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ABSTRACT

After the Montana Board of Public Education enacted new accreditation standards in 1989, the original Montana rural school curriculum guide no longer reflected state standards. A new rural curriculum guide was developed by drawing on pertinent sections of the Montana School Accreditation Standards and Procedures Manual, and by including model learner goals written by program-area committees that worked on the manual. This guide is divided into the nine program areas used the by State of Montana: communication arts, fine arts, guidance, health enhancement, library/media, mathematics, science, social studies, and vocational/practical arts. Each program area contains a description taken from the state accreditation manual; the rule outlining state requirements in that area; model goals that provide schools with some guidance in the development of effective programs; and expected learner outcomes at the primary, intermediate, and secondary levels. (SV)

A CURRICULUM GUIDE

from

THE MONTANA SCHOOL ACCREDITATION STANDARDS

for

MONTANA'S RURAL SCHOOLS

1993

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INTRODUCTION

During the early 1980s, committees of rural school teachers, county superintendents and small high school teachers came together in various parts of the state and developed the first rural education curriculum guide. It was a most successful document in that it enjoyed a wide circulation and was referred to and used not only by most of the rural multigrade schools, but also by several K-12 districts.

In 1989, after a two year study entitled PROJECT EXCELLENCE: Designing Education for the Next Century, the Montana Board of Public Education enacted new accreditation standards for Montana's public schools. For the first time the accreditation standards defined each educational program area in the standards. The original Montana Rural School Curriculum Guide no longer reflected what the state required, so there was a need to develop a new guide. Unfortunately, there has been no money to bring committees together since the new accreditation standards were enacted.

However, PROJECT EXCELLENCE included committees in each of the program areas who did extensive curriculum work. In addition to the language defining each program area in the standards, the committees which had participated in the study also wrote model learner goals to further define the educational program in Montana. Because of the recognition that Montana had many multigrade rural schools and also because of research which suggested more individualized learning, the committees did not write the model learner goals grade by grade, but rather listed benchmark levels of "By the end of the primary level, the end of the intermediate level, and upon graduation."

They further defined these levels as:

> The end of the primary level (typically the third grade):
>
> The end of the intermediate level (typically the eighth grade); and
>
> Upon graduation (typically the twelfth grade).

In this way these new model goals provide some freedom and recognition of what is already going on in Montana schools.

These model goals were adopted by the Board of Public Education as an appendix to the accreditation standards to provide guidance for schools as they develop their own educational programs, however, because most teachers do not peruse the accreditation standards on a daily basis or generally think of them as providing curriculum guidance, the editor, after consultation with the Montana Association of County School Superintendents of Schools and with permission from the Office of Public Instruction, chose to reprint here as a new rural school curriculum guide the portions of the MONTANA SCHOOL ACCREDITATION STANDARDS AND PROCEDURES MANUAL which are pertinent to curriculum work for all Montana schools.

There may be some concern that these models were not developed by rural educators, but on each of the committees of the study were rural and small school representatives. These committees also had representatives from all levels: elementary, secondary and higher education; as well as representatives of school administrators and the public. They received guidance in their work from the respective curriculum specialists at the Office of Public Instruction, and they used models from national professional organizations as well as working successful models from schools here in Montana.

HOW TO USE THIS GUIDE:

This guide is divided into nine education program areas, the same number as the State of Montana uses and they are presented alphabetically. The names also are the same as the state's. In some cases, for those educators coming from out of state, some titles may not be familiar, however, they tend to reflect a holistic approach to curriculum. The Communications Arts include reading and English language arts as well as second language. The Fine Arts include visual arts, drama, music, and creative movement. Health Enhancement includes both health and physical education, but the new title reflects a more integrated concept and lifelong approach. The other program titles should need no explanation.

In each program area, after the title, there is a description of the program in italics. This is taken directly out of the state accreditation manual. Next is the rule in bold, which tells what the state requires schools to include in the program. The next area is the model goals. These are also from the manual, but they are not in rule but rather are in an appendix as models for schools to use as they work on their own curriculum. Part of the model goals included is a section called Program Development. This area provides some guidance as to the parameters and special requirements for an effective program. The last area of each section are the model goals divided into various topics with the expected learner outcomes at the primary level and at the intermediate level. (See inside front cover, the Introduction, for an explanation of these levels.)

Because the Rural Education Center received many requests for an extension of the old rural school curriculum guide to the secondary level and since the model learner goals do have a high school level, a special secondary addition to this guide may be requested from the Center for K-12 districts.

COMMUNICATION ARTS

Language is at the core of successful schooling and living. Through language, humans learn beyond their own direct experiences; through their skills, concepts, and experiences in the communication arts, students become educated not merely in "English," but in all subject areas. Thus, effective communication arts programs have a very high priority in the curricula of Montana schools.

The education program in Communication Arts encompasses the study of languages and literatures, the development of reading, writing, listening, and speaking skills, effective media use, and the nurturing of creative, logical, and critical thinking.

RULE 10.55.1101 COMMUNICATION ARTS PROGRAM

(1) In general, a school's communication arts program shall:

- **(a) Be literature-based and include a wide variety of fiction and nonfiction, representing diverse cultures of Montana, the United States, and the world;**
- **(b) Create a "whole language" environment that integrates communication skills in all subject areas and that gives students extensive opportunities to use these skills in meaningful contexts;**
- **(c) Encourage reading as a search for information, meaning, and pleasure. The program will provide literature of high quality, which is enriching for every age and ability level;**
- **(d) Include a writing program that emphasizes process and focuses on the communication of ideas;**
- **(e) Include an oral language program that involves students in a variety of speaking, listening and viewing activities;**
- **(f) Give students opportunities to pursue their special gifts and interest through co-curricular offerings such as drama, speech, debate, journalism, literary publications, and humanities;**
- **(g) Provide programs that enable students to use their communication arts skills in the community and in the world;**
- **(h) Take advantage of the offerings of special groups in education, business, and industry;**
- **(i) Be accomplished by activities such as creative drama, cooperative learning, small-group discussion, whole-language experience, and cross-content projects;**
- **(j) Use the language of students with limited English proficiency to develop more diverse English language skills.**

COMMUNICATION ARTS MODEL LEARNER GOALS
GENERAL

(1) In the study of languages, students shall be given the opportunity to:
- (a) Learn how languages function, evolve, and reflect cultures.
- (b) Learn how context--topic, purpose, audience--influences the structure and use of language.
- (c) Have the opportunity to develop second-language proficiency.

(2) In the study of literature, students shall be given the opportunity to:
- (a) Read, listen to, view, and study a variety of classical, contemporary, and multicultural literature, at all grade levels. Literature shall include poetry, fiction and non fiction, and drama.
- (b) Respond to literature through writing, speaking, and through media and the fine arts.
- (c) Gain insights from literature, recognizing it as a mirror of human experience.
- (d) Learn about their own and other cultures and recognize that literature is a reflection of culture.
- (e) Experience literature as a way to appreciate the rhythms and beauty of language.

(3) In the study of communication skills, five interwoven strands: listening, speaking, reading, writing, and using media, students shall be given the opportunity to:
- (a) Understand and practice the process of listening: perceiving, discriminating, attending, assigning meaning, evaluating, responding, and remembering.
- (b) Speak effectively, formally and informally, in all five basic communication functions: expressing feelings, utilizing social conventions, imagining, informing, and controlling.
- (c) Read for both pleasure and information and approach reading as a search for meaning.
- (d) Write clearly and effectively to express themselves and to communicate with others.
- (e) Use, view, and understand print and electronic media and be aware of the impact of technology and the media on communication.

