

CHAPTER 3501
DEPARTMENT OF CHILDREN, FAMILIES, AND
LEARNING
GRADUATION STANDARDS

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PROFILE OF LEARNING

3501.0300 PURPOSE.

The purpose of parts 3501 0300 to 3501 0469 is to establish the profile of learning requirements for a high school diploma

Statutory Authority: *MS s 121.11*

History: *22 SR 2075*

3501.0310 SCOPE.

Parts 3501 0300 to 3501 0469 govern the minimum requirements that public school districts shall establish for earning a high school diploma for all students who enter ninth grade for the first time in the fall of 1998 or a subsequent year

Statutory Authority: *MS s 121.11*

History: *22 SR 2075*

3501.0320 DEFINITIONS.

Subpart 1 **Scope.** For the purposes of parts 3501 0300 to 3501 0469, the terms defined in part 3501 0030 have the same meaning unless otherwise indicated in subpart 2

Subp 2 **Definitions for the profile of learning.** For the purposes of parts 3501 0300 to 3501 0469, the terms in items A to J have the meanings given them

A "Graduation requirements" means the number and distribution of high school content standards that a district must offer and certify that a student has completed to be eligible for a high school diploma.

B "Learning area" means one of the ten categories into which all preparatory content standards and high school content standards are organized. The learning areas include (1) read, listen, and view, (2) write and speak, (3) literature and the arts, (4) mathematical applications, (5) inquiry, (6) scientific applications, (7) people and cultures, (8) decision making, (9) resource management, and (10) world languages

C "Content standard" means a set of state-prescribed specifications in a learning area

(1) "High school content standard" means a content standard that fulfills one of the high school graduation requirements

(2) "Preparatory content standard" means a primary, intermediate, or middle level content standard that a district requires students to complete, usually in kindergarten through grade 8

(a) "Primary content standard" means a content standard that the district requires students to complete in approximately kindergarten through grade 3

(b) "Intermediate content standard" means a content standard that the district requires students to complete in approximately grades 4 and 5

(c) "Middle level content standard" means a content standard that the district requires students to complete in approximately grades 6 through 8

D "Specifications" means what a student must know and be able to do to complete a content standard

E "Performance package" means a group of assignments and application activities that a student shall perform to demonstrate completion of the specifications of a content standard

(1) "State model performance package" means a state-developed performance package that is an example of assignments and application activities

(2) "Local performance package" means a performance package other than a state model performance package adopted by a district to show that a student has completed all specifications of a content standard at a level that equals or exceeds the difficulty and complexity of the state model performance package

F "Rubric" means the criteria set by the commissioner to be used by a district to assign a score to student work on a performance package

G "Exemplar" means an actual example of student work on a performance package determined by the commissioner to represent student performance that earns a score of "3" or "4"

H "Exemption" means that a student with an IEP or Section 504 Accommodation Plan is not required to complete a particular content standard

I "Modification" means that a student with a disability with an IEP or Section 504 Accommodation Plan or a student with limited English proficiency with an individual graduation plan is not required to complete all specifications of a content standard or that a student with limited English proficiency may complete a content standard entirely in a language other than English

J "Commissioner" means the commissioner of the Department of Children, Families, and Learning

Statutory Authority: *MS s 121 11*

History: *22 SR 2075*

3501.0330 GRADUATION REQUIREMENTS.

Subpart 1 **Standards and requirements.** The statewide content standards are established in parts 3501 0440 to 3501 0469 The preparatory content standards are in parts 3501 0460 to 3501 0469 High school content standards are in parts 3501 0440 to 3501 0450 High school graduation requirements are in subparts 3 and 5

Subp. 2 **Districts and students.**

A A district shall provide learning opportunities for all students in all preparatory content standards in learning areas one to nine, and learning opportunities sufficient to meet graduation requirements in high school content standards in all ten learning areas A district shall offer at least one foreign language in learning area ten

B There are 48 high school content standards that are in ten learning areas. A student is required to complete 21 of the 47 content standards in learning areas one to nine under subpart 3 for graduation. A student may select electives from 28 of the 47 content standards in learning areas one to nine under subpart 3. A student may select the content standard in learning area ten as one or more electives.

C This part shall be implemented according to Laws 1998, chapter 398, article 5, section 9, to be coded as Minnesota Statutes, section 121.1114.

Subp 3 Distribution requirements for high school graduation. A student shall be required by a district to complete all specifications of at least 24 high school content standards to be eligible for high school graduation. The district shall require a student to complete 21 of the 24 high school content standards as follows:

A one content standard in learning area one, read, listen, and view in the English language reading, listening, and viewing complex information, under part 3501.0441, subpart 2, or technical reading, listening, and viewing, under part 3501.0441, subpart 3,

B two content standards from learning area two, write and speak in the English language:

(1) academic writing, under part 3501.0442, subpart 2, or technical writing, under part 3501.0442, subpart 3, and

(2) public speaking, under part 3501.0441, subpart 4, or interpersonal communication, under part 3501.0442, subpart 5,

C two content standards from learning area three, literature and the arts:

(1) literary and arts creation and performance, under part 3501.0443, subpart 2, in an art form other than creative writing, and

(2) literature and arts analysis and interpretation of literature, under part 3501.0443, subpart 3,

D three content standards from learning area four, mathematical applications:

(1) discrete mathematics, under part 3501.0444, subpart 2, or chance and data analysis, under part 3501.0444, subpart 3,

(2) algebraic patterns, under part 3501.0444, subpart 4, or technical applications, under part 3501.0444, subpart 5, and

(3) shape, space, and measurement, under part 3501.0444, subpart 6;

E two content standards from learning area five, inquiry:

(1) math research, under part 3501.0445, subpart 2, history of science, under part 3501.0445, subpart 3, history through culture, under part 3501.0445, subpart 4, history of the arts, under part 3501.0445, subpart 5; world history and cultures, under part 3501.0445, subpart 6, recorders of history, under part 3501.0445, subpart 7, or issue analysis, under part 3501.0445, subpart 8, and

(2) research process, under part 3501.0445, subpart 9; social sciences processes, under part 3501.0445, subpart 10, research and create a business plan, under part 3501.0445, subpart 11, market research, under part 3501.0445, subpart 12, case study, under part 3501.0445, subpart 13, or new product development, under part 3501.0445, subpart 14,

F two content standards from learning area six, scientific applications:

(1) concepts in biology, under part 3501.0446, subpart 2,

(2) concepts in chemistry, under part 3501.0446, subpart 3,

(3) earth and space systems, under part 3501.0446, subpart 4,

(4) concepts in physics, under part 3501.0446, subpart 5, or

(5) environmental systems, under part 3501.0446, subpart 6,

G four content standards from learning area seven, people and cultures:

(1) themes of United States history, under part 3501.0447, subpart 2;

(2) United States citizenship, under part 3501.0447, subpart 3,

(3) diverse perspectives, under part 3501.0447, subpart 4, and

(4) human geography, under part 3501.0447, subpart 5, institutions and traditions in society, under part 3501.0447, subpart 6, or community interaction, under part 3501.0447, subpart 7,

H three content standards from learning area eight, decision making

- (1) individual and community health, under part 3501 0448, subpart 2,
- (2) physical education and fitness, under part 3501 0448, subpart 3, and
- (3) career investigation, under part 3501 0448, subpart 4, or occupational experience, under part 3501 0448, subpart 5, and

I two content standards from learning area nine, resource management.

- (1) economic systems, under part 3501 0449, subpart 2, and
- (2) natural and managed systems, under part 3501 0449, subpart 3, personal and family resource management, under part 3501 0449, subpart 4, business management, under part 3501 0449, subpart 5, financial systems, under part 3501 0449, subpart 6, or technical systems, under part 3501 0449, subpart 7

Subp 4 **Elective requirements.** In addition to the distribution requirements under subpart 3 that districts shall offer and require students to complete to be eligible for high school graduation, districts shall require students to complete three additional content standards of the student's choice from the high school content standards listed in parts 3501 0440 to 3501 0450. Elective requirements may not be fulfilled by repeating standards completed to fulfill distribution requirements in subpart 3, items A to I, except for learning area three, where literary and arts creation and performance or literature and arts analysis and interpretation standards under part 3501 0443, or both, may be completed in multiple art areas, learning area five, where the world history and cultures standard may be completed with a world history survey and a comprehensive, in-depth study of one or more cultures, nations, movements, or time periods under part 3501 0445, subpart 6, or learning area ten, world language, under part 3501 0450, subpart 2, where the standard may be completed in more than one world language.

Subp 5 **Additional requirements.**

A A district shall require a student to complete one application of technology in each of the following four learning areas: area two, write and speak, area four, mathematical applications, area five, inquiry, and area six, scientific applications.

B A district may establish additional requirements beyond the statewide graduation requirements.

Subp 6 **Repeating content standards.** A district shall allow a student to complete a content standard more than once so that the student may improve the score for that content standard.

Subp 7 **Variations.**

A A district shall require completion of the requirements in subparts 1 to 5 for a student unless variations are expressly stated for the student. Variations for a student from the requirements in subparts 1 to 5 are permitted only as specified in parts 3501 0340 and 3501 0350.

B Upon application of a student, with approval of the student's parent or guardian, the district must waive any content standard when the district determines that:

- (1) the student is participating in a course of study as rigorous or more rigorous than required by this rule for graduation,
- (2) achieving the content standard to be waived would have the effect of precluding the student's opportunity to participate in the rigorous course of study, and
- (3) the content standard could not feasibly have been attained earlier in the student's course of study.

The district must annually inform the commissioner of the number, type, and conditions of waivers granted in a format prescribed by the commissioner and must work with the commissioner to reduce the number of waivers needed.

Statutory Authority: *MS s 121 11*

History: *22 SR 2075*

3501.0340 VARIATIONS FOR STUDENTS WITH IEPs OR SECTION 504 ACCOMMODATION PLANS.

Subpart 1 **Determination of requirements.**

A A student with an IEP or Section 504 Accommodation Plan in kindergarten through grade 8 shall have all primary, intermediate, and middle level content standards considered by the student's IEP or Section 504 Accommodation Plan team for inclusion in the student's IEP or Section 504 Accommodation Plan as specified in subpart 2

B. A student's IEP or Section 504 Accommodation Plan team shall consider the graduation requirements in part 3501.0330 for inclusion in the student's IEP or Section 504 Accommodation Plan when a student with a disability is 14 years old or registers for grade 9. An IEP team shall also consider the student's transition plan when determining which of the required and elective content standards will be included in the student's IEP

Subp. 2 Individualized plans.

A For a student in kindergarten through grade 8 with an IEP or Section 504 Accommodation Plan, the student's IEP or Section 504 Accommodation Plan team may modify preparatory content standards for the student in the IEP or Section 504 Accommodation Plan. The team shall define which specifications of a content standard the student will pursue under the selected modification. If the team determines that the student is to be exempt from one or more of the content standards, it shall explain the exemption in the IEP or Section 504 Accommodation Plan. When exempt status is adopted for a content standard, the team shall determine whether or not a different standard or IEP goal specific to the learning area is appropriate and shall include that goal in the student's plan.

