

Smarter Balanced Tech Overview

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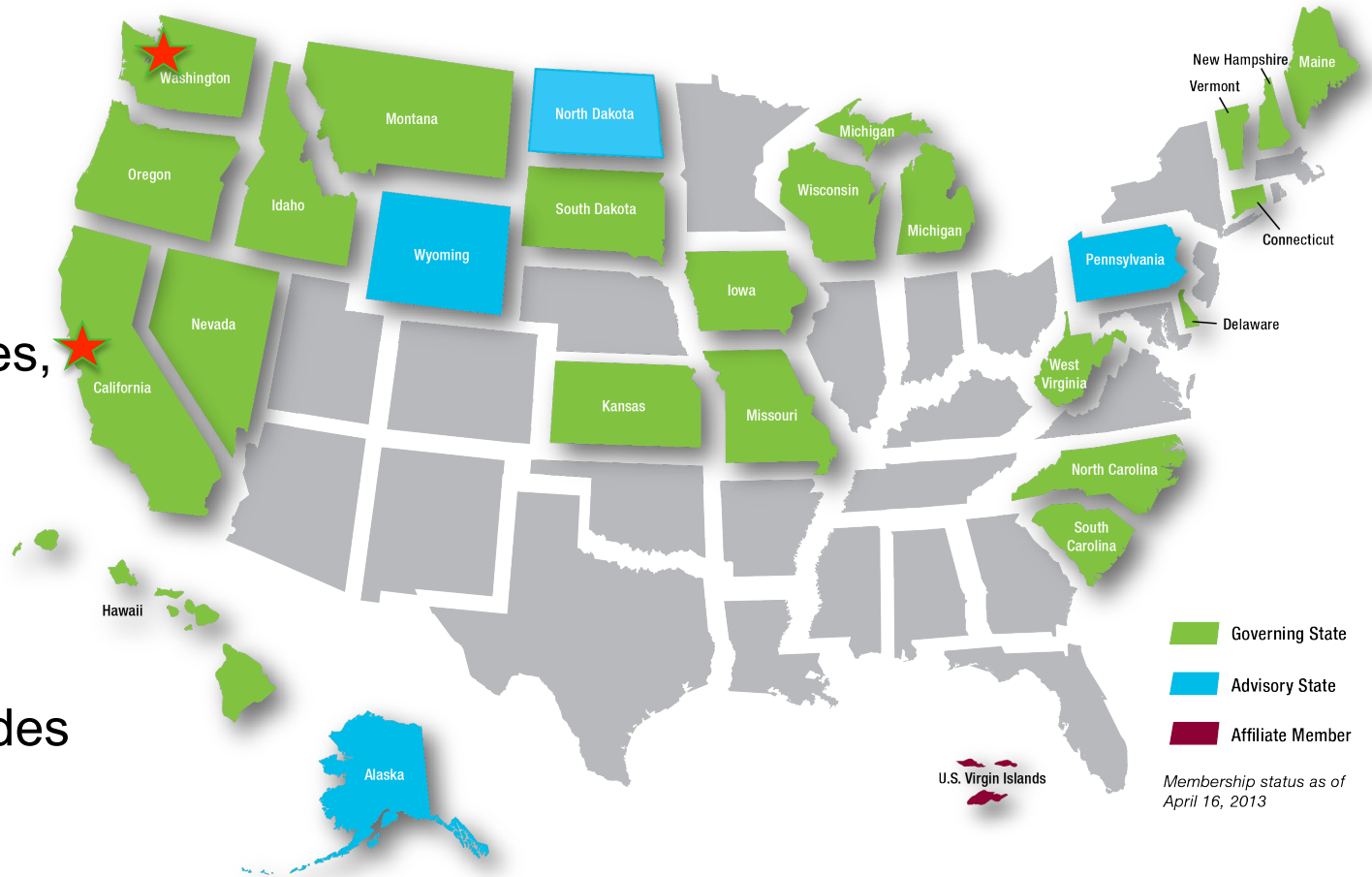


