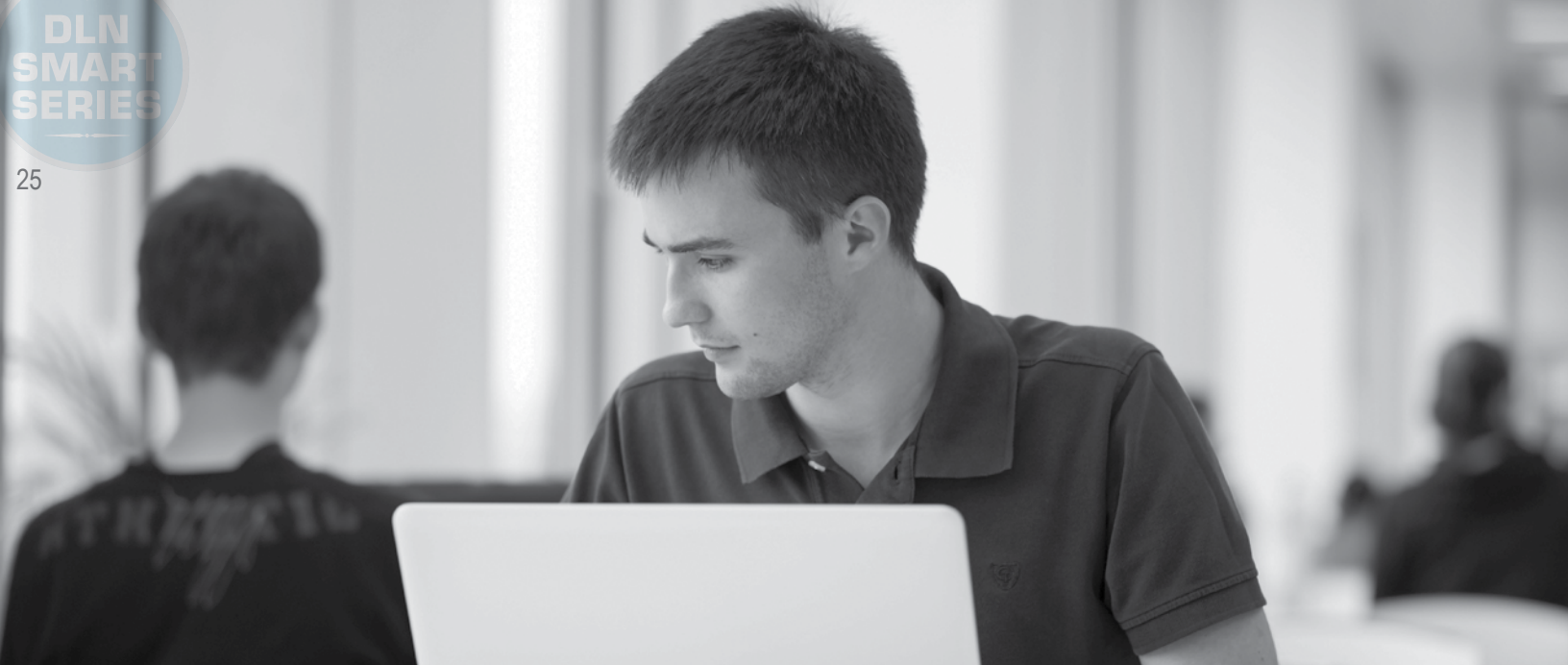
Foundation for Excellence in Education (@ExcellinEd)

Getting Smart® (@Getting\_Smart)

DLN Smart Series  
#smartseries



**DIGITAL LEARNING NOW!**



## CONCLUSION

ETS outlines [four forces](#) that are converging to create a critical “inflection point” in assessment: 1) technological, social, and economic trends are changing the skills needed for citizenship and employment; 2) the power of personal digital and computing devices (and the number of people with daily access to them) are increasing exponentially; 3) cognitive science, a fairly young field, is creating new and powerful insights into how people learn; and 4) the demand for K-12 education learning and assessment tools has exploded and is reaching levels that will spur greater investment and innovation.<sup>33</sup>

This shift to online assessment creates the opportunity for better data to inform short-term instruction and long-term accountability efforts. Because they are designed around the CCSS, they will better measure achievement against internationally benchmarked standards for college and career readiness. But there is another prospect available: using next-generation assessments as a pivot point to expand access to technology, shift to digital instructional materials and tools, and move toward personalized learning opportunities for all students.

New tests create a timeline. With just 21 months from December 2012 until the school year of full operational administration of the PARCC and Smarter Balanced assessments in the fall of 2014, states and districts can't

afford to wait. It's worth noting that, by its nature, standardized testing tends to lag behind instruction in the adoption of new technology. The consortia have set a low bar for technology requirements – they should be viewed as a bare minimum for testing in less than ideal circumstances, not instructional design specifications. It is virtually assured that readiness for instruction will mean readiness for assessment. In other words, plan high-access instructional environments for the 2014-15 year and they will be more than adequate for testing.