B. For a high school student with an IEP or Section 504 Accommodation Plan, the student's IEP or Section 504 Accommodation Plan team shall

(1) determine whether the student will pursue the content standard without modification;

(2) determine whether one or more of the 21 required content standards will be modified to an individual level,

(3) define the elective content standards that the student will also pursue and whether, for each elective, the student will pursue the content standard without modification, or the content standard modified to an individual level; or

(4) determine whether the student is exempt from one or more of the graduation requirements under part 3501.0330, subparts 3 to 5. When exempt status is adopted for a content standard, the team shall determine whether or not a different standard or IEP goal specific to the learning area is appropriate and shall include that goal in the student's plan.

C A student's IEP or Section 504 Accommodation Plan team shall define which specifications of a preparatory or high school content standard the student will pursue when a content standard is modified. When a content standard is modified, the student's IEP or Section 504 Accommodation Plan team shall define appropriate assessment of the modified content standard

Statutory Authority: *MS s 121 11*

History: *22 SR 2075*

3501.0350 VARIATIONS FOR STUDENTS WITH LIMITED ENGLISH PROFICIENCY (LEP).

Subpart 1 **Individual graduation plans.** A district shall establish and maintain procedures that ensure LEP students will be provided opportunity to complete both preparatory and high school content standards. Graduation requirements for an LEP student shall be as specified in part 3501.0330, subparts 3 to 5, unless modified in an individual graduation plan developed and annually reviewed by a team including school advisory staff designated by the district, teachers of the LEP student, parents or guardians of the LEP student, and the LEP student. Specifications for standards in learning areas one and two shall not be modified to permit completion in a language other than English

Subp 2 **Student election.** A student whose individual graduation plan team recommends that a content standard be modified under this part may refuse the modified requirement and pursue graduation without modified requirements

Statutory Authority: *MS s 121 11*

History: *22 SR 2075*

3501.0360 ADJUSTED PERFORMANCE PACKAGES.

Subpart 1 Limited use for high school students. For a student who enters grade 9 before the fall of 2001, the district may adjust the difficulty or complexity of a performance package for a high school content standard so that all specifications of the content standard are completed but one or more assignments or activities require student work that is less difficult or complex than that required in a state model performance package

Subp 2 Limited use for preparatory students. For a student who enters grade 6, 7, or 8 in the fall of 1998, the district may adjust the difficulty or complexity of a performance package for a preparatory content standard

Subp 3 Scoring. The district shall assign a score of "pass" to a student who completes all assignments and activities on an adjusted performance package under subparts 1 and 2

Subp 4 Criteria for adjustments. A district shall adjust performance packages according to criteria in a district profile of learning implementation manual under part 3501 0420

Subp 5 Incomplete work. A district shall not assign a score to incomplete student work on an adjusted performance package

Subp 6. Prohibitions for kindergarten through grade 5. For a student who enters kindergarten through grade 5 in the fall of 1998 or later, the district shall not adjust performance packages for preparatory content standards to a lesser level of difficulty or complexity

Subp 7 Approval. A district decision to adjust the difficulty or complexity of a performance package for a student shall be made only with the written approval of the student's parent or guardian

Statutory Authority: *MS s 121 11*

History: 22 SR 2075

3501.0370 ASSESSMENT AND SCORING STUDENT ACHIEVEMENT.

Subpart 1 District assessment requirements. A district shall

A assess student performance in primary, intermediate, middle level, and high school content standards using a state model performance package, local performance package, or adjusted performance package under part 3501 0360,

B establish processes by which content standards completed as verified on transcripts from other Minnesota public school districts shall be transferred as completed, work completed and verified on transcripts from postsecondary educational institutions or educational institutions outside the state shall be accepted for completion of content standards, and opportunities for a student to demonstrate completion of a high school content standard through learning experienced by the student outside the district's curriculum are provided,

C use a checklist defining the work that must be completed by a student to meet the specifications of a content standard, and

D. use scoring criteria as specified in subpart 3

Subp 2 District scoring process. Districts shall determine that a student's performance package is completed by using the checklist under subpart 1, item C, and shall assign a score to the student's work on a performance package according to the scoring criteria in subpart 3

Subp 3 Scoring criteria.

A Scoring criteria for a performance package includes

(1) a score of "4," that signifies student work that meets or exceeds the rubric for the state exemplar score of "4",

(2) a score of "3," that signifies student work that meets the rubric for the state exemplar score of "3",

(3) a score of "2," that signifies student completion of work defined on the checklist under subpart 1, item C, but that does not meet the rubric for the state exemplars, and

(4) a score of "1," that signifies student completion of work defined on the checklist under subpart 1, item C, with performance significantly below the rubric for the state exemplars

B Incomplete student work on a performance package shall not receive a score and does not complete a content standard

Subp 4 **Other scoring considerations.** While schools may offer and students may complete specifications of content standards at various grades and ages, the index used by the commissioner to select exemplars for scoring shall be:

A scoring of primary level performance packages shall use outstanding work by third graders,

B scoring of intermediate level performance packages shall use outstanding work by fifth graders,

C scoring of middle level performance packages shall use outstanding work by eighth graders, and

D scoring of high school performance packages shall use outstanding work by 12th graders

Subp. 5 Individualized scores.

A When a student completes an adjusted performance package, the district shall record the score as "pass "

B When a student, under provisions in an IEP or Section 504 Accommodation Plan completes the specifications of a modified content standard as determined in the student's plan, the district shall record the score as "pass-individual." When a student's IEP or Section 504 Accommodation Plan exempts the student from a content standard, the district shall record "exempt" for that content standard

C When an LEP student, under provisions of an LEP individual graduation plan completes the specifications of a modified content standard, the district shall record the score as "pass-LEP" When an LEP student under the provisions of an individual graduation plan completes all specifications of a content standard solely in a language other than English, except for work in learning area ten, the district shall record the score as "pass-LEP"

Subp 6 **Recording repeated content standard scores.** When a student completes a content standard more than once, the district shall record the highest attained score.

Statutory Authority: *MS s 121 11*

History: *22 SR 2075*

3501.0380 ADVISING STUDENTS.

A district shall establish procedures for advising a student and the student's parent or guardian of student progress in completing content standards and the choices and opportunities available for achieving graduation and learning consistent with the student's postsecondary educational and career goals

Statutory Authority: *MS s 121 11*

History: *22 SR 2075*

3501.0390 PREPARATORY CONTENT STANDARD RECORD DATA.

A district shall establish a system for recording student completion of primary, intermediate, and middle level content standards that must include

A content standards completed by the student, and

B the score achieved on each content standard

Statutory Authority: *MS s 121 11*

History: *22 SR 2075*

3501.0400 HIGH SCHOOL STUDENT TRANSCRIPT DATA.

Subpart 1 **Transcript information.** A district shall include on the transcript for a high school student the following information

A high school content standards completed by the student,

B the score achieved on each high school content standard, or a notation that the content standard has been certified as completed through the district's process for transferring credit under part 3501 0370, subpart 1, item B, and

C date of completion of each high school content standard

Subp 2 **Transcript format.** A district shall format a high school student transcript according to specifications provided by the commissioner

Statutory Authority: *MS s 121 11*

History: *22 SR 2075*

3501.0410 NOTIFICATION TO PARENTS AND STUDENTS.

In addition to the requirements of part 3501 0120, the district shall provide written notice to parents and students, including

A the content standards taught and assessed in the school curriculum,

B the procedures for advising students and parents or guardians and how to access these procedures,

C the procedures by which students may meet graduation requirements with content standards completed outside the district curriculum,

D the individual student progress and achievement reporting schedule the district uses, and

E. procedures for student and parent or guardian appeal of policies and procedures in the district's profile of learning implementation manual

Statutory Authority: *MS s 121 11*

History: *22 SR 2075*

3501.0420 IMPLEMENTATION REPORTING.

Subpart 1 **Report to commissioner.** A district shall, by July 31, 1998, submit for approval by the commissioner, in a format prescribed by the commissioner, its district profile of learning implementation manual, including the following

A policies and procedures for involving students, parents or guardians, and the community in decisions regarding implementation of the profile of learning,

B policies and procedures for ensuring that all students kindergarten through grade 8 are taught and assessed on all preparatory content standards in learning areas one through nine under parts 3501 0460 to 3501.0469 in a comprehensive academic school curriculum that integrates technology,

C policies and procedures for ensuring that all high school students have access to comprehensive academic school curriculum that integrates technology and that provides graduation opportunities through instruction and assessment of content standards from all ten learning areas under parts 3501 0440 to 3501.0450,

D policies and procedures for assessment of student demonstration of the content standards, including criteria for local adoption of performance packages and identification of the teaching staff and processes established for scoring student work,

E policies and processes for staff development for continuous improvement of curriculum, instruction, and assessment,

F policies and procedures by which a student may meet a graduation requirement for a content standard, whether the district offers the content standard in its school curriculum or the student accomplishes the work in another learning environment, including process for transfer of standards completed in another Minnesota school district, recognition of work completed in other schools and postsecondary institutions, and credit for standards achieved in extracurricular activities, activities outside of the school, previous learning, and community and work experiences,

G policies and procedures for periodic advising of students, the student's parents or guardians, or both, of the student's progress and achievement and of the choices and opportunities available for achieving learning, graduation, and the student's postsecondary educational and career goals,

H policies and procedures for recordkeeping and reporting of student achievement, and

I procedures for student and parent or guardian appeal of policies and procedures in the district's profile of learning implementation manual

Subp 2 **Students with disabilities or limited English proficiency.** District policies and procedures under subpart 1 shall include considerations for students with disabilities and students with limited English proficiency

Subp 3 **Ongoing reporting.** By September 1 of each subsequent year, the district shall report to the commissioner any amendments to its district profile of learning implementation manual or a statement that the last submitted manual continues to reflect current policies and procedures of the district

Subp 4 **Reporting to community.** The information in subparts 1 to 3 must also be reported to the community each year as part of the district's system accountability report.

Statutory Authority: *MS s 121 11*

History: 22 SR 2075

3501.0430 OTHER DISTRICT RESPONSIBILITIES.

A district shall maintain records of the following to be submitted for audit at the request of the State Board of Education for its periodic review of graduation standards, opportunities, and requirements

A copies of local performance packages used to assess student completion of primary, intermediate, middle level, and high school content standards,

B aggregated records of student completion of each high school content standard,

C aggregated data on each year's high school graduates, including average number of high school content standards completed, and the number of each score earned on each content standard,

D anonymous examples of local student work that have been assigned scores of "3" and "4" on primary, intermediate, middle level, and high school content standards for both audit and district staff development opportunities, and

E issues, comments, and concerns about student achievement and system delivery of content standards as may assist the board in upgrading or expanding student requirements under the profile of learning

Statutory Authority: *MS s 121 11*

History: 22 SR 2075

3501.0440 CONTENT STANDARDS; HIGH SCHOOL LEVEL.

The specifications of the high school content standards are established in parts 3501.0441 to 3501.0450

Statutory Authority: *MS s 121 11*

History: 22 SR 2075

3501.0441 LEARNING AREA ONE: READ, LISTEN, AND VIEW IN THE ENGLISH LANGUAGE.

Subpart 1. **High school content standards for learning area one.** The specifications for high school content standards in learning area one are under subparts 2 and 3

Subp 2 **Reading, listening, and viewing complex information.** A student shall demonstrate the ability to comprehend and evaluate complex information in varied nonfiction by reading, listening, and viewing varied English language selections containing complex information and, in these selections

A identify main ideas and supporting information,

B distinguish fact from opinion, fiction from nonfiction, or both,

C identify bias, point of view, and author's intent,

D identify relevant background information, and

E analyze and evaluate the credibility of evidence and source, the logic of reasoning, and how the type of communication shapes or limits information

Subp 3 **Technical reading, listening, and viewing.**

A A student shall demonstrate the ability to read and apply technical information from varied English language documents or electronic media by applying information from

technical reading, listening, or viewing selections in at least two of the following applications

- (1) build or assemble from a plan,
- (2) operate, maintain, or repair from a technical manual,
- (3) analyze a situation based on technical information, and
- (4) create a design based on technical reading.