SETDA Emerging Technologies Forum
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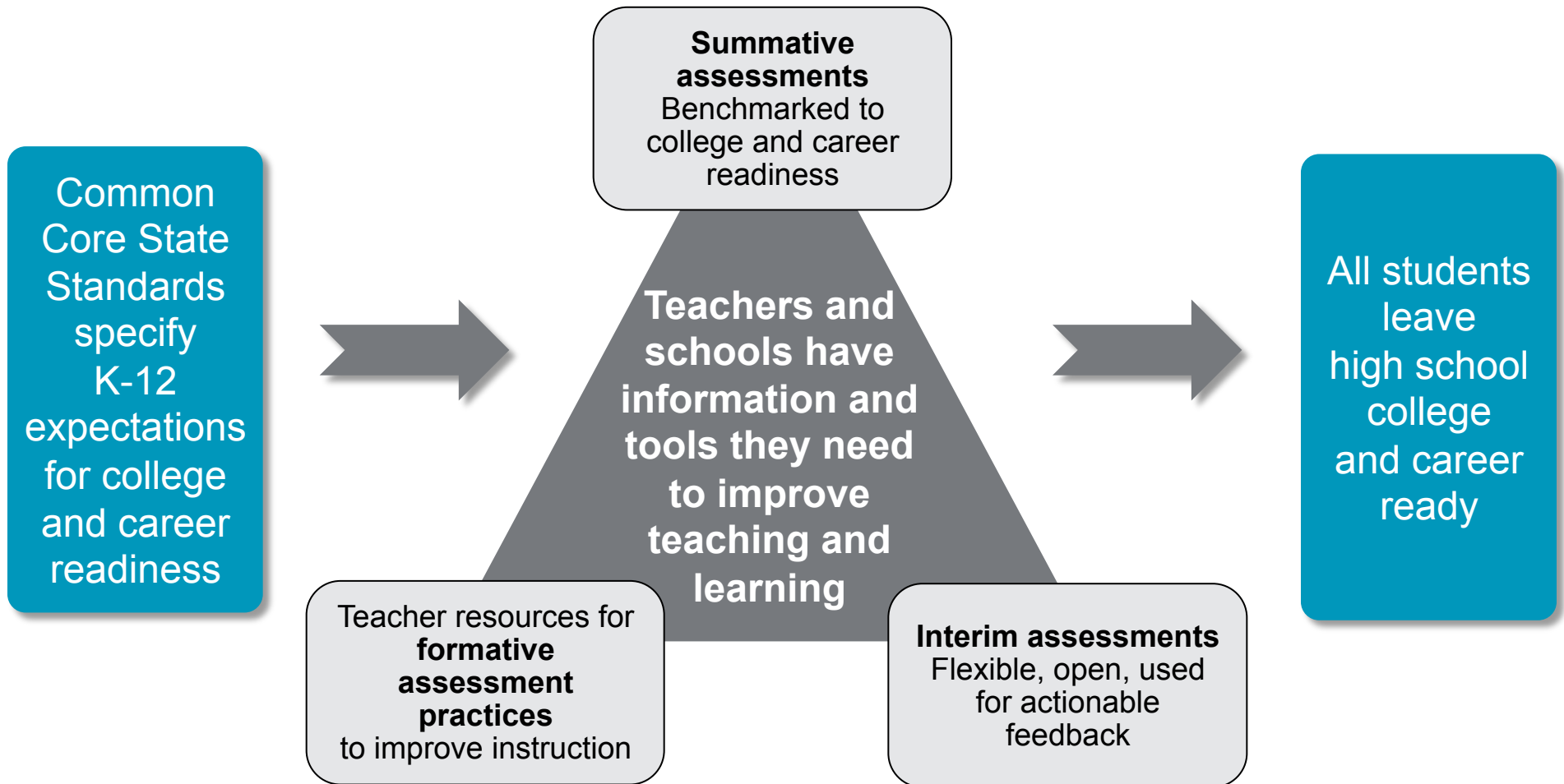


A National Consortium of States

- 26 member states and territories representing 39% of K-12 students
- 21 Governing States, 4 Advisory States, 1 Affiliate Member
- Washington state is fiscal agent
- WestEd provides project management services