The 21-month timeline provides an appropriate pivot point for the shift to digital instructional materials. The combination of digital content and digital assessment provides more than sufficient rationale (benefits and savings) to support an increase in improved access to technology.

State and district leaders need to actively leverage the resources, expertise, and services provided by groups such as SETDA, CoSN, Digital Learning Now, and the Alliance for Excellent Education in accelerating their efforts to preparing for the new assessments. States should have an active dialog with district leaders about devices, testing windows, and professional development and devise a plan for handling issues such as access and connectivity as they plan for the broader shift to personalized, technology-rich learning opportunities.

# APPENDIX A: SMARTER BALANCED HARDWARE AND OPERATING SYSTEMS INFOGRAPHIC

Smarter Balanced Hardware & Operating Systems Infographic  
<http://www.smarterbalanced.org/wordpress/wp-content/uploads/2011/12/Hardware-Operating-Systems-Infographic.pdf>



What will it take to provide **19 million students** and their schools a better assessment experience?

Preparing the nation for the move to online assessments...

## Hardware & Operating Systems

### Minimum Hardware Requirements & Recommended Operating Systems

#### DESKTOP Computers

**Smarter Balanced Minimum Hardware Requirements for Current Computers**

**Monitor**

- Windows XP (service pack 3)
- Windows 7 (64-bit version)
- 1GB RAM (2GB recommended)
- 20 GB free hard drive space

**Web Cam**

- 1.3 megapixel resolution
- 30 FPS frame rate

**Mouse**

- 1000 dpi resolution
- 20 FPS frame rate

**Keyboard**

- 1000 dpi resolution
- 20 FPS frame rate

#### LAPTOP Computers

**Smarter Balanced Minimum Hardware Requirements for Current Laptops**

**Monitor**

- 1024 x 768 resolution
- 15.5 inch diagonal

**Web Cam**

- 1.3 megapixel resolution
- 30 FPS frame rate

**Mouse**

- 1000 dpi resolution
- 20 FPS frame rate

**Keyboard**

- 1000 dpi resolution
- 20 FPS frame rate

#### TABLET Computers

**Smarter Balanced Minimum Hardware Requirements for Current Tablets**

**Monitor**

- 1024 x 768 resolution
- 9.5 inch diagonal

**Web Cam**

- 1.3 megapixel resolution
- 30 FPS frame rate

**Mouse**

- 1000 dpi resolution
- 20 FPS frame rate

**Keyboard**





- 1000 dpi resolution
- 20 FPS frame rate

**Screen Resolution and Screen Size Trends**

The graphs on this slide show current screen resolution and screen size trends. The graphs on this slide show current screen resolution and screen size trends. The graphs on this slide show current screen resolution and screen size trends.

**Supports Resolution of at least 1024 x 768**  
9.5 inches

## Internet Browsers

**Current Browser Usage**

The data on this slide shows the current browser usage as reported by schools across the nation.

**Secure Browsers**

The data on this slide shows the current browser usage as reported by schools across the nation.

## Bandwidth

**Number of Students Simultaneously Testing**

Number of Testing Sites: 23

Internal Network Bandwidth

Size and Number of Test Bases

**Bandwidth Note:** Bandwidth requirements for Smarter Balanced assessments are based on the number of students and the number of test bases.

**Site Internet Connection**

The data on this slide shows the current internet connection speeds for schools across the nation.

**School Site Connectivity**


The data on this slide shows the current internet connection speeds for schools across the nation.

**9% OF SITES SURVEYED NATIONALLY REPORTED LESS THAN 2 Mbps**

**800 Students = 8 Mbps**

200 Students = 2 Mbps | 400 Students = 4 Mbps

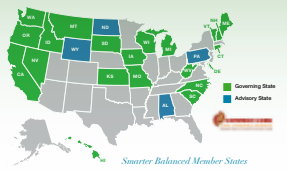
## About Smarter Balanced



**Smarter Balanced Assessment Consortium**

Smarter Balanced is a national consortium developing assessments aligned to the Common Core State Standards in English language arts/mathematics and mathematics that are designed to help prepare all students to graduate high school college- and career-ready.

For the most up-to-date information, please visit <http://www.smarterbalanced.org>



**Smarter Balanced Member States**

Smarter Balanced currently serves member states from 19 million of the nation's public K-12 students. These states share a commitment to developing a next-generation assessment aligned to the Common Core State Standards that provide educators with meaningful feedback and actionable data.

# APPENDIX B: STATE MEMBERSHIP IN ASSESSMENT CONSORTIA



## State Memberships in Assessment Consortia

Updated December 10, 2012. For a description of each Assessment Consortia please see the guide on our website.

