Charlo Public Schools

Integrated Technology Plan

2011 – 2014
(Created September 17, 2010
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Introduction

The Charlo Public Schools (K-12) have built a proud tradition of educating students in the community. The Charlo Board of Trustees has committed its efforts and monies to insuring that district students and teachers have the best possible equipment, materials, and training available for instruction. This effort includes providing opportunities for students, teachers, and community members to become efficient and literate users of current technology. The district is located in a rural area of Montana which has caused the district to explore and develop the use of technology to further enhance student educational experiences. The use of technology has been integrated throughout the school district to promote school improvement, professional development, student academic achievement, assessment, and the advanced delivery of instruction. Technology is the tool that allows the district to equalize opportunity for students and teachers with larger districts in the state, while providing the individual and personal education that only smaller schools can offer.

The Charlo School District has developed and implemented this technology plan to improve student achievement at all levels through the integration, use, and application of technology in curriculum and instruction. The district utilized the OPI Ed Tech Plan, E-Rate guidelines, Montana Technology Standards, local surveys, Charlo District/School profile data, student academic achievement data, and the districts Five Year Comprehensive Plan as the basis for development of this integrated technology plan. In addition, the district performed a review of relevant research to provide staff with curriculum and teaching strategies that integrate technology into instruction. This plan will serve the Charlo District/Schools as a blueprint for the integration, use, and application of technology to continue improvement of student academic achievement.

Charlo District Vision/Mission Statement

The community of Charlo Schools accepts the responsibility to foster a safe learning environment that will enhance development of social and academic skills for all students.

Part 1: Goals and Strategies for Use of Technology & Telecommunications

Sections A, B, C - Goals, Academic Achievement, Student & Teacher Technology Literacy

The following goals align with Ed Tech A, B and E-Rate 1A, 1B, 1C, 1D.

Goal		5YCEP Reference
1	The Charlo District will provide all staff with the professional development needed to integrate technology into the curriculum and instruction to improve academic achievement. *Timeline: The district will have this goal in place 2011 to 2014.*	District & School Goals 1, 2, & 3
2	All Charlo teachers will know, understand, and be able to teach the content knowledge required by the Montana Content and Performance Standards for Technology. (new standards August 15, 2008) *Timeline: The district will have this goal in place 2011 to 2014.*	District & School Goals 1, 2, & 3
3	All Charlo staff including teachers and administrators will be technologically proficient. *Timeline: The district will have this goal in place 2011 to 2014.*	District & School Goals 1, 2, & 3
4	All Charlo students will be technologically proficient by 8th grade. *Timeline: The district will have this goal in place 2011 to 2014.*	District & School Goals 1, 2, & 3

Goal 1	
The Charlo District will provide all staff with the professional development needed to integrate technology into the curriculum and instruction to improve academic achievement. *Timeline: The district will have this goal in place 2011 to 2014.*	
Objective 1	Charlo staff will rate themselves a "3" or better as measured by the Teachers' Technology Use in Teaching and Learning sections of the Taking A Good Look at Instructional Technology (TAGLIT) by spring of 2012.
Objective 2	Charlo staff will rate themselves a "3.25" or better as measured by the Teachers' Technology Use in Teaching and Learning sections of the Taking A Good Look at Instructional Technology (TAGLIT) by spring of 2013.
Objective 3	Charlo staff will rate themselves a "3.5" or better as measured by the Teachers' Technology Use in Teaching and Learning sections of the Taking A Good Look at Instructional Technology (TAGLIT) by spring of 2014.

Goal 2	
All Charlo teachers will know, understand, and be able to teach the content knowledge required by the Montana Content and Performance Standards for Technology. (new standards August 15, 2008) *Timeline: The district will have this goal in place 2011 to 2014.*	
Objective 1	Charlo staff will know, understand and be able to teach the content knowledge required by the Montana Technology Content and Performance Standard 2, a student must: collaborate and communicate globally in a digital environment - by Spring of 2012 as measured by a TBD survey.
Objective 2	Charlo staff will know, understand and be able to teach the content knowledge required by the Montana Technology Content and Performance Standard 1, a student must: use digital tools and resources for problem solving and decision making – by Spring of 2013 as measured by a TBD survey.
Objective 3	Charlo staff will know, understand and be able to teach the content knowledge required by the Montana Technology Content and Performance Standard 3, a student must: apply digital tools and skills with creativity and innovation to express him/her, construct knowledge and develop products and processes - by Spring of 2014 as measured by a TBD survey.

Goal 3	
All Charlo staff including teachers and administrators will be technologically proficient. *Timeline: The district will have this goal in place 2011 to 2014.*	
Objective 1	Ninety percent of the Charlo teachers will rate themselves a "3" or better as measured by the Teachers' Technology Skills section of Taking A Good Look at Instructional Technology (TAGLIT) by spring of 2012.
Objective 2	Ninety percent of the Charlo teachers will rate themselves a "3.25" or better as measured by the Teachers' Technology Skills section of the Taking A Good Look at Instructional Technology (TAGLIT) by spring of 2013.
Objective 3	Ninety percent of the Charlo teachers will rate themselves a "3.5" or better as measured by the Teachers' Technology Skills section of the Taking A Good Look at Instructional Technology (TAGLIT) by spring of 2014.

Goal 4	
All Charlo students will be technologically proficient by 8th grade. *Timeline: The district will have this goal in place 2011 to 2014.*	
Objective 1	Ninety percent of the Charlo 8th grade students will rate themselves a "3" or better as measured by the Students' Technology Skills section of Taking A Good Look at Instructional Technology (TAGLIT) by spring of 2012.
Objective 2	Ninety percent of the Charlo 8th grade students will rate themselves a "3.25" or better as measured by the Students' Technology Skills section of the Taking A Good Look at Instructional Technology (TAGLIT) by spring of 2013.
Objective 3	Ninety percent of the Charlo 8th grade students will rate themselves a "3.5" or better as measured by the Students' Technology Skills section of the Taking A Good Look at Instructional Technology (TAGLIT) by spring of 2014.

Part II: Strategies

Section A: Promotion of research based curricula and teaching strategies that integrate technology.

The following strategies will be used by the Charlo District/Schools to improve student achievement and improve teacher effectiveness. The following strategies align with Ed. Tech C, D, H, I, J, K, and E-Rate 1A, 1B, 1C.

Strategies	
Strategy 1 Professional Development	Charlo staff will attend local, regional, and state wide professional development on researched based teaching strategies which may include but are not limited to: Technology Integration, Differentiated Instruction, Assistive Technology, Basic Technology Skills, Multimedia Tools, and Communication Tools.
	Each year professional development opportunities will be provided through the district and other training available in the Charlo area. The training provides support to teachers ensuring the success of technology infusion into the classroom.
	In addition, the district will assist teachers in developing technology rich units and integration strategies which are carefully aligned to Montana State Standards.
Strategy 2 Other Professional Activities	The following activities will be available and incorporated into the professional development program for Charlo staff. Numerous opportunities exist for collaboration of staff in grants, regional technology networks, mentoring programs, the MEA conference, the Northwest Conference of Computers, online university classes, and peer exchange of information and support.
Strategy 3 Curriculum Review	Charlo staff will conduct a review of current technology applications integrated into the curriculum for alignment with the Montana Content and Performance Technology Standards adopted August 15, 2008.
Strategy 4 Academic	Charlo staff will provide students with instruction and an opportunity to use technology applications to improve student achievement along with CRT, SAT, and ACT scores.

Relevant research cites supporting the strategies listed above is included in Appendix B on pages 24-25.

Section B: Access for teachers and students

The Charlo District will continue to provide equitable access for teachers and students to technology hardware, software, and equipment during the term of this plan. The district will implement the following strategies to ensure continued access for all students and staff in the Charlo School District. (Aligned with Ed Tech C and E-Rate 1A & 1B)

Strategies	
Strategy 1	The Charlo Technology Committee will monitor and track access by students and teachers to ensure equal access by all.
Strategy 2	The Charlo District will provide current technology through the use of the Technology Fund, General Fund, Reap Fund, and other appropriate funds for all students and staff.
Strategy 3	Charlo students and staff will have access to appropriate technology necessary to complete technology projects and demonstrations.
Strategy 4	All Charlo staff will have access to appropriate technology for instruction, student management, and communication purposes. The district will install a new telephone system ensuring access for all staff and for improving communications with parents, the community, and in the district/school.
Strategy 5	All Charlo staff will have access to websites which provide standard based curriculum technology integration units.

Section C: Innovative Instructional Delivery Strategies

The Charlo District will promote innovative instructional delivery strategies by continuing and/or implementing the following strategies. (Aligned to Ed Tech 1)

Strategies	
Strategy 1	All Charlo staff will be encouraged to use innovative technology materials available through district resources, local school collaboration, OPI, and other sources.
Strategy 2	Charlo students will have the opportunity to enroll in innovative e-learning projects to expand the current class offerings in the district.
Strategy 3	Charlo staff will have the opportunity to teach and benefit from professional development for on-line instruction through e-learning projects.
Strategy 4	Charlo High School students will have the opportunity to enroll in online college courses for dual credit where appropriate. The district has a tech prep agreement allowing students to get college credit for certain high school classes.
Strategy 5	The district will continue to enhance a technology mentoring program developed to assist staff members with technology integration and proficiency.
Strategy 6	Other innovative instructional delivery strategies used in the district include: SMART Board applications (or equivalent), distance learning & program integration, and many subject specific techniques.
Strategy 7	The district will explore using a software program for parent and staff communication, sharing and updating student progress, and information networking.

