Google™ in Education

Pilot Guide: Bringing Chromebooks for Education to your school/classroom

*Photo provided by Cathedral of St. Raymond School, Joliet IL

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Overview

This guide was developed from interviews with school districts who have successfully deployed Google Chromebooks to their students and others who are currently piloting them. We have aggregated best practices from these interview to create this how-to guide. Keep in mind, these are simply ideas and suggestions to help your school develop your own plan and not a prescriptive one-size-fits-all. We recommend speaking with your Google representative and your surrounding districts who have adopted Chromebooks to learn more!

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Section 1 - Initial assessment

1. **Gain an understanding of what your users are doing today with technology**
    - How much technology is already built into your curriculum and how so?
    - Are you using Google Apps and if so, to what capacity?
    - Are you "tied" to legacy software?
    - Are you using web resources?
    - Is the technology "student-centered" (e.g. laptops) or "teacher-centered" (e.g. SMART boards, document cameras)?

2. **Clearly articulate the goals of 'why' you want to bring technology to your school/classroom**

    - What are the results you hope to achieve and how will you track them?
    - Do you envision technology will be used for consuming, creating and publishing digital content?
    - Will you globalize the curriculum (connect with Chinese students for example)?
    - Do you expect technology to be a solution for increasing student engagement and/or learning outcomes or is it a tool? (HINT: You can't replace good teachers!)

3. **Survey your teachers** to understand how and when they currently use technology, web applications, and software applications for student learning. This will help determine what the best tools are for your teachers and help structure your professional development training.

    Tip #1:
    Schools find visiting other schools who have implemented a 1:1 program very helpful. Ask your Google representative for a list of schools near you. Leyden School District is also offering a Summer Symposium (http://goo.gl/Qb0OF) to share their 1:1 implementation.

    You can also browse a few schools' **Professional Development Sites**
    - Edmonton Public Schools (http://goo.gl/LRBhb) (Alberta, Canada)
    - Richland School District Two (http://goo.gl/SfPy7) (South Carolina)
    - Fond du Lac School District (http://goo.gl/2njx7) (Wisconsin)
    - Leyden High School District 212 (http://goo.gl/jI1RS) (Illinois)

4. **Make sure your network is ready** to handle a 1:1 initiative. Before bringing in any devices, schools have found that having a robust technical infrastructure and wireless network is key.

Tip #2:
Leyden School District went 1:1 with Chromebooks, and has around 2,000 users at any given time using their wireless network. On average they use 170MB of bandwidth so they upgraded to a 250MB pipe to support video streaming (Youtube), SlideRocket, and other bandwidth intensive applications. Their Network Manager does some traffic shaping by content area and individual users are capped at 54MB on the Chromebook.

- Additional Resources:
  - Planning your Chromebook implementation: Chrome Devices for Education Technical Planning Guide (http://goo.gl/hqdQf).
  - Contact your Google Sales Representative for Google partners that can evaluate your network and bandwidth requirements.

Section 2 - Developing a strategic plan

1. **Form a committee** to manage the 1:1 evaluation process, and **map a strategic plan** to achieve the goals discussed in Section 1 (Initial assessment).
   - Some districts engaged a professional strategic planning firm at this point.
   - Council Bluffs recommended including a diverse set of stakeholders from parents, teachers, students, community leaders, etc. when forming the committee.

2. **Identify your key stakeholders for alignment and support** such as:
   - Superintendent
   - Curriculum department
   - Technology department
   - Principals and other administrators
   - Parents
   - Teachers
   - Students
   - School Board
   - Larger community/voters

3. **Develop an engagement plan** for those key stakeholders. Ideas from other districts include:
   - Rocky River School District created Google Apps accounts for their PTA and School Board members, and use Google Docs to collaborate and plan.
   - Reward teachers who are using technology to truly modify and redefine learning by offering them a Chromebook.

Tip #3:

Schools report that you may never have 100% buy-in. It is common to have a group of teachers who are eager for more technology, a group who could be swayed, and a group who do not believe there should be additional technology.