B From the selected applications in item A, a student shall

- (1) identify and select relevant information for completing the application,
- (2) interpret specialized vocabulary;
- (3) interpret information found in charts, graphs, tables, and other visual and graphic representations of data, and
- (4) apply step-by-step procedures.

Statutory Authority: *MS s 121 11*

History: *22 SR 2075*

3501.0442 LEARNING AREA TWO: WRITE AND SPEAK IN THE ENGLISH LANGUAGE.

Subpart 1 **High school content standards for learning area two.** Specifications for high school content standards in learning area two are under subparts 2 to 5

Subp 2 **Academic writing.** A student shall demonstrate the ability to write using grammar, language mechanics, and other conventions of standard written English for a variety of academic purposes and situations by writing original compositions that

- A describe, narrate, or explain observations of human events or situations,
- B analyze patterns and relationships of ideas, topics, or themes;
- C construct support for a position, argument, plan, or idea, and
- D evaluate an idea, topic, or theme based on expressed criteria

Subp 3 **Technical writing.** A student shall demonstrate the ability to write in the English language for a variety of technical purposes, situations, and audiences by writing original technical compositions including a set of procedures or directions, a report or proposal, and informational correspondence that describe a complex process, procedure, or device for a particular audience by

- A evaluating the amount of technical knowledge the audience has,
- B determining where and how the information will be used,
- C using style and format and conventions appropriate for the audience,
- D using technical vocabulary appropriate for the audience,
- E incorporating detailed examples or illustrations, and
- F including warnings or cautions to help the reader prevent errors.

Subp. 4 **Public speaking.** A student shall demonstrate the ability to construct and deliver speeches using English language conventions for a variety of purposes, situations, and audiences by constructing and delivering, for specific audiences, speeches in which the student has

- A determined the intent of the message,
- B selected appropriate conventions of communication,
- C constructed supporting arguments using selected information,
- D used visuals, technology, or other equipment,
- E used effective delivery techniques, and
- F adjusted the presentation based on verbal and nonverbal feedback from an audience

Subp 5 **Interpersonal communication.** A student shall demonstrate understanding of interpersonal communication strategies, the components of the interpersonal communication process, and how various factors affect patterns of communication, interaction, and problem solving in group settings by

A using appropriate English language conventions and communication skills in varied interpersonal situations,

B demonstrating effective speaking skills, effective listening skills, appropriate feedback, problem-solving techniques, effective group skills, and communication strategies in a variety of simulated or authentic situations, and

C using skills of conciliation, mediation, or negotiation to improve communication

Statutory Authority: *MS s 121 11*

History: 22 SR 2075

3501.0443 LEARNING AREA THREE: LITERATURE AND THE ARTS.

Subpart 1 **High school content standards for learning area three.** Specifications for high school content standards in learning area three are under subparts 2 and 3

Subp 2 **Literary and arts creation and performance.** In dance, music, theater, visual arts, creative writing, or media arts, a student shall demonstrate understanding of the elements, techniques, and processes of the selected art form and how works of the art form are structured; and, in the art form, the student shall create or perform, or both, an original artistic presentation including a single complex work or multiple works that

A demonstrates elements and skills of art form,

B demonstrates artistic decisions to communicate intent,

C demonstrates a sense of an artistic whole,

D demonstrates a consideration of audience, and

E uses multiple sources for critique and feedback

Subp 3 **Literature and arts analysis and interpretation.** A student shall demonstrate the ability to interpret and evaluate complex works of music, dance, theater, visual arts, literature, or media arts by

A describing the elements and structure of the art form, the artistic intent, and the historical, cultural, and social background of the selected art works,

B applying specific critical criteria to interpret and analyze the selected art works,

C describing how particular effects are produced by the artist's use of the elements of the art form, and

D communicating an informed interpretation using the vocabulary of the art form

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3501.0444 LEARNING AREA FOUR: MATHEMATICAL APPLICATIONS.

Subpart 1 **High school content standards for learning area four.** Specifications for high school content standards in learning area four are under subparts 2 to 6

Subp 2 **Discrete mathematics.** A student shall use discrete structures to demonstrate mathematical relationships and solve problems by

A describing the difference between discrete and continuous models of data and permutations, combinations, and other principles of systematic counting,

B translating between real-world situations and discrete mathematical models using vertex-edge graphs, matrices, verbal descriptions, and sequences,

C analyzing and modeling iterative and recursive patterns,

D analyzing and solving problems by building discrete mathematical models, developing and comparing algorithms or sequences of procedures, and determining whether solutions exist, the number of possible solutions, and the best solutions; and

E using properties of mathematics to justify reasoning in a logical argument

Subp 3 **Chance and data analysis.** A student shall

A demonstrate understanding of the statistical concepts of measures of center, variability, and rank, differences between correlation and causation, sampling procedures, line or curve of best fit, and concepts related to uncertainty of randomness, permutations, combinations, and theoretical and experimental probabilities,

B investigate a problem of significance by formulating a complex question, designing a statistical study, collecting data, representing data appropriately, using appropriate statistics to summarize data, determining whether additional data and analysis are necessary, drawing conclusions based on data, and communicating the results appropriately for the intended audience,

C analyze and evaluate the statistical design, survey procedures, and reasonableness of conclusions in a published study or article,

D use probability experiments, simulations, or theory-to-model situations involving uncertainty, and

E make predictions based on the model

Subp 4 **Algebraic patterns.** A student shall demonstrate the ability to identify rates of change in different models of linear relationships and know characteristics of polynomial, exponential, and periodic functions and relations, functional notation, and terminology by

A translating between real-world situations and mathematical models using graphs, matrices, data tables, spread sheets, or both, verbal descriptions, and algebraic expressions,

B generalizing patterns and building mathematical models to describe and predict real situations including linear, exponential growth and decay, and periodic,

C using algebraic concepts and processes to represent and solve problems involving variable quantities, and

D using properties of algebra to justify reasoning using a logical argument

Subp 5 **Technical applications.** A student shall

A demonstrate knowledge of computational technologies, how to use complex measurement equipment for several systems, how to convert between measuring systems, how to measure to scale, how to calculate quantities using algebraic formulas, how to read and interpret information in complex graphs, tables, and charts, scientific and exponential notation used in complex systems, trigonometric applications appropriate to technical situations, and fundamental geometric constructions or calculations used in drafting or construction,

B. create a set of plans to design or modify a complex structure, product, or system by researching background information, calculating mathematical-specifications, and developing a materials list that matches mathematical-specifications,

C. construct a complex structure, product, or model to mathematical-specifications, and

D analyze existing complex structure, product, or system for purposes of maintenance, repair, trouble shooting, or optimizing function

Subp. 6 **Shape, space, and measurement.** A student shall

A demonstrate understanding of the characteristics of geometric figures in both two and three dimensions, including reflections, rotations, and translations, congruence and similarity; perimeter, area, and volume, distance; scaling, and symmetry,

B use spatial visualization to model geometric structures and solve problems,

C analyze characteristics of shape, size, and space in art, architecture, design, or nature,

D. translate between numerical relationships and geometric representations to analyze problem situations, scale models, or measurement,

E use properties of shape, location, or measurement to justify reasoning in a logical argument, and

F demonstrate understanding of measurement accuracy, error, and tolerances

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3501.0445 LEARNING AREA FIVE: INQUIRY.

Subpart 1 **High school content standards for learning area five.** Specifications for high school content standards in learning area five are under subparts 2 to 14

Subp 2 **Math research.** A student shall design and conduct an investigation on a mathematical topic by

- A selecting and refining a topic through research,
- B formulating generalizations about the topic,
- C documenting insights gained during the investigation,
- D connecting new concepts to familiar ideas in mathematics,
- E using mathematical properties to support conclusions, and
- F communicating findings for an audience outside of mathematics

Subp 3 **History of science.** A student shall demonstrate understanding of the interaction between social, economic, technological, and environmental factors and the occurrence of varied major scientific advances in recorded history by

- A gathering information on one major scientific breakthrough,
- B investigating and analyzing the social, economic, technological, environmental context in which a scientific breakthrough occurred, and
- C analyzing the immediate and long-term effect of the scientific breakthrough in any or all of social, economic, technological, and environmental contexts

Subp 4 **History through culture.** A student shall demonstrate understanding of historical periods, including major events, conflicts, and leaders of a historical period, through investigating the cultural expressions of the period by

- A interpreting ideas from artistic expressions to compare representations of a historical period to selected philosophies, events or conflicts, and people and their contributions, and
- B gathering information and analyzing selected cultural expressions of a period, including major writings, publications, or both, artistic works, architecture, technology, and daily life and social customs

Subp 5 **History of the arts.** A student shall demonstrate understanding of an art form or theme from various historical periods or cultures and, for each work, gather information to analyze the development of a selected idea or theme, and select, describe, and interpret works of art in a historical, cultural, or historical and cultural framework, to identify changes, developments, or both, of

- A themes or ideas,
- B social or cultural contexts,
- C the form and function of each work, and
- D the expressive qualities of art for each historical period

Subp 6 **World history and cultures.** A student shall

A demonstrate understanding of the significance of key people, events, places, concepts, and themes in the historical development of one or more world cultures by

(1) a survey of world history including early civilizations, classical traditions, major empires, and institutions, expansions of exchange and encounter, intensified hemispheric interactions, and the first global age, the age of revolutions, and the twentieth century, or

(2) a comprehensive, in-depth focus on a single culture, nation, movement, or time period,

B investigate and analyze cause and effect relationships among issues, events, and major historical developments in at least one culture, nation, movement, or time period, and

C investigate and describe the impact of at least one theme on other cultures, nations, movements, or time periods

Subp 7 **Recorders of history.** A student shall demonstrate understanding that historical knowledge is the result of decisions made by recorders of history, including an understanding of events in a chronological framework, the factors influencing decisions made by recorders of history, and the types of information sources by

A analyzing two or more accounts of the same historical event recorded in different time periods, comparing and contrasting the accounts, and explaining the differences in

terms of availability and use of sources, societal influences on the recorder, and purpose of the account, if known, and

B recording the history of an event using several primary sources, including identifying factors that influence the recorder of the event and using appropriate validation procedures.