Section D: Timeline 2011-2014

(Aligned with Ed Tech H and E-Rate 1C)

Section A: Promotion of research based curricula and teaching strategies to integrate technology.		
Goals & Objectives	Strategies and Supporting Activities	Timelines
Strategy 1 Professional Development Goal 1 Obj. 1,2,3 Goal 3 Obj. 1,2,3	*Charlo staff will attend local, regional, and state wide professional development on researched based teaching strategies which may include but are not limited to: Technology Integration, Differentiated Instruction, Assistive Technology, Basic Technology Skills, Multimedia Tools, and Communication Tools.*	
	Each year professional development opportunities will be provided through the district and other training available in the Charlo area. The training provides support to teachers ensuring the success of technology infusion into the classroom.	
	In addition, the district provides curriculum meetings which assist teachers in developing technology rich units and integration strategies which are carefully aligned to Montana State Standards.	
	Supporting Activities	**Timeline**
	Charlo staff will attend training and curriculum meetings.	Ongoing
	Charlo staff will attend MEA conferences	Yearly
	Charlo staff will attend regional NCCE conference	Yearly
	Charlo staff will attend individual professional development	Requested
	Staff will present to district staff at regular intervals the content from conferences and workshops	Each Quarter
	Staff with advanced technology skills and strategies will mentor less experienced teachers.	Ongoing
Strategy 2 Other Professional Activities Goal 1 Obj. 1,2,3 Goal 3 Obj. 1,2,3	*The following activities will be available and incorporated into the professional development program for Charlo staff. Numerous opportunities exist for collaboration of staff in grants, regional technology networks, mentoring programs, the MEA conference, the Northwest Conference of Computers, online university classes, and peer exchange of information and support.*	
	Supporting Activities	**Timeline**
	Charlo staff will attend training and curriculum meetings.	Ongoing
	Charlo staff will attend MEA conferences	Yearly
	Charlo staff will attend regional NCCE conference	Yearly
	Charlo staff will attend individual professional development	Requested
	Staff will present to district staff at regular intervals the content from conferences and workshops	Each Quarter
	Staff with advanced technology skills and strategies will mentor less experienced teachers.	Ongoing
Strategy 3 Goal 2 Obj. 1,2,3	*Charlo staff will conduct a review of current technology applications integrated into the curriculum for alignment with the Montana Content and Performance Technology Standards adopted August 15, 2008*	
	Supporting Activities	**Timeline**
	The district will provide teachers with release time, technology standards, and benchmarks to use for review of current curriculum.	Yearly during PIR
	District staff will align curriculum with state technology standards	Yearly

	when reviewing or updating all content areas.	
Strategy 4 Academic Goal 3 Obj. 1,2,3 Goal 4 Obj. 1,2,3	*Charlo staff will provide students with instruction and an opportunity to use technology applications to improve student achievement along with CRT, SAT, and ACT scores.*	
	Supporting Activities	**Timeline**
	The district will provide students with software to remediate and enhance skills in math and reading.	On-going
	Students will have the opportunity to use software to advance higher level thinking skills.	On-going
	Students will have the opportunity to use web based opportunities to prepare for upper level achievement tests, entrance exams, and national norm referenced tests.	On-going

Section B: Access for Teachers and Students		
Goals & Objectives	Strategies and Supporting Activities	Timelines
Goal 1 Obj. 1,2,3	*Strategy1: The Charlo Technology Committee will monitor and track access by students and teachers to ensure equal access by all.*	
	Strategy 2: The Charlo District will provide staff and students current technology through the use of the Technology Fund, General Fund, and other appropriate funds.	
	Strategy 3: Charlo students and staff will have access to appropriate technology necessary to complete technology projects and demonstrations.	
	Strategy 4: All Charlo staff will have access to appropriate technology for instruction, student management, and communication purposes. The district will install a new telephone system ensuring access for all staff and for improving communications with parents, the community, and in the district/school.	
	Strategy 5: All Charlo staff will have access to websites which provide standard based curriculum technology integration units.	
	Supporting Activities	**Timeline**
	Charlo staff will take the TAGLIT every year (or every other year) to gather data for possible revision of the Technology Plan.	Yearly
	The Charlo Technology committee will administer a needs assessment to ensure that all staff and students have appropriate and necessary hardware.	Yearly
	The Technology Committee will review and analyze the TAGLIT data to form recommendations for professional development and determine progress of the district toward the goals of this plan.	Yearly
	The district will continue to provide on-line resources for students and staff.	Yearly Subscriptions
	The district will monitor the replacement schedule for equipment and software to ensure access is equitable.	Yearly
	The district will install a new telephone system ensuring access for all staff and for improving communications with parents, the community, and in the district/school. The district will explore adding a phone system capable of voice mail (60 analogue sets and 14 digital sets), caller ID, and auto attendant.	Install 2011

Section C: Innovative Instructional Delivery Strategies		
Goals & Objectives	Strategies and Supporting Activities	Timelines
Goal 1 Obj. 1,2,3	*Strategy 1: All Charlo staff will be encouraged to use innovative technology materials available through district resources, local school collaboration, OPI, and other sources.*	
	Strategy 2: Charlo students will have the opportunity to enroll in innovative e-learning projects to expand the current class offerings in the district.	
	Strategy 3: Charlo staff will have the opportunity to teach and benefit from professional development for on-line instruction through e-learning projects.	
	Strategy 4: Charlo High School students will have the opportunity to enroll in online college courses for dual credit where appropriate. Tech prep agreements are in place to allow students a chance to receive college credit for high school classes.	
	Strategy 5: The district will continue to enhance a technology mentoring program developed to assist staff members with technology integration and proficiency.	
	Strategy 6: Other innovative instructional delivery strategies used in the district include: SMART Board applications (or equivalent), distance learning & program integration, and many subject specific techniques.	
	Strategy 7: *The district will explore using a software program for parent and staff communication, sharing and updating student progress, and information networking.*	
	Supporting Activities	**Timeline**
	Students will be introduced to on-line opportunities and the e-learning project for possible college classes.	Continuous
	Charlo staff will be provided in-service for on-line opportunities and e-learning.	Continuous
	Staff teaching in the e-learning programs will mentor other staff.	Yearly
	Staff will integrate distance learning and software programs into curriculum and instruction.	Yearly
	Teachers are encouraged to mentor and partner with staff members in and around their school district.	Continuous
	The district will support staff in locating and integrating innovative technology materials for use.	Continuous
	The district will explore implementing a software program for staff and parents to enhance communication, information sharing, and networking.	Continuous

Section E. Parent Involvement and Communication

(Aligned with Ed Tech J and E-Rate 1A, 1B)

The Charlo District recognizes the importance of parent involvement and communication to increase student academic achievement. The following list of activities will be continued and/or implemented to increase parent involvement and communication.

- The district will continue a school web page for information and communication with parents and the community. The district web page can be found at http://www.charlo.k12.mt.us/. Parents will be given the opportunity to email school staff, read bulletins, read handbooks, lunch information, activity schedules, class schedules, view the technology plan, and resource links for students and parents.
- The district will explore utilizing a software program which provides parents with access to important student data including grades along with teacher comments and other information.
- The district will install a new telephone system for improving communications with parents, the community, and in the district/school. The district will explore adding a phone system capable of voice mail (60 analogue sets and 14 digital sets), caller ID, and auto attendant.
- The district will continue an Open House for students and parents which provides information on how to access the school web page and other technology programs.
- Adult Education classes for the community will be developed by surveying the individuals at Open House, Parent Teacher Conferences, and through the district web site.
- Survey parents on their feelings about the school.
- School newsletters and electronic bulletin boards.
- Technology presentations at School Board Meetings, graduations, Technology Night, and other community events.

Section F: Adult Literacy and Adult Education

(Align with Ed Tech K)

The Charlo District recognizes the supporting role that school technology can have in improving Adult Literacy and Adult Education in the community. The district will implement and/or continue the following strategies to assist Adult Literacy and Adult Education opportunities in the community.

- The district will make the computer lab and the e-learning program available for community members to access and benefit from when appropriate.
- Appropriate software for enhancement and/or remediation of reading and math skills will be made available for community members.
- The school site complete with technology will be available for Adult Education Classes.
- Support other community projects with use of the schools technology equipment and expertise as opportunities become available.
- Computer labs are made available to community members and groups for training in basic computer skills and for research.

Part III: Professional Development

The Charlo District will provide ongoing, sustained professional development for all school professionals to further the effective use of educational technology. The following strategies align with Ed. Tech A, C, D, E, I, M and E-Rate 2A, 2B, 2C, 2D.

Section A: Teachers' Technology Proficiency	
Strategies	Timelines
Charlo will administer the TAGLIT survey to staff each year (or every other year) to determine proficiency levels and professional development needs.	Yearly
Charlo will administer the Eisenhower Teacher Self-Assessment and Professional Development Study to identify additional information for professional development needs.	Yearly
The Charlo District technology committee will tabulate results of the assessments and develop recommendations for needed professional development.	Yearly

Section B: Teachers' Technology use and Integration	
Strategies	Timelines
Charlo will administer the "Technology Content Standards Self-Assessment for Teachers" to determine progress of technology use and integration.	Yearly
Charlo will administer a local survey to determine support needed for staff regarding time for preparation and practice.	Yearly
The Charlo District will survey staff to determine the use and integration of technology in all grades and content areas.	Yearly

Section C: Resources to Support Professional Development	
Strategies	Timelines
The district will identify teachers, students, trainers, and technical personnel needed throughout the school year.	Yearly
Charlo will identify the media resources available in the district to support the professional development plan.	Yearly
The Charlo District will provide funding for professional development through the use of the technology fund, general fund, grants, and Reap funds.	Yearly
The district will identify community resources available for training and technical support through surveys.	Yearly

Section D: Training in Technology Based Delivery of Specialized & Rigorous Academic Content	
Strategies	Timelines
The district will support teachers to attend professional development opportunities at the local, regional, and state level to meet the needs identified in hardware, software, curriculum, and instruction.	Yearly
The Charlo District will utilize data from assessments to determine the effectiveness of the technology professional development program and make appropriate revisions as needed.	Yearly

Part IV: Assessment of Needs

The Charlo School District continues to commit time, resources, personnel, and professional development to improve student achievement using technology. The district is committed to providing an assessment of the telecommunications services, hardware, software, and other services that will be needed to improve education and library services. The following strategies align with Ed. Tech F, H, M and E-Rate 3A, 3B, 3C, 3D.

Sections A, B, & C: Hardware, Software, & Telecommunications

The Charlo School District Technology Committee will be responsible for supervision and coordination of the Technology Plan in the district. Assessment of the Technology Plan in the Charlo Schools will be supervised and coordinated by this committee. The following "refresh" cycle should be adopted once the target levels have been reached to keep the technology modern. The district will investigate leasing as an option to purchasing computers and must always be open to emerging technologies as ways to better deliver curriculum and services.

