

TSD R1 - GRADES 9 - 12

INTEGRATION OF NETS_S 1-4:

Students use technology within all content areas to collaborate, communicate, generate innovative ideas, investigate and solve problems.

1. Creativity and Innovation

Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:

- a. apply existing knowledge to generate new ideas, products or processes.
- b. create original works as a means of personal or group expression.

GL	9	10	11/12
S1 a-b	Generate ideas and create original works for personal and group expression using a variety of digital tools.		
Evidence of Learning	<ul style="list-style-type: none"> ▪ Combine technologies to create and share products from different content areas. ▪ Create digital products for culminating projects or inclusion in portfolios. 		
Examples	Basic Level		
	Enhance a presentation by adding graphics and sounds. R, W, M, Sc, SS, C, , H/F, A, CTE	Enhance a presentation by adding images, video and audio files. R, W, M, Sc, SS, C, H/F, A, CTE	Use a wide variety of digital media to collect and present information for a Senior Project. R, W, M, Sc, SS, C, H/F, A, CTE
	21st Century Learning Environment		
	Create a virtual literature trip when reading an assigned historic novel, map important parts, integrate textual excerpts with archival images, and video of evidence and eyewitness accounts from the American Memory database sponsored by the Library of Congress. R, SS	Compare the merits of different presentation software to communicate results from a national survey. R, W, M, Sc, SS, C, H/F, A, CTE	Publish chemistry lab reports using blogs in order to share results with peers, receive input and data from other sources and process and display data. Sc

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INTEGRATION OF NETS_S 1-4:

Students use technology within all content areas to collaborate, communicate, generate innovative ideas, investigate and solve problems.

1. Creativity and Innovation

Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:

- c. use models and simulations to explore complex systems and
- d. identify trends and forecast possibilities.

GL	9	10	11/12
S1 c, d	Use models and simulations to explore systems, identify trends and forecast possibilities.		
Evidence of Learning	<ul style="list-style-type: none"> ▪ Analyze survey data, report information and display the data in a variety of ways to support conclusions. ▪ Identify patterns and correlations of data to build understanding and recognize relationships between common and uncommon elements. ▪ Determine and explore cause and effect using virtual simulations in different contexts. 		
Examples	Basic Level		
	Collect data on stress points in different Popsicle bridge designs and analyze the data to make hypotheses about general bridge-making principles. Sc, CTE	Use the results of an online survey to determine which products customers prefer in the student store. CTE	Research, analyze and share information regarding career paths (e.g., use <i>WOIS</i> or <i>CareerVoyages</i>). R, W, C
	21st Century Learning Environment		
	Participate in an online simulation (e.g., students act as reporters breaking a story on a mysterious outbreak of illness in an elementary school; <i>Be A Reporter Game</i> by NewsU.org). W	Design, create and play simple video games and simulations to illustrate concepts. R, W, C, Sc, SS Compare and contrast post-secondary options using multimedia software. R, W, C	Participate in an online simulation that investigates a current global concern. Sc, SS

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INTEGRATION OF NETS_S 1-4:

Students use technology within all content areas to collaborate, communicate, generate innovative ideas, investigate and solve problems.

2. Communication and Collaboration

Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students:

- a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
- b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.

GL	9	10	11/12
S2 a-b	Communicate and collaborate to learn with others.		
Evidence of Learning	<ul style="list-style-type: none"> ▪ Interact and collaborate with others using a variety of digital tools. ▪ Communicate information and ideas effectively to multiple audiences using a variety of media and formats. 		
Examples	Basic Level		
	Share documents to collaborate and peer-edit short stories and expository writing. R, W	Collect school-wide data in a spreadsheet and create charts or other graphical representations (e.g., bacteria counts from household kitchen appliances). Sc, H/F	Practice foreign language skills using online tools. WL
	21st Century Learning Environment		
	Compose music using digital tools and post online for peer review. A	Participate in an online music community (e.g., share and comment on lyrics, tracks, music clips, beats, samples and remixes). A	Rewrite the lyrics to a folk song, record and store the music files to be remixed by classmates. W, A

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2. Communication and Collaboration

Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students:
c. develop cultural understanding and global awareness by engaging with learners of other cultures.
d. contribute to project teams to produce original works or solve problems.

