Intel-Based Chromebooks in Education

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K-12 Blueprint
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Judy Salpeter
Editor
K-12 Blueprint
Where are you in the Adoption of Chromebooks in Your School or District?

• We are just considering them
• We have done a small pilot
• We have purchased a lot of them - now we are figuring out deployment
• We have purchased and deployed them and are happy with the results

Respond using the poll form that appears on your screen.
Intel-Based Chromebooks in Education

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Blanca E. Duarte
Founder, LogicWing, Inc.
Is Chromebook* Right for Your School?

Intel based Chromebooks Offer:

• An instant-on ecosystem
• A primarily cloud-based solution
• Easy collaboration
• Easy access to homework
• A variety of apps
• All school-day battery life
• Full keyboard
• Simple IT management
• Automatic updates
• An affordable solution

Chromebooks Do Not:

• Offer a complete offline solution
• Currently support some education usages
• Support specialty Windows* and Mac* software, like interactive whiteboarding software¹

¹Quantifying the Economic Value of Chromebooks for K–12 Education , IDC Whitepaper, Apr, 2013

Chromebook is a cloud-based research, collaboration, and productivity tool.
Chromebooks* Deliver a Simple, Streamlined Education Experience

Students
Research, create, and collaborate anywhere

Teachers
Monitor progress and streamline communications

IT Administrators
Simplify deployment, management, and security

To learn more about the Chromebooks and the Chrome Ecosystem, see http://www.prowesscorp.com/index.php/project/google-chromebook-and-the-google-chrome-ecosystem/

Intel®-based Chromebooks deliver a streamlined education experience for students, teachers, and IT administrators.
Why Intel®-based Chromebooks* for Education?

Less waiting, more learning

Fast, hassle-free collaboration

Smooth multitasking

More responsive apps

All school-day learning

Smooth Chromecast* screen-sharing

Intel® processor-based Chromebooks offer significant advantages for students, teachers, and IT administrators compared with Exynos*-based Chromebooks.

1 Source: based on findings by Principled Technologies as documented in Chromebooks in the Classroom: A Comparison, White Paper
2 Source: Based on Intel internal testing, tab-casting a non-YouTube* embedded site running full screen 720p online video playback

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. Configurations: Acer® C720 Chromebook on Haswell architecture vs HP® Chromebook 11 on Exynos 5250 and Samsung® Chromebook on Exynos 5250, measured on Google® Octane, Sunspider, WebXPRT, boot up, browsing, app loading, video playback and Chromecast* sharing by Intel or Principled Technologies. For more information go to http://www.intel.com/performance. Detailed configuration in the backup.

Intel is a sponsor and member of the BenchmarkXPRT Development Community, and was the major developer of the XPRT family of benchmarks. Principled Technologies is the publisher of the XPRT family of benchmarks. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases.
Work More Efficiently, Finish On Time

50% less waiting to create presentations

47% less waiting to do math homework online

46% less waiting to read a textbook and take notes online

Based on findings by Principled Technologies as documented in [Chromebooks in the Classroom: A Comparison, White Paper](http://www.intel.com/performance). Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. Configurations: Acer® C720 Chromebook on Haswell architecture vs Samsung® Chromebook on Exynos 5250, measured on browsing, app loading, video playback and Chromecast® sharing by Principled Technologies. For more information go to [http://www.intel.com/performance](http://www.intel.com/performance). Detailed configuration in the backup.

Students can get more work done on time, streamlining class and homework time.
Multitasking without Frustration

Open multiple tabs and browse multiple web pages:

- Quickly create presentations by searching online content, opening Google Slides*, and adding images from Google Maps.*
- Easily collaborate during class by using Google Sheets* and apps, while watching educational videos on YouTube*.