Recommended purchase cycles for technology in the district:

- Computers replaced every 3-5 years
- Servers replaced every 3-5 years
- Printers replaced every 5 years
- Peripheral equipment replacement every 3-5 years

Charlo School District Identified Needs during the Plan Timeline

The following items were identified as the highest priority technology needs of the district over the next three years.

1. Professional development for staff on the use and integration of technology into curriculum and classes. The goal is supported by the TAGLIT results showing student and teacher technology skills scoring higher than technology use scores.
2. The district needs a new telephone system which ensures access for all staff and for improving communications with parents, the community, and in the district/school.
3. Yearly upgrade of software.
4. Continue adding SMART boards and other technology equipment on a regularly scheduled basis until all instructional areas are updated and/or equipped.
5. Replacement of computers and printers after a life of 5 years.

Charlo School District Technology Committee

The technology committee is established and meets regularly. The committee meetings include a discussion of the district progress in meeting the technology goals and strategies of this plan. A general assessment of technology equipment and needs are discussed at regularly scheduled meetings with brainstorming sessions included. As new innovations in technology emerge, the Technology Committee will make a determination as to how or if these innovations will fit into the district and schools.

The technology committee may substitute alternate measures of staff technology skills and use if it seems more appropriate given changing conditions in the course of the duration of this plan.

Assessments of Hardware and Software

The district professional development strategy concerning hardware and software acquisitions is based on data from the needs assessments outlined earlier in this plan. The district will conduct an assessment each year for new hardware and software to determine professional development and other supportive services needed by staff.

The district has conducted an assessment of compatibility for current hardware and software with projected new purchases. The Charlo District has established minimum standards for hardware & software compatibility with new and current technology. The use of current equipment is continued as long as it supports the goals and strategies of this technology plan.

Assessment of Telecommunications Services

The district will continue and expand existing telecommunication services that are vital components needed to improve educational opportunities for students and support teachers. The district will update the phone system to include voice mail, caller ID, and an auto attendant. These services will include: 1) On-line resources for staff and parents; 2) a basic phone system to contact parents and order materials; 3) Internet accessibility for staff to conduct research and utilize for communication purposes; and 4) a long distance phone plan since the district is located in a rural setting.

The Charlo District hardware and software inventory is attached in Appendix A.

Part V: Budget (3 years)

The following detailed budget provides evidence that the Charlo District has sufficient resources to acquire and support the discounted and non-discounted items in this technology plan. The following budgets show the coordination of funds from all available sources to successfully carry out this plan. In addition, the budgets show federal funds are used to supplement and not supplant other district funds. The following sections align with Ed. Tech G & Ed. Tech Guidance and E-Rate 4A, 4B

Sections: A, B, C – Sufficient Budget, Coordination of Funds, Federal Funds

Estimated Technology Budget 2011 – 2012

Category/Item	Cost Per Item	Number	Total	E-Rate Funds	District Funds	Source
Telecommunications						
Telephone Service (Basic Lines & Long Distance)	$524.22		$6,290.64	$4,717.98	$1,572.66	General Fund & Tech Fund
Cell Phones	$90.58		$1,086.96	$815.22	$271.74	
Internet Service	$663.63		$7,963.56	$5,972.67	$1,990.89	
Total Tele-communications Services	$1,278.43		$15,341.16	$11,505.87	$3,835.29	
Service Contracts						
Tech Support & Online Subscriptions			$1,500.00		$1,500.00	Tech Fund
Total Service Contracts			$1,500.00		$1,500.00	
Hardware and Software						
Printers and Cartridges	$6,500.00	both	$6,500.00		$6,500.00	General Fund & Tech Fund
Computers	$750.00	7	$5,250.00		$5,250.00	
Server	$1,300.00	1	$1,300.00		$1,300.00	
SMART Board	$2,000.00	1	$2,000.00		$2,000.00	
Software	varies		$7,000.00		$7,000.00	
Peripheral Equip.	varies	varies	$1,500.00		$1,500.00	
Phone System	varies	varies	$9,945.00		$9,945.00	
Total Hardware and Software			$33,495.00		$33,495.00	
Professional Development						
Staff Technology Training (includes partial staff)	$16,000.00		$16,000.00		$16,000.00	General Funds
Total Professional Development	$16,000.00		$16,000.00		$16,000.00	
Maintenance and Misc.						
Maintenance & Technology Staff Position	$35,000.00		$35,000.00		$35,000.00	Gen Fund
Total Maintenance and Misc.	$35,000.00		$35,000.00		$35,000.00	
Total Budget			$101,336.16	$11,505.87	$89,830.29	

Estimated Technology Budget 2012 – 2013						
Category/Item	**Cost Per Item**	**Number**	**Total**	**E-Rate Funds**	**District Funds**	**Source**
Telecommunications						
Telephone Service (Basic Lines & Long Distance)	$524.22		$6,290.64	$4,717.98	$1,572.66	General Fund & Tech Fund
Cell Phones	$90.58		$1,086.96	$815.22	$271.74	
Internet Service	$663.63		$7,963.56	$5,972.67	$1,990.89	
Total Tele-communications Services	$1,278.43		$15,341.16	$11,505.87	$3,835.29	
Service Contracts						
Tech Support & Online Subscriptions			$1,500.00		$1,500.00	Tech Fund
Total Service Contracts			$1,500.00		$1,500.00	
Hardware and Software						
Printers and Cartridges	$6,500.00	both	$6,500.00		$6,500.00	General Fund & Tech Fund
Computers	$750.00	8	$6,000.00		$6,000.00	
Server	$1,300.00	1	$1,300.00		$1,300.00	
SMART Board	$2,000.00	1	$2,000.00		$2,000.00	
Software	varies		$7,000.00		$7,000.00	
Peripheral Equip.	varies	varies	$1,500.00		$1,500.00	
Total Hardware and Software			$24,300.00		$24,300.00	
Professional Development						
Staff Technology Training (includes partial staff position)	$16,000.00		$16,000.00		$16,000.00	General Funds
Total Professional Development	$16,000.00		$16,000.00		$16,000.00	
Maintenance and Misc.						
Maintenance & Technology Staff Position	$35,000.00		$35,000.00		$35,000.00	Gen Fund
Total Maintenance and Misc.	$35,000.00		$35,000.00		$35,000.00	
Total Budget			$92,141.16	$11,505.87	$80,635.29	

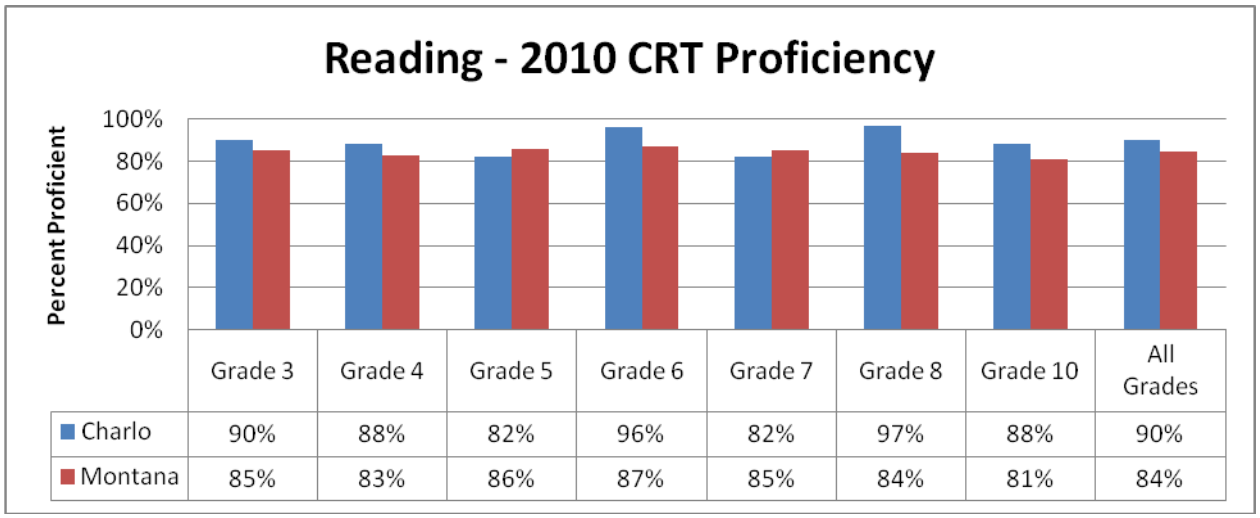
Estimated Technology Budget 2013 – 2014						
Category/Item	**Cost Per Item**	**Number**	**Total**	**E-Rate Funds**	**District Funds**	**Source**
Telecommunications						
Telephone Service (Basic Lines & Long Distance)	$524.22		$6,290.64	$4,717.98	$1,572.66	General Fund & Tech Fund
Cell Phones	$90.58		$1,086.96	$815.22	$271.74	
Internet Service	$663.63		$7,963.56	$5,972.67	$1,990.89	
Total Tele-communications Services	$1,278.43		$15,341.16	$11,505.87	$3,835.29	
Service Contracts						
Tech Support & Online Subscriptions			$1,500.00		$1,500.00	Tech Fund
Total Service Contracts			$1,500.00		$1,500.00	
Hardware and Software						
Printers and Cartridges	$6,500.00	both	$6,500.00		$6,500.00	General Fund & Tech Fund
Computers	$750.00	9	$6,750.00		$6,750.00	
Server	$1,300.00	1	$1,300.00		$1,300.00	
SMART Board	$2,000.00	1	$2,000.00		$2,000.00	
Software	varies		$7,000.00		$7,000.00	
Peripheral Equip.	varies	varies	$1,500.00		$1,500.00	
Total Hardware and Software			$25,050.00		$25,050.00	
Professional Development						
Staff Technology Training (includes partial staff position)	$16,000.00		$16,000.00		$16,000.00	General Funds
Total Professional Development	$16,000.00		$16,000.00		$16,000.00	
Maintenance and Misc.						
Maintenance & Technology Staff Position	$35,000.00		$35,000.00		$35,000.00	Gen Fund
Total Maintenance and Misc.	$35,000.00		$35,000.00		$35,000.00	
Total Budget			$92,891.16	$11,505.87	$81,385.29	