(4) In the study of thinking, students shall be given the opportunity to:
- (a) Think creatively, exploring unique insights, points of view, and relationships.
- (b) Think logically, testing the validity of arguments and detecting fallacies in reasoning.
- (c) Think critically, asking questions, making judgments, and evaluating messages.

COMMUNICATION ARTS ACROSS THE CURRICULUM

(1) The basic education program in communication arts recognizes that communication skills and concepts should not be taught in isolation. Programs shall integrate all of these skills and concepts in cross-content experiences that truly engage students.

COMMUNICATION ARTS PROGRAM DEVELOPMENT

(1) The communication arts curriculum shall be developed and evaluated according to the standards for all program areas.

(2) Library/media specialists will be viewed as a part of the instructional team by helping other instructors select appropriate materials and by teaching and guiding students in their search for information and worthwhile reading.

(3) Learning assistance centers and fine arts facilities shall be available to enhance the communication arts curriculum with access for dramatic, cultural, and media presentations.

COMMUNICATION ARTS MODEL LEARNER GOALS

AREA	PRIMARY	INTERMEDIATE
ENGLISH LANGUAGE	(a) People label objects and ideas with words and that words and their meanings change over time and through usage. (b) Groups of people use different pronunciations and word choices to refer to the same objects and ideas. (c) Language changes to accommodate subject, audience, and purpose.	(a) Understand that words are arbitrary, culturally-based symbols for objects and ideas that change over time and through usage. (b) Recognize that people gain identity through their language, including pronunciation, word choice, and nonverbal communication. (c) Analyze the ways that language changes to accommodate subject, audience, and purpose.
SECOND LANGUAGE	(a) Experience rhymes, stories, songs, and dramatic activities that promote enjoyment in learning a second language. (b) Recognize some cultural traditions from the second language culture. (c) Reproduce and understand sounds, words, and sentences using pronunciation, stress, rhythm, and intonation. (d) Speak and understand a second language in informal conversations, using simple vocabulary. (Eff. 7/1/99)	(a) Experience oral and literary traditions of the second language culture. (b) Expand cross-cultural understanding. (c) Speak and understand more complex ideas and information in directed activities, both formal and informal. (d) Use reading and writing skills in the second language in a variety of meaningful activities. (Eff. 7/1/94)

AREA	PRIMARY	INTERMEDIATE
LITERATURE	(a) Experience a variety of classical, contemporary, and multicultural works of literature, including poetry, fiction and nonfiction, and drama. (b) Respond to a literary work by recapturing the meaning of plot in words, dramatic presentations, or pictures. (c) Recognize and make associations with the people, places, and problems in her/his reading. (d) Begin to understand culture through literature. (e) Recognize and appreciate rhythm, rhyme, and repetition and other qualities of language in literature. (f) Begin to evaluate the major components of literary works, including characters, setting, and action. (g) Create and share original pieces of literature that use characters, setting, and action.	(a) Expand experiences with classical, contemporary, and multicultural literature. (b) Respond to literature on the basis of his/her own insights and respect the different responses of others. (c) Recognize and understand the interrelationships among the elements in a literary work. (d) Begin to recognize how culture influences literary works and to compare and contrast that culture with his/her own experiences. (e) Appreciate and understand how language enhances meaning in literature and how meaning is enhanced by sensory and figurative language; by literary devices such as metric patterns and imagery (e.g., simile, metaphor); and by an author's semantic and connotative qualities. (f) Analyze and evaluate elements of literary works, including characters, setting, plot, theme, and imagery. (g) Create and share original pieces of literature in a variety of genres that use characters, setting, plot, theme, and imagery.

AREA	PRIMARY	INTERMEDIATE
LISTENING	(a) Discriminate between significant and insignificant sounds and words. (b) Develop a "listening set": anticipate meaning, ignore distraction, and visualize what is heard. (c) Assign a basic meaning to what is heard by recognizing the main idea and supporting details. (d) Distinguish new from familiar material, significant from insignificant, and fantasy from reality. (e) Respond to what is heard by asking questions, following directions, and giving feedback. (f) Remember important aspects of the message.	(a) Discriminate between emotional and unemotional speaking and between spontaneous and scripted speaking and acting. (b) Increase attentiveness by expanding attention span, predicting and rehearsing ideas, and being aware of factors that affect attention. (c) Recognize a variety of speaking purposes and patterns of organization. (d) Distinguish fact from opinion, information from persuasion, and logic from emotion. (e) Respond to what is heard by controlling emotions, asking questions, and giving appropriate feedback. (f) Expand memory through note-taking and relating new material to old.

AREA	PRIMARY	INTERMEDIATE
SPEAKING	(a) Show an awareness of oral expression features: pronunciation, volume, and rate of speaking. (b) Begin to adapt speech to audience and context in order to communicate ideas clearly. (c) Begin to establish a relationship with the audience through eye contact and attending to audience reaction. (d) Develop confidence as a speaker through experience with the five functions of speaking: expressing feelings, utilizing social conventions, imagining, informing, and controlling.	(a) Use words, figures of speech, and nonverbal factors to enhance oral presentation. (b) Organize and expand oral and nonverbal skills to suit the level of communication (interpersonal, intrapersonal, group, public, and mass). (c) Become increasingly aware of audience feedback during the speech. (d) Increase confidence and effectiveness as a speaker in all five functions of speaking.
READING	(a) Associate the written form with the spoken word. (b) Recognize basic word and sentence structures which are essential to comprehending written material. (c) Understand how punctuation affects meaning. (d) Read a variety of material and begin to use study skills to find answers and information. (e) Enjoy and appreciate reading.	(a) Use appropriate strategies to identify words and their meanings. (b) Refine his/her use of word attack and context clues which aid comprehension within a word, sentence, paragraph, or an entire work. (c) Adapt fluency, rate, and style of reading to the purpose of the material. (d) Read for information and continue to develop study skills. (e) Read as a leisure activity.

AREA	PRIMARY	INTERMEDIATE
WRITING	(a) Write frequently, using varied formats, for a variety of purposes and audiences. (b) Recognize how spelling, punctuation, capitalization, and handwriting contribute to meaning in writing. (c) Understand how to generate and organize ideas and how to create a clear written message. (d) Respond to, revise, and edit his/her own and others' writing.	(a) Write frequently, using varied formats, for a variety of purposes and audiences. (b) Understand and use spelling, punctuation, capitalization, handwriting, and usage as part of total effectiveness in writing. (c) Select a topic, generate and organize ideas, and choose appropriate language for his/her writing purpose. (d) Respond to, revise, and edit his/her own and others' writing.
MEDIA (See also Library/Media)	(a) Develop a "viewing" set and adopt appropriate behavior for appreciating a media performance or presentation. (b) Recognize, use and operate a variety of media equipment. (c) Understand the basic components and characteristics of media. (d) Use print and nonprint media in the classroom, library, and other settings as sources of information and entertainment.	(a) Understand and respond to media performances and presentations. (b) Incorporate media in oral and written presentations. (c) Understand that media convey messages. (d) Use a wide variety of print and nonprint media in leisure time, classroom, and library for information and entertainment.
THINKING	(a) Begin to demonstrate thinking skills such a comparing, contrasting, inferring, and evaluating in both verbal and nonverbal communication. (b) Respond to an experience by creating an action (a pantomime, picture, poem, or story) to express understanding. (c) Express associative thinking as well as creativity and inventiveness.	(a) Respond to an evaluate intentions and messages of speakers, writers, presenters, and media. (b) Differentiate between fact and opinion, recognize logical/illogical sequences, create an hypothesis, and predict outcomes. (c) Expand creativity, inventiveness, and logical/critical thinking.