4. **Survey your students** to better understand their access to technology. Some questions you may wish to ask include:

- Does your family have a computer at home?
- Does your family have access to high speed internet at home?
- Does your family have a wireless network?
- Do you have your own personal device (tablet, laptop, etc.) at home?
- If your family does not have internet access at home, where do you go to access the web?

Tip #4:
Here is a survey for students (http://goo.gl/BmLg7) that you can use.

5. **Discuss how to fund** your implementation. Ideas from other districts include:

- Decrease funds spent on textbooks and reallocate towards web resources
- Incorporate technology into new building budgets
- Use general fund money
- Ask students to subsidize the program with an annual tech fee
- Divert funds for new computer labs to mobile Chromebook carts and or Chromebox labs
- Apply for grants, such as the Race to the Top Grant, Golden Leaf, etc.
- Finance or lease through 3rd parties (Ask your Google Account Manager who they recommend)
- Ask the community to help fund it via a bond or levy

6. **Consider the timing** of the initiative. Some districts recommend coupling it with other structural changes. Some examples from other districts include:

- Kaneland School District moved from a block schedule to an 8 period schedule. This caused the need for more materials given that there would be more students in class at the same time. Instead of buying more textbooks, Kaneland incorporated more web-based materials and added more technology.
- Moving to online assessments. As one district prepared for the implementation of Common Core, they looked for devices that they could use for testing and learning.

Tip #5:
If you will be adopting the Common Core, ensure that you are evaluating devices and operating systems that are on Smarter Balance and PARCC's approved list (http://goo.gl/d6wxE).

7. **Investigate how you will manage** the devices. Some key considerations include:
    - Will you need to image the devices every summer?
    - Are there costly and timely upgrades associated with the operating system?
    - How will you push out necessary applications to all devices in an efficient manner?
    - How will you manage and filter the devices if students take them off campus?
    - What is the included device warranty and what is the warranty process for repairs (including covered warranty claims as well as accidental damage).
    - Will you need to add more staff in order to manage the devices?
        - Council Bluffs School District found that for traditional PCs, they would need to add one support staff member for every 700 PCs. From their pilot, they found that they would only need to add one support staff member for every 2800 Chromebooks.

9. Given the information collected above, continue to **refine your plan** based on the feasibility of what you want to accomplish.

Section 3 - Implementing a pilot program

1. **Detail your goals** and how you will track them. Some such milestones can include:
    - How often are the students using the technology inside and outside of the classroom?
    - Are you using the device to meet the curriculum goals from Section 1?
    - Is it easier to train/learn with X or Y device?
    - Are the students distracted by either device?

2. **Select a group of teachers** who are not necessarily tech savvy but are tech willing. You may want to include a mix of tech savvy and non-tech savvy teachers. Typically this is anywhere from 15-50 teachers depending on the size of your district. They will become your trainers when it comes time for the larger rollout.

3. Consider creating a **parent advisory group** to see how the devices also affect students at home.

4. Consider having the teachers fill out an **internal application in order to be part of the process**. For example, have them detail how they would want to use the devices, and why the devices should be put in their classroom. Look for teachers who are self-motivated and could eventually train other teachers should you expand your initiative.

5. Find **Google Apps Champions** who can support web-based lesson plans, embrace technology in their classrooms, etc.

6. Consider **giving your teachers access to devices first** before students have access.

> **Tip #6**:
> Leyden School District used this strategy to build comfort and confidence with the device and it also allowed faculty to vet websites and applications to ensure they worked on a Chromebook.

7. **Encourage teachers to take risks**, and let them know it's okay to fail during the pilot year. Other districts report that teachers learn a lot from these experiences, and that the number of successful integrations will continue to rise.

8. **Establish a Google Group** for pilot users to pose questions and exchange best practices with each other.

9. **Set up a Hangout with a Google staff member** to welcome your teachers to the pilot, give them some tips to get started, and do a Q&A.

10. **Do a post-survey** with same questions to understand how technology has changed students learning. Although there aren't any studies proving additional technology directly increases test scores, you can measure other things like attendance, grades, participation, etc.

Example: Council Bluffs created student surveys (http://goo.gl/lVZS4) and teacher surveys (http://goo.gl/TZYay) that you can use to structure your surveys.

