PROPOSED REGULATION OF THE

STATE BOARD OF EDUCATION

LCB File No. R008-10

April 7, 2010

EXPLANATION – Matter in ***italics*** is new; matter in brackets **[**~~omitted material~~**]** is material to be omitted.

AUTHORITY: §§1-5, NRS 385.080, 385.110, 389.0185 and 389.520.

A REGULATION relating to education; revising provisions governing the performance standards for instruction in technology and computers; and providing other matters properly relating thereto.

Section 1. Chapter 389 of NAC is hereby amended by adding thereto a new section to read as follows:

Instruction in the second grade in technology and computers must be designed so that pupils meet the following performance standards by the completion of the second grade:

1. For the areas of creativity and innovation, demonstrate creative thinking, build knowledge and develop innovative products and processes using technology, as demonstrated by the ability of the pupil to:

(a) Use digital tools to brainstorm and organize ideas;

(b) Create an original work using a variety of digital tools to demonstrate personal or group expression;

(c) With assistance from the teacher, use digital models and simulations; and

(d) Identify patterns and predict possibilities in data from the classroom using digital tools.

2. For the areas of communication and collaboration, use digital media and environments to communicate and work in collaboration with other pupils, including pupils

outside of the classroom, to support the learning of the pupil and the learning of other pupils, as demonstrated by the ability of the pupil to:

(a) Work in groups in the classroom to create and publish digital products;

(b) Communicate information and ideas to other pupils and the parents of the pupil using digital text and illustrations;

(c) Use digital resources to learn about places, persons, celebrations and maps; and

(d) Work in a team to solve problems using digital tools.

3. For the area of fluency of research and information, gather, evaluate and use information, as demonstrated by the ability of the pupil to:

(a) Determine the steps necessary to answer a question using digital tools;

(b) Identify and organize keywords and use multiple sources to answer a question;

(c) Recognize that different sources of information and digital tools are appropriate for completing different tasks; and

(d) Collect and display data using a variety of technological resources and report the results.

4. For the areas of critical thinking, problem solving and decision making, use critical thinking skills to plan and conduct research, manage projects, solve problems and make informed decisions using the digital tools and resources that are appropriate for the specific task, as demonstrated by the ability of the pupil to:

(a) Investigate a problem that arises in an everyday situation using digital resources;

(b) Use a digital planning tool;

(c) Use data to answer a problem that arises in an everyday situation using digital tools; and

(d) Explore alternative solutions to and diverse perspectives on problems that arise in everyday situations using digital tools.

5. For the area of the appropriate use of technology, understand human, cultural and societal issues relating to technology and practice legal and ethical behaviors when using technology, as demonstrated by the ability of the pupil to:

(a) List the rules of the classroom governing the safe use of technology;

(b) List potential dangers in digital environments and how to report situations that are potentially unsafe;

(c) Use technologies in learning activities;

(d) Describe how technology can enhance learning; and

(e) Describe what it means to use technology in an appropriate manner and the responsibilities associated with using technology.

6. For the areas of technological operations and concepts, demonstrate an understanding of technological concepts, systems and operations, as demonstrated by the ability of the pupil to:

(a) List examples of technological tools;

(b) Use proper techniques for basic keyboarding skills;

(c) Use software that is appropriate for the age of the pupil;

(d) Demonstrate proper care of equipment; and

(e) Use routine procedures for the technological tools in the classroom.

