



Black Gold School Division

Technology Plan

2022 - 2025

Introduction

Black Gold has a long history of supporting teachers in the infusion of technology. While we take pride in providing excellent technical support to our schools, our primary focus is always on student use and assisting teachers as they work with their students. To this end, Black Gold employs an Educational Technology Consultant and Technology Integration Facilitator(s) who work with our staff to assist them as they move forward with increasing technology integration. Our focus is on critical thinking skills, HOTS (analyze, evaluate and create), collaboration and personalization based on the Alberta curriculum.

Purpose of the Plan

Black Gold Regional Schools has developed and subsequently revised a three-year Technology Plan since its inception. It is reviewed annually to align with Board of Education and Alberta Education goals.

Planning Process

The Technology Integration Planning Committee meets at least twice a year to review and revise the Technology Plan and propose related actions based on the plan. The plan is published on the BGSD website.

The development of the plan by the Technology Integration Planning Committee involves review of and changes to the previous plan. Additions and changes reflect the last two years of discussion focused on changing trends in technology in conjunction with strategic planning undertaken by the Board of Education.

Technology Vision, Beliefs and Goals

The Board of Education's vision is to enable students to fulfill personal aspirations while they learn how to become lifelong learners and contributing members of society.

Our Technology Vision: Learning and teaching in a digital world

We envision classrooms with readily available digital tools and resources to engage learners and teachers in the collaborative pursuit of challenging and personalized learning experiences. Students will demonstrate ethically responsible use of digital tools reflective of today's global, digital world.

Our Technology Beliefs:

Our belief is that digital technologies play an integral role in preparing students as future global citizens. Technology is used to engage students, help them expand their thinking beyond personal experiences, think critically about ideas and information, and explore creative expressions while making connections to life in and beyond the classroom. Digital resources used throughout the curriculum help students to successfully live, learn, work and communicate in our evolving cross-cultural digital society. The best use of digital tools and resources is to focus their application on higher order thinking skills and personalizing learning in a collaborative setting. All students as developing digital citizens should have ready access to available digital technologies in the course of their school work. All staff should have ready access to appropriate technologies and support in the use of digital tools and resources.

Educational Technology Leadership

Our purpose as leaders is to work with all stakeholders to co-develop and maintain a shared vision and responsive culture for innovative teaching and learning that is enabled through technology by enhancing

educational technology leadership capacity in ongoing trend areas:

- Increasing embedded technology use through curriculum change
- Personalized learning to help all students succeed
- Connecting schools with social learning through collaboration, partnerships and networking
- Building safe supportive positive environments in our digital world

We have identified goals in educational technology leadership for administrators:

- Develop a strong shared vision of technology use
- Communicate technology use expectations to staff regularly
- Shared Leadership: mobilize commitment from champions
- Lead by example: model technology use with students and staff
- Efficient and effective use of technology resources

Leadership indicators are tied to the Leadership Quality Standards as outlined in Alberta Education's nine competencies of the LQS document.

Teaching and Educational Technology

Our purpose is the integration of technology to build on a foundation of **literacy** and **numeracy** to help students make sense of a rapidly changing world, supporting students as they build their conceptual understanding of the learning outcomes, taking a mental construct that is abstract, timeless and universal, and transferring it to multiple situations, leveraging technology to bring "real world" meaning to content knowledge and skills.. Conceptual understanding brings relevance and rigour to learning as it places an emphasis on higher-level thinking skills such as analysis, synthesis, and evaluation as students apply concepts to other contexts. Students will have opportunities to build an understanding of how knowledge has been constructed within a discipline or topic so they can go beyond rote and surface learning. This will challenge students to be actively involved in the development and explanation of their knowledge.

Technology allows for personalization of the curriculum. Students have choice and can engage with the curriculum, demonstrating their knowledge in various ways. Collaboration is also greatly enhanced with technology as students and staff are able to share goals, build consensus and share diversity.

The Educational Technology Consultant and Technology Integration Facilitators support teaching and learning by:

- Working collaboratively with teachers in the development of personalized, collaborative, creative and critical thinking resources, lessons, and activities using vetted digital tools and media
- Supporting the use of Chromebooks and other educational technology projects
- Supporting administrators in planning technology use
- Collaborating with other Learning Services personnel
- Maintaining the Black Gold Engaging Students website.

- Supporting teachers and students in the use of assistive technology.