Part VI: Evaluation and Accountability

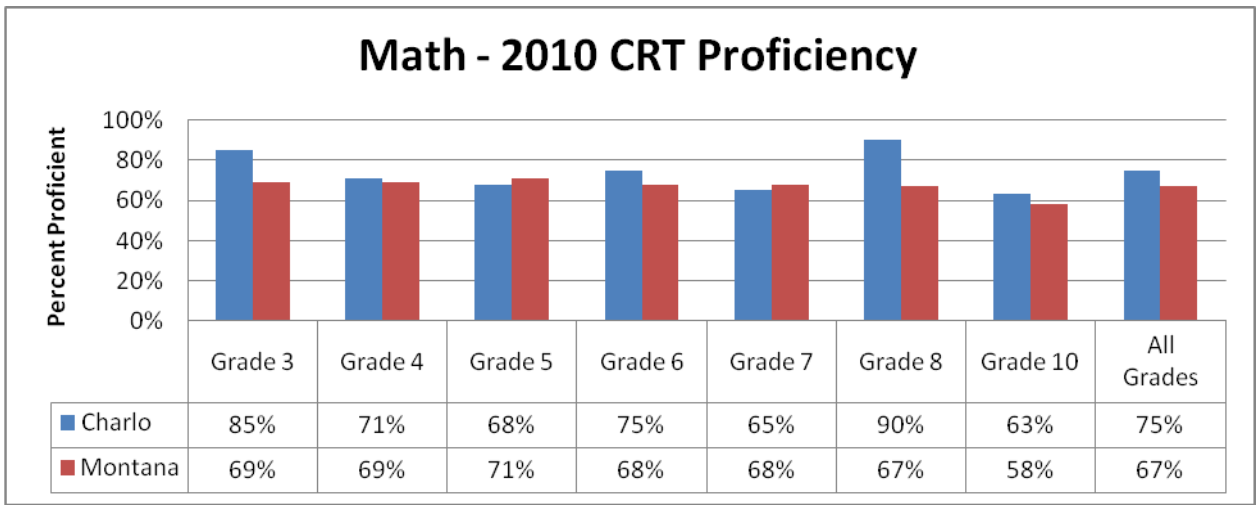
The Charlo District technology plan evaluation process allows the district to monitor progress toward goals and make mid-course corrections in response to new developments and opportunities as they arise. District staff will meet and conduct a review of the technology plan and make necessary revisions each year. The review team will utilize the assessment results gathered from each goal stated in this plan, state achievement test data for grades 3-8 and 10, data available from the districts five year comprehensive plan, staff observations, and any other appropriate available data. The review team in consultation with the Administration/School Board will have the responsibility to recommend changes to the technology plan. The following sections apply to Ed. Tech. L and E-Rate 5A.

Section A: Analysis of student academic achievement data

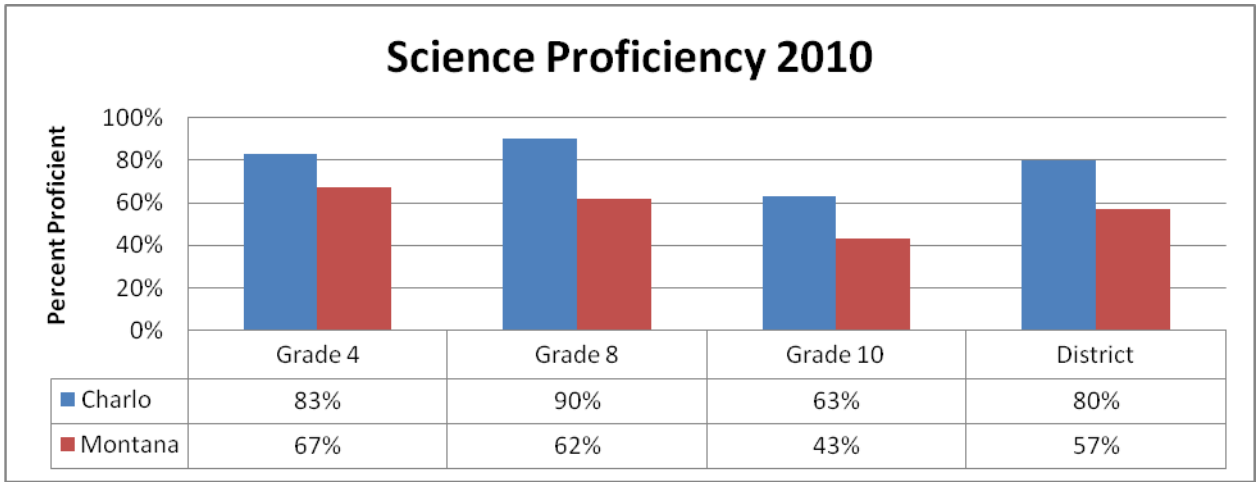
Charlo Schools use the CRT test to measure student academic achievement progress along with several local measures of student progress. The CRT test is given to grades 3-8 & 10 for reading and math. Science is measured in grades 4, 8, and 10. The results of the CRT testing will be analyzed each year to measure student academic progress. The results of the district analysis of student academic achievement data and the curricula and teaching strategies selected and implemented under this technology plan will assist in supporting improved student progress and integrate with the district Five Year Comprehensive Plan. The charts that follow show Charlo CRT results compared to the state of Montana results by grade and district for reading, math, and science along with district progress over the last seven years. The data analysis results indicate that Charlo students were at or higher than the state profile in 2010 for reading in all grades except 5 and 7. In addition, students were at or higher than the state for math in all grades except 5 and 7. Science results show Charlo students scored at or higher than the state in all tested grades. Overall results the last seven years show student proficiency improving in reading and math.



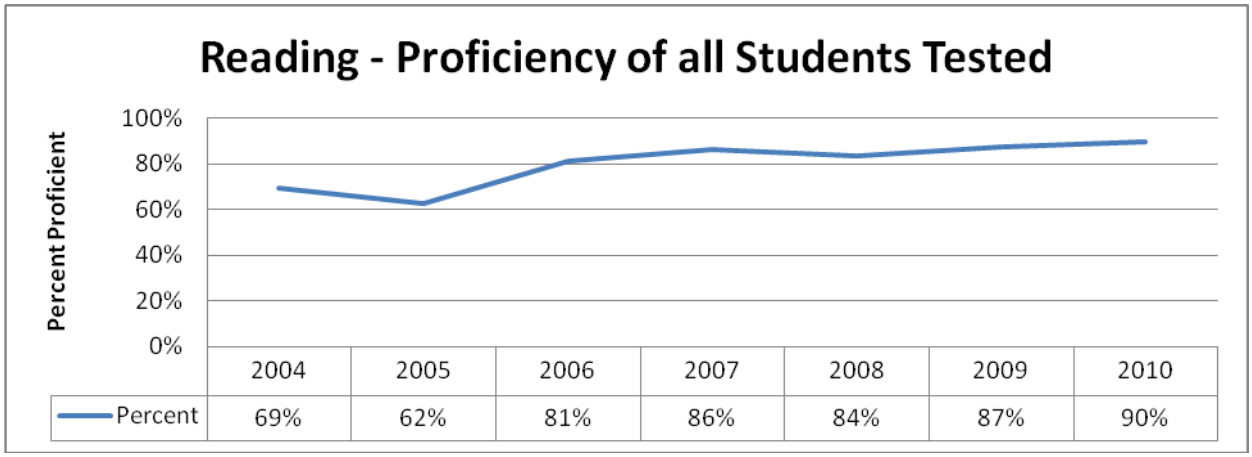
	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 10	All Grades
Charlo	90%	88%	82%	96%	82%	97%	88%	90%
Montana	85%	83%	86%	87%	85%	84%	81%	84%



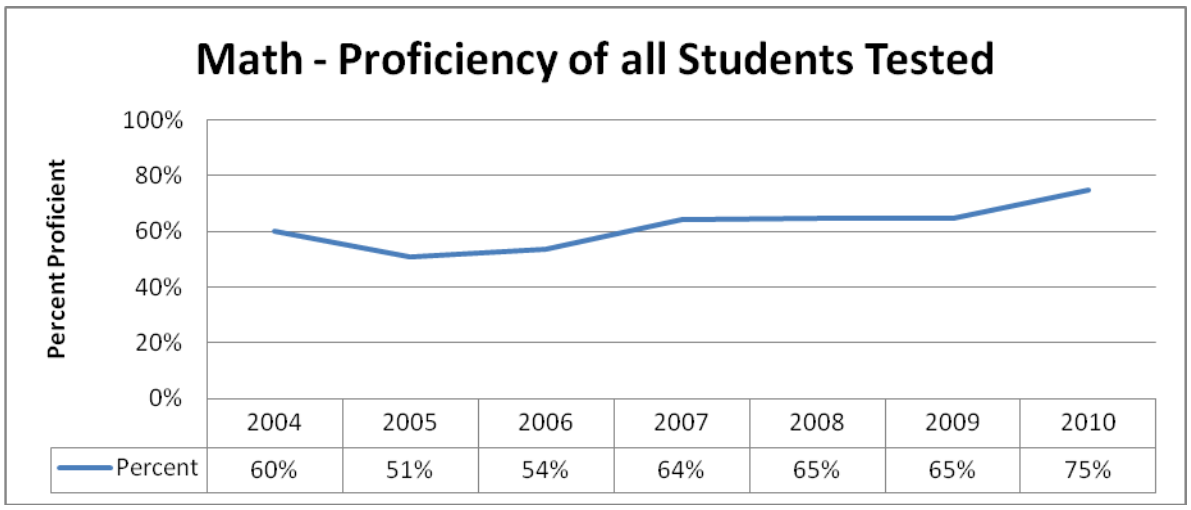
	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 10	All Grades
Charlo	85%	71%	68%	75%	65%	90%	63%	75%
Montana	69%	69%	71%	68%	68%	67%	58%	67%



	Grade 4	Grade 8	Grade 10	District
Charlo	83%	90%	63%	80%
Montana	67%	62%	43%	57%



	2004	2005	2006	2007	2008	2009	2010
Percent	69%	62%	81%	86%	84%	87%	90%



Section B: Analysis of student technological proficiency data
The district will assess student technological proficiency by administering the TAGLIT. The results of this assessment each year will determine adjustments and revisions to the district technology plan goals, objectives, and activities. The student TAGLIT survey will be given in the spring each year (or every other year) to gather data for analysis. Current results seem to indicate that students are making good progress in word processing, spreadsheets, multimedia tools, communication using email, and search engines on the internet. Areas that the students seem to find more challenging include databases, multimedia software to create a product, creating web pages, and probes to gather data. Future TAGLIT results will indicate what skills and information students could use to further their technology training. In addition, students could benefit from technology skills related to the content areas of reading, math, and science. The integration of technology into the classroom is essential for students to understand and apply technology skills.