Section 4 - Selecting a device

1. Consider whether you want to provide devices **(1:1)** or have students bring their own (**BYOD**). Here are some advantages of each:

Advantages of 1:1:

- Teachers are more comfortable since there are often less tech problems and it's a uniform implementation
- Don't have to worry about charging (long battery life with Chromebooks) and don't waste time booting up computers (8 second boot up with Chromebooks)

Advantages of BYOD:

- More affordable to fund
- Students may already have devices that they prefer to use

2. Decide whether you want to **standardize on one device**, **or** whether you want to have **different devices for different departments**. For example, you may wish to use tablets in Science and use Chromebooks in English.

3. **Create a list of requirements** that you want in a device based on your curriculum goals (see Section 1 - Initial assessment) and **then weight those requirements** according to their importance. Then score each device on those requirements.

> **Tip #7**:
> Richland2 shared their criteria and weighting process (http://goo.gl/LOvsG). You will see that one of their major goals was to increase student creation of content as opposed to just consuming it -- thus a keyboard is weighted heavily in their decision criteria.

Section 5 - Training your teachers

1. Develop an **overall Professional Development plan for your school**. It may be helpful to establish key strands of Professional Development that you want to achieve competency in.

> **Tip #8**:
> Council Bluffs School District identified these four focus areas:
>
> 1. Google Apps
> 2. Web 2.0 and other ways to incorporate the web into the classroom
> 3. Classroom management in a 1:1 environment
> 4. Creating a professional learning community (PLC) so teachers can exchange best practices

2. **Set up a tech integration team**, and ensure that you have at least one staff member who is focused on integrating the devices into the classroom. Ideally the team has both classroom and technology experience.

3. Schedule a **"Kick-off" meeting** with the district leaders and staff to explain the vision and goals of the technology initiative.

> **Tip #9**:
> Hillsborough School District conducted a full day training kicked off by the Superintendent with a broader message on why the district was bringing in more technology. Then they conducted specific workshops on various topics including Google Apps, Support options, District policies, and others. You can see their agenda here (http://goo.gl/sJ9Il).

4. Introduce users first to the **Chrome Browser** by having them download Chrome on their existing computers and smartphones. Show them the power of Chrome by having them log into **Chrome Sync**, and then show them how they can pull up their open tabs on one device on any of their other devices. It's then easy to understand Chromebooks -- it's simply the Chrome Browser in a computer!

5. After the teachers understand that the Chromebook is just an access point for the web, **focus on the curriculum, professional development and web resources** to meet those curriculum goals, instead of focusing on the device.

6. Let teachers know that your initiative does not mean they have to use technology in every single lesson during every class period. Discuss with your teachers **when it is appropriate to incorporate technology** into the lesson.

> **Tip #10**:
> One Professional Development trainer at Council Bluffs asks staff three questions on whether they should integrate tech into lesson or unit:
>
> 1. Does tech allow them to do something that they couldn't do before?
> 2. Does tech enhance something they're already doing?
> 3. Does tech make something they're doing more efficient for them or students?
>
> If you can answer 'yes' to any of the questions, tech would be a good addition.

7. Consider developing **individual Professional Development plans** with your teachers, so that you can track their goals and progress

> **Tip #11**:
> Every high school teacher at Fond du Lac School District met with a member of the Tech Integration team, and created a Google Doc with a personalized learning plan. The teacher would put questions in the Doc and the Tech Integration team would respond.

8. Showcase the **SAMR** (**s**ubstitution, **a**ugmentation, **m**odification, **r**edefinition) **model**, and discuss with your teachers how they can move from just **substituting** technology (e.g. instead of writing a paper with pen and paper, typing it into a Google Doc) to **modifying** and **redefining** their classroom with technology (e.g. bringing in subject experts via Video Chat; using the collaborative power of Google Docs). It is very common for teachers to start at the substitution level and remain there for a while until they feel more comfortable with technology.

9. Recognizing that not all of your teachers will be at the same level in terms of technology integration, **pick one skill** that you want all teachers to master.

Tip #12:
Council Bluffs School Districts require that all of their staff have a web presence by creating a Google Site. Teachers use it to upload class notes, materials and any other information that students may want to access after class or if they were absent.