Curricular Change

Change in the pedagogical use of technology requires a systemic change in the way educational activities, projects and tools are used. In order to further encourage pedagogical technology change to coincide with curricular change, various models of technology use will be leveraged. The SAMR Model of Technology Use by Dr. Ruben Puentedura is an example that can help identify opportunities for change.

Access to Technology

All classrooms have access to technology through division supplied devices, new sets will be added if enrollment changes justify additional computers. Evergreening of devices will occur on a regular basis. Recycling of computers is managed by a certified recycler that wipes the data from the device. Chromebook computers that are still operational but no longer managed by BGSD may be distributed to families that do not have a device for their child. These devices are not supported by BGSD in any way.

Bring Your Own Educational Device (BYOED)

Bring Your Own Educational Device is an initiative that encourages students (and staff) to use their own electronic devices in classrooms to personalize their learning. While we encourage staff and students to bring their own technology to school, BYOED programs have clear goals for student use within a classroom. All formal BYOED programs must meet specific criteria as outlined below. BYOED implementation is a school based decision and managed from both the classroom and overall school level. Some classrooms have a mix of devices relying on BYOED devices to attain a 1:1 level of access.

BYOED School Requirements for Classroom/School-wide Implementations

- A well articulated plan that integrates the BGSD goals for technology use.
- Student FAQ opportunity
- Parent Council discussion
- Parent Letter/Survey
- Parent FAQ opportunity
- Signed Admirable Use Agreement for each student
- Additional (if any) technology requirements determined, including base devices

Assistive Technology

The Universal Design for Learning Model encourages the use of digital tools and media to assist students by providing for multiple methods of representation, expression and engagement. While some tools may be targeted towards students with physical, sensory, cognitive, speech, learning or behavioral special needs, many other students can be assisted in meeting their individual learning goals through the use of these tools. The Student Services Department, supported by the Technology Department, will match the appropriate assistive technology platforms and related tools to student needs. This ranges

from personalizing learning through Google Workspace for Education apps to specialized access, specialized software, and specialized services to create meaningful and participatory access to learning. Student Services' role then is not only to diagnose and prescribe, but also to support teachers in their understanding of the use of "assistive" and emerging technologies in their classrooms with students who "need" assistive technologies.

Cross Curricular Technologies

Tools that can be used to cross curricular boundaries to engage learners in a variety of outcomes are encouraged and supported. Often these tools are specialized enough that schools will not deploy on their own. To that end, Educational Technology will employ a variety of educational tools that support these unique activities. This varies from hardware sets, shared among schools, to software activities. Possible technologies - BeeBot and ProBot robotics, digital imaging, plotting, 3D printing, Micro:bit, and Minecraft.

Keeping Technology Current

Evergreening: Student Computers

Computers will be distributed as below. With current budgeting allocations, evergreening assumes a 6 - 7 year equipment life.

- Chromebooks for all grades, sets of 25 in grades 1 and 2, sets of 30 in grades 3 to 12.
- Division 1 grades will have access to a set of touchscreen chromebooks. This may be augmented with Chrome Tablets as well.
- A small number of Touchscreen Chromebooks will be supplied yearly for Student Services. These devices are dedicated to students as identified by student services.
- CTS/CTF computers consist of one lab per division 4 school for every 400 students as dictated by curriculum needs. These computers are Microsoft Windows based with a full keyboard and 24" screen. Schools may choose to purchase Apple Mac computers, additional costs are covered by the school.
- Cloud printers will be supplied at a rate of one for every 6 computer carts or group of 180 devices.
- Chromebooks in schools will be maintained at a 1:2 ratio; 1 device for every 2 students with division based funding. As additional funds become available the ratio will be lowered, getting closer to the ideal 1:1.

Evergreening: Network Infrastructure and Servers

- Servers are replaced on an ongoing basis,
- Infrastructure for networking both wired and wireless, including associated equipment such as firewalls, switches, etc. is replaced on an ongoing basis.

Evergreening: Classroom Computers

Classroom technology will consist of a desktop computer, 24" monitor, wireless keyboard and mouse and a classroom display of a short throw projector. All classroom computers are generally replaced every 6 - 8 years and projectors every 10-12 years. Associated peripherals such as document cameras and printers are the responsibility of the school, as are the cost of parts necessary for the repair of any computer.

