

St. Paul's Lutheran School Technology Plan

2016-2020

Respectfully Submitted by the St. Paul's Technology Committee:

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Overview of The Technology Committee's Study

From its onset, the Technology Committee's focus was to improve student learning through the use of technology. There are a myriad of devices, programs, and technologies available to students, but without a strong tie to student learning, these items are reduced to quickly passing fads and pricey toys.

The Technology Committee believes that all the devices in this plan will aid student learning. The students will have opportunity to dig deeper into the content areas, explore interactively, and work more efficiently. With these goals, it was determined that students in Grades 3-8 should each have access to a device throughout the school day. The Technology Committee recommends that our school goes 1:1, where each student would receive his/her own device at school.

The Scope and Sequence document was completed first. This document lays out the basic skills that students will be learning at each grade level at St. Paul's. In the lower grades, students will explore content and reinforce skills in a very hands-on way through the use of touch-screen tablets. In the middle grades, students will work to develop proficient typing skills and use laptops in a very guided manner to learn more about content areas through selected resources from the teacher. In fifth grade, all students will take a computer basics class to learn necessary skills in common programs. In the upper grades, Google docs will be incorporated into classes throughout the day. Students will use these programs to create content for various subjects. Finally, our students in grades 6-8 will have the option of taking advanced computer classes and participating in Lego League.

Once student learning goals had been established, the committee directed its attention to the infrastructure needed to accommodate this style of learning. It was determined that several significant upgrades will need to be made. New wires will be run to accommodate additional wireless access points, wire raceways will need to be installed to make sure these wires are tucked away. Our firewall and switches need to be upgraded in order to accommodate the increased number of computers.

Student devices were selected next. The committee researched three different school districts and several different platforms including Apple, Windows, and Google Apps for Education.

After long discussions about the benefits and drawbacks of the different systems, it was determined that Google provided the most comprehensive, user friendly platform of the three. Google Apps for Education has an administrator's console that allows teachers to easily modify the settings of student devices, add applications to student devices, interact with students by sharing documents. Additionally, Google Apps provide the ability for teachers to "hand out" homework digitally and for students to "submit" completed homework digitally.

Chromebooks were selected because each computer can be enrolled into one administration console. Managing the settings on all of our devices becomes very simple. Additionally, there are few devices that provide the same functionality for the price. The Chromebooks the Technology Committee recommends are under \$200 apiece.

It was determined that the tablet lab for students in Preschool through 2nd Grade could be comprised of Apple I-Pads. The committee recommends that St. Paul's publicizes to school families and the congregation that we will happily take I-Pad donations from individuals who are upgrading to a new device and no longer need their old one. Students will use educational games on the I-Pads that have been purchased from the I-Tunes store. The I-Pad lab will serve as a center for small groups of students. St. Paul's would like 6-10 devices to stock the I-Pad lab.

Finally, other components, such as charge carts and printers were selected to support the laptops that were recommended for Grades 3-8.

The Technology Committee is continuing its work, with a goal of creating a Technology Handbook for student and parents and a Maintenance and Replacement Policy for our equipment. Both documents should be completed by the end of this school year.

The next pages provide specific information for the St. Paul's Technology Plan including:

- Scope and Sequence
- Overall Cost Estimate
- Infrastructure and Wiring Bid from Peter Kramp (The Tech)

Technology Education at St. Paul's Lutheran School

Philosophy

St. Paul's Lutheran School provides (add device(s) here) for students to use throughout the grade levels. It is our goal to provide enhanced learning experiences and a variety of teaching methods by integrating technology into all areas of instruction. Equipping students with these devices will benefit the students and school by:

- Providing additional options for presentation of information in classes
- Providing access to additional current materials for classroom use
- Encouraging faculty members to reevaluate the methods of teaching in their classroom
- Providing additional resources not normally available to both teachers and students
- Achieving ISTE NETS standards throughout the curriculum
- Addressing needs identified through the Accreditation process surrounding technology in the classroom
- Allowing us to fully use systems already in place to extend the classroom such as Google Apps for Education
- Reducing the digital divide between school and home
- Equipping students for their future in a technology rich world
- Training our students throughout the curriculum to show and share their faith as digital citizens in a digital world
- Creating device uniformity across the school allowing for the technology to benefit the classroom rather than the technology impeding the education

Scope and Sequence

Early Education (Preschool - 2nd Grade)

Technology: I-Pad Lab / Center, Occasional PC Lab Use

The students will...