With an Intel®-based Chromebook*, students can research and work across multiple web pages in multiple tabs without slowdowns.¹

¹ Based on findings by Principled Technologies as documented in Chromebooks in the Classroom: A Comparison, White Paper.
Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. Configurations: Acer* C720 Chromebook on Haswell architecture vs Samsung* Chromebook on Exynos 5250, measured on browsing, app loading, video playback and Chromecast* sharing by Principled Technologies. For more information go to http://www.intel.com/performance. Detailed configuration in the backup.
All-Day Battery Life

Battery Run Down – Browsing

With an Intel®-based Chromebook*, students can work 57% longer while browsing the Web without having to keep track of power cords or find outlets.¹

¹ Based on findings by Principled Technologies as documented in Chromebooks in the Classroom: A Comparison, White Paper. Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. Configurations: Acer® C720 Chromebook on Haswell architecture vs Samsung Chromebook on Exynos 5250, battery life while lightly browsing the internet measured by Principled Technologies. For more information go to http://www.intel.com/performance. Detailed configuration in the backup.
For a More Interactive Educational Experience

Experience smoother, faster rendering with Intel® based Chromebooks* on WebGL applications

Immersive 2D and 3D graphics in education apps only enhance learning if they render quickly and smoothly. Some education apps like BioDigital Human are now using WebGL™, a new Web standard for 2D and 3D, because WebGL doesn’t require teachers and students to install a browser plugin.

1 Based on findings by Principled Technologies as documented in Chromebooks in the Classroom: A Comparison, White Paper. Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. Configurations: Acer* C720 Chromebook on Haswell architecture vs Samsung* Chromebook on Exynos 5250, measured on BioDigital Human app by Principled Technologies. For more information go to http://www.intel.com/performance. Detailed configuration in the backup.
Intel Is Committed to an Amazing Intel Based Chromebook* Experience

More than 1,000

Intel software engineers spend time working on Chrome OS*, adding to it and making sure it works well on Intel Architecture

#1 External contributor to Chrome OS*¹

#1 Contributor to Linux*²

5 Number of generations of Chromebooks* on Intel® architecture

¹ Based on top non-Google Chromium committers, top non-Google Chromium owners (aka reviewer per domain), and combining the # of commits for Chromium and Blink (since the fork in Apr). Data is collected through analysis of the commit logs and information on Chromium/Blink projects from Apr-Jul’ 13

² Based on Linux 3.11 at http://lwn.net/SubscriberLink/563977/bfa5c2bdf40944f/

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. Configurations: Acer® C720 Chromebook on Haswell architecture vs HP® Chromebook 11 on Exynos 5250 and Samsung® Chromebook on Exynos 5250, measured on Google® Octane, Sunspider, WebXPRT, boot up, browsing, app loading, video playback and Chromecast* sharing by Intel or Principled Technologies. For more information go to http://www.intel.com/performance. Detailed configuration in the backup.

Intel works closely with Google* to ensure an amazing Chromebook* experience on Intel® architecture—now and in the future.

* Other names and brands may be claimed as the property of others.
Success Stories: Profiles and tips from groundbreaking schools and districts involved in 1:1, BYO and other major initiatives.

News and Research: Updates on topics ranging from eRate funding to product comparisons, PISA results to new state or district initiatives.

Toolkits: Collections of distributable and adaptable resources on current topics including:
- Common Core Standards
- Bring Your Own Device (BYOD)
- Educational Technology Policy
- Planning for Digital Content
- ICT Program Evaluation
- Funding Technology Initiatives
- Professional Learning Communities

Other Resources: Including:
- On-Demand versions of webinars (including this one)
- eBooks and videos on a range of topics

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- Assessment in 21st Century Classrooms
- Collaboration in the Digital Classroom
- Inquiry in the Science Classroom

For Administrators
- Project-Based Approaches
- Thinking Critically with Data
- Educational Leadership

Click a picture to play an overview video about the course
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http://engage.intel.com

Teachers Engage is a worldwide network of educators interested in effective use of technology, instructional design, project-based approaches, assessment of 21st century skills, open-ended questioning.