GL	9	10	11/12
S2 c, d	Develop cultural understanding and global awareness by engaging with learners of many cultures.		
Evidence of Learning	<ul style="list-style-type: none"> ▪ Build empathy by learning about many cultures through digital content from around the world. ▪ Participate in an online community dedicated to understanding or solving a local or global issue. 		
Examples	Basic Level		
	Contribute to an online project that combines photos and personal stories in order to share perspectives and understanding. R, W, Sc, SS, A, WL	Interact online with other students within your community, from various regions, states or other countries to compare and contrast high school experiences. W, SS, C, WL	Participate in desktop or group videoconferencing with local, state, national or international learners. R, W, Sc, SS, C, WL
	21st Century Learning Environment		
	Participate in a world-wide writing workshop which has students writing, editing and publishing stories on a wiki and then publishing to a blog. R, W, C, WL	Engage in a discussion board pertinent to a current global event. R, W, Sc, SS, C, WL	Create video digital stories, publish to a storytelling website and trade comments and ideas with storytellers from around the globe. R, W, WL

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Students use technology within all content areas to collaborate, communicate, generate innovative ideas, investigate and solve problems.

3. Research and Information Fluency

Students apply digital tools to gather, evaluate, and use information. Students:
 a. plan strategies to guide inquiry.

4. Critical Thinking, Problem Solving, and Decision Making

Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. Students:
 a. identify and define authentic problems and significant questions for investigation.

GL	9	10	11/12
S3 a S4 a	Identify and define authentic problems and significant questions for investigation and plan strategies to guide inquiry.		
Evidence of Learning	<ul style="list-style-type: none"> Explore possible topics and available information on current issues using databases and digital resources to organize a project or solve a problem. 		
Examples	Basic Level		
	Identify sources using a database to research material for a persuasive speech. R, W, Sc, SS, C, H/F	Use global online news media to compare point of view or bias of the same event. R, W, Sc, SS, C, H/F	Compare and contrast information found about the same global issue from different databases and analyze bias and fairness to the topic. W, Sc, SS, C, H/F, CTE
	21st Century Learning Environment		
	Compare and contrast norms of healthy behavior by collecting and analyzing data on student health (e.g., measure BMI, physical fitness and nutrition using digital tools). Sc, H/F	Analyze scientific data and draw conclusions (e.g., participate in an online project collecting data on frog populations and habitat). Sc	Engage in an online mock debate on current issues. R, Sc, SS, C, H/F Analyze the capabilities and limitations of current and emerging technology resources and assess their potential to address career needs. R, W, Sc, SS, C, H/F, CTE

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INTEGRATION OF NETS_S 1-4:

Students use technology within all content areas to collaborate, communicate, generate innovative ideas, investigate and solve problems.

3. Research and Information Fluency

Students apply digital tools to gather, evaluate, and use information. Students:

- b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.

GL	9	10	11/12
S3 b	Locate and organize information from a variety of sources and media.		
Evidence of Learning	<ul style="list-style-type: none"> ▪ Select the appropriate search engines or directories. ▪ Use advanced functions of search engines and databases. ▪ Catalog and organize resources. 		
Examples	Basic Level		
	Use online citation websites to learn how to correctly cite sources. W	Use advance search features in a library database to identify documents for different purposes. R, W, M, Sc, SS, C, H/F	Develop a digital plan to organize a culminating project. R, W, M, Sc, SS, C, H/F, CTE
	21st Century Learning Environment		
	Use an online calendar to plan a semester-long art project that uses the work of several students assembled into a large installation. A	Create a digital photo gallery that depicts the Industrial Revolution using royalty free images with permission. SS	Create a Gantt chart to manage a project that constructs a business plan for a new enterprise in the local community. R, M, C

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3. Research and Information Fluency

Students apply digital tools to gather, evaluate, and use information. Students:

- b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
- d. process data and report results.

4. Critical Thinking, Problem Solving, and Decision Making

Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. Students:

- c. collect and analyze data to identify solutions and/or make informed decisions.