Subp 8 **Issue analysis.** A student shall research an issue and evaluate proposed positions or solutions by

- A gathering information on past or contemporary issues,
- B identifying relevant questions or a range of points of view,
- C summarizing relevant background information,
- D examining information from each source for bias and intended audience,
- E identifying areas of conflict, compromise, or agreement among various groups concerning the issue, and

F evaluating multiple positions and proposed solutions for the issue, including analyzing conclusions, arguments, and supporting evidence, identifying motives of groups or individuals, analyzing feasibility and practicality; identifying impact on policies, comparing alternative solutions, and projecting consequences

Subp 9 **Research process.** A student shall use primary research techniques of surveys, structured and unstructured interviews, observations, questionnaires, and access secondary sources in multiple ways to

- A refine a topic into a clear statement of a research problem with subproblems,
- B evaluate a research problem for feasibility,
- C create a plan for collecting and interpreting data,

D write a review of background information based on a survey of related literature from a variety of sources including identifying key issues, and identifying relevant historical and contextual background,

E collect and interpret primary data; and

F discuss research findings, including describing research problems, describing the findings from a survey of literature, presenting primary data, interpreting and analyzing information, and formulating possibilities for further research

Subp 10 **Social science processes.** A student shall access sources of social science information and data to

A formulate a question about a historical event, issue, or interpretation of a concept,

- B create a plan for collecting and interpreting data,
- C evaluate a research problem for feasibility,

D gather information through the primary research techniques of observations, interviews, surveys, or experiments,

E gather background information based on a survey of related literature from a variety of sources including identifying key issues and relevant historical and contextual background, and

F discuss research findings, including describing issues; describing the findings from a survey of literature, presenting primary data; identifying bias and context of data or findings; examining how the time period and location of data source affect the data, examining limitations of the investigation, research process, or findings, and formulating possibilities for further research

Subp 11. **Research and create a business plan.** A student shall develop and implement a plan to start a business or an organization to demonstrate an understanding of relevant scientific, economic, marketing, and sales principles, how the business or organization functions within a larger context, the potential impact of the business or organization on people and communities, and human resources management through

A gathering information by keeping records, using market research, tracking markets, using computers, telecommunications, and satellite technology, using a variety of sources of information, and utilizing human resources,

B developing a business plan by conducting a feasibility study, producing a cost and benefit analysis, conducting a resource assessment, and identifying alternative solutions to problems; and

C implementing a plan that communicates information regarding decisions, applies human relations skills, applies relevant and useful mechanical and technical skills, uses marketing and sales techniques, integrates economic, marketing, sales, and technical aspects with sound environmental practices, and analyzes the effectiveness of the plan

Subp 12 **Market research.** A student shall investigate a product through market research by

A conducting secondary research to investigate a market need or problem,

B defining a marketing problem,

C conducting market research using at least two of the following methods: direct mail survey, telemarketing survey, personal interview, discussion group, panels, sampling, observations, or market analysis,

D correlating, tabulating, and reporting findings, and

E analyzing the viability of product, price, place, and promotion based on research findings

Subp. 13 **Case study.** A student shall use observation to study human interaction, learning, or development including theories of human behavior, learning, or development, methods and techniques of primary research, and legal and ethical procedures related to research by

A refining a topic into a clear statement of a research problem with subproblems,

B creating a plan for collecting data including evaluating feasibility, and establishing a process for conducting observations and recording descriptions,

C gathering and analyzing data, and

D communicating a description of any or all of the key scenes, people, dialogue, and places, a comparison of the findings to theories of human interaction, learning, or development, conclusions based on the findings, and an identification of implications for further study

Subp 14 **New product development.** A student shall research, develop, and test a new product to demonstrate an understanding of needs analysis, specific materials or technologies, material processing or design techniques, or both, by

A researching the need and the market,

B designing a new or improved product that meets the need,

C creating the new or improved product,

D testing and evaluating the product, and

E assessing the impact of production, use, and eventual disposal of the product on the environment, society, and health, as applicable

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3501.0446 LEARNING AREA SIX: SCIENTIFIC APPLICATIONS.

Subpart 1. **High school content standards for learning area six.** Specifications for high school content standards in learning area six are under subparts 2 to 6

Subp 2 **Concepts in biology.** A student shall

A demonstrate understanding of biological concepts, theories, and principles including cell theory, mechanisms of heredity, biological change over time, the interdependence of organisms, material cycles and energy flow in living systems, the behavior of organisms, and the historical significance of major scientific advances through the investigation and analysis of cells, organisms, and ecosystems,

B demonstrate understanding

(1) of how historical and current scientific concepts and knowledge guide scientific inquiries,

(2) that scientific inquiries are performed to test ideas and predictions and to learn about the natural world;

(3) of how the use of various technologies influence the quality of data and the investigation,

(4) of the essential role of mathematical tools and models and how they are essential to scientific inquiry,

(5) of how explanations based on evidence adhere to established criteria including empirical standards, logic, openness to criticism, and reporting of methods and procedures, and

(6) of how traditions govern the conduct of science, including ethics, peer review, and consensus,

C design and conduct an experiment to investigate a question and test a hypothesis by

(1) formulating a question and hypothesis,

(2) designing and conducting an investigation,

(3) recording relevant data,

(4) analyzing data using mathematical methods,

(5) constructing reasonable explanations to answer the question and supporting or refuting a hypothesis,

(6) identifying and considering alternative interpretations of results, and

(7) specifying implications for further investigation,

D design and conduct one investigation through a problem-based study, service learning project, or field study by identifying scientific issues based on observations and the corresponding scientific concepts, analyzing data to clarify scientific issues or define scientific questions, and comparing results to current models, personal experience, or both, and

E use scientific evidence to defend or refute an idea in a historical or contemporary context by identifying scientific concepts found in evidence, evaluating the validity of the idea in relationship to scientific information, and analyzing the immediate and long-term impact on the individual, society, or both, in the areas of technology, economics, and the environment.

Subp. 3 Concepts in chemistry. A student shall

A demonstrate understanding of concepts, theories, and principles in chemistry by investigating and analyzing atomic theory, relationships between the structure and properties of matter including organic and inorganic bonding, periodicity, and solutions chemistry, chemical reactions, interactions of energy and matter, and the historical significance of major scientific advances,

B demonstrate understanding

(1) of how historical and current scientific concepts and knowledge guide scientific inquiries,

(2) that scientific inquiries are performed to test ideas and predictions and to learn about the natural world,

(3) of how the use of various technologies influence the quality of data and the investigation,

(4) of the essential role of mathematical tools and models and how they are essential to scientific inquiry,

(5) of how explanations based on evidence adhere to established criteria including empirical standards, logic, openness to criticism, and reporting of methods and procedures, and

(6) of how traditions govern the conduct of science, including ethics, peer review, and consensus,

C design and conduct an experiment to investigate a question and test a hypothesis by

(1) formulating a question and hypothesis,

(2) designing and conducting an investigation,

(3) recording relevant data,

- (4) analyzing data using mathematical methods,
- (5) constructing reasonable explanations to answer the question and supporting or refuting the hypothesis,
- (6) identifying and considering alternative interpretations of results, and
- (7) specifying implications for further investigation,

D design and conduct an investigation through a problem-based study, service learning project, or field study by identifying scientific issues based on observations and the corresponding scientific concepts, analyzing data to clarify scientific issues or define scientific questions, and comparing results to current models, personal experience, or both, and

E use scientific evidence to defend or refute an idea in a historical or contemporary context by identifying scientific concepts found in evidence, evaluating the validity of the idea in relation to the scientific information, and analyzing the immediate and long-term impact on the individual, society, or both, in the areas of technology, economics, and the environment

Subp 4 Earth and space systems. A student shall

A demonstrate understanding of earth and space systems by investigating and analyzing earth systems through the interaction of forces and energy, geochemical processes and cycles, theories of the origin and evolution of the universe, energy in the earth system, and the historical significance of major scientific advances,

B demonstrate understanding

- (1) of how historical and current scientific concepts and knowledge guide scientific inquiries,
- (2) that scientific inquiries are performed to test ideas and predictions and to learn about the natural world,
- (3) of how the use of various technologies influence the quality of data and the investigation,
- (4) of the essential role of mathematical tools and models and how they are essential to scientific inquiry,
- (5) of how explanations based on evidence adhere to established criteria including empirical standards, logic, openness to criticism, and reporting of methods and procedures, and
- (6) of how traditions govern the conduct of science, including ethics, peer review, and consensus,

C design and conduct an experiment to investigate a question and test a hypothesis by

- (1) formulating a question and hypothesis,
- (2) designing and conducting an investigation,
- (3) recording relevant data,
- (4) analyzing data using mathematical methods,
- (5) constructing reasonable explanations to answer the question and supporting or refuting the hypothesis,
- (6) identifying and considering alternative interpretations of results, and
- (7) specifying implications for further investigation,

D design and conduct one investigation through a problem-based study, service learning project, or field study by identifying scientific issues based on observations and the corresponding scientific concepts, analyzing data to clarify scientific issues or define scientific questions, and comparing results to current models personal experience, or both; and

E use scientific evidence to defend or refute an idea in a historical or contemporary context by identifying scientific concepts found in evidence, evaluating the validity of the idea in relation to the scientific information, and analyzing the immediate and long-term impact on the individual, society, or both, in the areas of technology, economics, and the environment

Subp 5 Concepts in physics. A student shall

A demonstrate understanding of matter, forces, and energy by investigating and analyzing the concepts of motion, force, laws of conservation, electricity, magnetism, waves, energy, and work, and the historical significance of major scientific advances,

B demonstrate understanding

(1) of how historical and current scientific concepts and knowledge guide scientific inquiries,

(2) that scientific inquiries are performed to test ideas and predictions and to learn about the natural world,

(3) of how the use of various technologies influence the quality of data and the investigation,

(4) of the essential role of mathematical tools and models and how they are essential to scientific inquiry,

(5) of how explanations based on evidence adhere to established criteria including empirical standards, logic, openness to criticism, and reporting of methods and procedures, and

(6) of how traditions govern the conduct of science, including ethics, peer review, and consensus,

C design and conduct an experiment to investigate a question and test a hypothesis by.

(1) formulating a question and hypothesis,

(2) designing and conducting an investigation,

(3) recording relevant data,

(4) analyzing data using mathematical methods,

(5) constructing reasonable explanations to answer the question and supporting or refuting the hypothesis,

(6) identifying and considering alternative interpretations of results, and

(7) specifying implications for further investigation,

D design and conduct one investigation through a problem-based study, service learning project, or field study by identifying scientific issues based on observations and the corresponding scientific concepts, analyzing data to clarify scientific issues or define scientific questions, and comparing results to current models, personal experience, or both, and

E use scientific evidence to defend or refute an idea in a historical or contemporary context by identifying scientific concepts found in evidence, evaluating the validity of the idea in relationship to scientific information, and analyzing the immediate and long-term impact on the individual, society, or both, in the areas of technology, economics, and the environment

Subp 6 Environmental systems. A student shall

A demonstrate understanding of the use of decision-making models and scientific investigation and issues involving relationships among the individual, society, economy, and environment by investigating and analyzing the scientific concepts, principles, laws, or theories that affect and are effected by environmental changes, the components of social systems that affect and are effected by environmental changes, the interactions between social and natural systems, local, regional, or global implications of short-term or long-term environmental changes, and methods for citizenship action;

B demonstrate understanding

(1) of how historical and current scientific concepts and knowledge guide scientific inquiries,

(2) that scientific inquiries are performed to test ideas and predictions and to learn about the natural world,

(3) of how the use of various technologies influence the quality of data and the investigation,

(4) of the essential role of mathematical tools and models and how they are essential to scientific inquiry,

(5) of how explanations based on evidence adhere to established criteria including empirical standards, logic, openness to criticism, and reporting of methods and procedures, and

(6) of how traditions govern the conduct of science, including ethics, peer review, and consensus,

C analyze a significant environmental topic to identify problems,

D analyze an environmental problem to identify related issues,

E develop a conceptual understanding of the local issue by identifying related scientific concepts and ecological systems; identifying related social systems, identifying interest groups, the point of view of interest groups, and possible solutions, and analyzing how humans and natural systems affect and are affected by the local issue,

F design and conduct primary research to enhance understanding of the local issue,

G develop and evaluate a personal action plan designed to promote a specific solution, and

H design and conduct an experiment to investigate a question and test a hypothesis by

(1) formulating a question and hypothesis,

(2) designing and conducting an investigation,

(3) recording relevant data,

(4) analyzing data using mathematical methods,

(5) constructing reasonable explanations to answer the question and supporting or refuting the hypothesis,

(6) identifying and considering alternative interpretations of results, and

(7) specifying implications for further investigation

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3501.0447 LEARNING AREA SEVEN: PEOPLE AND CULTURES.