Surplus Equipment

- Equipment purchased by a school and declared surplus will be available to other schools through the Technology Department at market value as long as the device can be updated to the current operating system. Equipment declared surplus that is not needed by any school will be recycled, sold or donated.
- Recycling of computer and network technology will be done through the Technology Department
- Sales and donations will be done through the technology department with monetary transactions handled by the Business Services Department.
- Schools must coordinate the donation or request of computers for schools through the technology department.

Technology Fee

Starting in the 2019-2020 school year the BGSD School Board approved a technology fee of \$10 for division 1 and a \$20 fee for division 2, 3, and 4. These funds are not to be used for student devices, it is to cover software and technologies that the students have not had access to in the past, assistive technologies, creative software, writing assistance and feedback software and enrichment hardware such as robotics and virtual reality headsets. The fee will also be used to cover additional bandwidth and infrastructure cost for student access and BYOED.

Starting in the 2022-2023 school year BGSD has a hardware technology fee. This fee was approved by the BGSD School Board to help bring the device:student ratio closer to a 1:1 level in our schools, ensuring access and equity for students. This fee is \$10 for division 1 students and \$30 for division 2, 3 and 4 students. 100% of the funds will go to purchasing Chromebooks for student use. With the additional fee the chromebook numbers will be improved from a 1:2 ratio as mentioned above to closer to a 2:3 ratio or even 1:1 ratio in some grades.

These fees will be reflected on student accounts as one fee with a detailed description of what is covered by the fee.

Technology Support

The Division maintains a Technology Department to offer support to school and Division personnel. This support includes:

- Planning and Consultation
- Purchasing

- Installation and Support
- Maintenance
- Professional Development

I.T. Staff

- I.T. Manager
- I.T. Analyst
- I.T. Technicians

Service Management

In order to facilitate an efficient use of system personnel, setup, troubleshooting and repairs are prioritized as follows:

- **Severity 1 – Critical System is Down:** WAN, LAN, Whole Lab, Internet, Firewall, E-Mail, filtering, servers and data backup; Office staff member cannot perform job; Regulatory or Legal Implications
- **Severity 2 – Teacher/Student Can Not Work - No Workaround Available:** Teacher Desktop PCs, classroom multimedia technologies connected to Teacher PCs, new staff/student accounts, special needs student assigned PCs; all copies of an important software program in a lab not working
- **Severity 3 – Some But Not Most Affected:** some hardware/software is not working in lab, carts, etc. but is working on all but a few machines.
- **Severity 4 - Workaround Available:** print to another printer; student/staff personally owned devices not connecting to wireless access, etc.
- **Severity 5 – New Install:** software and hardware, new initiatives and emerging technologies

All parts, other than for those related to servers/network infrastructure, are a school based expense.

Purchasing

There are several issues concerning technology infrastructure that have been identified in Black Gold. These include the large investment the Board has made in technology, the need to support the program in a cost-effective manner yet maintain an appropriate number of support personnel, legal concerns regarding unauthorized software, system needs, and Alberta Education requirements.

Guidelines established to address these concerns include:

- all hardware and software will be purchased either through, or with knowledge of, the Technology Department and will be supported based on system support standards as below;
- all donations (currently, used equipment is not accepted) will be made through the Technology Department and will be based on system standards; Donated technology is not supported by Division IT.
- management of networked equipment and services should occur centrally;
- schools and departments must maintain an inventory of all software purchased;

- chromebooks will be the preferred platform for student use purchases, unless specialized hardware/software is required and associated funding is allocated as necessary above the base purchase budget;

Technology Department Support of BGSD Owned Devices

All software not purchased by the division, including Operating Systems, and related updates on these systems, must be legally purchased by the school or department. All such purchases must be documented by the school or department and shared with the Technology Department as to which hardware they are associated with.

BGSD uses Google Workspace for Education for all email, staff and students. Chromebooks are managed from the Google Admin panel and the Apps are now the main office tools for student use. Microsoft products are purchased and provided by a license agreement through Alberta Education.

Recommendations for student software are provided by the Technology Integration Facilitators, Student Services and school administrators. Web software must be vetted for FOIP concerns. An Educational Technology Risk Assessment Framework is maintained by the Educational Technology Consultant. Other software will be installed on servers only after successful testing by the Technology Department, as part of the purchase process. All schools must maintain records of software purchases for audit purposes. Some access to install legally obtained software and/or digital materials locally is given to teachers on their own classroom computer or student netbooks on a case by case basis. However, this software may be removed at any time as a computer is reimaged as part of the functional identity model. Software that has not been tested by the Technology Department should not be installed.