GL	9	10	11/12
S3 b, d S4 c	Analyze, synthesize and ethically use information to develop a solution, make informed decisions and report results.		
Evidence of Learning	<ul style="list-style-type: none"> ▪ Combine information from separate sources to produce, support and counter arguments. ▪ Assess the credibility, validity and potential bias of online resources. ▪ Apply copyright law to correctly excerpt, paraphrase and publish results to a wider audience. ▪ Cite sources using bibliography tools. ▪ Select relevant sources for a particular purpose or audience. 		
Examples	Basic Level		
	Practice extracting portions of sources from teacher-provided articles in accordance with copyright law. W	Research alternative energy use options by exploring several websites, books, reference materials and interviewing experts. W, Sc	Research a current topic and select online information that is appropriate and credible to support a point of view. W
	21st Century Learning Environment		
Compare and contrast the relative strengths of various search engines and databases. R, W, Sc, SS, C	Evaluate the reliability of news reports on voting machine issues in the 2004 election by tracing the sources (e.g., press releases and academic research) the reports were based on. R, W, Sc, SS, C	Survey and analyze media coverage of a topic over several decades and publish an evaluation on a wiki. R, W, Sc, SS, C	

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4. Critical Thinking, Problem Solving, and Decision Making

Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. Students:

- d. use multiple processes and diverse perspectives to explore alternative

GL	9	10	11/12
S4 d	Use multiple processes and diverse perspectives to explore alternative solutions.		
Evidence of Learning	<ul style="list-style-type: none"> ▪ Explore and integrate alternative concepts and feedback from multiple audiences. ▪ Develop a range of problem-solving skills. 		
Examples	Basic Level		
	Identify and analyze websites with opposing points of view. R, W, SS, C	Use online survey results to analyze different points of view regarding an identified problem at school. R, W, M, Sc, SS, C, H/F	Identify a local issue or problem and investigate how other communities have solved a similar issue and share results online. R, W, Sc
	21st Century Learning Environment		
	Participate in a class project through iEARN (International Education and Resource Network). R, W, M, Sc, SS, C, H/F, A	Subscribe to RSS feeds of relevant websites, blogs and other online references in order to follow the development of a social issue. R, W, Sc, SS, C, H/F, CTE	Use GIS software to evaluate social and economic data to analyze population and economic trends. SS, C

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DIGITAL CITIZENSHIP OF NETS_S 5-6

Students demonstrate a clear understanding of technology systems and operations and practice safe, legal and ethical behavior.

5. Digital Citizenship

Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. Students:

- a. advocate and practice safe, legal, and responsible use of information and technology.

GL	9	10	11/12
S5 a	Practice personal safety.		
Evidence of Learning	<ul style="list-style-type: none">▪ Practice the safe and responsible sharing of information, data and opinions online.▪ Protect access to passwords and digital accounts.▪ Recognize potential online dangers.▪ Understand privacy issues and how data is archived and publicly available.		
Examples	Demonstrate knowledge of passwords, privacy and anonymity and recognize spam, phishing, 419 fraud and identity theft.	Demonstrate knowledge of passwords, privacy and anonymity and recognize spam, phishing, 419 fraud and identity theft.	Demonstrate knowledge of passwords, privacy and anonymity and recognize spam, phishing, 419 fraud and identity theft.

DIGITAL CITIZENSHIP OF NETS_S 5-6

Students demonstrate a clear understanding of technology systems and operations and practice safe, legal and ethical behavior.

5. Digital Citizenship

Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. Students:

- a. advocate and practice safe, legal, and responsible use of information and technology.
- b. exhibit a positive attitude toward using technology that supports collaboration, learning, and
- c. demonstrate personal responsibility for lifelong learning.
- d. exhibit leadership for digital citizenship.

GL	9	10	11/12
S5 a-d	Practice ethical and respectful behavior.		
Evidence of Learning	<ul style="list-style-type: none"> ▪ Comply with district Acceptable Use Policy (AUP). ▪ Practice ethical and appropriate use of all media and comply with copyright law. ▪ Participate and engage with the global community within expected norms of behavior and positive interaction. ▪ Recognize, report and counteract cyberbullying. 		
Examples	Compare Acceptable Use Policies: - Student to staff. - School to school. Cite all sources properly.	Predict how technology misuse could damage business processes and relationships. Cite all sources properly.	Rewrite your school's Acceptable Use Policy so that elementary students can understand it. Cite all sources properly.

DIGITAL CITIZENSHIP OF NETS_S 5-6

Students demonstrate a clear understanding of technology systems and operations and practice safe, legal and ethical behavior.

6. Technology Operations and Concepts

Students demonstrate a sound understanding of technology concepts, systems, and operations. Students:

- a. understand and use technology systems.
- b. select and use applications effectively and productively.

