Nauset Public Schools

Mission: The Nauset Public Schools will develop, maintain, and continuously provide the infrastructure and the professional support necessary to ensure that all students have the opportunity to develop and make use of current technology as both a producer and a consumer.

K-5 TECHNOLOGY BLUEPRINT COMMITTEE MEMBERS

Barbara Lavoine……Director of Technology

Elaine Pender..Orleans Elementary Principal

Joanna Hughes……………………………………………………………………………………………..Eddy Elementary Principal

Dawn Steber...Orleans Elementary Teacher

Anne Moore……………………………………………………………………………………………………Eddy Elementary Teacher

Breigh Ann Menza..Eastham Elementary Teacher

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Contributing Members:

Dr. Richard Hoffmann…………………………………………………………………………………………………….Superintendent

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BENCHMARK 1 – COMMITMENT TO A CLEAR VISION AND IMPLEMENTATION STRATEGIES

Vision - Nauset Public Schools will use technology to enhance and improve student learning, develop critical thinking skills, and foster creativity, providing all learners access to knowledge, information, and resources that connect them to the local and global community. Students and staff will be technologically literate and remain current with tools necessary to effectively communicate, collaborate, research, and access resources. They will apply their understanding, present ideas, evaluate and analyze information, and share knowledge in a socially responsible and ethical manner. Educators will utilize technology to collaborate on curriculum, differentiate instruction, analyze assessment data, and provide learning opportunities and interventions to maximize student growth and achievement. The District will identify and implement the appropriate resources to increase the efficiency and effectiveness of our management and operations systems.

EDUCATIONAL TECHNOLOGY – IMPLEMENTATION STRATEGIES

Nauset Public Schools is committed to achieving our mission and vision for technology. As part of our vision, the following strategies are suggested to meet the benchmarks, goals, and implementation schedule outlined within this plan:
- Provide students with the necessary opportunities and instruction to develop the skills and aptitude required to make effective use of available technologies in order to succeed in our schools, in college, in the work place, and as a tool for personal growth and development
- Develop and provide effective technology training and support for all Nauset Public School staff
- Create a safe online learning environment for activities on both the local-area and wide-area networks
- Provide all academic classrooms with current and effective technology equipment.
- Employ the robust use of internet and cloud-based applications
- Assess technology tools, including assistive technology, and services regarding impact on teaching, learning, and data management
- Ensure that the financial resources are committed to meeting the technology needs related to infrastructure, hardware, software, professional development, and staffing
- Coordinate and evaluate technology purchases and implementation though the IT department and monitor goals annually with involvement of technology stakeholders
- Provide collaborative opportunities for staff and students to share ideas, information, analyses, and creations

BENCHMARK 2 – TECHNOLOGY INTEGRATION AND LITERACY

Nauset Public School District students and staff will have the necessary technology literacy skills to function in a global community. A culture of digital literacy will be established and fostered through daily interactions among students and staff. The District will encourage innovative strategies and opportunities for virtual learning and online instructional courses.

Students will meet annual grade level technology benchmarks and expectations as established within the District and as outlined in the State Technology Standards. Staff and students will collaborate to create learning opportunities that embed these skills and aptitudes, and student work will be assessed with consideration of both standards from the Massachusetts Curriculum Frameworks and the Technology Literacy Standards. Student work will include integration of standards into class work, presentations, and projects.

Nauset staff members will continue to gain and maintain proficiency with the embedded use of technology; when appropriate, teachers will integrate technology as a curriculum, instruction, and assessment tool. The embedded use of technology will further enhance student interest, inquiry, problem-solving, analysis, collaboration, creativity, and critical thinking skills.

The Nauset Public School District understands that Technology Integration and Literacy cannot be achieved without appropriate staffing. The District will provide Instructional Technology Specialists to support, coach, and model technology instruction and integration.