- learn the basic functions of an I-Pad by using St. Paul's I-Pad lab / center to engage in tactile learning.
- use the I-Pad lab for enrichment and reinforcement activities.

The teachers will

- use Smart Boards and document cameras to convey pictures, ideas and improve close-up learning for larger groups.
- seek out additional technology methods to help improve hands-on education of early education students.
- research apps found in the iTunes Store to enhance and enrich student learning and download them to the Ipad lab.

Middle Grade Education (3-4 Grade)

Technology: PC Lab, Chromebook Lab

The students will...

- be introduced to typing using the PC Lab with hands covered to gain fluency and proper typing technique
- be introduced to the basic functions of a word processing program on Google docs
- use Chromebooks to access a teacher-created web page for subject learning links (skill practice, enrichment activities, supplemental videos and articles)

The teachers will...

- use Smart Boards, teacher web pages, and document cameras to convey pictures, ideas and improve close up learning for larger groups.
- seek out additional technology methods to help improve hands-on education of middle grade education students.

Upper Grade Education (5-8 Grade Homeroom)

Technology: Chromebook Lab

The students will...

- use Docs, Slideshow, Sheets on Google docs to demonstrate knowledge in various subject areas.
- use Docs interactively with the teacher and other students to collaborate on projects and edit written works.
- use Chromebooks to access a teacher-created web page for subject learning links (skill practice, enrichment activities, supplemental videos and articles)

The teachers will...

- use Smart Boards and document cameras to convey pictures, ideas and improve close up learning for larger groups.
- use Google Apps for Education, teacher-created web pages, and blog sites to create in-depth, interactive learning experiences for students.
- research and apps found in the Chrome Store to enhance and enrich student learning and make them available to the class via Chromebook.
- seek out additional technology methods to help improve hands-on education of middle grade education students.

5th Grade Computers (Required Course in Computer Lab)

Course Length: 1 Year

Technology: PC Lab

The students will...

- gain proficiency in typing using the PC Lab with hands covered to gain fluency and proper typing technique.
- learn computer basics such as finding and moving documents, and printing and saving files.
- create word processing documents using toolbars and shortcut keys.
- develop spreadsheets containing formulas using toolbars and shortcut keys..
- create flyers, posters, and bulletins using toolbars and shortcut keys..
- create slideshow presentations using toolbars and shortcut keys.
- learn safety when searching online and using various websites.
- learn how to effectively evaluate websites for truthfulness, credibility, and appropriate tone.
- learn proper “net etiquette” and be able to identify cyber-bullying.

Advanced Computers (Grades 6-8 Elective Course in Computer Lab)

Course Length: 1 Semester

Technology: Computer Lab

The students will...

- Make games in Microsoft Powerpoint
- Use Microsoft Powerpoint to create videos
- create and edit short movies including sound effects and music.
- edit photos
- create web pages
- research careers in technology

Programming and Robotics Basics (Grades 6-8 Elective Course in Computer Lab)

Course Length: 1 Semester

Technology: Computer Lab, Raspberry Pi

The students will...

- Use programs such as Scratch to learn basic programming skills
- Apply programming knowledge to complete specific tasks on devices such as Legos and Raspberry Pi devices

Lego League (Grades 3-8 Extra Curricular)

Course Length: Fall Semester

Technology: Computer Lab and Legos

The students will...