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• Be informed on education technology policies and share your point of view
• Participate in our free Webinars or host one of your own for the community
• Access all your Intel Teach training resources in one location
• Receive tips, tricks, and strategies for effective trainings
Today’s Educators Have Many Choices

Tablet  Laptop  2 in 1

Chromebook*

* Other names and brands may be claimed as the property of others.
Intel® based Chromebooks* Available

Dell Chromebook 11

Acer C720P Chromebook

Acer C720 Chromebook

Lenovo X131e Chromebook

HP Chromebook 14

Toshiba Chromebook

* Other names and brands may be claimed as the property of others.
Acer Chromebook Seed Program

Test Drive an Acer C720 Chromebook for free!

Acer is offering K-12 schools across the country an opportunity to pilot the Chrome OS utilizing an Acer C720 Chromebook for free. This offer enables schools to explore the advantages of Chromebooks and determine if they are the solution of choice for bringing the power of the web to classrooms. Limited quantities available.

Apply Now at
http://bit.ly/AcerChromebookSeed

Program Rules:
1. K-12 schools must complete the Acer K-12 Chromebook Program application on our website to participate in the Acer Chromebook Seed Program.
2. By entering the program, the customer agrees to have two short conference calls with Acer.
3. After the first call, during which Acer innovative solutions will be discussed, each K-12 customer will receive one Acer C720-2103 Chromebook.
4. The C720-2103 is the only system available in the program. No substitutions are allowed.
5. Thirty days after delivery of the systems, customers will have a second conference call with Acer to discuss their impressions of the products.
6. K-12 customers can then:
   - Explore opportunities with an Acer representative for long-term use of the Acer Chromebook seed unit.
   - OR Return the system to Acer and owe nothing. Return shipping will be paid by Acer.
7. Only one application per K-12 school will be accepted and approved. If a school submits multiple applications, only the first one received will be accepted.
8. Large school districts with multiple schools will be limited to a total of 3 units only.

Program Dates: February 3, 2014 – April 15, 2014

*Units will ship to the eligible customers within 2-3 weeks of the first conference call.
Our Team:
Dr. Debra Hamm, Superintendent
Tom Cranmer, Chief Technology Officer
Tommy Carter, Senior Systems Engineer and Charles Hucks, Systems Engineer
Donna Teuber, Team Leader for Technology Integration
Technology Integration Specialists: Pam Hanfland, Chuck Holland, Lisa Knoche, MaryAnn Sansonetti-Wood, Janine Sears
Over 26,000 Students and Growing

39 Schools and Centers
• 18 Elementary Schools
• 7 Middle Schools
• 5 High Schools
• 4 Magnet Centers
• 2 Child Development Centers
• 2 Alternative Centers
• Adult Ed and Charter School
Leadership

- Project RED Signature District
- CoSN Teaming for Transformation District
- 2007 NSBA National Site Visit Host
- Recipient of the EdTech 2012 District TIPS Award
- AASA's President's Award for Excellence in Technology

"In partnership with our community, Richland School District Two prepares all students for success by providing meaningful, challenging, and engaging learning experiences."
Project Goals

• Improved Student Learning
• Student Engagement
• 21st Century Skills
• Project-based Learning
• Equity of Access

21st Century Skills
• Communication
• Collaboration
• Critical Thinking
• Creativity
Timeline

Phase 1 - January 2012
  Grades 5, 6, 1/3 high school
Phase 2 - August 2012
  Grades 4, 7, 1/3 high school
Phase 3  - August 2013

1TWO1 Grades 3-12
Conditions for Success

- Access to technology
- Ongoing professional development
- Technology integrated into high quality instruction
Professional Development

- Technology and Learning Coaches in each school
- High teacher satisfaction
- SC Midlands Summit
- Face-to-face and virtual courses
- Intel® Teach Elements
- Technology Leadership series
Tech Integration

- Project-Based Learning
- Flipped Classrooms
- ePortfolio Creation
- Online Collaboration
- Multimedia
- Publishing
- Virtual Field Trips
- eTextbooks
- Podcasting
- Online Assessments
Resources

• Digital Starter Kit
  o Google Apps for Education
  o WeVideo
  o VoiceThread
  o OverDrive
  o eTextbooks
  o Hapara Teacher Dashboard

• Other Tools and Resources for the Common Core
Why Chromebooks?