COMMUNICATION ARTS MODEL LEARNER GOALS - SECONDARY

AREA	UPON GRADUATION
ENGLISH LANGUAGE	(a) Understand that words have denotative and connotative meanings and that oral, written, and nonverbal languages incorporate nuances of meaning. (b) Know the history of the English language as well as the principle of linguistic changes. (c) Refine his/her analysis of the ways languages change to accommodate topic, audience, and purpose and evaluate the effectiveness of such changes.
SECOND LANGUAGE	(a) Read, listen to, and view literary works in the second language. (b) Refine his/her understanding of world cultures. (c) Speak and understand the second language by adapting speaking and listening skills to a variety of audiences or situations. (d) Use knowledge of linguistic structures to speak and write more fluently in the second language. (e) Increase his/her understanding of English language and literature through comparison with the second language.

AREA	UPON GRADUATION
LITERATURE	(a) Read a broad selection of classical, contemporary, and multicultural literature, including poetry, novels, essays, short stories, and drama. (b) Be able to analyze his/her own and others' responses to literature. (c) Understand and analyze literature's significance to his/her own life. (d) Understand how cultural and historical setting and the literary tradition influence literature. (e) Appreciate and analyze how language enhances meaning in literature through the use of elements such as stylistic, sensory, figurative, semantic, and logical attributes. (f) Analyze and evaluate elements of literary works, including characters, setting, plot, theme, imagery, mood, figurative language, and genre. (g) Create and share original pieces of literature in a variety of genres that use characters, setting, plot, theme, imagery, mood, and figurative language.

AREA	UPON GRADUATION
LISTENING	(a) "Listen" with the eyes as well as the ears by perceiving verbal and nonverbal clues. (b) Choose and use a listening strategy best suited to the purpose in a listening situation. (c) Recognize nuances of meaning in similar words, situations, and nonverbal clues. (d) Evaluate oral messages for accuracy, effectiveness, significance, and propriety. (e) Give supportive feedback to a speaker by eliciting the best that the speaker has to offer. (f) Demonstrate long- and short-term memory by taking notes and searching memory.

AREA	UPON GRADUATION
SPEAKING	(a) Use oral and nonverbal language to communicate effectively. (b) Use invention, organization, style, and delivery to enhance messages. (c) Use audience analysis to prepare and present speeches. (d) Have experience and confidence in a variety of formal and informal speaking situations.
READING	(a) Comprehend ideas and meaning in material which requires increasingly complex structures. (b) Refine general and technical vocabularies, recognize multiple meanings and connotations, and comprehend longer, more complex passages. (c) Reflect on ideas presented at the literal, interpretive, and critical/creative levels. (d) Apply study skill strategies for immediate recall and long-term retention. (e) Read to satisfy, extend, and expand personal interests.

AREA	UPON GRADUATION
WRITING	(a) Write frequently, using varied formats, for a variety of purposes and audiences. (b) Use spelling, punctuation, capitalization, handwriting, and usage effectively and purposefully. (c) Focus the purpose of writing, visualize the audience, and refine the language of his/her writing. (d) Respond to, revise, edit, and evaluate his/her own and others' writing.
MEDIA (See also Library/Media)	(a) Develop a discriminating appreciation of media. (b) Demonstrate flexibility and familiarity in the use of electronic media and media centers. (c) Evaluate the effectiveness of a particular medium as it conveys a message. (d) Locate and use a variety of print and nonprint media in the home, classroom, and library. (e) Understand the legal responsibilities involved in media use.
THINKING	(a) Respond to, interpret, and evaluate intentions and messages of speakers, writers, presenters, and media. (b) Evaluate the validity of assertions and detect fallacies in reasoning and in emotional appeals; differentiate between subjective and objective viewpoints. (c) Use higher-level thinking processes to solve problems in the everyday world.

FINE ARTS

The Fine Arts provide a means of expression and communication that goes beyond speaking and writing. The Fine Arts are our most illuminating and universal form of language; through them we transmit to our children our cultural heritage and humanity.

The Fine Arts dynamically cultivate all of the senses, emotions, and intelligences. They are the means by which students develop literacy in the symbol systems fundamental to higher order and critical thinking. And, they constitute a dimension of learning which extends and fulfills human experience unlike that of any other discipline.

The Fine Arts are not complete until understandings are found between and among the arts and they are integrated with other Program Areas.

RULE 10.55.1201 FINE ARTS PROGRAM

(1) A basic program in fine arts includes:

- **(a) Visual arts (drawing, painting, printmaking, photography, film, electronic media, sculpture, two- and three-dimensional construction, applied design, and kinetic and performance art);**
- **(b) Performing arts, including music (choral music, instrumental music, and music appreciation); theater (drama, play production); and creative movement;**
- **(c) Literary arts (poetry, prose, drama);**
- **(d) Instruction that incorporates fine arts' history, criticism, production, performance, and aesthetics.**

FINE ARTS: MODEL LEARNER GOALS
GENERAL

Through the Fine Arts, students develop critical and creative thinking and perceptual abilities applicable to all areas of life.

(1) A basic program in fine arts gives the student the opportunity to:

- (a) Understand the principal sensory, formal, technical, and expressive qualities of each of the fine arts.
- (b) Identify processes, materials, tools, and disciplines required to produce the visual, performing, and literary arts.
- (c) Apply their knowledge of concepts, elements, principles, theories, and processes in the fine arts.
- (d) Develop their intuitive and creative thought processes as a balance to learning in the cognitive and psychomotor domains.
- (e) Make informed judgments about the fine arts and about their relationships to the history, culture, and environments of the world's people.
- (f) Understand the relevance of their education in the fine arts to the range of fine arts professions and to a lifetime of aesthetic pleasure.
- (g) Use materials, tools, and equipment safely.

PROGRAM DEVELOPMENT

(1) The fine arts curriculum shall be developed and evaluated according to the standards for all program areas.

(2) At all levels, the school district shall encourage the sharing of arts programs with parents and the public. For example, elementary drama study may culminate in special programs for parents, during or after school. Middle and high schools students may perform for parents and the public or participate in drama festivals, forensics, plays and civic programs. Gifted student writers and artists shall be encouraged to present their work to the public.

(3) At least once in a school year, the school district shall give students the opportunity to view a live drama, music, or dance performance.

(4) The school district shall take advantage of local resources, such as museums, galleries, theaters, cultural outreach programs, performance groups, professional writers and publishers, higher education services, the Montana arts council programs, and other expertise to supplement and enhance the arts program.

(5) Work and performance areas (e.g., middle and high school theaters and studios) shall meet all health and safety regulations and shall include adequate space for the storage of materials and equipment. The school shall ensure that stage and auditorium facilities are adequately managed and that students using them are supervised.