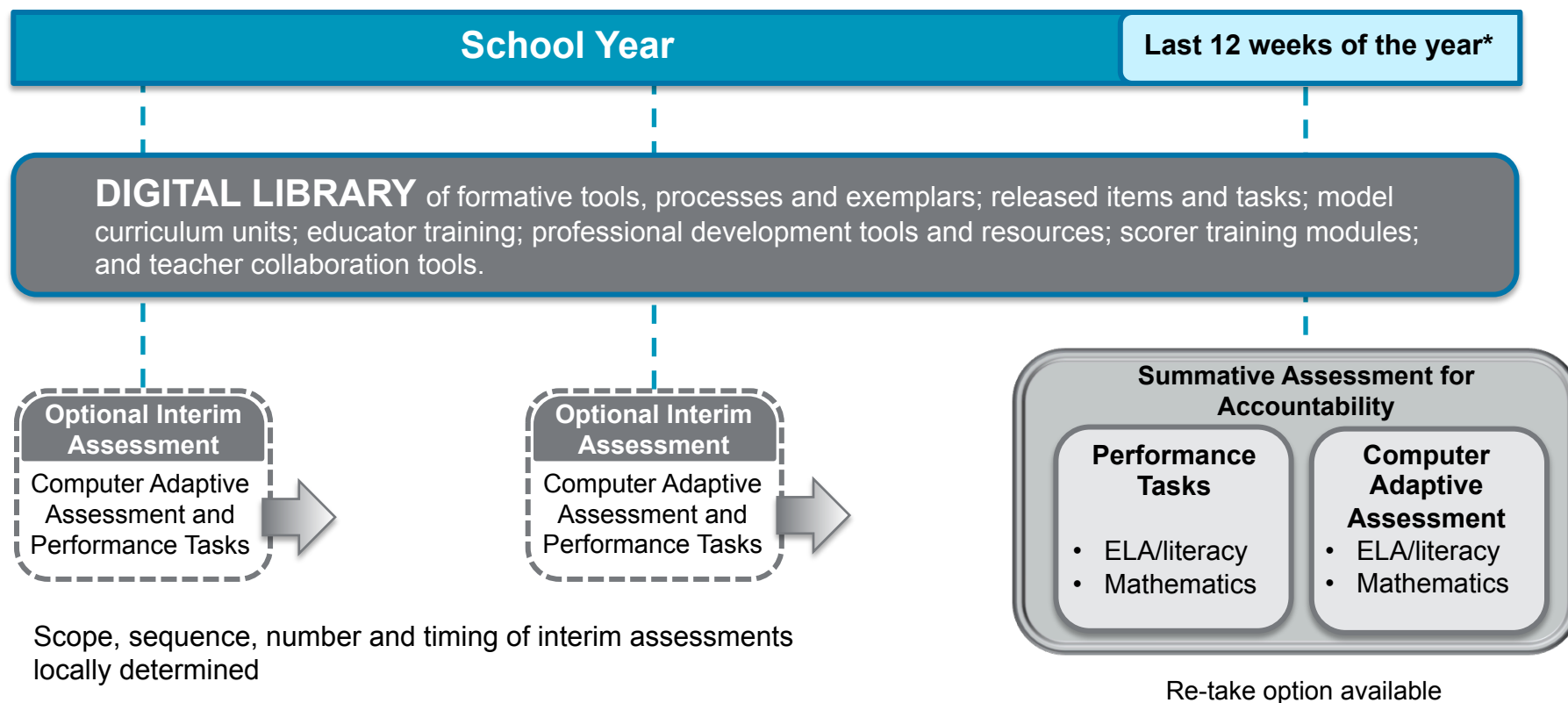


A Balanced Assessment System



A Balanced Assessment System

ELA/Literacy and Mathematics, Grades 3-8 and High School



*Time windows may be adjusted based on results from the research agenda and final implementation decisions.