22,500 Chromebooks
- 15,000 Samsung XE500
- 500 Samsung XE303
- 7,000 Lenovo X131E

21,500 Other Devices
- 6,000 Windows Laptops (reducing)
- 10,000 Windows Desktops (reducing)
- 500 Apple Laptops and Desktops
- 5,000 iPads

Meets Most Student Needs

- Most of our applications are web based.
- Students spend most time in a web browser, even with traditional laptops.
- More productive than tablets.
- Fill in the gaps with remote desktop and strategically placed common devices.
- Surveyed staff to define needs. Chromebooks were best match overall.
- Best option for multi-user environments. Fast boot, fast login, no profile delay.
Why Chromebooks? (cont’d)

Low Capital and Operation Costs, Both Initially and Ongoing

- Options as low as $250, plus $30 for lifetime management.
- True zero touch deployment. No imaging, no pre-configuration, no IT staff required.
- Self-maintaining and end user resettable. Only physical repair required.
- No local personality or data to worry about. Users can move around nearly instantly.
Why Intel?

Performance
● HTML5, JavaScript, Video and Graphics decoding and rendering are all jobs for the local processor and graphics chipset.
● Real world results - better end user experience.
● Anticipating longer useful life as performance demands increase.

Battery Life
● Tasks are finished more quickly. Users can move on to other activities.
● New Haswell options offer best balance of performance and battery consumption.
● Lenovo Intel options include removable/replaceable batteries.

The Right Partner
● Long standing, mature platform with widest deployment across operating systems.
● Intel is the trusted partner of choice with the companies that produce the products that we want.
Contact Us

• Follow our Blog: http://r2tisnews.blogspot.com/
• Learn more about our 1TWO1 Initiative: https://sites.google.com/a/richland2.org/1two1implementation/
• For more information, contact Donna Teuber and Tommy Carter: dteuber@richland2.org, tcarter@richland2.org
6th Largest School District in North Carolina
42,000 Students
53 Schools
24,000 Chromebooks (Secondary)
9,000 Netbooks (Elementary)
3,500 Lenovo X1 (Staff)
Timeline

2009-10 2010-11 2011-12 2012-13 2013-14

Infrastructure

Professional Development

6th Grade Netbooks

7th and 8th Grade Netbooks

9th Grade Laptops

Chromebooks
Goal

Create a “My Size Fits Me” Learning Culture

• Personalize Instruction
• Maximize Learning Outcomes
• Increase Engagement
• Curriculum Enhancement
• Combine the Classroom and the Community
Targets
Intel and Lenovo

Powerful and Rugged

• Increasing Your Access Model Requires Preparation
• HTML5 Web Based Tools Are for Creation
• Allows for QWERTY Functionality
• Multi-media Processing Power
• Longer Battery Life
• Amazing Boot Times Maximize
• Affordable and Sustainable

=

Good

Fast

Cheap

pick two

FOR THOSE WHO DO.
Digital Resources

K-12 Blueprint

HOME BASE

Google Apps for Education

Education On Cloud Model With Google Apps

Student Information and Learner Profile
Standards & Curriculum
Instructional Design, Practice & Resources
Assessment
Data Analysis and Reporting
Professional Development & Educator Evaluation
UCPS Contacts

Dr. Mary Ellis
Superintendent
Union County Public Schools
mary.ellis@ucps.k12.nc.us

Dr. Mike Webb
Deputy Superintendent
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Scott Jacumin
Head of Instructional Technology
Union County Public Schools
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http://www.ucps.k12.nc.us/
What interests you most about Chromebooks in Education?

• The price is right.
• The IT Management Console supports large deployments.
• The Chrome Apps for Learning are terrific.
• The battery life and start up speed are impressive.
• Our other devices aren’t working as well as we'd like and we're looking for alternatives.

Respond using the poll form that appears on your screen.
If you have a question, click on the Q&A icon, type your question into the text box and press “send.”

Visit www.k12blueprint.com in the future for resources on planning technology implementations and personalizing learning.
Thank You

Visit [www.k12blueprint.com](http://www.k12blueprint.com) for resources on planning technology implementations and personalizing learning.

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