- engineer a robot to complete FIRST Lego League missions
- shadow a programmer to learn Lego Mindstorms EV3 programming
- engage in a research project as part of the FIRST program
- participate in Core Values team building activities per the FIRST program

Appendix - Resources for Teachers

Bible History

- “Bible Gateway” provides an easy to use search tool for any bible passage:
(<http://biblegateway.com/>)
- “Lego Bible” provides an alternative way of teaching kids Bible lessons:
(www.youtube.com)

Social Studies

- “Google Earth” (must be downloaded to computer): (<https://www.google.com/earth/>)
- “Time Toast” to create digital timelines: (<https://www.timetoast.com/>)

Math

- “Alex” math assessment, placement, practice, enrichment: (<https://www.aleks.com/>)
- “Math Game Time” provides games for math reinforcement at every grade level:
(<http://www.mathgametime.com/>)
- “Cool Math Games” provides games for math reinforcement at every grade level:
(<http://www.mathgametime.com/>)
- “Easy CBM” provides baseline tests in math to determine student placement and areas for reinforcement: “<https://easycbm.com/index.php>”

Science

- “Labster” has a wealth of virtual science labs: (<https://www.labster.com/>)

Spanish

- “Babbel” for Spanish class: (<https://www.babbel.com/>)

Computers

- “Typing Club” typing program: (www.typingclub.com)
- “Code Monkey Studios” to teach coding: (<https://www.playcodemonkey.com/>)

- “Code.org” to teach coding: (<https://code.org/educate>)
- “Khan Academy” to teach computer programming:
(<https://www.khanacademy.org/computing/computer-programming>)
- “Weebly”, “Blogspot”, “Web.com” to create websites and webpages.
- “Scratch” to learn basic programming skills: (scratch.mit.edu)

Misc.

- “Prezi” allows you to create interesting presentations: (<https://prezi.com/>)
- “Evernote” lets you access your notes and other documents anywhere:
(<https://evernote.com/>)
- Minecraft for Education: (<https://minecrafteu.com/>)
- “Poll Everywhere” for quick formative assessment and survey with Chromebooks:
(<https://www.polleverywhere.com/>)
- “Kahoot” program for teachers create quizzes. Students login and compete against each other: (<https://getkahoot.com/>)
- “Glogster” to create online multimedia posters. Combine all kinds of media on one page and create fantastic posters: “<https://www.glogster.com/#one>”
- “Screencast” downloadable software to make your own video presentations - think flipped classroom. (<http://www.screencast.com/>)
- FLL alignment maps <http://www.firstinspires.org/node/5546>

Overall Cost Estimate

Priority Order in Which Purchases Will Be Made:

Phase 1:

- | | |
|---|-------------|
| 1. Infrastructure (Cabling project, AP's, Switches) | \$18,118.75 |
| 2. 7-8 Laptop Lab / Charge cart (25 devices) | \$7,750 |
| a. \$230 per device with Management Console | |
| 3. Printer for 7-8 Grade Classroom | \$225 |
| 4. K, 1-2 Classroom Document Cameras | \$250 |
| a. \$125 each | |

Phase 1 Total: \$26,343.75

Phase 2:

- | | |
|--|---------|
| 5. 5-6 Laptop Lab / Charge cart (25 devices) | \$7,750 |
| a. \$230 per device with Management Console | |
| 6. Printer for 5-6 Grade Classroom | \$225 |
| 7. Computer Lab Upgrades | \$3,500 |

Phase 2 Total: \$11,475

Phase 3:

- | | |
|--|---------|
| 8. Grades PS - 2 Tablet Lab / Charge Station | \$500 |
| 9. 3-4 Laptop Lab / Charge cart (20 devices) | \$6,600 |
| a. \$230 per device with Management Console | |
| 10. Printer for 3-4 Grade Classroom | \$225 |
| 11. Computer Lab Upgrades / Replacements | \$3,500 |
| 12. 3-4, 7-8 Document Cameras | \$250 |
| a. \$125 each | |

Phase 3 Total: \$11,075

Grand Total: \$48,893.75