FINE ARTS LEARNER GOALS

AREA	PRIMARY (typically 3rd grade)	INTERMEDIATE (typically 8th grade)
VISUAL ARTS	(a) Begin to recognize different works of art and identify artists, placing them in a historical time and place. (b) Be familiar with and appreciate the various sources of art in the community (museums, galleries, studios, public places). (c) Begin to recognize universal emotions and experiences expressed in selected visual images. (d) Identify and use the elements of art and principles of art in organizing for personal expression. (e) Learn to appropriately select and to care for a variety of art materials, media and tools. (f) Use appropriate vocabulary to describe the expressive qualities of a variety of works of art and evaluate art experiences. (g) Experience a sense of accomplishment and pleasure from the creative act. (h) Enjoy and appreciate a variety of art works.	(a) Observe the sensory and formal applications used by artists. (b) Identify art processes, forms, and materials from many cultures and historical periods. (c) Appreciate art in a variety of settings (home, community, classroom, and studio). (d) Identify materials, tools, and techniques used by artists for expressive purposes. (e) Understand the elements and principles of art used by the artist to express creative ideas, moods, and feelings. (f) Know the vocabulary required to describe the sensory, formal, technical, and expressive qualities of art. (g) Understand the role of galleries and museums in preserving and transmitting art heritage and contemporary culture. (h) Identify different art works from distinct cultures and historical and stylistic periods. (i) Discover and discriminate among the methods of expressing imagination, interpreting experience, and selecting materials and techniques. (j) Demonstrate the ability to solve visual and technical problems in art. (k) Analyze, compare, contrast, and distinguish art work from a variety of styles and periods using formal viewing criteria. (l) Experience a sense of accomplishment and pleasure from experimentation, innovation, and skill development.

AREA	PRIMARY (typically 3rd grade)	INTERMEDIATE (typically 8th grade)
LITERARY ARTS - DRAMA (See also Communication Arts)	(a) Understand how movement, sound, and setting convey emotions and meaning in short dramatic performances (live or recorded). (b) Recount emotional and sensory responses to a dramatic activity as a listener and viewer. (c) Identify body, voice, costume, and make-up as elements of characterization. (d) Understand the daily-life sources of dramatic art: story, character, and conflict. (e) Express original interpretations of ideas and objects through the use of dramatic elements in a solo or group performance. (f) Use pantomime, puppets, or other dramatic devices to express individual interpretations of ideas, concepts, objects, or familiar stories. (g) Enjoy and appreciate a variety of dramatic selections and experiences.	(a) Identify historical, cultural, and environmental elements in a variety of dramatic works. (b) Apply knowledge of dramatic principles and techniques to enhance enjoyment of reading and viewing dramatic works. (c) Understand plot, character, setting, and theme. (d) Recognize the expressive and technical qualities of dramatic work through study, interpretation, and enactment in planned and improvised solo or group presentations. (e) Evaluate a variety of dramatic works.

AREA	PRIMARY (typically 3rd grade)	INTERMEDIATE (typically 8th grade)
MUSIC	(a) Realize the importance of music in everyday life. (b) Respect musical performance and composition. (c) Begin to recognize universal emotions and experiences expressed in music of various cultures and periods. (d) Enjoy participating in music and use music as a means of personal expression. (e) Sing with free vocal production a repertoire of folk and composed songs. (f) Use body movements and/or hand motions to show differences in music. (g) Use voice and instruments to create melodic and rhythmic patterns to accompany songs. (h) Recognize band and orchestra instruments and identify the major instrument groups. (i) Create short pieces, using nontraditional sounds available in the classroom, such as tapping fingers or striking various objects.	(a) Be increasingly aware of music as an important part of everyday life; enjoy music through listening, singing, and playing instruments. (b) Sing with free vocal production, becoming more accurate in pitch. (c) Add to the repertoire of songs learned at the primary level. (d) Participate in vocal and/or instrumental ensembles. (e) Understand basic music notation and terminology. (f) Refine his/her understanding of the basic elements of music theory. (g) Recognize and evaluate various types of music and music of various periods and styles, using recorded and live examples. (h) Experiment with variations in tempos, timbres, and phrasing for expressive purposes with voice or instruments. (i) Discuss personal responses to music.

AREA	PRIMARY (typically 3rd grade)	INTERMEDIATE (typically 8th grade)
CREATIVE MOVEMENT	(a) Be aware of feelings evoked by dance performance and/or creative movement. (b) Develop body awareness through creative movement. (c) Respond spontaneously in movement to various material, conceptual, and sensory stimuli. (d) Reproduce simple dance forms of other cultures, ethnic backgrounds, and historical periods. (e) Enjoy simple rhythmic patterns in a movement sequence. (f) Improvise creative movement around a tool, materials, dance element, or sensory stimulus. (g) Communicate personal feelings and ideas by using movement. (h) Determine preferences for specific dance forms.	(a) Be aware of the thoughts and images evoked by major dance forms. (b) Develop efficient movements and body awareness for dance and creative movement. (c) Enjoy freedom of creative and uninhibited movement in a variety of dance experiences. (d) Participate in various dance forms of other cultures and historical periods. (e) Use appropriate vocabulary to show understanding of basic dance concepts. (f) Improvise a short study around a mood, message, tool or material, using dance and creative movement. (g) Develop criteria for forming opinions about dance performances. (h) Evaluate the mood or message conveyed by a dance performance.

FINE ARTS LEARNER GOALS - SECONDARY

AREA	SECONDARY LEVEL
VISUAL ARTS (If Offered)	(a) Recognize the processes, forms, and materials used to produce a variety of art. (b) Use principles of visual discrimination in assessing the aesthetic properties of natural and artificial objects and environments. (c) Apply the vocabulary required to describe the sensory, formal, technical, and expressive qualities of art. (d) Understand the value of original works of art by experiencing them in a variety of settings. (e) Recognize factors that influence artists' choices of form, style, content, and artistic intent. (f) Understand the importance of preserving and transmitting art heritage, and the accompanying responsibility of museums, galleries, and scholars. (g) Understand the significance of major art works in embodying the spirit of a culture or a historical period. (h) Understand the processes, equipment, and materials needed for various visual arts. (i) Exercise self-direction in independent problem solving (visual, conceptual, technical) to produce art works with complex content. (j) Create art, demonstrating the creative and innovative use of equipment, materials, and techniques. (k) Experience the sense of accomplishment and satisfaction with his/her ability to conceive, execute, evaluate, and present a finished creative work. (l) Develop aesthetic criteria based on elements and principles of art and analyze the effectiveness of the components of works of art in achieving the artist's intent. (m) Develop criteria for judging the cultural and historical significance of works of art. (n) Appreciate and enjoy art works from a wide range of cultures and historical and stylistic periods.

AREA	SECONDARY LEVEL
LITERARY ARTS - DRAMA (If offered) (See also Communication Arts)	(a) Identify artistic choices made in a variety of theatrical forms in order to produce specific effects. (b) Appreciate a variety of written drama and theatrical productions, including live and recorded performances. (c) Apply knowledge of dramatic concepts, elements, principles, theories, and processes to the viewing, performing, and critiquing of dramatic presentations. (d) Demonstrate knowledge of the principles of drama by participating in a variety of theater productions. (e) Understand the social, cultural, educational, and historical functions of drama.