Section C: Analysis of teacher technological proficiency data.
The Charlo District will assess teacher technological proficiency by administering the TAGLIT Survey. The results of this assessment each year (or every other year) will determine adjustments and revisions to the district technology plan goals, objectives, and activities. This survey will be administered in the spring of each year to gather data and provide support for professional development targets. Current indications are that teachers are making excellent progress in most areas with tech skills and tech use. Technology areas that teachers find the most challenging and may find more professional development helpful include databases, spreadsheets, video & editing, creating web pages, graphing calculators and using probes, and online discussions. The planned professional development program will provide teachers with the training and expertise to teach integrated technology skills to students.

Section D: Analysis of teacher technology use and integration into curriculum and instruction data.

Technology integration into the curriculum can be measured in a variety of ways. Charlo Schools will measure and analyze technology integration by reviewing student achievement scores, TAGLIT results from students and teachers, increased checkout of equipment from the media center, by teacher self-assessment, and by administrative classroom observations. The assessment results will guide the district technology goals, objectives, and activities. Current observations for student and teacher TAGLIT results show that student and teacher tech skills score higher than tech use. Appropriate professional development assisting teachers with the integration of technology use into the curriculum will further improve both student and teacher tech use scores.

Section E: Ongoing analysis of hardware, software, and telecommunication needs.

The continued emergence of new technology makes it very difficult for districts to continually stay current with technology acquisitions. However, this technology plan outlines strategies that the district will employ to make their best effort to stay current with new and emerging technology to improve student achievement. The district strategies are based on local needs, assessments, and future trends. The district Technology Committee will be responsible for conducting the ongoing analysis of hardware, software, and telecommunication needs in order to be responsive to a changing technological society. The district Technology Committee will make recommendations for changes to the technology plan goals, strategies, and activities.

Section F: Evaluation timeline including plan revision and school board approval

The district technology plan will be reviewed at least once a year in order to be responsive to new developments and opportunities that may arise. The district technology committee will meet and conduct a review of the technology plan and make necessary revisions each year. The review team will utilize the assessment results gathered from each goal stated in this plan, state achievement test data for grades 3 - 8, and 10, data available from the districts five year comprehensive plan, staff observations, and any other appropriate available data. The review team will make recommendations to the Administration for changes to the technology plan.

Section G: Compliance with Children's Internet Protection Act

The Charlo District has an Internet safety policy with appropriate safe guards in place to protect and monitor the students and staff. The district uses a program for internet filtering for compliance with the CCIPA. In addition, the district as part of the Internet safety policy is educating students about appropriate online behavior, including interacting with other individuals on social networking websites, in chat rooms, and cyber bullying awareness and response. The school board held a public meeting with input from the community when adopting the Technology Protection Measure, the Internet Safety Policy, and the acceptable use policy.

Analysis of Current District Assessment and Progress

The Charlo District technology development, implementation, use, and applications over the last few years have met the expectations of the previous technology plan. The reason for meeting the expectations of the previous plan is that the district continues to seek out new and emerging technologies along with innovative methods of integrating those strategies into curriculum and instruction. The integration of these strategies provides students with support and exciting new methods of learning.

An inventory of current district technology is attached in Appendix A. The district has internet service to all the school buildings. Currently workstations are located in every classroom as well as in separate labs. The district has 30 classrooms with Internet capabilities, 2 rooms with phone service, and 30 rooms with video capabilities. The district is in the process of installing phone service with voice mail to all classrooms in 2011. The district has 85 computers with Internet connections. A Local Area Network (LAN) has been established to connect all classrooms and thereby workstations. The district is connected with hard wiring and wireless access points. A high speed Internet connection has been established in the district. In addition, the district has in place a data backup system, power backup and surge protector in case of electrical problems. In-house security needs are taken care of through network security built into Windows systems and the server software. Firewall protection for the system is established and maintained. The district does have an established Internet Access Policy which is updated every year.

When curriculum is revised or reviewed, the use of technology will be incorporated in the teaching of objectives when such use will enhance learning conditions. All students K-12 in accordance with their abilities will be taught to use the Internet as a resource when doing research. Early use of computers for word processing and spreadsheets will be encouraged in all classes. Special technology classes will be taught in the high school. These classes will incorporate the needs of the students in the curriculum. Some of these needs will be determined by surveying students on what they would like to learn. This will also be geared to the students needs through consultation with career counseling. Other technology skills taught would follow the technology curriculum guide that has been developed. Students will be tested on their technology knowledge as an ongoing part of regular classroom assignments and tests.

Appendix A

Charlo Schools Technology Inventory 2009-2010

- 85 Desktop and Laptop Computers
- 25 Printers
- Copy Machines
- Fax machine
- Scanners
- Digital & Video cameras
- SMART Board Systems
- Digital Projectors
- Servers

Appendix B

Relevant Research

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Appendix C

Montana Content and Performance Standards for Technology

Technology Content and Performance Standards Adopted by the Board of Public Education July 30, 2008 Effective Date August 15, 2008.

Montana Standards for Technology

Today's learners—teachers and students—are continually affected by a variety of digital technologies. These technologies have altered their expectations and skills. Traditional instruction alone no longer provides students with all the skills necessary to find personal value and professional success. Therefore, education needs to play an increasing role in empowering learners to be technologically literate and to integrate digital tools into their lives. Expectations for student learning are increasing as digital tools make basic tasks easier. We must help students meet these expectations by understanding that:

- *digital technology must be in the hands of all students;*
- *technological literacy includes more than simple mastery of skills;*
- *digital citizens must use digital tools safely and responsibly;*
- *learning environments are no longer constrained by school walls; they are global and personal;*
- *digital technology skills are acquired, developed, and mastered at an individual pace;*
- *access to tools and flexible networks are critical for learner success.*

While digital technology tools can be used to facilitate assessment of student learning, the primary application of these tools must be used to support content area learning. Although integrated learning systems can be used to deliver curriculum, true technology integration involves dynamic interactions among learners using digital tools.

Inquiry-based learning activities, rich in relevant content and integrated with digital technology, can facilitate collaboration, critical thinking, creativity, and problem solving. Properly applied, technology enhances learning and instruction, but does not become the focus. By providing access to information and tools for expression, opening pathways to communication, and facilitating personal understanding, technology supports learning in all subjects.

Pursuant to Article X Sect 1(2) of the Constitution of the state of Montana and statutes §20-1-501 and §20-9-309 2(c) MCA, the implementation of these standards must incorporate the distinct and unique cultural heritage of Montana American Indians.

Technology Content Standard 1

To satisfy the requirements of Technology Content Standard 1, a student must: use digital tools and resources for problem solving and decision making.

Rationale

As personal and global problems become more complex, digital tools are powerful vehicles for data collection and analysis, collaboration, and presentation of solutions. Therefore, all learners must select and use digital tools to make sound, accurate, data-supported decisions and presentations.

Benchmarks for Technology Content Standard 1 for the end of grade 4

The benchmark for Technology Content Standard 1 for a student at the end of grade 4 is the ability to:

- identify and investigate a problem and generate possible solutions;
- collect data and information using digital tools;
- organize collected data and information using a variety of digital tools;
- identify the accuracy, diversity and point of view, including Montana American Indians, of digital information;
- share information ethically and note sources.

Benchmarks for Technology Content Standard 1 for the end of grade 8

The benchmark for Technology Content Standard 1 for a student at the end of grade 8 is the ability to:

- use multiple approaches to explore alternative solutions;
- collect relevant data and information on a subject from a variety of digital resources;
- analyze and ethically use data and information from digital resources;
- compare accuracy, diversity, relevance and point of view, including Montana American Indians, of digital information;
- share data and information ethically and appropriately cite sources.

Benchmarks for Technology Content Standard 1 upon graduation

The benchmark for Technology Content Standard 1 for a student upon graduation is the ability to:

- use multiple approaches and diverse perspectives, including Montana American Indians, to explore alternative solutions;
- collect relevant data and information on a subject from a variety of digital resources;
- select from an array of digital tools to organize and analyze data from a variety of resources;
- evaluate and synthesize data and information;
- share data and information ethically and appropriately cite sources.

Technology Content Standard 2

To satisfy the requirements of Technology Content Standard 2, a student must: collaborate and communicate globally in a digital environment.

Rationale

Digital tools can facilitate collaboration and communication by opening pathways to a global learning environment. All learners share the responsibility to practice and advocate the safe and responsible use of these digital tools.

Benchmarks for Technology Content Standard 2 for the end of grade 4

The benchmark for Technology Content Standard 2 for a student at the end of grade 4 is the ability to:

- identify and explore online collaboration and communication tools;
- identify and explore safe, legal, and responsible use of digital collaboration and communication tools;
- communicate the results of research and learning with others using digital tools;
- explore how technology has expanded the learning environment beyond the traditional classroom.

Benchmarks for Technology Content Standard 2 for the end of grade 8

The benchmark for Technology Content Standard 2 for a student at the end of grade 8 is the ability to:

- select and use online collaboration and communication tools;
- use digital collaboration and communication tools in a safe, legal, and responsible manner;
- communicate the results of research and learning with others using digital tools;
- use technology in a global learning environment.

Benchmarks for Technology Content Standard 2 upon graduation

The benchmark for Technology Content Standard 2 for a student upon graduation is the ability to:

- evaluate and apply online collaboration and communication tools to exchange ideas and information and participate in projects;
- use digital collaboration and communication tools in a safe, legal, and responsible manner and advocate for such use by others;
- synthesize and communicate the results of research and learning with others using various digital tools;
- apply technology that supports collaboration, learning and productivity in a global environment.

Technology Content Standard 3

To satisfy the requirements of Technology Content Standard 3, a student must: apply digital tools and skills with creativity and innovation to express him/her, construct knowledge and develop products and processes.