10. **Lead by example**, and ensure that your district and school administrators are using web technology themselves.

Tip #13:
Cedarburg's High School principal uses Google Docs for note-taking at all of his administrative meetings, and encourages his staff to do the same.

11. Consider setting up a 2-5 day **summer boot camp** for teachers. Many other districts have brought in external Professional Development trainers to lead workshops during these days. Some districts also give graduate credit or stipends to teachers who attend these trainings.

Tip #14:
Leyden School District held a two-day faculty training session and brought in 16 tech-savvy educators to present. You can view notes and presentations from the trainers on their site. (http://goo.gl/DtKG0)

12. Continue **training throughout the school year** during in-service days and by providing optional after-school sessions. Engage with your regional training centers (e.g. AEAs, CESAs, ESCs, etc.) because they can often provide extra professional development resources.

Tip #15:
Council Bluffs developed two-hour Teacher Academies (http://goo.gl/KJeLq) offered after-school for teachers. They would cap these sessions at 30-35 teachers.

Tip #16:
Leyden School District has flipped the PD model by recording videos and having teachers watch them before training. Then teachers come to training to implement what they've learned.

13. Encourage your teachers to become **online learners** themselves by signing up for online courses, such as the Google Power Search class (http://goo.gl/A4xNE).

14. **Make professional development relevant** by structuring it around what teachers are actually doing (e.g. create a lesson plan for Thursday).

15. **Highlight one tool a month** for teachers and ask them to incorporate it into their teaching

> **Tip #17**:
> Rochester 3A School District recently featured Brainshark as one tool for their teachers.

16. **Work with media specialists and librarians** to assist with student and teachers' questions on content they can access on the web. For example, they can take the Google Power Search class, and then teacher students and teachers the best ways to search on the web, find information, organize information (Drive), etc.

17. **Stop purchasing software** once you have a majority of teachers feeling comfortable with web resources.

> **Tip #18**:
> Fond du Lac School District stopped purchasing Office licenses for computers. They then used the saved money to put into additional tech initiatives.

18. Consider **attending a regional Google summit** and bringing your most tech willing teachers who can bring best practices back to your district

Section 6 - Successful Deployment

1. Conduct a **student pre-inventory form** (http://goo.gl/BmLg7) to gain an understanding of access to technology and Wifi environments at home.

2. Consider if you will roll out in **phases or groups, grade levels or a "big bang" approach** throughout the district.

3. **Come up with school-wide / district-wide policies** on acceptable use of technology, social media usage, parent/student contract, etc.

> **Tip #19**:
> Many districts and teachers have already come out with these policies and are willing to share them. For example, see this rollout guide (http://goo.gl/Fs3BN) by James Sanders, a teacher at KIPP Bay Area.

4. Will you **engage a Google Partner** to assist with deployment and or Professional Development?

5. **Determine logistics**:
    - Will students take the devices home or not during the school year?
    - Will students take the devices home during the summer?
    - Will students continue to use the same device throughout their schooling or whether they will receive a different device each year.

6. Decide if you will have **3rd party insurance or a self-insured program** if you decide that you need that insurance.

7. Based on your student pre-inventory survey, determine if you will have a portion of **3G devices** for students without internet access at home. You may also want to work to expand Wifi options for students. These could include:
    - Partnering with the local library
    - Extending hours of access to certain parts of your schools' building with wifi access
    - Partnering with local businesses who may offer free Wifi
    - Engaging with local internet service providers to negotiate reduced rates for low income students

8. Determine **filtering options** for users off of the school wireless network.

9. Consider establishing a **Tech Support Internship class** for your students. These students will help with tech support questions and issues and can also use the class to pursue other relevant certifications, such as C++ or becoming a Google Apps Certified Trainer.

> **Tip #20**:
> Learn more about how Leyden School District structured their Tech Support Internship class (http://goo.gl/xCgcg).

Feedback

We hope you have found this guide helpful. If you have developed any helpful resources, or have any feedback, please let us know! You can email Mike Schwab (mikeschwab@google.com) or Steven Butschi (sbutschi@google.com).