AREA	SECONDARY LEVEL
MUSIC (If offered)	(a) Enjoy participating in choral and/or instrumental music. (b) Develop a commitment to singing or playing well and a respect for quality music and skilled performance. (c) Develop sensitivity to interaction and blending of instruments and/or voice through participation in music ensembles. (d) Demonstrate how skill, technique, and sound production affect musical performance. (e) Analyze music from various cultures and historical periods, using knowledge of musical concepts. (f) Develop a further understanding of the concepts of music theory. (g) Perform music from various musical periods in solo and ensemble form. (h) Critique musical performance for technical skill, quality of sound, lyric qualities, and effectiveness of artistic intent. (i) Improvise or compose music in solo or ensemble form.

AREA	SECONDARY LEVEL
CREATIVE MOVEMENT (If offered)	(a) Be aware of the interaction of dance elements, tools, materials, and techniques of a dance performance. (b) Develop strength, balance, and coordination needed to refine body awareness in creative movement and/or dance. (c) Perform individual or group dances (e.g., tap, modern, ballet, jazz, folk, social) from various cultures and historical periods. (d) Enjoy freedom of creative and uninhibited movement in a variety of dance experiences. (e) Understand how movement elements, materials, and mood enhance the expressive qualities of dance. (f) Design an individual or group dance around a mood or message, integrating technique, skill, and materials. (g) Observe professional dance (live or recorded) or participate in community dance performances. (h) Critique dance or creative movement performances. (i) Analyze social, cultural, and ritual of contemporary performances.

GUIDANCE

Students of all ages must make many choices that affect their lives, now and in the future. Comprehensive guidance programs are a way to serve the divergent and changing needs of students.

The student is the focus and purpose of a K-12 guidance program, and all students should benefit from it. Through all levels and in all areas, students shall continue to build upon previous learner goals. Also, because citizenship skills are important to personal and social development, see "Social Studies" program standards.

RULE 10.55.1901 DEFINITION

(1) **Guidance counseling is the specific educational service that helps individual students develop their personal, social, educational, and career/life planning skills.**

GUIDANCE PROGRAM DEVELOPMENT

(1) The guidance program shall be developed and evaluated according to the standards for all program areas.

(2) The school shall ensure confidentiality and privacy for counseling and the security of guidance records.

GUIDANCE MODEL LEARNER GOALS

AREA	PRIMARY (typically 3rd grade)	INTERMEDIATE (typically 8th grade)
PERSONAL DEVELOPMENT	(a) Develop a positive self-image, personal initiative, and physical independence. (b) Experience security in his/her school environment. (c) Be able to identify and express feelings. (d) Develop decision making skills and accept responsibility for his/her decisions.	(a) A sense of conscience, morality, personal value, and self-worth. (b) A positive and realistic self-concept. (c) An acceptance of sexuality and physical image. (d) Self-direction and independence. (e) Appropriate ways to express feelings. (f) Strong decision making skills and an acceptance of responsibility for his/her decisions.
SOCIAL DEVELOPMENT	(a) Share experiences and manage school, family, and social concerns. (b) Develop a sense of belonging. (c) Understand and appreciate the rights of others. (d) Understand that other people have feelings.	(a) Gain a sense of social recognition. (b) Have the opportunity to establish close peer relationships. (c) Recognize and respect the fact that different people have different values and systems of values.
EDUCATIONAL DEVELOPMENT	(a) Realize the meaning and value of learning.	(a) Skills with which to form goals. (b) An awareness of the need for lifelong learning. (c) Motivation for achievement of personal goals.
CAREER DEVELOPMENT	(a) Understand the nature and values of occupations at home, school, and within the community. (b) Develop an awareness of his/her emerging interests and talents and their relationship to occupations.	(a) Assess individual values, interests, aptitudes, and abilities and their relationship to career development. (b) Increase his/her understanding of the components of career planning. (c) Begin in-depth exploration of career fields and specific occupations.

GUIDANCE MODEL LEARNER GOALS - SECONDARY

AREA	UPON GRADUATION
PERSONAL DEVELOPMENT	(a) Develop personal independence as a responsible adult. (b) Identify and use resources that help him/her cope successfully with life's complexities.
SOCIAL DEVELOPMENT	(a) Develop a sense of responsibility to self, others, and society. (b) Use abilities and skills in establishing and maintaining family, peer, and community relationships.
EDUCATIONAL DEVELOPMENT	(a) Formulate and attain realistic long-term goals. (b) Strengthen his/her awareness of the need for lifelong learning.
CAREER DEVELOPMENT	(a) Use career guidance information and resources to plan for postsecondary education, vocational training, and/or work.

HEALTH ENHANCEMENT

Health Enhancement teaches children the importance of achieving and maintaining a healthy lifestyle. It helps them actively protect, maintain, and improve their health and sensitizes them to society's critical health issues.

The Health Enhancement program is a comprehensive program that combines the disciplines of health and physical education. The present separation of these two critical elements is not in the best interests of our children. Healthy, well-nourished children learn better. A healthy state transcends the physical and includes mental, social, physical, and intellectual dimensions of self. Quality of life, healthy care, and the containment of health care costs will be major issues for all Montanans in the next century. By sensitizing our children to health care issues and establishing and encouraging health behaviors that can be maintained throughout life, we can positively influence Montana's future.

RULE 10.55.1301 HEALTH ENHANCEMENT PROGRAM

(1) **In general, a basic health enhancement program shall:**
- (a) **Integrate lifestyle management throughout the curriculum;**
- (b) **Focus on the total self and the development of responsibility, values, attitudes, and behaviors;**
- (c) **Give students decision-making tools for personal health;**
- (d) **Address intellectual, social, emotional, and physical dimensions of healthy lifestyles.**

RULE 10.55.1302 HEALTH ENHANCEMENT PARTICIPATION

(1) **Each student shall participate in a health enhancement program which is based on age, ability, and aptitude.**

PROGRAM DEVELOPMENT

(1) The health enhancement curriculum shall be developed and evaluated according to the standards for all program areas.

(2) Areas of the health enhancement curriculum integrated into other subject areas are ancillary to the main health enhancement program, which shall be provided by a health enhancement specialist (K-12) or by a classroom teacher in the elementary grades.

(3) Interscholastic sports and intramural programs shall not be used as a substitute for a health enhancement course.

(4) Recess shall not be used to fulfill health enhancement requirements.

(5) When required as part of the basic education program, all students shall have daily health enhancement activity.

(6) The school district shall encourage its teaching staff to exemplify healthy lifestyles.

(7) A telephone or communication device and basic first aid materials shall be located in close proximity to the instructional physical activity area.