Using Computer Adaptive Technology for Summative and Interim Assessments

Increased precision

- Provides accurate measurements of student growth over time

Tailored for Each Student

- Item difficulty based on student responses

Increased Security

- Larger item banks mean that not all students receive the same questions

Shorter Test Length

- Fewer questions compared to fixed form tests

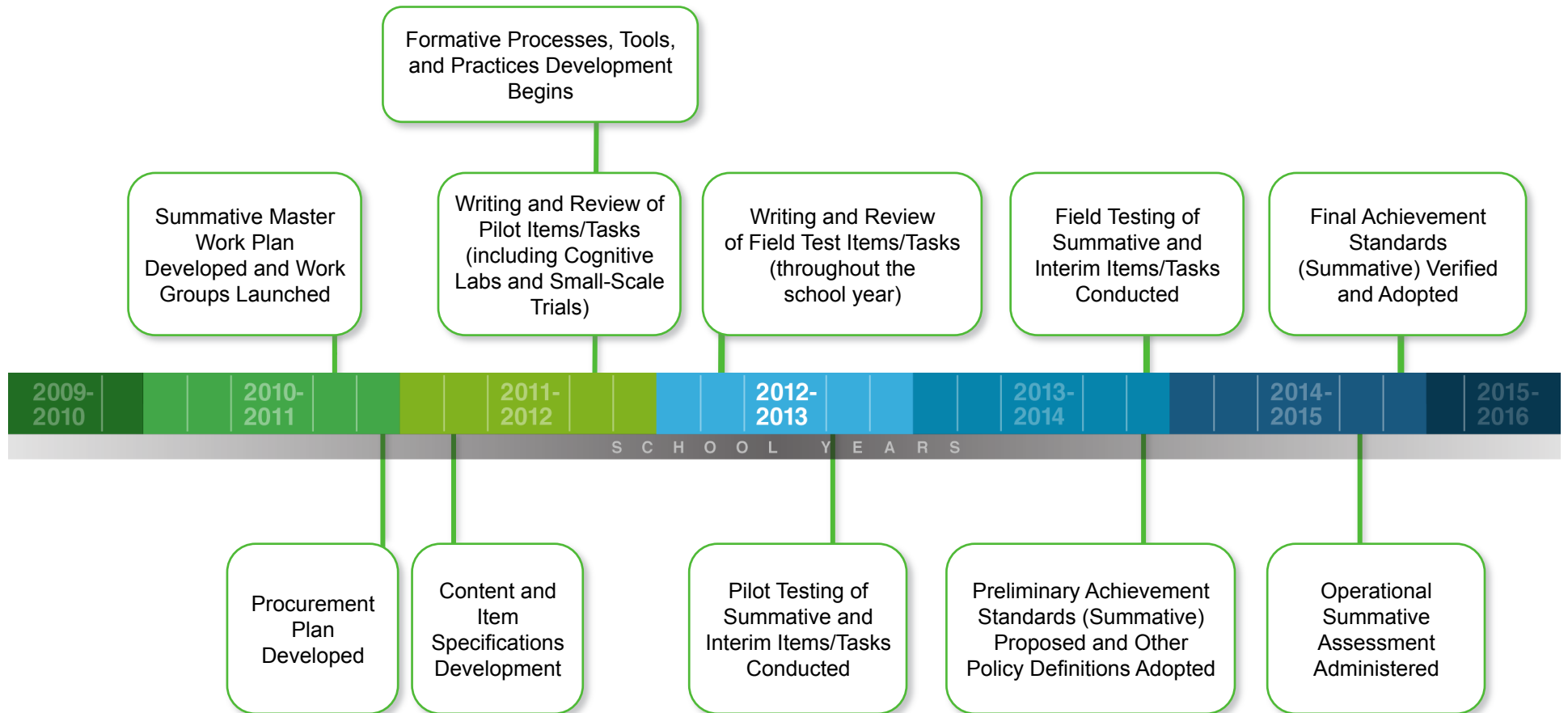