Subpart 1 **High school content standards for learning area seven.** Specifications for high school content standards in learning area seven are under subparts 2 to 7

Subp 2 **Themes of United States history.** A student shall

A demonstrate understanding of the Declaration of Independence, the United States Constitution, and themes related to key events, concepts, and people in the historical development of the United States, including the convergence of people, colonization, settlement, and the American Revolution, expansion, the Civil War, and the Reconstruction, tribal sovereignty and the relationship between American Indian tribal governments and federal and state government, industrialization, the emergence of modern America, and the Great Depression, World War II, and postwar United States to the present, and

B illustrate the influence of diverse ideals or beliefs on a theme or an event in the historical development of the United States

Subp 3 **United States citizenship.** A student shall demonstrate understanding of the foundations, rights, and responsibilities of United States citizenship including how the United States government, as established by the Constitution, embodies the principles and ideals of a democratic republic, the rights and responsibilities of United States citizens, non-citizens, and dual citizens, and the formal and informal structures within which interest groups exercise power, by

A examining the foundational documents, including the United States Constitution and the Bill of Rights relating to citizen rights and responsibilities,

B examining persisting issues involving rights, roles, and status of individuals in relation to the general welfare of society,

C analyzing how citizens can affect public policy, and

D observing, analyzing, and interacting with an actual or simulated governmental process

Subp 4 **Diverse perspectives.** A student shall evaluate events and actions from diverse United States and world perspectives by identifying

A how race, culture, gender, and disability may influence beliefs, actions, and world view,

B how data and experiences may be interpreted differently, and

C issues, topics, or concepts around which disagreement or ambiguity exists, including describing points of view concerning the issue, investigating reasons for identified points of view, investigating reasons for alternate viewpoints, and analyzing how the interpretation of an issue is affected by omitted viewpoints

Subp 5 **Human geography.** A student shall demonstrate understanding of human geography by

A identifying the location of major places and geographic features on the surface of the earth, the physical and cultural characteristics of places, the physical processes that shape patterns on the earth's surface, how movement of cultural characteristics interconnects various places, and how the physical environment is modified by and modifies human activities,

B. interpreting and communicating geographic information through maps and other forms of graphic tools and geographic information systems,

C analyzing the effects of alterations on cultural landscapes, physical landscapes, or both,

D analyzing the relationship between geography and a dispute about land use versus ownership or political control; and

E analyzing the relationship between geography and culture

Subp 6 **Institutions and traditions in society.** A student shall demonstrate understanding of institutions and traditions in society by

A identifying societal concepts that influence the interaction among individuals, groups, and institutions in society, how societal concepts and institutions develop and change over time, and how cultural diversity affects conflict and cohesion within and across groups and institutions,

B examining tension between individuality and conformity,

C examining how roles, status, and social class affect interaction in groups and institutions;

D describing how institutions change over time, and

E analyzing how institutions affect continuity and change

Subp. 7 **Community interaction.** A student shall demonstrate an understanding of the relationships between organizations and the communities the organizations serve through direct service or experience, by

A. assessing and evaluating the impact of an issue, event, or service on a target population, and

B. suggesting, applying, and evaluating strategies designed to improve the community through direct service or other authentic experience

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3501.0448 LEARNING AREA EIGHT: DECISION MAKING.

Subpart 1 **High school content standards for learning area eight.** Specifications for high school content standards in learning area eight are under subparts 2 to 5

Subp 2 **Individual and community health.** A student shall demonstrate an understanding of decision-making processes and community health practices that promote healthful nutrition and dietary practices, and physical fitness, and that reduce and prevent tobacco use, drug and alcohol use, intentional and unintentional injuries, HIV, sexually transmitted diseases, and unintentional pregnancies by

A analyzing how health maintenance and disease prevention decisions are influenced by the media, technological advances, interpersonal communication, and immediate and long-term risk factors, and

B. creating a plan for an in-depth study of one of the community health practices described in this subpart including in-depth information needed, procedures required, how this area is impacted by other community health practices, and options for completing an in-depth study

Subp 3 **Physical education and fitness.** A student shall use decision-making processes to select appropriate physical activities to achieve fitness and shall demonstrate understanding of the training necessary to improve fitness and the rules and skills associated with physical activities by

A designing and implementing a health-enhancing fitness plan, including

- (1) establishing current levels of cardiovascular fitness, muscular endurance, and flexibility,
- (2) setting cardiovascular, muscular, and flexibility goals to improve total body fitness,
- (3) selecting measurement strategies,
- (4) identifying frequency, intensity, time, and types of activities required to meet goals,
- (5) analyzing impact of goals on cardiovascular system and affected muscle groups,
- (6) evaluating reasonableness of maintaining the fitness plan over an extended period of time, and
- (7) evaluating effectiveness of the plan on total body fitness, and

B demonstrating knowledge and skills in an aerobic activity and at least two other physical fitness activities

Subp. 4 **Career investigation.** A student shall demonstrate understanding of a variety of career clusters, attributes and aptitudes needed in particular types of occupations and careers, how attitudes and behaviors affect the climate of a workplace, how systems within a workplace affect or interact with systems in the community, and how systems affect an individual worker by

A determining personal interest, aptitudes, and abilities,

B establishing an explicit career action plan, including selecting a program that meets a career or vocational preparation goal,

C investigating a career through research, internship, mentorship, or community service placement, and

D. evaluating career choices in relationship to life goals and personal attributes

Subp 5 **Occupational experience.** A student shall apply a decision-making process in real-work situations by

A analyzing.

(1) individual career-related strengths, experiences, and interests that may affect lifework choices,

(2) the current and projected employment outlook in a selected career cluster,

(3) skills, technical information, and work relationships required for a specific job, and

(4) current work-related laws and how the laws affect a worker,

B. making short-term and long-term employment choices,

C creating documents for job-seeking and placement,

D. integrating technical knowledge and skills to achieve goals in an employment situation,

E applying effective problem-solving strategies in employer-employee, coworker, and customer-client situations, and

F. evaluating job performance according to standards and expectations of the workplace and personal job goals

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3501.0449 LEARNING AREA NINE: RESOURCE MANAGEMENT.

Subpart 1 **High school content standards for learning area nine.** Specifications for high school content standards in learning area nine are under subparts 2 to 7

Subp 2 **Economic systems.** Through the use of the fundamental concepts of economics, a student shall demonstrate understanding of the interactive nature of global, national, and local economic systems, how government decisions impact those systems, and how individuals, households, businesses, and governments use scarce resources to satisfy unlimited wants and needs by

A analyzing a public issue in terms of production, distribution, and consumption;

B analyzing how change in the economy affects individuals, households, business, government, and the environment,

C explaining how scarcity of productive resources impacts decisions concerning the production and distribution of goods and services,

D. examining how domestic and global economic systems interact, and

E. comparing the rules and procedures of different economic systems by examining the effect on supply, demand, capital, prices, role of institutions, and natural resources

Subp 3 **Natural and managed systems.** A student shall develop and communicate a resource management plan involving natural and managed systems by

A demonstrating understanding of the interaction and interdependence of natural and managed systems, including natural ecosystems, and human-managed systems,

B. describing the biological, physical, and human characteristics of the systems,

C. gathering data using appropriate techniques,

D identifying the nature of the interactive and interdependent relationships,

E. using appropriate environmental impact criteria,

F analyzing economic and environmental costs and benefits;

G presenting and defending a cost and benefit risk analysis to a jury of peers, and

H modifying the plan based on feedback.

Subp 4. **Personal and family resource management.** A student shall apply principles of personal and family resource management and informed decision making by:

A. demonstrating understanding of sound buying principles, issues involved in renting or buying a home, personal finance terminology, insurance options, and implications of nonfinancial resources,

B creating plans for major purchases;

C evaluating personal banking services and cash or credit options;

D analyzing a household budget,

E preparing personal income tax statements,

F analyzing and selecting investment options, and

G analyzing how to manage household resources considering broader economic and environmental systems

Subp 5. **Business management.** A student shall use fundamentals of informed decision making and business management, including personnel management procedures, customer, employee, and management practices, use of banking services, forms of business organization; and current work-related laws and how the laws affect employment by.

A maintaining finances of the business;

B. analyzing business expenses and organizational and environmental costs,

C applying personnel management procedures,

D applying human relations strategies,

E applying marketing strategies, and

F organizing work time around long-term priorities and immediate needs

Subp.6 **Financial systems.** A student shall use financial systems and information and basic accounting principles to.

A prepare accounts, ledgers, journals, financial statements, and payroll data;

B conduct financial analysis using mathematical techniques, including ratio analysis, comparative statements analysis, cost analysis, and trend analysis; and

C create a report based on information obtained from data analysis, including describing and displaying data, analyzing effectiveness of past financial actions, and recommending future courses of action based on conclusions of data analysis

Subp. 7 **Technical systems.** A student shall apply knowledge, skills, and tools of technological systems by

A investigating and analyzing the scientific principles and elements (inputs, processes, outputs, feedback) of a specific technological system in relation to a macrosystem;

B using basic skills and tools related to operating a specific system,

C creating, modifying, analyzing, or troubleshooting a technological system,

D transferring knowledge of a specific system to create or modify a plan for a macrosystem, and

E examining short-term impact on the environment and long-term sustainability.

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3501.0450 LEARNING AREA TEN: WORLD LANGUAGES.

Subpart 1. **High school content standard in world language.** Specifications for the high school content standard in learning area ten are under subpart 2.

Subp 2 **World language.** A student shall demonstrate understanding of the features and appropriate applications of a foreign, domestic, technical, or symbolic language other than English and communicate in a variety of applications by

A. showing evidence of comprehension of complex information communicated by others in a language other than English,

B using the language to communicate complex information to others, and

C analyzing information and communication situations based on criteria used by others highly skilled in the language

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3501.0460 PREPARATORY CONTENT STANDARDS IN LEARNING AREA ONE: READ, LISTEN, AND VIEW.