HEALTH ENHANCEMENT MODEL LEARNER GOALS

AREA	PRIMARY	INTERMEDIATE
HEALTH ENHANCEMENT Demonstrate	(a) A variety of perceptual, motor, and rhythm skills, including but not limited to throwing, catching, kicking, striking, balancing, creative movement and folk dance, and skills related to lead-up games. (b) An appropriate level of physical fitness in cardiorespiratory function, body composition, and musculoskeletal performance. (c) Develop positive interpersonal relationships and self-concepts.	(a) A variety of physical skills that influence individual physical development, including but not limited to skills practice and lead-up games, rhythms and dance, and individual, dual, or team sports. (b) An appropriate level of physical fitness in cardiorespiratory function, body composition, and musculoskeletal function. (c) Positive interpersonal relationships and self-concept. (d) An understanding of the importance of regular and sustained physical activity throughout life. (e) An ability to identify roles, responsibilities, contributions, and life cycles in a family structure.
Identify (at primary level) and Understand (at intermediate level)	(a) Components of wellness and describe how decision making affects personal health practices. (b) Roles, responsibilities, contributions, and life cycles in a family structure. (c) The difference between use and abuse of drugs and their effects on an individual's total development. (d) Safety hazards, causes of accidents, and preventive measures for disease control. (e) Human body parts and systems, emphasizing individual uniqueness. (f) Ways in which advertising influences personal health choices. (g) Food combinations that provide a healthy and balanced diet. (h) Potential sources of pollution and pollution's harmful effects. (i) Resources which help promote and maintain community health.	(a) Substance use and abuse and their effects on the individual and society. (b) Health problems, including diseases and their etiology, the identification of symptoms of a variety of health problems, and prevention of health problems and injuries. (c) The functions and maintenance of body systems, including knowledge of the reproductive system. (d) The need for and use of consumer health services and products. (e) Basic nutrition and its application. (f) Cultural, environmental, social, and ethical issues which affect healthy lifestyles. (g) Interrelationships between physical health and mental well-being.

HEALTH ENHANCEMENT MODEL LEARNER GOALS - SECONDARY

AREA	UPON GRADUATION
HEALTH ENHANCEMENT	(a) Demonstrate a variety of physical skills used in physical activity, including but not limited to dance, individual, dual, or team sports, and lifetime leisure and recreational activities. (b) Demonstrate an appropriate level of physical fitness in cardiorespiratory function, body composition, and musculoskeletal function. (c) Understand the importance of a positive self-concept and interpersonal relationship for total health. (d) Understand the role of lifelong physical activity and the principles of safe and effective exercise, be able to plan a personal fitness program. (e) Understand roles, responsibilities, contributions, and life cycles in family structures. (f) Understand the risks of using drugs, alcohol, and tobacco. (g) Understand attitudes and behaviors for preventing and controlling disease and accidents. (h) Understand human reproduction and the emotional and ethical components of human sexuality. (i) Be able to evaluate and select health services, practices, and products. (j) Understand the relationship of sound nutrition to total health. (k) Understand the consequences of personal and community decisions that affect the economy and the cost, availability, and quality of health care. (l) Understand the relationship of sound mental health practices to total health. (m) Identify careers in health and physical activity and their roles and responsibilities.

LIBRARY/MEDIA

The pleasure of reading, viewing, and listening, and the ability to use and manage information are essential for students to function in a global community.

RULE 10.55.1801 LIBRARY/MEDIA PROGRAM

(1) **Library/media services bring together the resources and technology that enable a student to:**

- (a) **Read for the sake of enjoyment and enrichment;**
- (b) **Read, listen, and view critically;**
- (c) **Learn effective ways to find information and material to meet his/her unique needs;**
- (d) **Organize, analyze, and interpret information;**
- (e) **Integrate information across content areas;**
- (f) **Reach conclusions;**
- (g) **Become a lifelong learner;**

(2) **To help students achieve learner goals, the library/media program shall:**

- (a) **Teach library/media skills in sequence and in the context of the K-12 curriculum;**
- (b) **Support and enrich all areas of the school program;**
- (c) **Integrate library/media instruction across content areas;**
- (d) **Involve students in literature and reading, with the opportunity to be advised about reading in an unstructured, informal setting;**
- (e) **Encourage a love of reading and an appreciation of literature;**
- (f) **Give students the opportunity to identify and meet personal information needs.**

LIBRARY/MEDIA PROGRAM DEVELOPMENT

(1) The library/media program shall be developed and evaluated according to the standards for all program areas.

(2) The library/media program shall have a collection development policy.

(3) The school shall cooperate with other libraries through resource sharing.

(4) Each school shall have a centralized library/media collection that includes print and nonprint materials that are readily accessible to students and staff. The collection shall be:

- (a) Selected by professionals to meet the learner goals, curricular needs, and student recreational needs.
- (b) Culturally diverse.
- (c) Centrally based, inventoried, and catalogued.
- (d) Sufficient to meet the professional needs of the staff.
- (e) Current and adequate to meet the learner goals, curricular requirements, and recreational needs of the students.

LIBRARY/MEDIA MODEL LEARNER GOALS

AREA	PRIMARY (typically 3rd grade)	INTERMEDIATE (typically 8th grade)
INFORMATION ACCESS The library/media center gives students access to information and resources in a variety of formats. It helps them develop the skills needed for lifelong learning in an information-based society.	(a) Demonstrate good library citizenship, such as caring for an returning materials, and express a sense of ownership of his/her school library/media center. (b) Be aware of the library catalog and possess the beginning skills to identify and locate print and nonprint materials. (c) Know what reference means and that there are sources for reference; have beginning skills to use references such as dictionaries and encyclopedias. (d) Translate information from print and nonprint resources. (e) Conduct research by selecting a topic and finding information on that topic. (f) Identify people in the community as sources of information.	(a) Be aware of the types of libraries and of the unique nature of libraries in a free society. (b) Locate materials which fulfill assignments and satisfy personal interests. (c) Be aware of types of basic reference sources (encyclopedias, dictionaries, almanacs, atlases, periodical indexes, subject encyclopedias, subject dictionaries and data bases). (d) Gather, analyze, select, and use materials. (e) Select a topic, find a variety of information sources on that topic, summarize, paraphrase, evaluate, synthesize, and present the information in a new form while citing sources. (f) Identify sources of information in the community.
INFORMED AND CREATIVE USE OF MEDIA AND TECHNOLOGY The library/media center enables students to develop as critical leaders and viewers and to use technology to express ideas. (See also Communication Arts)	(a) Know that information can be delivered by a variety of technologies. (b) Be able to use technology for the creative expression of ideas. (c) Know the difference between factual and imaginary. (d) Understand that a variety of people, such as authors, illustrators, publishers, are involved in the creation and production of books and other media.	(a) Request information in a variety of formats and from a variety of technologies; select formats appropriate for his/her learning style. (b) Use technology for the creative expression of ideas. (c) Begin to evaluate appropriate print and nonprint media for accuracy, relevance, and bias. (d) Appreciate aesthetically a variety of media. (e) Understand that many people, such as authors, illustrators, and publishers, collaborate in the production of books and other media and own the material through copyrights.
APPRECIATION & ENJOYMENT OF LITERATURE	For integral learner goals in the literary arts, see the "Communication Arts" and "Fine Arts" program areas.	

LIBRARY/MEDIA MODEL LEARNER GOALS-SECONDARY

AREA	UPON GRADUATION
INFORMATION ACCESS	(a) Understand and appreciate the role of information in a free society. (b) Access print and nonprint materials effectively and efficiently for individual and group needs. (c) Identify, locate, and use basic and specialized reference sources and data bases. (d) Apply critical thinking and problem solving skills in selecting, evaluating, and using information. (e) Identify community resources and access information networks and other resource centers.
INFORMED AND CREATIVE USE OF MEDIA AND TECHNOLOGY (See also Communication Arts)	(a) Select materials in a variety of formats, delivered by a variety of technologies. (b) Use technology for the creative expression of ideas. (c) Evaluate appropriate print and nonprint media for accuracy, relevance, and bias. (d) Appreciate aesthetically a variety of media. (e) Use information legally and ethically.
APPRECIATION & ENJOYMENT OF LITERATURE	For integral learner goals in the literary arts, see the "Communication Arts" and "Fine Arts" program areas.