Sec. 2. NAC 389.2948 is hereby amended to read as follows:

389.2948 By the ~~[end]~~ ***beginning*** of the fifth grade, pupils must know and be able to do everything required in the previous grades for ~~[courses in]~~ technology and computers offered in

public schools. Instruction in the fifth grade in technology and computers must be designed so that pupils meet the following performance standards by the completion of the fifth grade:

1. ~~[To develop the ability to use productivity tools, pupils must be able to use appropriate productivity tools, including, without limitation, word processing, spreadsheets, databases, multimedia and telecommunications, as demonstrated by the ability of the pupil to:~~

~~(a) Demonstrate and use correct finger placement for basic keyboarding skills;~~

~~(b) Use basic formatting techniques on a computer, including, without limitation, selection of the font type, size and color;~~

~~(c) Use the tools of a computer to edit a composed document, including, without limitation, spell check;~~

~~(d) Include a graphic in a document;~~

~~(e) Print a document;~~

~~(f) Create a database using predefined fields, such as listing fields and formulas for an entry in a database or spreadsheet;~~

~~(g) Enter data for multiple records;~~

~~(h) Print reports based on sort and query, such as searching for certain criteria in a specified field;~~

~~(i) Under the guidance of a teacher or media specialist, construct a spreadsheet;~~

~~(j) Create a multimedia document or presentation to organize and present an idea using text, graphics or sounds, or any combination thereof;~~

~~(k) Describe and use the file management system of a computer;~~

~~(l) Explain the differences between data files, program files and operating system files;~~

(m) Describe access privileges and demonstrate the process of obtaining access where possible;

(n) Identify a local area network, or LAN;

(o) Explain the uses of electronic communication devices; and

(p) Define distance learning, telecommuting and teleconferencing.

2. In the area of tools used for research, pupils must be able to use various tools of technology to research information and evaluate the accuracy and appropriateness of the information to solve problems and make decisions, as demonstrated by the ability of the pupil to:

(a) With the direction of a teacher or a media specialist:

(1) Individually select a research topic or define a problem, give a possible outcome of the research of the topic or problem, and list available tools of technology that can be used;

(2) Generate a list of keywords to conduct an electronic search; and

(3) Explore hyperlinks to select and evaluate information useful to the research of a topic or problem;

(b) While working in a group, identify a tool for organizing the research of a topic or problem, and place information within a format;

(c) Demonstrate an understanding of intellectual property, and identify the source and content of information collected;

(d) Collaboratively list sources used to research a topic or problem; and

(e) With the direction of a teacher or a media specialist, summarize the research process and evaluate its outcome.

3. In the area of tools and processes, pupils must be able to identify, apply and manage various concepts, tools and resources to evaluate their accuracy and appropriateness in solving problems and making decisions, as demonstrated by the ability of the pupil to:

(a) List technological resources, including, without limitation, people, information, materials, machines, energy, effort, capital resources and time;

(b) Demonstrate the use of tools and materials to design or develop products or projects;

(c) Select and demonstrate the safe use of tools; and

(d) Identify situations where incorrect, inoperable or inappropriate tools are being used and cooperatively take appropriate actions to correct such situations.

4. In the area of systems, pupils must be able to recognize that systems are made up of individual components and that each component affects the operation of the system and its relationship with other systems, as demonstrated by the ability of the pupil to:

(a) List the parts of open, closed, simple, complex, micro and macro systems;

(b) Cooperatively identify resources necessary to achieve a desired outcome; and

(c) Given a multitude of systems, including, without limitation, open, closed, macro, micro, simple and complex systems, sort the systems according to the type and level of the system.

5. In the area of implications of technology and computers on society, pupils must be able to evaluate the impact and ethical implications of technology and computers on persons, society and the environment, as demonstrated by the ability of the pupil to:

(a) Explain how a given object was developed to meet a human need or desire;

(b) Communicate the positive or negative outcomes of technology;

(c) Compare and contrast the technological developments within a given career; and

~~(d) Discuss changes in information technologies and the effect that these changes have on the workplace and society.]~~ ***For the areas of creativity and innovation, demonstrate creative thinking, build knowledge and develop innovative products and processes using technology, as demonstrated by the ability of the pupil to:***

(a) Process new ideas that are based on prior knowledge to brainstorm solutions to a problem that arises in an everyday situation using digital tools;

(b) With limited assistance from the teacher, create an original work in a digital format to demonstrate personal or group expression;

(c) Use digital models and simulations to explore complex systems and issues; and

(d) Identify and represent trends to make predictions using data from the classroom.