Rationale

Digital tools can support creative and innovative expression, which is increasingly necessary in our changing world. The use of these tools can also facilitate the realization and fulfillment of one's talents and interests. The education community has the responsibility to provide access to the new avenues for creation and require nuanced understandings of digital citizenship and ownership.

Benchmarks for Technology Content Standard 3 for the end of grade 4

The benchmark for Technology Content Standard 3 for a student at the end of grade 4 is the ability to:

- use digital tools for personal expression;
- use various digital media to share information and tell stories;
- use technology to discover connections between facts;
- understand ownership of digital media;
- use digital tools and skills to construct new personal understandings.

Benchmarks for Technology Content Standard 3 for the end of grade 8

The benchmark for Technology Content Standard 3 for a student at the end of grade 8 is the ability to:

- apply a variety of digital tools for personal and group expression;
- use a variety of digital tools to create a product;
- use technology to recognize trends and possible outcomes;
- examine the relationship of copyright to ownership of digital media.

• use digital tools and skills to construct new personal understandings.

Benchmarks for Technology Content Standard 3 upon graduation

The benchmark for Technology Content Standard 3 for a student upon graduation is the ability to:

• develop projects combining multiple digital tools to suit a variety of audiences and purposes;
• evaluate and employ a variety of digital tools to effectively produce an original work;
• use models and simulations to identify trends, predict outcomes, and investigate information;
• evaluate legal protections for intellectual property and apply that understanding to personally create digital media.
• use digital tools and skills to construct new personal understandings.

Technology Content Standard 4

To satisfy the requirements of Technology Content Standard 4, a student must: possess a functional understanding of technology concepts and operations.

Rationale

Solely teaching application- and device-specific skills is no longer sufficient. While core computer skills are required to harness the power of digital tools, these skills need to be adaptable to the quickly changing technological landscape.

Benchmarks for Technology Content Standard 4 for the end of grade 4

The benchmark for Technology Content Standard 4 for a student at the end of grade 4 is the ability to:

• show skills needed to use communication, information and processing technologies;
• use appropriate terminology when communicating about current technology;
• transfer current knowledge to learning of new technology skills.

Benchmarks for Technology Content Standard 4 for the end of grade 8

The benchmark for Technology Content Standard 4 for a student at the end of grade 8 is the ability to:

• apply and refine the skills needed to use communication, information and processing technologies;
• use appropriate terminology when communicating about current technology;
• transfer current knowledge to learning of new technology skills.

Benchmarks for Technology Content Standard 4 upon graduation

The benchmark for Technology Content Standard 4 for a student upon graduation is the ability to:

• apply and refine the skills needed to use communication, information and processing technologies;
• use appropriate terminology when communicating about current technology;
• transfer current knowledge to learning of new technology skills.

Foundation Resources:

International Society for Technology in Education. *National Educational Technology Standards for Students.* 2nd Ed. Eugene, Oregon: ISTE, 2007.

Montana Office of Public Instruction. "Montana Content and Performance Standards for Technology." *Administrative Rules of Montana (10.54.7501)* Helena, Mont.: OPI, 2000.

Montana K-12 Technology
Performance Descriptors
A Profile of Four Levels

The Technology Performance Descriptors define students' knowledge, skills, and abilities in the Technology content area on a continuum from kindergarten through grade 12. These descriptions provide a picture or profile of student achievement at four performance levels: advanced, proficient, nearing proficiency, and novice.

Advanced: This level denotes superior performance. (Independently)

Proficient: This level denotes solid academic performance for each benchmark. Students reaching this level have demonstrated competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real-world situations, and analytical skills appropriate to the subject matter.

Nearing Proficiency: This level denotes that the student has partial mastery of the prerequisite knowledge and skills fundamental for proficient work at each benchmark. (Guidance)

Novice: This level denotes that the student is beginning to attain the prerequisite knowledge and skills that are fundamental for work at each benchmark. (Assistance)

Content Standard 1: Students use digital tools and resources for problem solving and decision making

Grade 4 Performance Descriptors

Advanced

A fourth grade student at the advanced level in Technology demonstrates superior performance. He/she:

- consistently uses digital tools and resources for problem solving and decision making;
- effectively uses assigned digital tools to identify a problem;
- brainstorms ways to generate possible solutions;
- uses assigned digital tools to collect data and information from a variety of resources;
- uses assigned digital tools to organize data and information;
- effectively identifies accurate and inaccurate information;
- understands diversity and point of view, including Montana American Indians;
- identifies and notes the work of others;
- understands the concept of digital media ownership.

Proficient

A fourth grade student at the proficient level in Technology demonstrates solid academic performance. He/she:

- uses digital tools and resources for problem solving and decision making;
- effectively uses assigned digital tools to identify a problem ;
- uses guided brainstorming to generate possible solutions;
- explores assigned digital tools to collect data and information from a variety of resources;
- uses assigned digital tools to organize data and information;
- differentiates between accurate and inaccurate information;
- recognizes diversity and point of view, including Montana American Indians;
- recognizes that using the work of others needs to be noted;
- explores the concept of digital media ownership.

Nearing Proficient
A fourth grade student at the nearing proficient level in Technology demonstrates partial mastery of the prerequisite knowledge and skills fundamental for proficiency in Technology. He/she:

- with guidance, examines digital tools and resources for problem solving and decision making;
- with guidance, uses digital tools to identify a problem;
- chooses a solution from a teacher-provided list;
- with guidance, explores assigned digital tools to collect data and information from a variety of resources;
- uses an assigned digital template to organize data and information;
- with guidance, differentiates between accurate and inaccurate information;
- with guidance, recognizes diversity and point of view, including Montana American Indians;
- with guidance, recognizes that using the work of others needs to be noted;
- with guidance, explores the concept of digital media ownership.

Novice
A fourth grade student at the novice level in Technology is beginning to attain prerequisite knowledge and skills that are fundamental in Technology. He/she:

- demonstrates limited understanding of digital tools and resources for problem solving and decision making;
- has limited understanding of digital tools used to identify a problem;
- with assistance, chooses a solution from a teacher-provided list;
- with assistance, uses a basic digital tool to collect data and information;
- with assistance, uses an assigned digital template to organize data and information;
- has limited understanding of accurate and inaccurate information;
- has limited understanding of diversity and point of view;
- has limited recognition of the concept of using the work of others;
- has limited understanding of the concept of digital media ownership.

Grade 8 Performance Descriptors

Advanced
An eighth grade student at the advanced level in Technology demonstrates superior performance. He/she:

- independently uses multiple approaches to explore alternative solutions;
- thoughtfully collects relevant data and information on a subject from a variety of digital resources;
- clearly demonstrates analysis and ethical use of data and information from digital resources;
- evaluate the accuracy, diversity, relevance and point of view, including Montana American Indians, of digital information;
- consistently demonstrates ethical practices when sharing data and information;
- appropriately cites sources using multiple styles.

Proficient
An eighth grade student at the proficient level in Technology demonstrates solid academic performance. He/she:

- demonstrates clear understanding of multiple approaches to explore alternative solutions;
- collects relevant data and information on a subject from a variety of digital resources;
- analyzes and ethically uses data and information from digital resources;
- understands the concepts of accuracy, diversity, relevance and point of view, including Montana American Indians, of digital information;
- demonstrates ethical practices when sharing data and information;
- correctly cites digital sources.

Nearing Proficient
An eighth grade student at the nearing proficient level in Technology demonstrates partial mastery of the prerequisite knowledge and skills fundamental for proficiency in Technology. He/she:

- with guidance, explores multiple approaches to explore alternative solutions;
- with guidance, collects relevant data and information on a subject from a variety of digital resources;
- with guidance, understands the analysis and ethical use of data and information from digital resources;
- with guidance, occasionally recognizes accuracy, relevance and point of view, including Montana American Indians, of digital information;
- with guidance, demonstrates ethical practices when sharing data and information;
- with guidance, cites digital sources.

Novice
An eighth grade student at the novice level in Technology is beginning to attain prerequisite knowledge and skills that are fundamental in Technology. He/she:

- has difficulty selecting approaches to explore alternative solutions;
- has limited success collecting relevant data and information on a subject from digital resources;
- has difficulty analyzing data and information from digital resources;
- has difficulty understanding ethical use of data and information from digital resources;
- has difficulty identifying accuracy, relevance and point of view, including Montana American Indians, of digital information;
- has limited success sharing data and information ethically;
- has difficulty citing sources appropriately.

<u>Upon Graduation Performance Descriptors</u>
Advanced
A graduating student at the advanced level in Technology demonstrates superior performance. He/she:

- independently applies multiple approaches and diverse perspectives, including Montana American Indians, to explore alternative solutions;

• independently and effectively collects relevant data and information on a subject from a variety of digital resources;
• independently explores and implements an appropriate digital tool to organize and analyze data from a variety of resources;
• routinely evaluates and synthesizes data and information;
• consistently shares data and information ethically;
• independently cites sources in the appropriate style.

Proficient
A graduating student at the proficient level in Technology demonstrates solid academic performance. He/she:

• applies multiple approaches and diverse perspectives, including Montana American Indians, to explore alternative solutions;
• consistently collects relevant data and information on a subject from a variety of digital resources;
• successfully selects from an array of digital tools to organize and analyze data from a variety of resources;
• effectively evaluates and synthesizes data and information;
• shares data and information ethically;
• cites sources in the appropriate style.

Nearing Proficient
A graduating student at the nearing proficient level in Technology demonstrates partial mastery of the prerequisite knowledge and skills fundamental for proficiency in Technology. He/she:

• with guidance, uses multiple approaches and diverse perspectives, including Montana American Indians, to explore alternative solutions;
• with guidance, collects relevant data and information on a subject from a variety of digital resources;
• with guidance, selects from a designated set of digital tools to organize and analyze data from a variety of resources;
• with guidance, evaluates and synthesizes data and information;
• with guidance, share data and information ethically;
• with guidance, appropriately cites sources.

Novice
A graduating student at the novice level in Technology is beginning to attain prerequisite knowledge and skills that are fundamental in Technology. He/she:

• has limited success using multiple approaches and diverse perspectives, including Montana American Indians, and difficulty exploring alternative solutions;
• has difficulty finding relevant data and information on a subject from a variety of digital resources;
• has difficulty selecting digital tools to organize and analyze data from a variety of resources;
• can seldom evaluate and synthesize data and information;
• can seldom share data and information ethically;
• has difficulty citing sources.