BGSD has a volume purchase plan with Apple Canada for hardware and software applications for MAC and iOS devices. In order to obtain discount volumes for software purchases the apps may be pooled among schools, co-ordinated by CO, for iOS devices. All Apple purchases must come through CO in order to count as a BGSD device and gain Apple support.

Networks

All classrooms are wired back to wiring closets with at least one connection. All labs are wired. All offices are wired back to wiring closets with at least one connection. Additional wiring will be installed as necessary.

Standard secure wireless networks have been developed and integrated into the existing network as necessary to meet curricular and operational needs. All school sites have wireless access throughout the building and in classrooms. No other wireless networks are allowed or supported. Black Gold owned wireless portable devices are set up to connect to the full Black Gold network including servers. Shaw Go-WiFi has installed some antennas on school facilities but they are not associated with the BGSD network in any way.

Staff owned and student owned laptops and other portable devices, will be allowed to connect on a public Black Gold wireless network, with Internet access only. Staff and student owned laptops and other

devices will not be supported by the Technology Department or the Division. Liability for loss, damage or theft of the device resides solely with the user.

A SuperNet-based Wide Area Network has been established to facilitate administrative and student communications and research. All access is through a gateway at the Central Office in Nisku to allow for firewall protection and URL blocking, as well as efficient sharing of a high-speed line to the Internet. The network allows video conferencing and remote management of hardware as required.

Terminal server (thin-client) access through VPN supporting MFA over the Internet from outside the Black Gold network will be available to all staff members who use computers as part of their job requirements.

Security

All reasonable efforts will be made to maintain a secure network. Unfortunately, this will result in some constraints to computer use. Non-Black Gold equipment is restricted as outlined above. All users, both students and staff are expected to sign and abide by the Division Admirable Use Agreement. Student agreements are maintained by the school, staff agreements by the Human Resources department.

Minimum requirements for passwords are set and enforced. Access to staff data is governed by the division's privacy and security policies. Staff folders can only be accessed by someone other than the owner at the request of the Superintendent - Human Resources. Student data may be accessed at the request of the school principal.

All Black Gold laptops that may contain student data will be encrypted in case of loss or theft. School principals and Central Office Department Heads should inform the Technology Department of any such portable computers or USB data storage devices to arrange for encryption.

Removing laptops from Black Gold property must be approved by the school principal. Laptops and other portable devices should never be left unattended, even in a locked vehicle.

Any device, staff or student, that is lost or stolen must be reported immediately to the BGSD FOIP Coordinator and the I.T. Manager.

Black Gold has an Administrative Procedures Manual which includes more detailed expectations of staff, as required by Alberta Education.

BGSD has implemented an LDAP server to manage usernames and passwords. All users will have one username and password for all services and the password will be changed on an annual basis. A password self service portal will be provided. Multifactor Authentication is required for all Google and O365 Accounts. Staff with local privileged access will be required to have MFA at the desktop.

When staff transfer schools or leave the division they will work with school administrators to transfer any shared documents owned by the staff member prior to leaving the division. File management policy, education.

Videoconferencing

Videoconferencing may be used for curricular, administrative and/or professional development needs. The Technology Department will establish procedures for shared resources and access outside of Black Gold.

Storage

All BGSD school staff are to use Google Drive for file storage and Google Drive for Desktop for access to their storage from within Windows 10. School servers have limited space for staff and student file storage. Google storage will be limited for staff and students in order to stay below our assigned storage cap. Offsite backups of files crucial to Division operation will be maintained by the Technology Department. Network storage areas are the property of the Division. Network administrators may review files and communications to ensure system integrity and responsible use of resources as per BGSD policies.

Cloud services such as our GAFE environment will be backed up when services are reasonably available such as a secondary cloud service or internal backup. In addition to centralized storage Microsoft Office 365 Sharepoint will be leveraged for storage for policy, procedure and a working document management system.

Educational Management and Administration

Student Cumulative Files

BGSD student data as mandated by Alberta Education is stored in the PASI Student Record database. Supplementary files will be stored on the BGSD Sharepoint system integrated with CLASI software. Each school scans and prepares new documents for upload to PASI or the supplementary sharepoint as required. Division office manages the verification of records.

Student Records

PowerSchool is the database program utilized by BGSD for maintaining student related data. Student information shall be maintained in a standard manner, with data entry the responsibility of each school. The goal is that all data is entered and maintained by the individual school responsible.