MATHEMATICS

Mathematics gives students the skills necessary to solve problems, to reason inductively and deductively, and to apply the numerical and spatial concepts necessary to function according to their needs in a technological society.

Priorities for basic mathematical skills include more than computation. A technological society requires daily use of skills such as estimating, problem solving, organizing and interpreting data, measuring, predicting, and applying mathematics to every day situations.

Mathematics is a dynamic, growing, and changing discipline whose cross-curricular significance requires its integration into all academic areas. An effective curriculum is responsive to recent developments in mathematical knowledge, the needs of an information society, the availability of technology such as computers and calculators, and includes relevant applications of mathematics.

RULE 10.55.1401 MATHEMATICS PROGRAM

(1) In a basic mathematics program, students:

- **(a) Become mathematical problem solvers;**
- **(b) Learn to communicate mathematically;**
- **(c) Learn to reason mathematically;**
- **(d) Learn to value mathematics;**
- **(e) Become confident in their ability to do mathematics;**
- **(f) Select and use appropriate technology to solve problems and acquire new knowledge.**

PROGRAM DEVELOPMENT

(1) The school district shall develop and evaluate a mathematics curriculum according to the standards for all program areas.

(2) The school district shall recognize the importance of technology as a tool for mathematics instruction. This technology may include but is not limited to computer systems, calculators, and other resources.

MATHEMATICS MODEL LEARNER GOALS

AREA	PRIMARY	INTERMEDIATE
PROBLEM SOLVING	(a) Solve problems from many contexts using strategies such as guess and check, make a table, looking for a pattern and simplify the problem. (b) Discuss alternate solution strategies and relationships among problems. (c) Use calculators as a problem solving tool.	(a) Recognize, formulate, and solve problems in mathematical and real life situations. (b) Apply a variety of strategies to solve one-step, multi-step, and nonroutine problems. (c) Verify and interpret the results with respect to the original problem situation and generalize to new problem situations.
COMMUNICATION	(a) Use oral and written language and symbols to communicate and extend mathematical ideas.	(a) Model situations in a variety of ways (e.g., verbal, concrete, pictorial, graphical, algebraic). (b) Read, interpret, and evaluate mathematical expressions of ideas. (c) Discuss mathematical ideas and situations, and make convincing arguments.
REASONING	(a) Describe, extend, and create auditory, visual, and written patterns. (b) Represent and describe relationships between quantities. (c) Explain his/her thinking and justify solutions using models, known facts, properties, relationships, and real world experiences.	(a)Recognize examples of deductive and Inductive reasoning. (b) Make and validate conjectures using models, known facts, properties, and relationships. (c) Apply proportional reasoning in problem solving and in discovering mathematical concepts.

AREA	PRIMARY	INTERMEDIATE
NUMERATION, COMPUTATION, AND ESTIMATION	(a) Understand and construct number meanings through real world experiences and physical materials. (b) Demonstrate understanding of our numeration system by relating counting, grouping, and place value concepts. (c) Understand and apply the operations of addition, subtraction, and multiplication of whole numbers. (d) Demonstrate an intuitive understanding of division of whole numbers. (e) Model, explain, and demonstrate proficiency with basic facts, algorithms, and mental arithmetic techniques. (f) Apply estimation strategies to working with quantities, measurement, computation, and problem solving. (g) Use estimation to determine reasonableness of results. (h) Use inverse operations and other mathematical relationships to solve number sentences. (i) Demonstrate the meanings of familiar fractions, mixed numbers, and decimals to tenths. (j) Use models to relate fractions to decimals, find equivalent fractions, and demonstrate the operations with decimals.	(a) Represent and use equivalent forms of numbers (fraction, decimal, percent, exponential, and scientific notation) in real world and mathematical situations. (b) Apply relationships between fractions, decimals, and percents. (c) Apply ratio, proportion, and percent. (d) Represent numerical relationships in one- and two-dimensional graphs. (e) Demonstrate operations, order relations, and number sense for whole numbers, fractions, decimals, and integers. (f) Apply basic number theory concepts. (g) Analyze, explain, and use procedures for addition, subtraction, multiplication, and division of whole numbers. (h) Select and use an appropriate method for computing from among mental arithmetic, paper and pencil, calculator, and computers. (i) Analyze, explain, and use estimation techniques. (j) Use estimation to check reasonableness of results.
MEASUREMENT	(a) Understand measurable attributes, the concept of a unit, and the process of measuring. (b) Apply measurement skills to everyday situations.	(a) Estimate, make and use measurements to describe, compare, or contrast objects in real world situations. (b) Select appropriate units and tools to measure to a level of accuracy required in a particular setting. (c) Use the customary and metric systems of measurement. (d) Demonstrate the concepts of perimeter, area, and volume through concrete experiences. (e) Apply procedures and formulas to determine area and volume.

AREA	PRIMARY	INTERMEDIATE
GEOMETRY	(a) Describe, model and classify shapes. (b) Investigate and predict results of combining, subdividing, and changing shapes. (c) Identify lines of symmetry, congruent and similar shapes, and positional relationships.	(a) Identify, describe, construct, and compare plane and solid geometric figures. (b) Understand geometric relationships and their consequences. (c) Demonstrate an intuitive understanding of transformational geometry. (d) Use geometry to describe the physical world.
STATISTICS AND PROBABILITY	(a) Collect, organize, and display data. (b) Use data to make and check predictions. (c) Demonstrate the basic concept of probability.	(a) Systematically collect, organize, and describe data. (b) Construct, read, and interpret tables, charts, and graphs such as stem-leaf, line, and box-whisker plots. (c) Draw inferences and construct and evaluate arguments based on data analysis. (d) Devise and carry out simulations involving probability. (e) Construct sample spaces and determine the theoretical and experimental probabilities of events. (f) Make predictions based on experimental results or mathematical probabilities.
ALGEBRA		(a) Use the concepts of variable, expression, and equation. (b) Represent concrete situations and number patterns with tables, graphs, verbal rules, and equations. (c) Analyze tables and graphs to identify properties and relationships. (d) Solve linear equations using concrete, informal, and formal methods. (e) Use models to demonstrate inequalities and non-linear equations. (f) Use calculators and computers to explore algebraic concepts.

MATHEMATICS MODEL LEARNER GOALS-SECONDARY

AREA	UPON GRADUATION
PROBLEM SOLVING	(a) Apply problem solving strategies. (b) Recognize, formulate, and solve problems within and outside of mathematics.
COMMUNICATION	(a) Formulate mathematical definitions and express generalizations discovered through investigations. (b) Express mathematically thoughts orally and in writing. (c) Understand written presentations of mathematics.
REASONING	<u>All students</u>: (a) Make and test conjectures. (b) Formulate counterexamples. (c) Follow logical arguments and judge the validity of arguments. (d) Construct simple valid arguments. <u>Students with extended interest</u>: (a) Construct formal proofs for mathematical assertions, including indirect proofs and proofs by mathematical induction.