SMART GOALS – BENCHMARK 2

Goal 2A - Beginning in the 2014-15 school year and each year thereafter, students will meet annual technology literacy standards as defined by the District's benchmarks for each grade level K-12; and

Goal 2B - Beginning in the 2015-16 school year a 5-year cycle will commence to incorporate the technology standards as defined by the Department of Elementary and Secondary Schools (DESE) specific to K-5

2014 Status	Actions Needed	Outcome – by 2019
Benchmarks have been created but were not yet fully aligned to instruction and assessment practices. DESE to publish new technology standards (likely 2015).	Technology curriculum maps, instruction, and assessment are created and in place for each of the elementary schools. Technology teachers will utilize aligned curriculum and instruction; common assessments will be created for key standards.	Students will consistently be achieving the District benchmarks and will have aligned curriculum, instruction, and assessment. Benchmarks and standards will be addressed both in lab setting and in content areas through technology integration.

Goal 2C - Beginning in the 2016-17 school year, a certified teacher[i] will be employed at the necessary percentage to provide technology instruction to all elementary students and content integration support for all K-5 teachers; Instruction time in the lab setting will be 30-40 minutes per week for kindergarten and 40-50 minutes per week for grades 1 through 5; technology content integration for grades 3-5 will be 40-50 minutes per week.

2014 Status	Actions Needed	Outcome – by 2019
K-5 Instructional time in the lab setting has been 30-50 minutes per class per week (30-40 minutes at the kindergarten level and 40-50 minutes for grades 1-5); however, the support of the Technology Teacher for content integration is only minimally possible with the time provided in the schedule and the number of classes.	Employ Technology Teachers at the necessary percentage to provide instruction to all K-5 classes and have a minimum of one period available weekly per class per grade 3-5 level for the purpose of supporting content integration.	Instruction in the technology standards within the lab setting and via content integration will occur with the support of the Technology Teacher to meet the benchmarks outlined in the goal. These benchmarks will reflect the new DESE Technology Standards.

Goal 2D - K-5 applications for key technology instruction will be consistent across all elementary schools

2014 Status	Actions Needed	Outcome – by 2019
K-5 Applications were mostly consistent but differences occurred at the various elementary schools which resulted in some inconsistencies of skill and concept development for applications used in Middle and High School.	Through the use of the consensus agreements reached as part of the K-5 Technology Blueprint and the writing of curriculum units and assessments for technology, applications for key technology instruction will become uniform.	Students will have consistent units of instruction and assessment that incorporates agreed upon applications. Students' conceptual understanding and skill development will be assessed in these agreed upon K-5 applications.

BENCHMARK 3 – TECHNOLOGY PROFESSIONAL DEVELOPMENT

Beginning in year one of this plan, staff will participate in high-quality, ongoing professional development that includes emerging technology, technology skills, content-specific applications, and research-based models of integration with the assistance of Instructional Support Specialists. At the outset, professional development will be specific to the unique needs of staff whose proficiency is at the beginning, mid-level, and/or high-level of performance. Professional development will include coaching, mentoring, modeling of best practices, application of skills, and tiered support until all staff attain desired levels of proficiency for technology integration and knowledge. New staff members will also receive specific professional development as part of their orientation program and during their first year of employment in order to reach proficiency.

All Nauset instructional staff members will receive professional development during each of the five years [2014-2019] that includes the use of high-capacity, internet-connected technology devices to further engage, instruct, and assess students within their unique classroom environments. Furthermore, instructional staff will receive training on the effective use of interactive whiteboard technologies and applications that are specific to their role and the population of students with whom they work. Professional development will enhance the use of technology as a tool to build collaboration among students, to improve communication among students, staff, and families, to provide feedback on student progress, and as a means by which content standards are taught in conjunction with critical and creative thinking skills.

Finally, professional development will allow the time necessary for staff members to plan lessons, units, projects, and assessments that improve the teaching and learning process. Staff members will have the opportunity to work with one another as well as with Instructional Support Specialists within the District to refine their use of technology as a tool for education. The professional development plan will also allow the flexibility to adapt to emerging technologies and to remain current with research-based best practices in regard to curriculum, instruction, and assessment.

SMART GOALS – BENCHMARK 3

Goal 3A - Create a tiered system of professional development for instructional staff to address remediation of basic technology skills and to build advanced independent skills throughout the five years of this plan

2014 Status	Actions Needed	Outcome – by 2019
Technology professional development was provided but it benefitted mostly Middle and High School staff as they began their 1:1 initiative and use of interactive whiteboards.	Professional development plan related to technology is developed for the elementary school staff and is timed around the incorporation, purchase, and use of new technologies.	Elementary staff will participate in tiered, effective professional development in order to provide content integration for students and to develop advanced, independent skills.