2. For the areas of communication and collaboration, use digital media and environments to communicate and work in collaboration with other pupils, including pupils outside of the classroom, to support the learning of the pupil and the learning of other pupils, as demonstrated by the ability of the pupil to:

(a) Collaborate with other pupils to create and publish a digital product and make the product available outside the classroom;

(b) Communicate information and ideas using digital text, images and sound;

(c) Describe the appropriate media and format for a specific audience;

(d) Use digital resources to research places, persons and different cultures from around the world;

(e) Contribute to a group to produce an original work in a digital format; and

(f) Describe the different ways to interact with other persons and contribute to a digital product.

3. For the area of fluency of research and information, gather, evaluate and use information, as demonstrated by the ability of the pupil to:

(a) For a research project, use digital tools to plan a timeline and track the progress of the project;

(b) Use keywords to search, organize, locate and synthesize information in multiple sources to create an original product;

(c) Explain the importance of using more than one source and recognize the possible biases in digital resources;

(d) Discern the differences between fact and opinion in digital content;

(e) Choose and use a digital tool that is appropriate for a task; and

(f) Collect, organize, analyze and manipulate data using digital tools and report the results in a format that is appropriate to the task.

4. For the areas of critical thinking, problem solving and decision making, use critical thinking skills to plan and conduct research, manage projects, solve problems and make informed decisions using the digital tools and resources that are appropriate for the specific task, as demonstrated by the ability of the pupil to:

(a) Develop questions that will guide the pupil in the investigation of a problem that arises in an everyday situation using digital resources;

(b) Plan and manage projects using a digital planning tool;

(c) Propose a solution to a problem that arises in an everyday situation using digital tools and data that has been collected; and

(d) Explore alternative solutions to and diverse perspectives on problems that arise in everyday situations and propose a solution to those problems using digital tools.

5. For the area of the appropriate use of technology, understand human, cultural and societal issues relating to technology and practice legal and ethical behaviors when using technology, as demonstrated by the ability of the pupil to:

(a) Describe the code of conduct for the use of technology at the school in which the pupil is enrolled and the consequences of violating that code of conduct;

(b) Describe unacceptable and unsafe behaviors when using technology, including, without limitation, cyber-bullying, divulging personal information and plagiarism;

(c) Use technological resources for solving problems, directing personal learning, collaborating and extending learning activities;

(d) Describe why a pupil needs lifelong learning in a world that is global and dynamic; and

(e) Explain the concepts of using technology in an appropriate manner, accessing technology in an appropriate manner and technological literacy, and explain the personal and societal responsibilities associated with those concepts.

6. For the areas of technological operations and concepts, demonstrate an understanding of technological concepts, systems and operations, as demonstrated by the ability of the pupil to:

(a) Give examples of technological systems;

(b) Demonstrate appropriate keyboarding skills;

(c) Choose the appropriate digital tools for a specific learning activity;

(d) Analyze and apply specific strategies for solving common hardware and software problems; and

(e) Generalize routine procedures for a variety of technologies.

Sec. 3. NAC 389.3905 is hereby amended to read as follows:

389.3905 By the ~~[end]~~ ***beginning*** of the eighth grade, pupils must know and be able to do everything required in the previous grades for ~~[courses in]~~ technology and computers offered in public schools. Instruction in the eighth grade in technology and computers must be designed so that pupils meet the following performance standards by the completion of the eighth grade:

1. ~~[To develop the ability to solve problems, pupils must be able to use problem-solving processes and resources to reach a desired outcome, as demonstrated by the ability of the pupil to:~~