Subpart 1 **Primary content standards.**

A **Literal comprehension.** A student shall demonstrate comprehension of literal meaning through reading, viewing, or listening to nonfiction and fiction selections by

(1) identifying main ideas and some supporting details,

(2) retelling main events or ideas in sequence,

(3) pronouncing new words using phonic skills,

(4) reading aloud fluently with appropriate expression,

(5) demonstrating appropriate techniques for learning new vocabulary, and

(6) interpreting presentations of data.

B **Interpretation and evaluation.** A student shall interpret and evaluate information from age-appropriate nonfiction and fiction selections by reading, viewing, and listening to

(1) understand ideas not explicitly stated,

(2) make predictions based on information in the selection;

(3) draw conclusions based on information in the selection,

(4) compare and contrast elements of the story or selection,

(5) distinguish facts from opinions, and

(6) summarize ideas and identify tone in persuasive, fictional, and documentary presentations

Subp 2 **Intermediate content standards.**

A **Literal comprehension.** A student shall demonstrate comprehension of literal meaning by.

(1) reading, listening, and viewing of nonfiction and fiction selections to identify main ideas and support details, retell main events or ideas in sequence, pronounce new words using phonics, demonstrate techniques of improving and expanding vocabulary, and demonstrate an age-appropriate reading rate,

(2) reading and applying technical instructions to perform an action,

(3) using presentations of data to understand scientific or mathematical information, and

(4) summarizing ideas and information from visual presentations

B Interpretation and evaluation. A student shall interpret and evaluate information from age-appropriate nonfiction and fiction selections by reading, listening, and viewing to.

(1) distinguish fact from opinion in nonfiction selections,

(2) interpret figurative language,

(3) make predictions based on information in the selection,

(4) compare and contrast settings, ideas, or actions,

(5) understand ideas not stated explicitly in the selection, and

(6) interpret effects of persuasive visual messages.

Subp 3 Middle-level content standards.

A Nonfiction. A student shall

(1) demonstrate the ability to comprehend, interpret, and evaluate information from a variety of nonfiction formats in reading, listening, and viewing, and

(2) comprehend information from selections that address abstract or complex ideas by

(a) identifying main ideas and supporting details,

(b) interpreting presentations of data in connection with other information in the text,

(c) comparing and contrasting information on the same topic from different types of sources,

(d) identifying differences in the points of view of the authors when given more than one selection on the same topic,

(e) identifying statements of fact and opinion within a selection, and

(f) using structural organizers within a selection to aid comprehension.

B Fiction. A student shall demonstrate the ability to comprehend, interpret, and evaluate information in fictional reading, listening, and viewing selections by

(1) retelling a story, including major characters, setting, sequence of events, and conflicts,

(2) showing evidence of an ongoing process for expanding vocabulary,

(3) interpreting literal and figurative language and imagery,

(4) categorizing events, behavior, or characters,

(5) predicting logical cause and effect sequence, and

(6) evaluating fiction according to preestablished criteria

C Technical reading. A student shall demonstrate the ability to comprehend technical information from documents or electronic media by

(1) knowing relevant technical vocabulary, use of tools, and safety procedures,

(2) applying step-by-step directions using appropriate tools and safety procedures, and

(3) showing an understanding of information from visual or graphic data

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GRADUATION STANDARDS 3501.0461

3501.0461 PREPARATORY CONTENT STANDARDS IN LEARNING AREA TWO: WRITE AND SPEAK.

Subpart 1 **Primary content standards; writing and speaking.** A student shall demonstrate the ability to write and speak for a variety of academic and technical purposes through

- A teaching another how to perform an action or create a product by
 - (1) writing directions with multiple steps,
 - (2) sequencing steps accurately,
 - (3) using task-specific vocabulary,
 - (4) writing a list of necessary materials, and
 - (5) using illustrations or visuals as a teaching aid,
- B writing a story by
 - (1) describing ideas or events from personal experience, observation, or imagination,
 - (2) sequencing ideas or events, and
 - (3) using details or examples to create images,
- C writing a report to describe and give information about a person, an object, or a situation, and
- D giving an informal oral presentation by
 - (1) presenting an opinion or idea,
 - (2) using reasons or examples to explain it, and
 - (3) responding to related questions from the audience

Subp 2 **Intermediate content standards.**

A **Writing.** A student shall demonstrate the ability to write for a variety of academic and technical purposes and audiences by

- (1) writing a story based on direct experience or observation including
 - (a) a problem solved, a conflict resolved, or a lesson learned,
 - (b) a description of setting using vivid details,
 - (c) a flow of action leading to a logical ending,
 - (d) an image of at least one character, and
 - (e) dialogue that captures authentic oral expression,
- (2) writing to request an action or a product with a final edit suitable for a real world audience including
 - (a) necessary information and detail using appropriate vocabulary, and
 - (b) use of formal structures and courteous conventions, and
 - (3) editing the finished product for correct mechanics and spelling

B **Speaking.** A student shall demonstrate the ability to speak to an audience or interact with a group by

- (1) planning and carrying out an event in a small group including
 - (a) constructing a flow chart of work to be done,
 - (b) implementing a group work plan,
 - (c) demonstrating a variety of cooperative group roles in discussion situations; and
 - (d) taking responsibility for obtaining, organizing, and using materials,
- (2) preparing and giving a demonstration to an audience including
 - (a) describing a step-by-step procedure to complete an action,
 - (b) using visuals or manipulatives to illustrate ideas,
 - (c) demonstrating effective delivery techniques, and
 - (d) answering questions from the audience concerning the demonstration

Subp 3 **Middle-level content standards.**

A **Writing.** A student shall demonstrate for a variety of academic and technical purposes, situations, and audiences the ability to write

- (1) a technical procedure or set of directions that uses
 - (a) technical terminology, use of tools to perform an action, or both,
 - (b) original visual representations to support text, including for example, illustrations, diagrams, charts, or technical drawings,
 - (c) sequenced steps using a numbered, bulleted, or outlined format,
 - (d) precise wording and objective style, and
 - (e) a glossary of technical terms used in the text,
- (2) a narrative including
 - (a) a description of events from direct experience or observation,
 - (b) use of relevant detail and figurative language to create an image of setting, characters, and events,
 - (c) dialogue between characters, and
 - (d) a sequence of events or ideas leading to a logical ending; and
- (3) an idea or opinion that
 - (a) gives a rationale that includes reasons to support or oppose the opinion,
 - (b) uses evidence to support the idea, and
 - (c) has correct spelling and mechanics

B **Interpersonal communication.** A student shall demonstrate the ability to communicate effectively in a small group by

- (1) solving a problem or settling a dispute, and giving a demonstration or presenting new information in a small group,
- (2) interacting and communicating appropriately with individuals of different gender, age, culture, and points of view,
- (3) adjusting communication on the basis of verbal and nonverbal feedback, and
- (4) expressing tone, mood, and vocabulary appropriate for a given situation

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History: *22 SR 2075*

3501.0462 PREPARATORY CONTENT STANDARDS IN LEARNING AREA THREE: THE ARTS.

Subpart 1 **Primary content standard; artistic creativity, performance, and expression.** A student shall describe at least three of the art forms in this subpart using the vocabulary of the art form and identifying similarities and differences between different art forms. A student shall

A in dance, demonstrate basic movements in musical or rhythmic contexts, respond to selected assignments and problems, and create sequences of movement to communicate an original story or an experience,

B in visual art, use appropriate tools and processes of at least three different media to communicate ideas, use elements of visual art to communicate ideas, and identify works and styles of art belonging to different cultures and times,

C in music, sing in a group, sing a varied repertoire of songs, play simple rhythms and melodies on classroom instruments, improvise simple rhythms and melodies, and use a system to read basic music notation, and

D in theater, use movement, sound, and language to create images, express emotions, and imitate animals, objects, or shapes, and use elements of environment, costume, and props to communicate story and character

Subp 2 **Intermediate content standard; artistic creativity, performance, and expression.** A student shall create, interpret, and evaluate the elements and principles of at least three of the art forms in this subpart. A student shall.

A in dance, demonstrate characteristic dance styles from more than one form or tradition, observe and discuss how dances are similar in terms of elements of dance, demonstrate more than one solution for creative movement problems, and use basic movements to create and perform a sequence with a beginning, middle, and end, with or without music,

B in visual arts, demonstrate the ability to communicate ideas effectively through at least three different media and techniques, use elements and principles of art to effectively communicate ideas, associate artwork with various cultures or historical periods, and describe selected works of art in terms of the elements and principles of visual or media art,

C in music, sing alone; sing rounds and part songs in a group, perform simple rhythmic, melodic, and harmonic patterns accurately on classroom instruments, improvise melodies and accompaniments using classroom instruments, voice, or both, and use a system to read musical notation, and

D in theater, interpret, perform, or interpret and perform a story based on an existing piece of literature by adapting plot, characters, and language for theatrical purposes, and evaluate plot, character, theme, language, sound, and spectacle, and create characterizations based on fiction or life experience

Subp 3 Middle-level content standards.

A. Artistic creativity and performance. A student shall demonstrate knowledge of at least three art forms through artistic process and presentation by

- (1) knowing the expressive and technical elements of an art form,
- (2) knowing basic conventions of the creative decision-making process, and
- (3) performing or presenting in each art form
 - (a) using principles and elements of the art form,
 - (b) demonstrating fundamental skills,
 - (c) using improvisation to generate and communicate artistic intent, and
 - (d) creating original works in a variety of contexts

B. Artistic interpretation. A student shall interpret and evaluate a variety of art works, performances, or presentations, including elements, principles, and styles of the art forms, and the social, historical, and cultural context of each work of art by

- (1) analyzing art works using the elements, principles, and styles of the art form,
- (2) evaluating works of art according to preestablished criteria,
- (3) describing personal reaction to the work of art, and
- (4) explaining the connection between the work of art and its social, cultural, or historical context

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History: 22 SR 2075

3501.0463 PREPARATORY CONTENT STANDARDS IN LEARNING AREA FOUR: MATHEMATICAL APPLICATIONS.

Subpart 1 Primary content standards.

A. Number sense. A student shall use number relationships to represent information and solve problems by

- (1) using whole numbers to represent numbers in more than one way, count and order, name and locate, measure, and describe and extend pattern,
- (2) demonstrating an understanding of place value, number relationships, relative size, and reasonableness of answers in problem-solving situations, and
- (3) solving problems and justifying thinking by selecting appropriate numbers and representations, using operations, patterns, and estimation, generating multiple solutions, organizing data using pictures and charts, and using concrete objects, diagrams, or maps to solve simple problems involving counting, arrangements, or routes

B Shape, space, and measurement. A student shall apply concepts of shape, space, and measurement to solve problems involving two- and three-dimensional shapes by demonstrating an understanding of

(1) patterns by describing, extending, and completing existing patterns, creating new patterns, representing spatial patterns pictorially, numerically, or both, and identifying, creating, or identifying and creating symmetrical patterns,

(2) measurement, given familiar objects, to identify type of measurement required, estimate measurement, select appropriate tools and units of measurement, measure accurately, and use measurements to order a group of objects according to size,

(3) familiar two- and three-dimensional shapes by identifying shapes in real-world contexts, drawing, building, or drawing and building familiar shapes, sorting and classifying shapes, and predicting the results of flipping, sliding, or turning a shape, and

(4) geometric terms used to describe spatial relations

Subp 2 Intermediate content standards.