Faster Results

- Turnaround time is significantly reduced

Mature Technology

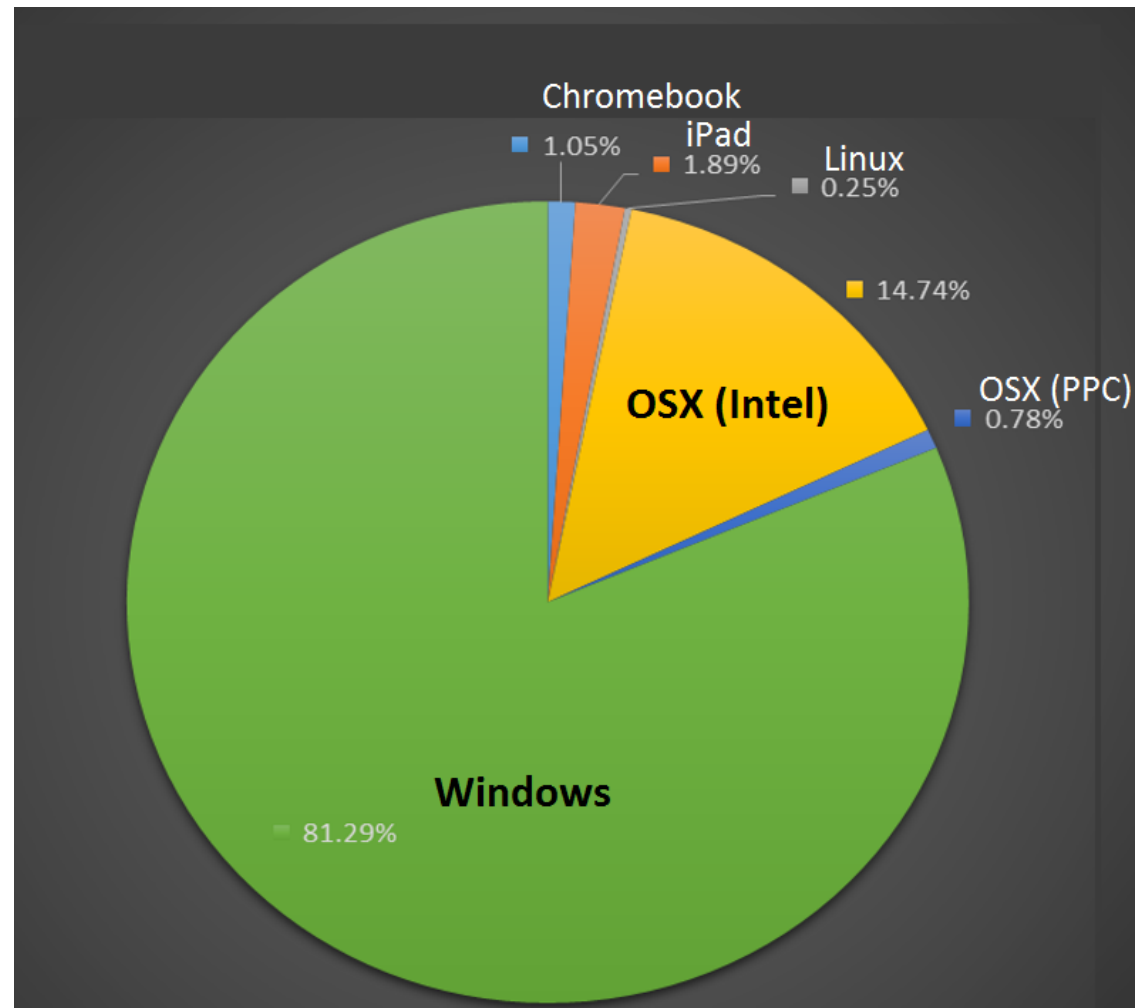
- GMAT, GRE, COMPASS (ACT), Measures of Academic Progress (MAP)

Timeline



Pilot Test Early Report

- More than 5,000 schools, over 650,000 students.
- Device Report
- Other Reports Pending



Technology Readiness



Technology Strategy Framework and System Requirements

(February 2013)