Content Standard 2: Students collaborate and communicate globally in a digital environment.

Grade 4 Performance Descriptors

Advanced

A fourth grade student at the advanced level in Technology demonstrates superior performance. He/she:

- independently uses digital tools to synchronously and asynchronously communicate with other age-level students outside their classroom environment;
- independently uses digital tools to collaborate with peers on projects and assignments outside their classroom environment;
- identifies and consistently uses safe, legal and responsible practices in using communication and collaboration technologies;
- shares the results of research with peers using digital presentation tools both online and in person;
- independently identifies and uses technologies that provide learning opportunities beyond the traditional classroom.

Proficient

A fourth grade student at the proficient level in Technology demonstrates solid academic performance. He/she:

- uses digital tools to synchronously and asynchronously communicate with other age-level students in their classroom environment;
- uses digital tools to collaborate with peers on projects and assignments in their classroom environment;
- identifies safe, legal and responsible practices in using communication and collaboration technologies.
- shares the results of research with peers using digital presentation tools either online or in person.
- identifies technologies that provide learning opportunities beyond the traditional classroom

Nearing Proficient

A fourth grade student at the nearing proficient level in Technology demonstrates partial mastery of the prerequisite knowledge and skills fundamental for proficiency in Technology. He/she:

- with guidance, uses digital tools to synchronously and asynchronously communicate with other age-level students in their classroom environment.
- with guidance, uses digital tools to collaborate with peers on projects and assignments in their classroom environment.
- with guidance, identifies safe, legal and responsible practices in using communication and collaboration technologies.
- with guidance, shares the results of research with peers using digital presentation tools either online or in person.
- with guidance, identifies technologies that provide learning opportunities beyond the traditional classroom

Novice
A fourth grade student at the novice level in Technology is beginning to attain prerequisite knowledge and skills that are fundamental in Technology. He/she:

- with assistance, uses simple digital tools to synchronously or asynchronously communicate with other age-level students in their classroom environment.
- with assistance, uses simple digital tools to collaborate with peers on projects and assignments in their classroom environment.
- with assistance, identifies core safe, legal and responsible practices in using communication and collaboration technologies.
- with assistance, shares the results of research with peers using digital presentation tools either online or in person.
- with assistance, identifies basic technologies that provide learning opportunities beyond the traditional classroom.

Grade 8 Performance Descriptors

Advanced
An eighth grade student at the advanced level in Technology demonstrates superior performance. He/she:

- independently selects the most effective digital tools to synchronously and asynchronously communicate with other age-level students in and out of their classroom environment.
- independently selects the most effective digital tools to collaborate with peers on projects and assignments in and out of their classroom environment.
- independently uses safe, legal and responsible practices in using communication and collaboration technologies;
- independently and effectively shares the results of research with peers using a variety digital presentation tools both online and in person;
- independently and effectively uses a variety of technologies to learn beyond the scope of the traditional classroom.

Proficient
An eighth grade student at the proficient level in Technology demonstrates solid academic performance. He/she:

- selects appropriate digital tools to synchronously and asynchronously communicate with other age-level students in and out of their classroom environment;
- selects appropriate digital tools to collaborate with peers on projects and assignments in and out of their classroom environment;
- consistently uses safe, legal and responsible practices in using communication and collaboration technologies;
- effectively shares the results of research with peers using digital presentation tools both online and in person;
- effectively uses technology to learn beyond the scope of the traditional classroom.

Nearing Proficient
An eighth grade student at the nearing proficient level in Technology demonstrates partial mastery of the prerequisite knowledge and skills fundamental for proficiency in Technology. He/she:

- with guidance, selects appropriate digital tools to synchronously and asynchronously communicate with other age-level students in and out of their classroom environment;
- with guidance, selects appropriate digital tools to collaborate with peers on projects and assignments in and out of their classroom environment;
- with guidance, consistently uses safe, legal and responsible practices in using communication and collaboration technologies;
- with guidance, effectively shares the results of research with peers using digital presentation tools both online and in person;
- with guidance, effectively uses technology to learn beyond the scope of the traditional classroom;

Novice
An eighth grade student at the novice level in Technology is beginning to attain prerequisite knowledge and skills that are fundamental in Technology. He/she:

- with assistance, uses digital tools to synchronously and asynchronously communicate with other age-level students in their classroom environment;
- with assistance, uses digital tools to collaborate with peers on projects and assignments in their classroom environment;
- with assistance, identifies safe, legal and responsible practices in using communication and collaboration technologies;
- with assistance, shares the results of research with peers using digital presentation tools either online or in person.
- with assistance, identifies technologies to learn beyond the scope of the traditional classroom.

<u>Upon Graduation Performance Descriptors</u>
Advanced
A graduating student at the advanced level in Technology demonstrates superior performance. He/she:

- evaluates and independently selects digital tools to synchronously and asynchronously communicate with others outside of the formal classroom environment;
- evaluates and independently selects digital tools to collaborate with others on projects and assignments outside of the formal classroom environment;
- independently uses and advocates to others safe, legal and responsible practices in using communication and collaboration technologies;
- independently and effectively synthesizes and communicates the results of research with others using digital presentation tools both online and in person outside of the formal classroom environment;
- independently and effectively uses technology to learn and teach beyond the scope of the traditional classroom.

Proficient
A graduating student at the proficient level in Technology demonstrates solid academic performance. He/she:

- evaluates and independently selects digital tools to synchronously and asynchronously communicate with others in and out of their classroom environment;
- evaluates and independently selects digital tools to collaborate with others on projects and assignments in and out of their classroom environment;
- consistently uses and advocates to others safe, legal and responsible practices in using communication and collaboration technologies;
- effectively synthesizes and communicates the results of research with others using digital presentation tools both online and in person;
- effectively uses technology to learn and teach beyond the scope of the traditional classroom.

Nearing Proficient
A graduating student at the nearing proficient level in Technology demonstrates partial mastery of the prerequisite knowledge and skills fundamental for proficiency in Technology. He/she:

- with guidance, evaluates and selects digital tools to synchronously and asynchronously communicate with others in and out of their classroom environment;
- with guidance, evaluates and selects digital tools to collaborate with others on projects and assignments in and out of their classroom environment;
- consistently uses and with direction advocates to others safe, legal and responsible practices in using communication and collaboration technologies;
- with guidance, communicates the results of research with others using digital presentation tools both online and in person;
- with guidance, uses technology to learn and teach beyond the scope of the traditional classroom.

Novice
A graduating student at the novice level in Technology is beginning to attain prerequisite knowledge and skills that are fundamental in Technology. He/she:

- with assistance, selects digital tools to synchronously and asynchronously communicate with others in their classroom environment;
- with assistance, selects digital tools to collaborate with others on projects and assignments in their classroom environment;
- with assistance, uses safe, legal and responsible practices in using communication and collaboration technologies;
- with assistance, communicates the results of research with others using digital presentation tools either online or in person;
- with assistance, uses technology to learn beyond the scope of the traditional classroom.

Content Standard 3: Students apply digital tools and skills with creativity and innovation to express themselves, construct knowledge and develop products and process.

Grade 4 Performance Descriptors

Advanced

A fourth grade student at the advanced level in Technology demonstrates superior performance. He/she:

- effectively applies digital tools and skills to create and share personal expressions in a variety of media;
- independently uses digital tools creatively to produce original works uncommon for this grade level;
- applies basic rules of ownership of digital media to their own personal use;
- uses digital tools to develop new understandings by discovering the connections between facts.

Proficient

A fourth grade student at the proficient level in Technology demonstrates solid academic performance. He/she:

- applies digital tools and skills to create and share personal expressions in a variety of media;
- understands basic rules of ownership of digital media;
- uses digital tools to discover connections between facts.

Nearing Proficient

A fourth grade student at the nearing proficient level in Technology demonstrates partial mastery of the prerequisite knowledge and skills fundamental for proficiency in Technology. He/she:

- with guidance attempts to apply digital tools and skills to create and share personal expressions in a variety of media;
- with guidance acknowledges basic rules of ownership of digital media;
- with guidance, uses digital tools to discover connections between facts.

Novice

A fourth grade student at the novice level in Technology is beginning to attain prerequisite knowledge and skills that are fundamental in Technology. He/she:

- with assistance attempts to apply digital tools and skills to create and share personal expressions in a variety of media;
- with assistance, recognizes basic rules of ownership of digital media;
- with assistance, attempts to use digital tools to discover connections between facts.

Grade 8 Performance Descriptors

Advanced

An eighth grade student at the advanced level in Technology demonstrates superior performance. He/she:

- effectively applies a variety of digital tools to create a multimedia product for personal and group expression;
- independently combines digital tools creatively to produce original works that exceed expectations;
- effectively uses technology to predict reasonable trends and outcomes;

• independently applies basic rules of ownership of digital media to their own personal use.

Proficient
An eighth grade student at the proficient level in Technology demonstrates solid academic performance. He/she:

- applies a variety of digital tools to create a product for personal and group expression;
- uses technology to predict reasonable trends and outcomes;
- understands the relationship of copyright to ownership of digital media.

Nearing Proficient
An eighth grade student at the nearing proficient level in Technology demonstrates partial mastery of the prerequisite knowledge and skills fundamental for proficiency in Technology. He/she:

- uses a digital tool to create a product for personal and group expression;
- with guidance, uses technology to predict reasonable trends and outcomes;
- explores the relationship of copyright to ownership of digital media.

Novice
An eighth grade student at the novice level in Technology is beginning to attain prerequisite knowledge and skills that are fundamental in Technology. He/she:

- with assistance, uses a digital tool, to create a product for personal and group expression;
- with assistance, uses technology to predict trends and outcomes;
- with assistance, begins to understand the relationship of copyright to ownership of digital media.

Upon Graduation Performance Descriptors

Advanced
A graduating student at the advanced level in Technology demonstrates superior performance. He/she:

- initiates distinguished multimedia projects combining image, text and sound to suit a variety of audiences and purposes;
- adapts digital tools to create products of a professional quality;
- independently evaluates and employs a variety of digital tools to effectively create innovative work;
- creates models and simulations to identify trends, predict reasonable outcomes, and effectively investigate information;
- independently selects the appropriate legal protections for personally created digital media.