A Shape, space, and measurement. A student shall

(1) describe and analyze two- and three-dimensional shapes and spaces using appropriate whole and partial units, including metric, to measure length, time, weight, volume, temperature, angle, and area, and using names and properties of common two- and three-dimensional shapes,

(2) describe and compare two- and three-dimensional geometric figures existing in the physical world,

(3) analyze and create new shapes by combining, dissecting, or transforming existing shapes,

(4) extend or create geometric patterns to solve problems,

(5) represent a three-dimensional space in two-dimensional view,

(6) measure, including identifying type of measurement required, selecting appropriate tools and units of measurement, and measuring accurately,

(7) estimate measurements by using appropriate units and comparisons to known objects or quantities, and

(8) use maps or graphs to determine the most efficient routes

B Number sense. A student shall

(1) demonstrate understanding of concepts of place value, variables, and equations; when and how to use number operations, when and how to use a variety of estimation strategies, addition, subtraction, and multiplication of single-digit multiples of powers of ten, and the reasonableness of calculator results,

(2) use number concepts and a variety of math operations to represent information and solve problems,

(3) solve a variety of multiple-step problems using number relationships and properties, number patterns, and appropriate computation or estimation procedures,

(4) generate and describe more than one method to solve problems,

(5) use whole numbers, simple fractions, and money amounts to quantify, label, measure, and locate numerical information,

(6) represent real-life situations mathematically,

(7) represent patterns using words, pictures, and numbers, and

(8) use lists or diagrams to solve counting and arrangement problems.

C. Chance and data handling. A student shall

(1) demonstrate understanding of how to find range, mean, and median simple concepts of likelihood including impossible, unlikely, equal chance, likely, certain, fair, and unfair, and information displayed in graphs, tables, and charts,

(2) answer questions by collecting and organizing data, representing data, and communicating results,

(3) conduct experiments involving uncertainty including listing possible outcomes, tally, record, and explain results, and use the results to predict future outcomes,

(4) describe patterns, trends, or relationships in data displayed in graphs, tables, or charts, and

(5) represent data using at least two graphic forms

Subp 3 Middle-level content standards.

A. **Space, shape, and measurement.** A student shall

(1) demonstrate understanding of basic concepts of coordinate systems, by knowing precise mathematical names and properties of two- and three-dimensional shapes, converting common measurement units within the metric system and customary systems, and understanding how properties of shapes affect stability and rigidity of objects,

(2) recognize and describe shape, size, and position of two- and three-dimensional objects and the images of the objects under transformations,

(3) create complex designs using transformations and tilings to generalize properties of shapes;

(4) connect geometric concepts and use them to test conjectures and solve problems, including distances (rational and irrational), the Pythagorean Theorem, similarity and congruence, slope, properties of polygons and polyhedra, and symmetry,

(5) measure length, mass, perimeter, and area of quadrilaterals and circles, surface area, and volume of solids and angles, including determining type of measurement needed (exact, approximate, derived), selecting appropriate measurement tools and units, and measuring to the appropriate accuracy,

(6) describe how changes in the dimensions of figures affect perimeter, area, and volume; and

(7) use vertex-edge graphs to solve problems

B. **Number sense.** A student shall

(1) demonstrate understanding of number concepts including place value, exponents, prime and composite numbers, multiples, and factors, fractions, decimals, percents, integers, and numbers in scientific notation that translate among equivalent forms, and compare and order numbers within a set,

(2) solve a variety of problems by representing numbers efficiently, selecting appropriate operations, selecting appropriate methods to estimate or compute, and generating and describing more than one method to solve problems,

(3) analyze and justify operations and methods used and evaluate the reasonableness of computed results to problems with proposed solutions,

(4) apply proportional reasoning to solve a variety of problems using rates, ratios, proportions, and percents, and

(5) create a real-world communication that demonstrates the ability to use a variety of numbers in context

C. **Chance and data handling.** A student shall

(1) evaluate and solve problems, including calculating basic measures of center and variability, to demonstrate understanding of basic concepts of probability and calculate simple probabilities,

(2) formulate a question and design an appropriate data investigation,

(3) organize raw data and represent it in more than one way,

(4) analyze data by selecting and applying appropriate data measurement concepts,

(5) critique various representations of data,

(6) devise and conduct a simulated probability situation, and

(7) predict future results based on experimental results

D. **Patterns and functions.** A student shall

(1) analyze patterns and use concepts of algebra to represent mathematical relationships, including demonstrating understanding of the concepts of variables, expressions, and equations,

(2) recognize, analyze, and generalize patterns found in linear and nonlinear phenomena, data from lists, graphs, and tables, number theory, sequences, rational numbers, and formulas,

(3) represent and interpret cause and effect relationships using algebraic expressions, equations and inequalities, tables and graphs, verbal descriptions, and spread sheets,

(4) connect verbal, symbolic, and graphical representations, identify constraints, translate algebraic expressions into equivalent forms, and propose and justify solutions in problem situations, and

(5) use properties of mathematics to informally justify reasoning in a logical argument

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3501.0464 PREPARATORY CONTENT STANDARDS IN LEARNING AREA FIVE: INQUIRY.

Subpart 1 **Primary content standard; data categorization, classification, and recording.** A student shall demonstrate the ability to categorize, classify, and record information by

A gathering information from media sources, direct observation, interviews, and experiment or investigation to answer a question,

B recording the gathered information,

C displaying the gathered information using the appropriate format; and

D explaining the answer to the question

Subp 2 **Intermediate content standard; media, observation, and investigation.** A student shall demonstrate the ability to answer a question by gathering information from

A direct observations or experiments with a variable, including framing a question, collecting, recording, and displaying data, identifying patterns, comparing individual findings to large group findings, and identifying areas for further investigation,

B media sources, including selecting a topic and framing a question, accessing information from any or all of electronic media, print, interviews, and other sources, recording and organizing information, and reporting findings in written, oral, or visual presentation, and

C direct observation and interviews, including identifying a topic or area for investigation, writing a detailed description of the observation, conducting an interview with follow-up questions or designing and conducting a survey, recording and organizing information, and evaluating the findings to identify areas for further investigation

Subp 3 **Middle-level content standards.**

A **Direct observation.** A student shall demonstrate the ability to gather information to answer a scientific or social science question through

(1) direct observations, including framing a question, collecting and recording data, displaying data in appropriate format, looking for patterns in observable data, relating findings to new situations or large group findings, answering a question or presenting a position using data, and identifying areas for further investigation, and

(2) direct observations, interviews, or surveys, including framing a question, collecting data through observation, interviews, or surveys, recording and organizing information, and evaluating the question based on findings

B **Accessing information.** A student shall access information and use a variety of sources to answer a question or support a position by

(1) generating a question to be answered or a position to be supported through investigation,

(2) using electronic media or other available means to access relevant information,

(3) determining how to record and organize information;

(4) gathering information from multiple sources,

(5) evaluating the relevance of the information, and

(6) answering the question or supporting a position by synthesizing information

C. Controlled experiments. A student shall design and conduct a controlled experiment or investigation and interpret the results by:

- (1) using relevant information to generate a hypothesis or frame a question in a given topic;
- (2) defining the controls, variable, and sample size or number of repetitions;
- (3) setting up a method to test the hypothesis;
- (4) determining how to record and organize data;
- (5) conducting experiment and record data;
- (6) analyzing data and evaluating the hypothesis; and
- (7) identifying areas for further investigation

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3501.0465 PREPARATORY CONTENT STANDARDS IN LEARNING AREA SIX: APPLIED SCIENTIFIC METHODS.

Subpart 1. Primary content standard; direct science experience. A student shall demonstrate knowledge of basic science concepts of physical science, life science, and earth and space science through direct experience, including an understanding of:

- A. concepts related to everyday life through characteristic properties of objects, patterns and how they repeat, and cycles;
- B. how the basic needs of organisms are met;
- C. responses of organisms to changes in the environment;
- D. how the personal use of materials, energy, and water impacts the environment; and
- E. the characteristics of objects or phenomena, including measuring changes that occur in objects or phenomena as a result of interaction, sorting and classifying objects based on one or two properties, displaying information using graphs, and describing how previously learned concepts apply to new situations.

Subp. 2. Intermediate content standard; living and nonliving systems I. A student shall demonstrate:

- A. an understanding of:
 - (1) characteristics of organisms including plants, animals, and microorganisms;
 - (2) basic structures and functions of the human body;
 - (3) cycles and patterns in living organisms, earth systems, and physical systems;
 - (4) how human behavior and technology impact the environment; and
 - (5) characteristics of the physical world.
- B. the ability to:
 - (1) measure and classify objects, organisms, and materials on the basis of properties and relationships;
 - (2) make systematic observations of objects, events, or phenomena by recording data and predicting change;
 - (3) create a model to illustrate a concept, law, theory, or principle; and
 - (4) identify personal behaviors and use of materials that have a positive impact on the environment

Subp. 3. Middle-level content standards.

A. Living systems. A student shall demonstrate knowledge of interactions and interdependence of living systems by understanding the human body including heredity, reproduction, and regulation and behavior; plants, animals, and microorganisms including diversity and adaptation of organisms, and populations and ecosystems; and the dynamic effect of humans interacting with the environment by:

- (1) formulating questions to be answered based on systematic observation,

(2) designing and conducting investigations and field studies,

(3) analyzing data to support or refute hypotheses by identifying patterns in data, and comparing results to known scientific theories, current models, or personal experience, and considering multiple interpretations of data,

(4) describing how a premise is supported by scientific concepts, principles, theories, or laws; and

(5) creating a model to illustrate a contemporary or historical concept, principle, theory, or law

B. Earth systems. A student shall demonstrate understanding of the structure of earth systems, including the geosphere, hydrosphere, and atmosphere; concepts of change and constancy in the earth's history and theories of origin through evidence found in fossils, rocks and layers, land forms, and natural events, and the relative position and motion of objects in the solar system including moon phases and tides, seasons, eclipses, gravitational force, and planetary motion by:

(1) formulating questions to be answered based on systematic observation,

(2) designing and conducting investigations and field studies;

(3) analyzing data to support or refute hypotheses by identifying patterns in data, and comparing results to known scientific theories, current models, or personal experience, and considering multiple interpretations of data,

(4) describing how a premise is supported by scientific concepts, principles, theories, or laws, and

(5) creating a model to illustrate a contemporary or historical concept, principle, theory, or law

C. Physical systems. A student shall demonstrate an understanding of the fundamental laws and concepts of the physical world including properties of matter, physical and chemical changes, transfer of energy, and force and motion by:

(1) formulating questions to be answered based on systematic observation,

(2) designing and conducting investigations and field studies,

(3) analyzing data to support or refute hypotheses by identifying patterns in data; and comparing results to known scientific theories, current models, or personal experience, and considering multiple interpretations of data;

(4) describing how a premise is supported by scientific concepts, principles, theories, or laws, and

(5) creating a model to illustrate a contemporary or historical concept, principle, theory, or law

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3501.0466 PREPARATORY CONTENT STANDARDS IN LEARNING AREA SEVEN: PEOPLE AND CULTURES.