Goal 3B - Provide necessary foundational technology training to new staff during their induction program and their first year of employment based upon their demonstrated proficiency level

2014 Status	Actions Needed	Outcome – by 2019
New staff did not receive technology training; rather they received an overview of the district-wide applications that they will need to utilize.	Incorporate technology training and familiarity with district-wide applications during staff orientation and year one to best meet new staff needs.	New staff will be proficient by the end of their third year to the same degree that existing staff can integrate and use technology to support students and provide effective instruction and assessment practices.

Goal 3C - Create an Educational Technology Committee that will attend technology-based educational conferences in order to investigate new trends and tools in the education field, provide input for revisions to our implementation plan, and develop ongoing professional development ideas for staff

2014 Status	Actions Needed	Outcome – by 2019
Members of an Educational Technology Committee centered on grade 6-12 staff and elementary staff investigated trends and tools on their own.	K-5 staff members will form an elementary Educational Technology Committee and will attend technology-based educational conferences and workshops.	Nauset's K-5 and 6-12 Educational Technology Committees will be at the forefront of emerging technologies related to education and will help revise future Technology Plans and propose/plan/present professional development for other staff members.

The District provides connectivity to the internet for all devices in all schools and classrooms maintaining a CIPA-compliant atmosphere. The District will immediately move toward meeting the 1:1 standard of a high-capacity internet-connected technology device for each student and staff in grades 6 through 12. The District will also move toward meeting a 1:1 staff-to-device ratio and a tiered student-to-device ratio at the elementary level that will allow for the appropriate development of technology skills and the seamless integration of technology use as a tool for teaching and learning.

Classrooms will be provided with current technology equipment including access to digital projectors and interactive technologies.

The District will have an established device replacement cycle of five years or less. Cloud-based resources will be utilized for file-sharing, backups, scheduling, etc. to provide a WAN [wide-area network] concept to our geographically-unique District. This will require investment in the support services for the cloud-based technology. The District will provide desktop technicians [one for every 300-500 devices] to support network and desktop functionality

SMART GOALS – BENCHMARK 4

Goal 4A - Elementary school staff will have a 1:1 ratio of high-capacity, internet-connected devices for use by September 2016

2014 Status	Actions Needed	Outcome – by 2019
Most elementary school staff have their own high-capacity, internet-connected device. Some staff share these devices and other staff do not have a device. Some staff members have access to an iPad/tablet and incorporate it into their professional responsibilities.	Provide all instructional staff with an iPad/ tablet to complement current devices. Provide portable, wireless, cloud-based capability and allow integrated use of these devices as a professional tool. Build capacity toward integrated use of technology tools to enhance and improve instruction and assessment practices.	All instructional staff will have the professional development and experience with a portable high-capacity, internet-connected device [such as an iPad] to seamlessly integrate the use of the device as a tool for curriculum, instruction, and assessment as well as a professional tool for communication, collaboration, creativity, and problem-solving.

Goal 4B - Elementary students will have a tiered ratio of high-capacity, internet-connected devices by September 2017 based upon their grade level and instructional/assessment purposes

- o **Kindergarten and Grade 1 will have a ratio of 3-5 students: 1 device for centers/collaboration**
- o **Grades 2 and 3 will have a ratio of 2-3 students: 1 device for collaborative work**
- o **Grades 4 and 5 will have a ratio of 1-2 students: 1 high-capacity, internet-connected device**

2014 Status	Actions Needed	Outcome – by 2019
Elementary schools across the District had varying access to high-capacity, internet-connected devices and this resulted in ratios that ranged from 1 device : 2 students upward to 1 device for every 20 students.	Purchase, configure, and deploy devices based upon the guidelines listed above for each of the elementary schools.	Student to device ratios will meet the guidelines in the goal and these devices will be part of students' daily learning experiences.