GL	9	10	11/12
S6 a, b	Develop skills to use technology effectively.		
Evidence of Learning	<ul style="list-style-type: none"> ▪ Learn new vocabulary as technologies emerge. ▪ Meet keyboarding proficiency standards. ▪ Apply correct network procedures. ▪ Manage files effectively. 		
Examples	<p>Complete a Digital Communication Tools (DigiTools) or a computer applications class.</p> <p>Use access rights independently for a variety of storage applications (e.g., local, network or external drives).</p>	<p>Use access rights independently for a variety of storage applications (e.g., local, network or external drives).</p>	

DIGITAL CITIZENSHIP OF NETS_S 5-6

Students demonstrate a clear understanding of technology systems and operations and practice safe, legal and ethical behavior.

6. Technology Operations and Concepts

Students demonstrate a sound understanding of technology concepts, systems, and operations. Students:

- a. understand and use technology systems.
- b. select and use applications effectively and productively.
- c. troubleshoot systems and applications.
- d. transfer current knowledge to learning of new technologies.

GL	9	10	11/12
S6 a-d	Use a variety of hardware to support learning.		
Evidence of Learning	<ul style="list-style-type: none">▪ Apply prior knowledge to operate digital equipment.*▪ Implement adaptive approach to digital equipment problem solving.		
Examples	Seek out technology mentors and online resources.	Find, participate in and learn from online forums and discussion boards.	Identify and share solutions and ideas within a larger learning community that extends beyond the classroom.

*Digital equipment can include digital and document cameras, microphones, computers, various handheld devices, assistive technologies, scanners, classroom response systems, microscopes, pedometers, interactive whiteboards, GPS, etc.

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6. Technology Operations and Concepts

Students demonstrate a sound understanding of technology concepts, systems, and operations. Students:

- b. select and use applications effectively and productively.
- c. troubleshoot systems and applications.
- d. transfer current knowledge to learning of new technologies.

GL	9	10	11/12
S6 b-d	Select and use common applications.		
Evidence of Learning	<ul style="list-style-type: none"> ▪ Use software to reinforce skills in all subject areas. ▪ Create and publish multimedia projects. ▪ Use multiple features of a: <ul style="list-style-type: none"> - Word processing or publishing program. - Spreadsheet program. - Presentation program. - Database program. 		
Examples	<p>Create an interactive digital product about the periodic table.</p> <p>Create a portfolio of digital images.</p> <p>Create a presentation using custom animation features.</p>	<p>Design and produce a DVD with video, images and an audio soundtrack (e.g., interview a military veteran speaking about his or her experience).</p> <p>Analyze results from a chemistry lab experiment using a spreadsheet or database.</p>	<p>Design and record a multi-track podcast (e.g., book report with voice main track and background theme music).</p> <p>Demonstrate knowledge of various advanced features of a productivity application (e.g., macros, add-ons, master document and track changes).</p>

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- a. understand and use technology systems.
- b. select and use applications effectively and productively.
- c. troubleshoot systems and applications.
- d. transfer current knowledge to learning of new technologies.

GL	9	10	11/12
S6 a-d	Select and use online applications.		
Evidence of Learning	<ul style="list-style-type: none"> ▪ Explore and evaluate various databases and other sources. ▪ Use collaborative technologies to support learning. ▪ Design and publish content incorporating a variety of media and formats. 		
Examples	Participate in school-approved online groups to support learning.	Improve individual productivity using collaborative networking tools and develop personal learning networks.	Use appropriate collaborative networks according to purpose or interest (e.g., <i>TakingItGlobal</i> for social justice).

DIGITAL CITIZENSHIP OF NETS_S 5-6

Students demonstrate a clear understanding of technology systems and operations and practice safe, legal and ethical behavior.

Standard 6 Adapt to Change (Technology Fluency)

Transfer current knowledge to new and emerging technologies.

GL	9	10	11/12
S6 d	Formulate and synthesize new knowledge.		
Evidence of Learning	<ul style="list-style-type: none">▪ Apply technology to real-world experiences.▪ Adjust to changing technologies.▪ Modify current and create new technologies.▪ Personalize technology to meet individual needs, interests and learning styles.		
Examples	Create and publish original multimedia products (e.g., music, video, literature).	Evaluate the effectiveness, appropriateness or stability of a new social networking site for sharing information in a school newspaper.	Modify a virtual world environment by creating a representation of an assigned novel, with images of important parts of the book.