~~(a) Describe more than one design or problem-solving method;~~

~~(b) Select an appropriate design or problem-solving method; and~~

~~(c) Generate a desired outcome using a design or problem-solving method.~~

~~2. To develop the ability to use productivity tools, pupils must be able to use appropriate productivity tools, including, without limitation, word processing, spreadsheets, databases, multimedia and telecommunications, as demonstrated by the ability of the pupil to:~~

~~(a) Demonstrate proficiency and accuracy in keyboarding skills;~~

~~(b) Type, edit and print a document;~~

~~(c) Use advanced formatting techniques, including, without limitation, margins, line spacing and tabs;~~

~~(d) Import graphics with appropriate placement into a document;~~

~~(e) Search for and replace text within a document;~~

~~(f) Create a database, define fields and enter data for multiple records;~~

~~(g) Develop a spreadsheet that includes, without limitation, labels, values, formulas and functions;~~

~~(h) Create a chart that visually represents data;~~

(i) Print a spreadsheet showing the formulas used in the spreadsheet;

(j) Create a multipage, multimedia presentation using text, graphics and sound to communicate a concept effectively;

(k) Organize files on a computer disc, hard drive, server or other storage device;

(l) Explain how:

(1) A local area network, or LAN;

(2) An Intranet; and

(3) The Internet,

➥ operates when compared to a stand-alone system;

(m) Use an available electronic communication device, including, without limitation, e-mail, a facsimile machine, a telephone and a two-way radio; and

(n) Explain the advantages of connectivity for sharing information and resources.

3. In the area of tools used for research, pupils must be able to use various tools of technology to research information and evaluate the accuracy and appropriateness of the information to solve problems and make decisions, as demonstrated by the ability of the pupil to:

(a) With the assistance of a teacher or media specialist, select a research topic or develop a statement of a problem, and identify the elements, scope and expected outcome of the research on the topic or problem;

(b) Independently generate a list of keywords to conduct a search using electronic-based sources;

(c) Use hyperlinks to explore additional possible sources of information when collecting information;

(d) Place information within an organizational format;

(e) Demonstrate an understanding of intellectual property by citing sources of copyrighted materials in papers, projects and multimedia;

(f) Analyze selected information for reliability, authenticity and timeliness;

(g) Contribute to generating a standard bibliography while working within a group; and

(h) Independently list the steps of the process of the research and judge the outcome of the research.

4. In the area of tools and processes, pupils must be able to identify, apply and manage various concepts, tools and resources to evaluate their accuracy and appropriateness in solving problems and making decisions, as demonstrated by the ability of the pupil to:

(a) List the tools and resources needed to solve a problem in a technology or computer area;

(b) Demonstrate the proper use of tools, instrumentation, equipment, materials and processes while fabricating models, designs, simulations and prototypes;

(c) Given a situation, describe or define the correct use of tools, processes and materials in diverse technology and computer applications; and

(d) Correctly operate and perform appropriate maintenance on technology tools.

5. In the area of systems, pupils must be able to recognize that systems are made up of individual components and that each component affects the operation of the system and its relationship with other systems, as demonstrated by the ability of the pupil to:

(a) List resources necessary to achieve a desired outcome;

(b) Describe how the output of one system could be the input for another system;

(c) Given the systems in the area of technology, determine how those systems are controlled to achieve a desired outcome; and

(d) Select and use an appropriate system to achieve a given outcome.

~~6. In the area of implications of technology and computers on society, pupils must be able to evaluate the impact and ethical implications of technology and computers on persons, society and the environment, as demonstrated by the ability of the pupil to:~~

~~(a) Practice legal and ethical behaviors when using information and technology, and discuss the consequences of misusing such information and technology;~~

~~(b) Describe how technology is affecting society and the environment;~~

~~(c) Discuss the impact of technology on career options; and~~

~~(d) Demonstrate that people control technology and are responsible for the effects of technology.~~] ***For the areas of creativity and innovation, demonstrate creative thinking, build knowledge and develop innovative products and processes using technology, as demonstrated by the ability of the pupil to:***

(a) Independently apply prior knowledge to develop new ideas, products or processes using digital tools;

(b) Create an original work in a digital format to demonstrate personal or group expression;

(c) Use digital models and simulations to answer questions or solve problems; and

(d) Use technology to track trends, predict possibilities, and make and justify predictions using evidence, experiments and collaboration.