Nauset Public Schools - Technology Literacy Benchmarks and Expected Outcomes

The impact of the Technology Plan will be evident as students achieve the Grade Span Benchmarks / Expected Outcomes outlined below. These benchmarks are derived from DESE's Technology Literacy Standards and represent the key mastery standards for various grade spans. For example, the Grade 2 Outcomes represent the key technology literacy standards for K-2. In addition, there are many additional standards being introduced or developed within each grade level and these outcome statements represent the continuum of learning for students as they move from grade level to grade level across the District. Given Nauset's emphasis on the embedded use of technology into daily teaching and learning, the outcome statements also reflect framework standards from the *Partnership for 21st Century Skills*.

Grade 2 – Benchmarks/Expected Outcomes - *Students will be able to:*

- Use technology to express ideas using different media elements such as text, images, sound, and voice
- Begin to locate and use appropriate images to enhance curriculum projects
- Use computers or tablets to type stories, poetry, or presentations related to curriculum topics
- Access information given teacher-organized structure and recommended sites/links; login to the network or a specific program and enter password independently
- Demonstrate proficiency in basic operations including the use of a keyboard, touchscreen, desktop icons, and the beginning steps in applications and available hardware (e.g. launch a program, use a pointing device, open a web browser, conduct a basic search, download images, open/print/save files)
- Demonstrate beginner keyboarding skills including introduction of 'home row' position and identifying, locating, and using letters, numbers, and special keys (e.g. space bar, shift, delete) on the keyboard
- Demonstrate ability to use basic tools in painting and/or drawing programs
- Follow rules for the responsible use of computers, peripheral devices, and citing resources; explain why these rules exist
- Respect others' account privacy and work
- Follow proper ergonomics for applicable technology devices
- Work collaboratively with others using digital devices to communicate and to exchange information and ideas
- Begin to use strategies for collecting information, solving problems, and completing projects
- Use the computer or tablet to explore math concepts such as grouping, graphing, dividing, and understanding of geometry through a combination of shapes
- Utilize basic commands to create and edit projects that demonstrate or illustrate an idea
- Introduce the concept of taking electronic notes and citing sources to enhance understanding or to support research
- Understand the basics of how a computer/tablet works and basic elements of coding/programming

<u>Grade 5 – Benchmarks/Expected Outcomes</u> - *Students will be able to:*

- Create multimedia presentations that incorporate text, graphics, digital images, video, and sound
- Begin to understand concepts of digital photography/video
- Utilize basic principles of design and typography (text formatting techniques) to enhance ideas or to persuade an audience; use image-editing techniques to effectively present information
- Use technology for creative and expository writing with the utilization of more complex publishing tools
- Communicate and collaborate online as appropriate with other students/adults under teacher supervision
- Locate, organize, analyze, evaluate, and synthesize information from a variety of sources and media
- Understand copyright issues and properly cite sources
- Perform operations using available hardware and applications (e.g. printing with appropriate page setup and orientation, using taskbars, working w/menus, using multiple programs simultaneously, save/retrieve/delete electronic files on a hard drive or school network)
- Demonstrate intermediate keyboarding skills and proper keyboarding techniques to reach 20-25 WPM with fewer than 5 errors
- Begin use of keyboard shortcuts and quick commands and/or programs for productivity such as accessing and sharing files remotely; be comfortable with intermediate aspects of file management (saving files, renaming and deleting files, copying files, etc.)
- Introduce use of cloud-based storage to transfer files between home and school
- Use word processing programs to format, edit, proofread, add images, save, and print documents
- Provide examples of databases and use existing databases to conduct simple searches
- Use a spreadsheet to analyze, calculate, and store data
- Use age-appropriate, internet-based search engines to locate and extract information
- Explain and demonstrate responsible and ethical use of technology and compliance with established school and district rules
- Recognize and describe some potential risks and dangers associated with online communication and social media; be able to identify cyber-bullying
- Follow proper ergonomics for applicable technology devices
- Evaluate a website for its appropriateness, accuracy, and usability
- Understand and utilize intermediate elements of coding/programming to accomplish a desired task

*Note that these benchmarks and expected outcomes may be updated following the release of the Massachusetts Technology Standards in 2015-16