Proficient
A graduating student at the proficient level in Technology demonstrates solid academic performance. He/she:

- develops multimedia projects combining image, text and sound to suit a variety of audiences and purposes;
- evaluates and employs a variety of digital tools to effectively produce an original work;
- uses models and simulations to accurately identify trends, predict reasonable outcomes, and effectively investigate information;

• selects, with support, the appropriate legal protections for personally created digital media.

Nearing Proficient

A graduating student at the nearing proficient level in Technology demonstrates partial mastery of the prerequisite knowledge and skills fundamental for proficiency in Technology. He/she:

• with guidance, develops multimedia projects combining image, text and sound to suit a variety of audiences and purposes;
• with guidance, evaluates and employs a variety of digital tools to produce an original work;
• with guidance, uses models and simulations to identify trends, predict outcomes, and investigate information;
• explores the appropriate legal protections for personally created digital media.

Novice

A graduating student at the novice level in Technology is beginning to attain prerequisite knowledge and skills that are fundamental in Technology. He/she:

• develops, with assistance, a multimedia project combining image, text and sound to suit a specific audience and purpose;
• with assistance, evaluates and employs a variety of digital tools to produce an original work;
• with assistance, begins to use models and simulations to identify trends, predict outcomes, and investigate information;
• with assistance, begins to understand appropriate legal protections for personally created digital media.

Content Standard 4: Students possess a functional understanding of technology concepts and operations.

Grade 4 Performance Descriptors

Advanced

A fourth grade student at the advanced level in Technology demonstrates superior performance. He/she:

• independently demonstrates ability to input commands and data into digital devices;
• independently identifies the appropriate digital tool to complete tasks;
• independently uses proper terminology when communicating about technology;
• independently adapts current technology skills to additional and emerging technologies.

Proficient

A fourth grade student at the proficient level in Technology demonstrates solid academic performance. He/she:

• demonstrates ability to input commands and data into digital devices;
• identifies the appropriate digital tool to complete tasks;
• uses proper terminology when communicating about technology;
• adapts current technology skills to additional and emerging technologies.

Nearing Proficient
A fourth grade student at the nearing proficient level in Technology demonstrates partial mastery of the prerequisite knowledge and skills fundamental for proficiency in Technology. He/she:

- with guidance, demonstrates ability to input commands and data into digital devices;
- with guidance, identifies the appropriate digital tool to complete tasks;
- with guidance, uses proper terminology when communicating about technology;
- with guidance, adapts current technology skills to additional and emerging technologies.

Novice
A fourth grade student at the novice level in Technology is beginning to attain prerequisite knowledge and skills that are fundamental in Technology. He/she:

- with assistance, demonstrates ability to input commands and data into digital devices;
- with assistance, identifies the appropriate digital tool to complete tasks;
- with assistance, attempts using proper terminology when communicating about technology.

Grade 8 Performance Descriptors

Advanced
An eighth grade student at the advanced level in Technology demonstrates superior performance. He/she:

- independently demonstrates a consistent ability to input commands and data into digital devices;
- independently identifies the best appropriate digital tool to complete tasks;
- independently uses proper terminology when communicating about technology;
- independently adapts current technology skills to additional and emerging technologies;
- teaches others proper usage and core technology skills.

Proficient
An eighth grade student at the proficient level in Technology demonstrates solid academic performance. He/she:

- demonstrates a consistent ability to input commands and data into digital devices;
- identifies the best digital tool to complete tasks;
- uses proper terminology when communicating about technology;
- adapts current technology skills to additional and emerging technologies.

Nearing Proficient
An eighth grade student at the nearing proficient level in Technology demonstrates partial mastery of the prerequisite knowledge and skills fundamental for proficiency in Technology. He/she:

- with guidance, demonstrates a consistent ability to input commands and data into digital devices;
- with guidance, identifies the best digital tool to complete tasks;
- with guidance, uses proper terminology when communicating about technology;
- with guidance, adapts current technology skills to additional and emerging technologies.

Novice
An eighth grade student at the novice level in Technology is beginning to attain prerequisite knowledge and skills that are fundamental in Technology. He/she:

- with assistance, demonstrates an ability to input commands and data into digital devices;
- with assistance, identifies the appropriate digital tool to complete tasks;
- with assistance, attempts using proper terminology when communicating about technology.

Upon Graduation Performance Descriptors

Advanced
A graduating student at the advanced level in Technology demonstrates superior performance. He/she:

- independently demonstrates a consistent ability to input commands and data into digital devices;
- independently identifies the best appropriate digital tool to complete tasks;
- independently uses proper terminology when communicating about technology;
- independently adapts current technology skills to additional and emerging technologies;
- teaches others advanced usage and core technology skills;
- adapts existing digital tools to create and process data in innovative ways.

Proficient
A graduating student at the proficient level in Technology demonstrates solid academic performance. He/she:

- demonstrates a consistent ability to input commands and data into digital devices;
- identifies the best digital tool to complete tasks;
- uses proper terminology when communicating about technology;
- adapts current technology skills to additional and emerging technologies;
- teaches others proper usage and core technology skills.

Nearing Proficient
A graduating student at the nearing proficient level in Technology demonstrates partial mastery of the prerequisite knowledge and skills fundamental for proficiency in Technology. He/she:

- with guidance, demonstrates a consistent ability to input commands and data into digital devices;
- with guidance, identifies the best digital tool to complete tasks;
- with guidance, uses proper terminology when communicating about technology;
- with guidance, adapts current technology skills to additional and emerging technologies.

Novice
A graduating student at the novice level in Technology is beginning to attain prerequisite knowledge and skills that are fundamental in Technology. He/she:

- with assistance, demonstrates an ability to input commands and data into digital devices;
- with assistance, identifies the appropriate digital tool to complete tasks;

• with assistance, attempts using proper terminology when communicating about technology.

Montana Standards for Technology Glossary

Asynchronous Communication - Asynchronous means not occurring at the same time. Asynchronous refers to content, instruction, and communication between participants (e.g., students and teachers) that occurs at different times, the period of which may vary by circumstance, (e.g., e-mail, threaded discussions, homework, message boards).

Broad perspective - becoming a global thinker, including consideration and possible adaptation of other's views.

Collaboration Tools - Any digital tool that allows for shared input both synchronous and asynchronous (e.g., social networks, wikis, blogs, social bookmarking, forums, video conferencing, online productivity tools).

Collaborate - to work together in small groups or through collaboration tools, to exchange ideas, to develop understandings

Communication Tools - Any digital tool that allows for exchange of information and ideas both synchronous and asynchronous (e.g., email, instant messaging, forums)

Copyright - The idea that the authors of ideas, designs, and products may register their intellectual property with the government, thereby limiting the extent to which others may use and profit from, modify, or perform the protected creation. In the United States, the doctrine of Fair Use allows others to review, comment on, parody, and study copy-written materials with proper citation.

Digital Citizenship - The norms of behavior with regard to technology use. It includes online etiquette, responsible use of technology systems, information and software, safety and security.

Digital Collaboration - Using digital tools for the purpose of collaboration

Digital Environment - A virtual space that is created using digital tools for collaboration and communication.

Digital Information - written language, audio, or video accessed through digital means.

Digital Media - Any type of information in digital format, including computer-generated text, graphics, audio and animations.

Digital Presentation Tools - Tools that facilitate the sharing of information with others, either locally or in a virtual environment.

Digital Sources - information gathered (written, audio, video) online and noted.

Digital Tools - Inclusive of all hardware and/or software. (e.g., Computers, PDA's, Personal Video Players, personal music players, Word processors, Spreadsheets, Instant messaging, web browsers, web 2.0 tools)

Ethical Use - Respecting the hardware, ownership, privacy, and use of digital tools. (e.g., respecting ownership of intellectual property, being mindful of security and passwords, giving credit to cited sources, exhibiting appropriate behavior online, acknowledging boundaries of privacy)

Flexible Networks - A network environment which adapts with changing and emerging technologies and allows the users to explore interests safely and expediently.

Functional understanding - understanding usage sufficiently to perform day-to-day classroom tasks using digital tools

Global Communication - Refers to student communication outside the traditional classroom to learn collaboratively with other students from around the world. G**lobal Learning Environment** - digital environment that extends the learning beyond the classroom walls

Information and communication technology - "This term is used throughout much of the WORLD (added emphasis) in place of the word *technology*."

Information and Processing Technologies

- Data - data is raw. It simply exists and has no significance beyond its existence (in and of itself). It can exist in any form, usable or not. It does not have meaning of itself.
- Knowledge - knowledge is the appropriate collection of information, such that its intent is to be useful. Knowledge is a deterministic process.
- Understanding - understanding is an interpolative and probabilistic process. It is cognitive and analytical. It is the process by which I can take knowledge and synthesize new knowledge from the previously held knowledge.
- Wisdom - wisdom is an extrapolative and non-deterministic, non-probabilistic process. It beckons to give us understanding about which there has previously been no understanding, and in doing so, goes far beyond understanding itself.

Input Commands - Transferring information to a device with an expected performance result.

Intellectual Property - refers to a range of creations such as music, literature, artistic works, symbols, names, images or designs. Intellectual property law grants owners of such property exclusive rights to govern its use.

Inquiry - "Inquiry is any process that has the aim of augmenting knowledge, resolving doubt, or solving a problem."

Language Hierarchy for Performance Descriptors

- With Assistance - One to one help with step by step learning
- With Guidance - Walk away...less impact....limited input
- At proficient - no language used
- Independently - Students work on their own without guidance

Personal Responsibility - Understanding that personal actions have effects and that individuals are responsible for choices they make. **Synchronous Communication** - "Synchronous" means occurring at the same time. "Synchronous" refers to content, instruction, and communication between participants (e.g., students and teachers) that occurs at the same time even though they may be in different physical locations. For example, instruction in which students and teachers are online at the same time so that a question can be immediately answered (e.g., telephone calls, face-to-face meetings, physical classrooms, chat rooms, and videoconferencing).

Technology operations - basic skills needed to operate digital hardware and software

Web 2.0 - an emerging set of technologies occurring in the World Wide Web that aims to facilitate creativity, information sharing, and, most notably, collaboration among users.