Subpart 1. **Primary content standard; family, school, and community.** A student shall demonstrate knowledge of the interaction of location, family, school, and community, including an understanding of:

A. how wants and needs are responsibly met in the home, school, and community;

B. the reasons for location of communities or features of communities;

C. the ethnic and national backgrounds of community members,

D. the location of major places and geographic features of the earth's surface by creating mental maps of the local community and country in relation to larger geographic units;

E. how different people may respond differently to the same event,

F. how a personal history has changed over time,

G. how the student's home region has changed over time, and

H. how to work to improve the school, community, or environment.

Subp 2. Intermediate content standards.

A. Historical events. A student shall demonstrate knowledge of historical events and contributions of key people from different time periods through reading and constructing timelines of key events and the actions of important people, the contributions of key historical people, and cause and effect relationships of events over an extended period of time to:

- (1) describe a past event from the point of view of a local community member;
- (2) reconstruct a historical account of an event using primary and secondary sources;
- (3) describe how technology has changed the lives of people in the home, at work, in transportation, and communication; and
- (4) give examples of conflict, cooperation, and interdependence among individuals, groups, and nations.

B Geography and citizenship. A student shall demonstrate an understanding of

- (1) the interaction of people, places, and locations,
- (2) how to locate regions of the United States and selected regions of the world and identify geographic features and cultural characteristics of regions,
- (3) characteristics of various world regions by
 - (a) interpreting and using information based on maps and graphic representations;
 - (b) creating mental maps or graphic representations showing knowledge of location; and
 - (c) comparing ways that people from different cultures deal with their physical environment, and
- (4) characteristics of the student's local community by:
 - (a) describing how local resources and products are used in the region or the world;
 - (b) researching the origins of groups represented in the local community, and
 - (c) participating in an activity that contributes to the improvement of the student's community

Subp 3. Middle-level content standards.

A Current issue analysis. A student shall defend a position concerning a current event or issue by demonstrating understanding of the history, facts, controversy, values, beliefs, and emotions surrounding the issue by:

- (1) identifying specific events or situations illustrating the impact of the issue;
- (2) describing a range of opinions or positions on the issue;
- (3) selecting and defending a position based on information;
- (4) describing the responsibilities of citizens involved with the issues; and
- (5) summarizing the findings in a written, oral, or role-play presentation.

B. Geography and culture. A student shall demonstrate understanding of how regions of the world are defined in terms of location, resources, people and culture, and physical features; and how global systems are interconnected by:

- (1) identifying current or historical issues or conflicts that involve a particular region;
- (2) using mental maps to show location or region;
- (3) describing the physical and cultural characteristics;
- (4) describing the economic development, and
- (5) describing how the issue or conflict is influenced by location and physical and cultural geography.

C. History and citizenship. A student shall demonstrate knowledge of the facts and sequences of historical events, the origins and shaping influences of various points of view, and historical events in relationship to themes of change and migration by:

- (1) analyzing historical events from the point of view of participants;
- (2) illustrating a theme of change or migration that encompasses historical events,
- (3) constructing a history of a local community, institution, or the role of individuals to illustrate a continuum of change, and
- (4) describing how citizens contribute to a changing community through participation.

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3501.0467 PREPARATORY CONTENT STANDARDS IN LEARNING AREA EIGHT: DECISION MAKING.

Subpart 1. Primary content standard; personal health and fitness. A student shall demonstrate an understanding of activities that promote personal fitness, health, nutrition, and safety by showing evidence of the ability to:

A. make healthy choices in real or simulated situations including interpersonal conflict, proper care of the body; nutrition; safety; drugs, tobacco, and alcohol; and exercise and recreation, and

B. work to improve age-appropriate physical fitness, participate in a daily fitness plan, and demonstrate motor skills required for individual and team activities and appropriate competitive and cooperative participation in physical education activities.

Subp. 2. Intermediate content standards.

A. Personal health and nutrition. A student shall demonstrate understanding of how to recognize and get help in situations involving abusive or harassing behaviors; the consequences of using drugs, alcohol, and tobacco, the strategies to prevent the spread of communicable diseases, the strategies for preventing accidents; and age-appropriate nutritional recommendations by

- (1) using a decision-making model to promote healthy behaviors,
- (2) using a decision-making model to prevent or reduce the risk of unhealthy behaviors,
- (3) using a decision-making model to select foods that contribute to a healthy diet,
- (4) demonstrating what to do in case of sudden illness or injury; and
- (5) analyzing issues of safety in a school or community situation.

B. Physical education and fitness. A student shall demonstrate understanding of motor skills and physical fitness and participate in physical activities that develop motor skills and physical fitness by:

- (1) describing rules, skills, strategies, and etiquette associated with various physical education activities;
- (2) showing evidence of participating in a daily fitness plan,
- (3) showing evidence of age-appropriate physical fitness;
- (4) demonstrating motor skills required for individual and team activities;
- (5) displaying etiquette and team-building skills in physical education activities.

Subp. 3. Middle-level content standards.

A. Personal health. A student shall demonstrate understanding of the impact of nutrition, food selection, safety, and eating patterns on health; how to recognize abusive or harassing behaviors, the consequences of using tobacco, alcohol, and other drugs; strategies for preventing accidents and environmental hazards; what to do in case of sudden illness or injury, signs and symptoms of health problems that affect adolescents; sexual responsibility,

how to prevent communicable diseases, HIV and sexually transmitted disease infections, and pregnancy, and basic structures and systems of the human body by

- (1) analyzing the relationship of physical, social, and mental health,
- (2) applying a decision-making process to analyze health issues and attain personal goals,
- (3) analyzing how health-related decisions are influenced by internal and external factors,
- (4) demonstrating communication skills to express needs and enhance health, and
- (5) creating and implementing a nutritional health plan using a decision-making process that includes dietary recommendations with respect to age, gender, and activity level for a specific person, menus for a specified period of time, and analysis and demonstration of food preparation and safety skills

B Physical education and fitness. A student shall demonstrate understanding of motor skills and physical fitness and participate in physical activities that develop motor skills and physical fitness, by

- (1) describing rules, skills, strategies, and etiquette associated with physical education activities,
- (2) describing the benefit of daily participation in physical activities,
- (3) describing the components of fitness planning;
- (4) showing evidence of implementing a fitness plan;
- (5) showing evidence of age-appropriate physical fitness,
- (6) demonstrating motor skills required for individual, dual, and team activities, and
- (7) displaying proper etiquette and team-building skills in dual and group activities

C. Career exploration. A student shall explore career and education options to make informed decisions for future life choices by

- (1) determining areas of individual interest and ability,
- (2) determining at least two possibilities for career and education options that reflect personal interests and abilities;
- (3) gathering information for career options from a variety of sources; and
- (4) describing how each career might affect personal, family, and community life.

Statutory Authority: *MS s 121.11*

History: 22 SR 2075

3501.0468 PREPARATORY CONTENT STANDARDS IN LEARNING AREA NINE: RESOURCE MANAGEMENT.

Subpart 1 **Primary content standard; introduction to technology.** A student shall use appropriate computer technology to access information and to produce products by

- A. gathering information from electronic sources; and
- B. producing products and selecting language, format, and graphics appropriate for the purpose and audience using word processing

Subp. 2. **Intermediate standard; technology skills.** A student shall use appropriate computer technology to access, evaluate, and organize information and to complete products by.

- A. gathering and evaluating information from electronic sources,
- B. completing products and selecting language, format, and graphics appropriate for the purpose and audience including word processing, graphics, and multimedia presentation; and
- C. recognizing and using appropriate keys and techniques for entering data, keying written work, or both, at an age-appropriate level of speed and accuracy

Subp 3. Middle-level content standards.

A. Personal resources. A student shall demonstrate the ability to manage personal resources to meet a goal or solve a problem effectively by

- (1) identifying a problem, issue, or situation,
- (2) identifying personal resources relevant to the situation, including time, money, energy, and skills,
- (3) examining the problem, issue, or situation in light of personal goals,
- (4) generating options or solutions,
- (5) identifying the consequences of proposed solutions in a variety of areas,
- (6) creating and implementing an action plan, and
- (7) evaluating the effectiveness, impact, or both, of the use of personal resources in a variety of areas

B Group resources. A student shall demonstrate in a team the ability to manage resources to produce a product or service by

- (1) knowing background information about the product or service to be produced, basic principles of teamwork, and basic material and processing options,
- (2) identifying and describing a product or service to be produced by creating a model, prototype, or plan,
- (3) identifying the resources of the team members involved,
- (4) listing the other human and nonhuman resources required;
- (5) comparing available resources with needs;
- (6) determining how to get needed resources to revise the plan,
- (7) assigning work roles to each member of the team;
- (8) creating a flow chart or schedule describing how the task will be structured and the specific work assigned to each member of the team,
- (9) creating the product or service as a group, and
- (10) evaluating effectiveness of how the team managed resources

C Informed consumerism. A student shall demonstrate understanding of the impact of purchases in a household, business, community, and environment by knowing consumer rights and responsibilities, factors that affect consumer decisions, the impact of consumer decisions in a global context, and how to access information about consumer products by

- (1) describing a variety of personal or household purchases over a period of time,
- (2) comparing wants, needs, and available resources,
- (3) using information to compare and contrast potential purchases,
- (4) evaluating the quality of products or services,
- (5) evaluating the impact of the total purchases on the total household budget,
- (6) evaluating how consumer choices affect the community; and
- (7) evaluating the effect of the purchases on the environment.

D Technology applications. A student shall use appropriate technology to access, evaluate, and organize information and to produce products by

- (1) gathering and evaluating information from electronic sources,
- (2) applying appropriate technology processes to an identified need or problem,
- (3) producing products and selecting language, format, and graphics appropriate for purpose and audience by using word processing, graphics, multimedia, spread sheets, and databases, and
- (4) maintaining, using, or creating a technological system

Statutory Authority: *MS s 121 11*

History: *22 SR 2075*

**3501.0469 PREPARATORY CONTENT STANDARDS IN LEARNING AREA TEN:
WORLD LANGUAGES.**

Subpart 1 **Primary content standard.** A student shall demonstrate the ability to communicate in another language on age-appropriate topics including knowledge of cultural activities, products, and practices; and an understanding of features of the language and culture necessary for communication by

A showing evidence of comprehension of the written and spoken language that is supported contextually;

B writing with guidance on familiar topics, and

C participating in brief oral exchanges

Subp 2. **Intermediate content standard.** A student shall demonstrate the ability to communicate in another language on familiar topics by

A. showing evidence of understanding of how cultures are distinct in language, traditions, practices, products, and perspectives, and features of the language necessary for communication on familiar and personal topics,

B showing evidence of comprehension of the written and spoken language that is supported contextually,

C. writing with guidance on familiar topics, and

D participating in conversations on familiar topics.

Subp. 3. **Middle-level content standard.** A student shall demonstrate the ability to communicate in another language on familiar topics by

A showing evidence of understanding of how practices, products, and perspectives are influenced by culture, and features of the language necessary for communication on a variety of topics,

B showing evidence of comprehension of written and spoken information relating to daily living or personal events in formal and informal settings,

C expressing ideas, opinions, and experiences through writing and speaking, and

D communicating a basic procedure or set of directions.

Statutory Authority: *MS s 121.11*

History: 22 SR 2075