2. For the areas of communication and collaboration, use digital media and environments to communicate and work in collaboration with other pupils, including pupils outside of the classroom, to support the learning of the pupil and the learning of other pupils, as demonstrated by the ability of the pupil to:

(a) Collaborate with other pupils to create and publish digital products for real audiences in a variety of digital environments;

(b) Communicate information and ideas using digital text, images, sounds and video;

(c) Create digital products in formats that are appropriate for specific audiences and purposes;

(d) Use digital resources to communicate with other pupils and persons from a variety of cultures and places;

(e) Contribute to a group project to produce original works or solve problems; and

(f) Choose a method of interacting electronically for a specific goal or purpose.

3. For the area of fluency of research and information, gather, evaluate and use information, as demonstrated by the ability of the pupil to:

(a) Use digital tools to plan and organize a research-based inquiry;

(b) For a research project, use digital tools to plan a timeline, track the progress of the project and cite the sources the pupil used for the project;

(c) Use techniques for advanced searches to locate, access, synthesize and evaluate information in multiple sources to create an original product;

(d) Use digital tools to organize information with main ideas and supporting documents;

(e) Evaluate and compare facts and opinions in different sources of digital content and describe the point of view of the content;

(f) Choose and justify the use of appropriate digital resources to accomplish a variety of tasks;

(g) Use multiple digital tools to collect and process data to test theories and hypotheses; and

(h) Use a variety of formats to report results and evaluate the strengths and weaknesses of those formats.

4. For the areas of critical thinking, problem solving and decision making, use critical thinking skills to plan and conduct research, manage projects, solve problems and make informed decisions using the digital tools and resources that are appropriate for the specific task, as demonstrated by the ability of the pupil to:

(a) Use digital resources to identify a problem that arises in an everyday situation and develop questions that will guide the pupil in the investigation of the problem;

(b) Choose the appropriate digital planning tools for a project and use those tools to complete the project;

(c) Use data, examine patterns and use digital tools to research a problem that arises in an everyday situation and present a solution to the problem; and

(d) Use multiple processes to explore alternative solutions to and diverse perspectives on problems that arise in everyday situations and use digital tools to present a solution to the problems.

5. For the area of the appropriate use of technology, understand human, cultural and societal issues relating to technology and practice legal and ethical behaviors when using technology, as demonstrated by the ability of the pupil to:

(a) Model legal and ethical behaviors while using information and technology, including, without limitation, properly selecting, acquiring and citing a resource;

(b) Develop an argument for using technological resources in a safe, legal and responsible manner;

(c) Explain the value of current and emerging technologies to persons, society and the world;

(d) Assess the potential of current and emerging technologies to address personal, societal, lifelong learning and career needs; and

(e) Describe principles of leadership and ways to use current and emerging technologies in a responsible manner to foster leadership skills.

6. For the areas of technological operations and concepts, demonstrate an understanding of technological concepts, systems and operations, as demonstrated by the ability of the pupil to:

(a) Explain the uses for and advantages of technological systems;

(b) Demonstrate keyboarding skills by completing a variety of assignments in a timely manner;

(c) Choose and justify the use of digital tools and resources to accomplish a variety of tasks;

(d) Develop and apply strategies for solving common hardware and software problems; and

(e) Apply prior knowledge of technology to a current or emerging technology to answer a question that arises in everyday situations.