Hardware and Software Requirements Overview

Operating System	Minimum Smarter Balanced Requirements for Current Computers ¹²³	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 or at least 1GB of hard drive space available
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+ 1GHz processor 1GB RAM 80 GB hard drive or at least 1GB of hard drive space available
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 or at least 1GB of hard drive space available
iOS	iPads 2 running iOS6	iPads 3+ running iOS6
Android	Android-based tablets running Android 4.0+	Android-based tablets running Android 4.0+
Windows	Windows-based tablets running Windows 9+ (excluding Windows RT)	Windows-based tablets running Windows 9+ (excluding Windows RT)
Chrome OS	Chromebooks running Chrome OS (v19)+	Chromebooks running Chrome OS (v19)+

Minimum Computer Requirements

Minimum requirements represent a low compliance threshold. Districts should attempt to exceed these requirements as many machines operating at these levels could struggle with sufficient on-board memory and processing to run secure browsers as well as other simultaneous running programs accumulated on the device over time.

1 The minimum Smarter Balanced requirements are generally equivalent to the minimum requirements of the associated eligible operating system. Users should refer to the minimum requirements of the operating system as a means of resolving any ambiguities in the minimum Smarter Balanced requirements.

2 These guidelines do not supersede the minimum requirements of the operating systems.

3 All hardware choices should consider the individual needs of students. Some students may need hardware that exceeds these minimum guidelines, and some students may require qualitatively different hardware. Tablets may require the use of a mouse.



Technology Strategy Framework and System Requirements

(February 2013)

Additional Requirements Applicable across Operating Systems

Device Requirements	Minimum Smarter Balanced Requirements for Current Computers
Screen Size	10" class or larger 1024 x 768 resolution
Headphones / earphones	Available to students for use during the English language arts test and for students who require text-to-speech features on the mathematics test
Security	The device must have the administrative tools and capabilities to temporarily disable features, functionalities, and applications that could present a security risk during test administration.
Keyboards	Mechanical keyboards must be available unless students use alternative input devices as part of their classroom instruction.
Form Factors	No restriction as long as the device meets the other stated requirements. These forms include desktops, ⁴ laptops, netbooks, virtual desktops and thin clients, tablets (iPad, Windows, Chromebooks, and Android), and hybrid laptop/tablets.
Network	Must connect to the Internet with approximately 10–20 Kbps available per student to be tested simultaneously.
Chrome OS	Chromebooks running Chrome OS (v19)+

Minimum Requirements for Other Devices

Minimum requirements represent a low compliance threshold. Ultimately, districts should attempt to exceed these requirements as many machines operating at these levels could struggle with sufficient on-board memory and processing to run secure browsers as well as other simultaneous running programs accumulated on the device over time.

⁴ The resources (e.g., memory and processors) available to each client need to be equivalent or greater to the requirements for standalone hardware

Things that go wrong on exam day.

- Interference between wireless input devices (keyboards and mice)
- Interference between wireless input devices and wireless internet.
- Pairing between wireless input devices and their associated computing devices.
- Inadequate device capacity on wireless access points.
- Inadequate device capacity on the router. (DHCP)
- Inadequate bandwidth on wireless access points.
- Interference between wireless access points.
- Inadequate internet bandwidth (mismeasurement due to burst capacity).
- Insufficient power in the testing room.
- Insufficient cooling in the testing room.

More about this on my blog at:

<http://www.ofthat.com/2013/06/education-technology-readiness.html>

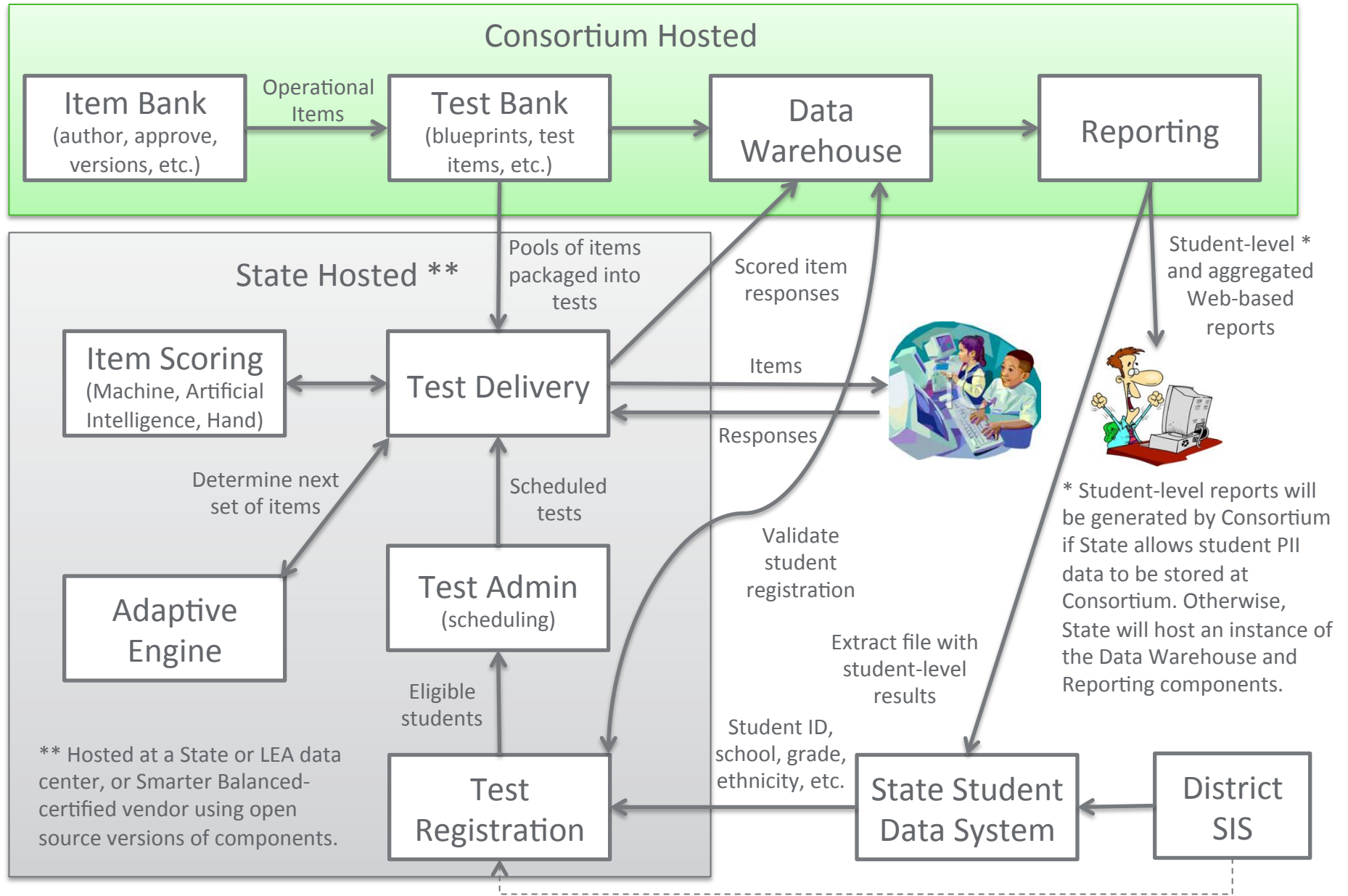
Technical Architecture



Key Components

- Test Item Authoring
- Item Bank and Test Packager
- Test Administration
 - Registration
 - Delivery
 - Scoring
- Secure Browser
- Data Warehouse
- Digital Library

Summative Assessment Logical Hosting Diagram



Credit: Rodney Okamoto

District will need to register students if no State system is available

Certification Program

- Student Device
 - Meets technology requirements
 - Can run the secure browser
- Test Administration
 - Import Test Package
 - Render With Fidelity
 - Integrate with Data Warehouse
- Scoring
 - Types: Deterministic, AI and Human
 - Calibrated to match other scoring systems

Resources

- <http://www.smarterbalanced.org/>
- Technology Requirements:
<http://www.smarterbalanced.org/smarter-balanced-assessments/technology/>
- Technology Readiness Tool:
<https://www.techreadiness.net>
- Technology Readiness Calculator:
<http://www3.cde.ca.gov/sbactechcalc/>
- My Blog: <http://www.ofthat.com>