State	Comprehensive Assessment Consortia		Alternate Assessment Consortia		English Language Proficiency Consortia	
	PARCC (23)	SBAC (25)	DLM (14)	NCSC (27)	ASSETS (30)	ELPA21 (13)
Alabama	Participating	Advisory			Member	
Alaska				Member		
Arizona	Governing			Member		
Arkansas	Governing			Tier II Partner		Member
California		Governing		Tier II Partner		Member
Colorado	Governing					
Connecticut		Governing		Member		
Delaware		Governing		Tier II Partner	Member	
District of Columbia	Governing			Member	Member	
Florida	Governing			Member		Member
Georgia	Governing			Member		
Hawaii		Governing				
Idaho		Governing		Tier II Partner	Member	
Illinois	Governing				Member	
Indiana	Governing			Member		
Iowa		Governing	Member			Member
Kansas		Governing	Member			Member
Kentucky	Participating					
Louisiana	Governing			Member		Member
Maine		Governing		Tier II Partner	Member	
Maryland	Governing			Tier II Partner	Member	
Massachusetts	Governing				Member	
Michigan		Governing	Member		Member	
Minnesota					Member	
Mississippi	Governing		Member		Member	
Missouri		Governing	Member		Member	
Montana		Governing			Member	
Nebraska						Member
Nevada		Governing		Member	Member	
New Hampshire		Governing			Member	
New Jersey	Governing		Member		Member	
New Mexico	Governing			Tier II Partner	Member	
New York	Governing			Member		
North Carolina		Governing	Member		Member	
North Dakota	Participating	Advisory		Member	Member	
Ohio	Governing					Member
Oklahoma	Governing		Member		Member	
Oregon		Governing		Tier II Partner		Member
Pennsylvania	Participating	Advisory		Member	Member	
Rhode Island	Governing			Member	Member	
South Carolina		Governing		Member	Member	Member
South Dakota		Governing		Member	Member	
Tennessee	Governing			Member	Member	Member
Texas						
Utah			Member		Member	
Vermont		Governing	Member		Member	
Virginia			Member		Member	
Washington		Governing	Member			Member
West Virginia		Governing	Member			Member
Wisconsin		Governing	Member		Member	
Wyoming		Advisory		Member	Member	
Virgin Islands (U.S.)				Tier II Partner		
PAC-6*				Member		

PARCC: Partnership for the Assessment of Readiness for College and Careers [www.parcconline.org](http://www.parcconline.org)  
 SBAC: Smarter Balanced Assessment Consortium [www.smarterbalanced.org](http://www.smarterbalanced.org)  
 DLM: Dynamic Learning Maps Assessment Consortium [www.dynamiclearningmaps.org](http://www.dynamiclearningmaps.org)  
 NCSC: National Center and State Collaborative [www.ncscpartners.org](http://www.ncscpartners.org)  
 ASSETS: Assessment Services Supporting ELs Through Technology System <http://assets.wceruw.org>

ELPA21: English Language Proficiency Assessment for the 21st Century (website expected in January 2013)  
 \* PAC-6 consists of six entities: American Samoa, Commonwealth of the Northern Mariana Islands, Federated States of Micronesia, Guam, Palau and Republic of the Marshall Islands

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## APPENDIX C: ONLINE ASSESSMENT RESOURCES

### PARCC

PARCC Website <http://www.parcconline.org/>

PARCC Technology Website <http://www.parcconline.org/technology>

### Smarter Balanced Assessment Consortium

Smarter Balanced Website <http://www.smarterbalanced.org/>

Smarter Balanced Technology Website <http://www.smarterbalanced.org/smarter-balanced-assessments/technology/>

### Useful Websites

Achieve The Core <http://www.achievethecore.org/>

Alliance for Excellent Education, Project 24 <http://www.all4ed.org/project24>

Assess4Ed Online Community <http://assess4ed.net/>

ETS K-12 Center Assessment Consortia Website [http://www.k12center.org/publications/assessment\\_consortia.html](http://www.k12center.org/publications/assessment_consortia.html)

Louisiana Technology Readiness Footprint Website <http://www.louisianaschools.net/footprint/>

SETDA Assessment Readiness Resource Page <http://setda.org/web/guest/assessment>

SETDA State Education Policy Center Database <http://setda.org/web/guest/sepc>

### Reports

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SETDA. Technology Readiness for College- and Career-Ready Teaching, Learning and Assessment. [http://www.setda.org/c/document\\_library/get\\_file?folderId=350&name=DLFE-1628.pdf](http://www.setda.org/c/document_library/get_file?folderId=350&name=DLFE-1628.pdf)

SETDA. Technology Requirements for Large-Scale, Computer-Based and Online Assessment: Current Status and Issues. [http://setda.org/c/document\\_library/get\\_file?folderId=344&name=DLFE-1336.pdf](http://setda.org/c/document_library/get_file?folderId=344&name=DLFE-1336.pdf)

### Webinars

Alliance for Excellent Education Webinars <http://www.all4ed.org/events/past>

ETS K-12 Webinars <http://www.k12center.org/events/webinars.html>

PARCC Webinars <http://www.parcconline.org/parcc-transition-implementation-webinars>

Smarter Balanced Webinars <http://www.smarterbalanced.org/resources-events/webinars/>

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PARCC Staff Members

Geoffrey Fletcher & Doug Levin, SETDA

Smarter Balanced Staff Members

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## ENDNOTES

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