Sec. 4. NAC 389.505 is hereby amended to read as follows:

389.505 By the ~~[end of the 12th grade,]~~ ***beginning of high school,*** pupils must know and be able to do everything required in the previous grades for ~~[courses in]~~ technology and computers offered in public schools. Instruction in ~~[the 12th grade]~~ ***high school*** in technology and

computers must be designed so that pupils meet the following performance standards by the completion of ~~[the 12th grade:~~

~~1. To develop the ability to solve problems, pupils must be able to use problem-solving processes and resources to reach a desired outcome, as demonstrated by the ability of the pupil to:~~

~~(a) Compare and contrast a variety of approaches to problem solving;~~

~~(b) When given a problem, effectively design a method for solving the problem; and~~

~~(c) Create, with technical accuracy, designs or models for solving problems in one of the following areas of technology:~~

~~(1) Energy, power and transportation;~~

~~(2) Communications;~~

~~(3) Construction; and~~

~~(4) Manufacturing.~~

~~2. To develop the ability to use productivity tools, pupils must be able to use appropriate productivity tools, including, without limitation, word processing, spreadsheets, databases, multimedia and telecommunications, as demonstrated by the ability of the pupil to:~~

~~(a) Type a multipage word processing document that is correctly formatted, including, without limitation, using headers, footers, pagination, line spacing and margin settings;~~

~~(b) Use appropriate tools such as spell check and a thesaurus;~~

~~(c) Create a database, define fields and enter data for multiple records;~~

~~(d) Interpret reports based on data;~~

~~(e) Create and print a chart that visually represents data from a spreadsheet;~~

~~(f) Analyze the significance of the data that is included in a spreadsheet;~~

(g) Create and present a multipage, multimedia presentation using:

(1) Animation;

(2) Digital video; or

(3) Linking,

with text, graphics and sound;

(h) Identify the intended message of a multimedia presentation;

(i) Organize files on a computer disc, hard drive, server or other storage device;

(j) Compare and contrast:

(1) A local area network, or LAN;

(2) A wide area network, or WAN;

(3) An Intranet; and

(4) The Internet;

(k) Compare and analyze the appropriate uses of a variety of electronic communications; and

(l) Locate and evaluate sources of distance learning, telecommuting and teleconferencing.

3. In the area of tools used for research, pupils must be able to use various tools of technology to research information and evaluate the accuracy and appropriateness of the information to solve problems and make decisions, as demonstrated by the ability of the pupil to:

(a) State a research topic or problem and list the elements, limits and expected outcomes of the research on the topic or problem;

(b) Independently generate a list of keywords for a research topic or problem, with qualifying modifiers to narrow a search of electronic-based resources;

(c) Using a variety of search strategies, use hyperlinks to select information;

(d) Select an organizational tool and accurately place collected information within a format to aid in making a decision;

(e) Create a standard bibliography or work-cited page; and

(f) Complete a rubric for the evaluation of the results of the research of a topic or problem.

4. In the area of tools and processes, pupils must be able to identify, apply and manage various concepts, tools and resources to evaluate their accuracy and appropriateness in solving problems and making decisions, as demonstrated by the ability of the pupil to:

(a) Conduct research in an area related to computers or technology, and explain how new tools, materials and processes are necessary to maintain and improve high productivity and quality;

(b) Use tools, with minimal direction, to produce solutions in an area related to computers or technology;

(c) Select the correct tool and process to complete a task; and

(d) Under the supervision of a teacher or media specialist, correct nonfunctioning technology systems.

5. In the area of systems, pupils must be able to recognize that systems are made up of individual components and that each component affects the operation of the entire system and its relationship with other systems, as demonstrated by the ability of the pupil to:

(a) Explain the evolution of a given system or process;

(b) Design a model of a system to produce a desired outcome; and

(c) Given a system, identify possible ways to improve the product, productivity or management, or any combination thereof, generated by the system.