PowerSchool is accessible by all the appropriate BGSD personnel with different levels of authorization in terms of information retrieval and maintenance. PowerSchool is synced with Alberta Education's PASI student information system, with data flowing from PowerSchool to PASI.

Grades, attendance and assignments in PowerSchool may be shared with parents and students.

Libraries/Learning Commons

Destiny is the centralized library circulation program used in BGSD. The use of e-books, digital audiobooks and podcasts is within the context of the Destiny library system. All BGSD Library/Learning Commons resources are cataloged according to national standards.

E-Mail

Google Mail, with the Black Gold Google Apps domain, is the email platform used for staff and student email accounts in BGSD. The account is owned and maintained by BGSD.

Engaging with Parents, School Communities and the Digital World

Parent Communication

Electronic grade books, attendance and assignment information available in PowerSchool will be shared with parents.

Public Publishing

Web Publishing is a powerful tool for students, teachers and administrators. All members of the school community may publish documents online for viewing on the Internet. Our Google domain provides various tools that can be used to publish content online and the BGSD websites provide a blog platform. A Moodle site is maintained by BGSD and staff and students may also use 3rd party tools to publish content.

Publishing of documents is governed by the following guidelines:

1. Private information concerning students or staff may not be published in any form.
 - This includes but is not limited to any information protected under the Freedom of Information and Privacy Protection Act. (FOIPP)
 - Photographs of students and student work may only be published if an appropriate general consent form is signed. The form must be signed by the student's legal guardian.
 - Home addresses, home phone numbers or other contact information for students or staff may not be published.
 - Web programs used by students must be vetted for FOIP concerns
2. All materials must be published in accordance with all existing copyright legislation.
 - The use of original or royalty-free material is encouraged.
 - If copyrighted material must be used, permissions of the Canadian Copyright Act must be followed.
3. Web site content posted on Black Gold School Division servers must be of an educational or administrative nature.
 - Web site content that promotes products or services is not permitted
 - "Vanity" sites are not permitted.
4. The author of a website is responsible for maintaining that site.

- Sites are to be kept current and accurate.

Public Publishing Responsibilities

Black Gold school websites have a common look and feel. All schools will maintain and keep current the web pages to provide information to current and potential parents and students.

Blogs and Wikis allow for collaboration and public publishing of student materials. All permissions that would apply to posting on a website apply to these areas as well. Passwords can restrict access and should be used in a manner that would mirror the normal access to student generated material in a classroom.

When new 3rd party web tools are used in BGSD classrooms that require a username and password the terms of use and privacy policy shall be reviewed by the teacher. All Chrome extensions and applications available in the BGSD chrome store gather minimal data on students. Teachers need to be aware of data access requests by 3rd party programs and the privacy implications for student data. Examples of things to consider:

- Requests for addresses or full names
- Requests for parental information
- Age related access recommendations
- Marketing to parents or students
- No privacy policy
- No data control

Evaluation and Reporting of This Plan

The rapid change of technology and curriculum will lead to frequent revisions of the plan. The plan will be continuously monitored and reviewed annually.

Several times over the course of each year, the Technology Integration Planning Committee will meet to evaluate the following:

- Were the goals associated with the BGSD Strategic Plan of the previous year met?
- Are curriculum goals as mandated by Alberta Education being met?
- What new goals for the BGSD Strategic Plan need to be added?
- What goals for the BGSD Strategic Plan need to be modified?
- What if anything needs to be changed in the overall vision and focus for technology use?

Technology Integration Planning Committee Members (2022/25)

(Positions/locations as of Spring 2022)

Robyn Steed	Trustee	Board of Education
Sean Flanagan	Principal	Ecole Leduc Junior. High School
Kathy Kloschinsky	Principal	Robina Baker Elementary School
Dan Lake	Principal	Calmar Secondary School
Richard Dechane	Assistant Principal	Leduc Composite High School
Annie Savard	Assistant Principal	École Leduc Estates School
Farhana Ibrahim	Teacher	École Secondaire Beaumont Composite
Jordan Baulkham	Teacher	École Corinthia Park School
Jaclyn Smith	Teacher	East Elementary School
Barry Scheelar	I.T. Manager	Central Office
Norm Dargis	Associate Superintendent	Central Office
Ray McCubbing	Ed. Tech Consultant	Central Office
Observers:		
Darren Maltais	TIF	Central Office
Rob Baptiste	I.T.	Central Office