~~6. In the area of implications of technology and computers on society, pupils must be able to evaluate the impact and ethical implications of technology and computers on persons, society and the environment, as demonstrated by the ability of the pupil to:~~

~~(a) Compare and contrast the impacts of new products and services on the quality of life;~~

~~(b) Given a specific technology, determine possible outcomes from the use of the technology and the acceptability of those outcomes;~~

~~(c) Develop a career plan; and~~

~~(d) Discuss the advantages and disadvantages of widespread use of and reliance on technology in the workplace and in society as a whole.]~~ ***high school:***

1. For the areas of creativity and innovation, demonstrate creative thinking, build knowledge and develop innovative products and processes using technology, as demonstrated by the ability of the pupil to:

(a) Independently or in collaboration with other pupils, apply prior and newly acquired knowledge to develop new ideas, products or processes using digital tools;

(b) Create an original work using digital tools, including, without limitation, tools for planning, researching, editing and producing the original work;

(c) Develop digital models or simulations to answer questions or solve problems; and

(d) Use technology to conduct research, conduct experiments and report data from the experiments to determine trends and possibilities and use evidence to make and justify predictions.

2. For the areas of communication and collaboration, use digital media and environments to communicate and work in collaboration with other pupils, including pupils

outside of the classroom, to support the learning of the pupil and the learning of other pupils, as demonstrated by the ability of the pupil to:

(a) Collaborate electronically with other pupils, persons and experts to create and publish digital products for real audiences;

(b) Create digital text, images, sound and video for use in a communication;

(c) Critique the appropriateness of digital formats for specific audiences and purposes;

(d) Interact electronically with groups of persons who are culturally diverse for specific purposes;

(e) Contribute electronically to a group project that identifies a problem, present solutions to the problem and evaluate those solutions; and

(f) Choose and justify a method of electronically interacting with other persons for a specific goal or purpose.

3. For the area of fluency of research and information, gather, evaluate and use information, as demonstrated by the ability of the pupil to:

(a) Use digital tools to plan, organize and critique research-based inquiries;

(b) For a research project, use digital tools to plan a timeline, track the progress of the project and cite the sources the pupil used for the project;

(c) Use techniques of advanced searches to locate, access, synthesize and evaluate information in multiple sources to create an original product for a real audience;

(d) Use digital tools to organize and compare information with main ideas and supporting documents;

(e) Use digital resources to assemble and evaluate facts, opinions and points of view that are appropriate for a specific task;

(f) Evaluate how other pupils use resources that are appropriate for a specific task;

(g) Use multiple digital tools to analyze data and critique theories and hypotheses; and

(h) Evaluate digital formats for reporting results to a variety of audiences and justify the use of those formats.

4. For the areas of critical thinking, problem solving and decision making, use critical thinking skills to plan and conduct research, manage projects, solve problems and make informed decisions using the digital tools and resources that are appropriate for the specific task, as demonstrated by the ability of the pupil to:

(a) Identify a complex issue, develop a systematic plan for the investigation of the issue and present innovative solutions to the issue;

(b) Analyze the capabilities and limitations of different digital planning tools for developing solutions or completing a project;

(c) Choose and apply digital tools to collect, organize and analyze data to evaluate theories or test hypotheses; and

(d) Use multiple processes to consider diverse perspectives on a problem that arises in an everyday situation, use digital resources to derive original solutions to the problem and assess the potential of those resources to address the social, lifelong learning and career needs.

5. For the area of the appropriate use of technology, understand human, cultural and societal issues relating to technology and practice legal and ethical behaviors when using technology, as demonstrated by the ability of the pupil to:

(a) Articulate the concepts and issues concerning intellectual and digital property rights;

(b) Compare the similarities and differences between the acceptable use of technological resources at school and in the work environment;

(c) Extrapolate how technology will affect the ability of the pupil to collaborate, learn and produce in postsecondary education and in a career;

(d) Analyze the capabilities and limitations of current and emerging technologies and assess the potential of those technologies to address personal, societal, lifelong learning and career needs; and

(e) Model appropriate behaviors in the use of technology while leading a group of pupils through a collaborative project using current and emerging technologies.

6. For the areas of technological operations and concepts, demonstrate an understanding of technological concepts, systems and operations, as demonstrated by the ability of the pupil to:

(a) Describe the components of technological systems and how those components interact;

(b) Critique the selection of digital tools based on the efficiency and effectiveness of those tools;

(c) Analyze and troubleshoot common hardware and software issues to optimize learning and productivity; and

(d) Analyze the capabilities and limitations of current and emerging technologies based on the potential of those technologies to address personal learning, career needs and societal issues.

Sec. 5. NAC 389.289 is hereby repealed.

TEXT OF REPEALED SECTION

389.289 Technology and computers. (NRS 385.080, 385.110, 389.0185, 389.520) By the end of the third grade, pupils must know and be able to do everything required in the previous grades for courses in technology and computers offered in public schools. Instruction in the third grade in technology and computers must be designed so that pupils meet the following performance standards by the completion of the third grade:

1. To develop the ability to use productivity tools, pupils must be able to use appropriate productivity tools, including, without limitation, word processing, spreadsheets, databases, multimedia and telecommunications, as demonstrated by the ability of the pupil to:

(a) Locate and use letters, numbers and special keys on a keyboard using the left and right hands, as appropriate;

(b) Type and edit an existing document;

(c) Search a database to locate specific information;

(d) Use a predesigned spreadsheet to enter simple labels, values and formulas, including, without limitation, three-cell formulas such as “2+2=4”;

(e) Use multimedia software;

(f) Explain the purpose of a multimedia presentation;

(g) Create and save files on various storage media;

(h) Identify the differences between network and stand-alone computer systems; and

(i) Identify a variety of electronic communication devices.

2. In the area of tools used for research, pupils must be able to use various tools of technology to research information and evaluate the accuracy and appropriateness of the information to solve problems and make decisions, as demonstrated by the ability of the pupil to:

(a) Contribute an idea for a topic or definition of a problem;

(b) Contribute one appropriate keyword to a group of keywords for a topic or problem, and use the keyword to conduct an electronic search;

(c) Work within a group to select research materials successfully;

(d) Identify an organizational tool and place information within a format;

(e) Participate in sharing his portion of the research with other members of his group; and

(f) Summarize the research process of the class and discuss the results of the research process.

3. In the area of tools and processes, pupils must be able to identify, apply and manage various concepts, tools and resources to evaluate their accuracy and appropriateness in solving problems and making decisions, as demonstrated by the ability of the pupil to:

(a) Identify tools and resources used in technology and computers;

(b) Regularly select and manipulate tools to use for tasks in the areas of technology and computers;

(c) Demonstrate the importance of safety while working with technology and computers; and

(d) Regularly resolve difficulties using tools or devices, with practice guided by a teacher.

4. In the area of systems, pupils must be able to recognize that systems are made up of individual components and that each component affects the operation of the entire system and its relationship with other systems, as demonstrated by the ability of the pupil to:

(a) List the parts of an open and a closed loop system;

(b) Given a system, explain how the parts of that system work together to achieve a desired outcome; and

(c) List and group technological systems, including, without limitation, construction, energy, power, transportation, biotechnology and manufacturing.

5. In the area of implications of technology and computers on society, pupils must be able to evaluate the impact and ethical implications of technology and computers on persons, society and the environment, as demonstrated by the ability of the pupil to:

(a) Discuss common uses of technology in daily life and the advantages and disadvantages provided by those uses of technology;

(b) Explain computer piracy and its implications;

(c) Use proper etiquette when using electronic communications;

(d) Identify changes in the school environment and in the community that are a result of technology;

(e) With the assistance of a teacher, list several careers which currently exist that were not in existence when the pupil was born; and

(f) Explain how physical environments are changed by human activity through technology.