AREA	UPON GRADUATION
NUMERATION, COMPUTATION, AND ESTIMATION	All students: (a) Compare and contrast the real number system and its various subsystems. Students with extended interests: (a) Understand and apply the operations with complex numbers.
MEASUREMENT	

AREA	UPON GRADUATION
GEOMETRY FROM A SYNTHETIC PERSPECTIVE	All students: (a) Represent problems with geometric models and apply properties of figures. (b) Classify figures in terms of congruence and similarity and apply these relationships. (c) Deduce properties of, and relationships between, figures from given assumptions. (d) Use the computer as a tool to investigate geometric concepts. Students with extended interests: (a) Understand an axiomatic system and investigate and compare various geometries (e.g., non-Euclidean and finite).
GEOMETRY FROM AN ALGEBRAIC PERSPECTIVE	All students: (a) Translate between synthetic and coordinate representations. (b) Deduce properties of figures using transformations and coordinates. Students with extended interests: (a) Analyze properties of Euclidean transformations, relate translations to vectors, and deduce properties of figures using vectors.
STATISTICS AND PROBABILITY	All students: (a) Use curvefitting to make predictions from data. (b) Apply measures of central tendency and understand the concepts of variability and correlation. (c) Design a statistical experiment to study a problem and communicate the outcomes. (d) Differentiate between biased and unbiased sampling and valid and invalid reasoning in statistical arguments. (e) Use the computer as a tool for statistical analysis. (f) Use experimental probability, theoretical probability, and simulation methods to represent and solve problems. (g) Apply properties of probability distributions. Students with extended interests: (a) Deduce generalizations about the effects of data transformations on measures of central tendency and variability. (b) Select an appropriate sampling method for a given statistical analysis. (c) Test hypotheses using appropriate statistics. (d) Apply random variables to generate and interpret probability distributions.
ALGEBRA	All students: (a) Represent problems with expressions, equations, and inequalities. (b) Solve equations and inequalities. (c) Use tables, graphs, and computers as tools to investigate algebraic concepts. Students with extended interests: (a) Use matrices to represent and solve problems. (b) Apply techniques based on the theory of equations and computer based numerical methods.

AREA	UPON GRADUATION
FUNCTIONS	All students: (a) Represent and analyze functions and relations using tables, rules, and graphs. (b) Analyze the effects of parameter changes on the graphs of functions. (c) Determine maximum and minimum points of a graph and interpret the results. (d) Investigate the concept of limit. Students with extended interests: (a) Perform operations on and apply the properties of functions. (b) Understand the conceptual foundations of limit, area under a curve, rate of change, and slope of a tangent line and their applications in other disciplines. (c) Analyze the graphs of polynomial, rational, radical, and transcendental functions.
TRIGONOMETRY	All students: (a) Apply trigonometry to problems involving right triangles. Students with extended interests: (a) Demonstrate the connection between trigonometric and circular functions. (b) Use circular functions to model periodic phenomena. (c) Apply general graphing techniques to trigonometric functions. (d) Solve trigonometric equations and verify trigonometric identities. (e) Demonstrate the connections among trigonometric functions, polar coordinates, and complex numbers.
DISCRETE MATHEMATICS	All students: (a) Use discrete structures such as finite graphs, sequences, and series. (b) Solve enumeration and finite probability problems. Students with extended interests: (a) Solve problems using linear programming and difference equations. (b) Develop and analyze algorithms. (c) Investigate problems in computer validation and application of algorithms.

SCIENCE

Science is a creative process used to investigate natural phenomena, resulting in the formation of theories verified by directed observations. These theories are challengeable and changeable. Data used to support or contradict them must be reproducible.

Although science as a body of knowledge is ever changing, the processes of science are constant. In scientific procedure, a problem is identified, pertinent data is gathered, hypothesis is formulated, experiments are performed, the results are interpreted, and conclusions are drawn.

Science education strengthens students' basic investigative skills and fosters their understandings of and interest in the world. They acquire and apply critical thinking and problem-solving skills and information critical to survival in a technological society.

RULE 10.55.1501 SCIENCE PROGRAM

(1) **A basic program in science gives students the opportunity to:**

- (a) **Use scientific processes and communicate how they are used to develop scientific knowledge;**
- (b) **Develop the use of science skills to enhance his/her ability to think logically, critically, and creatively;**
- (c) **Recognize that scientific knowledge is continually subject to review, verification, and revision;**
- (d) **Gather reliable information in all areas of the sciences, using chemicals, laboratory equipment and hands-on activities safely and appropriately;**
- (e) **Show competence in measurement and mathematics;**
- (f) **Gain and convey information through oral, written, and graphic communication;**
- (g) **Recognize the character of independent and dependent variables;**
- (h) **Understand the core concepts of current scientific knowledge and use them in problem solving and decision making;**
- (i) **Identify problems of individual or social importance and select and apply appropriate scientific techniques to investigate these problems;**
- (j) **Understand the interactions of science, technology, and society;**
- (k) **Explore the use of science-related skills effectively in careers, leisure activities, and lifelong learning.**

SCIENCE PROGRAM DEVELOPMENT

(1) The science curriculum shall be developed and evaluated according to the standards for all program areas.

(2) Elementary school science instruction shall include hands-on, investigative classroom activities and field experiences on a regular basis.

(3) Laboratory class size shall be limited for safety purposes. The number of students shall be determined through consultation with the teacher, considering the number, size and use of laboratory stations.

(4) Care shall be taken to ensure that laboratory activities are reasonably safe and under the constant supervision of an appropriately endorsed instructor.

(5) Chemicals shall be stored in a separate storeroom and according to reactive compatibilities. Flammable materials shall be stored with exhaust-only ventilation.

(6) All science classrooms shall be in compliance with the Montana Indoor Clean Air Act.

(7) All science classrooms shall have the proper safety equipment. For example, a chemistry laboratory should have a fire alarm, fire blanket, appropriate fire extinguisher(s), eye wash, goggles, and one-sided aprons. Gas supplies serving science laboratories shall have a master shut-off valve that is readily accessible to the instructor or instructor in charge. Electrical outlets must be ground-faulted.

SCIENCE MODEL LEARNER GOALS

AREA	PRIMARY (typically 3rd grade)	INTERMEDIATE (typically 8th grade)
GENERAL SCIENCE	(a) Show confidence in his/her ability to learn science. (b) Examine his/her environment using the five senses; recognize the limits of sensory perception. (c) Convey information through the use of oral, written, and graphic communication. (d) Group objects or events according to their observed characteristics. (e) Suggest explanations for events based on observation. (f) Predict possible results based upon past experiences. (g) Measure and order properties of objects or events using standardized units of measure. (h) Be aware of spatial relationships by describing an object's position in relation to other objects. (i) Perform experiments to test hypotheses under controlled conditions with limited variables. (j) Cite ways that science and technology have changed people's lives. (k) Recognize that scientists and technicians are people with interesting jobs. (l) Properly care for living organisms and show respect for life and property. (m) Be aware of the need for conservation, preservation, and the wise use of natural resources.	(a) Develop a positive attitude toward science. (b) Use basic scientific skills to solve problems and answer questions about the environment. (c) Work independently and in groups in the classroom, laboratory, and in the field. (d) Identify and state a problem and use scientific processes to resolve it. (e) Use tools and equipment for observations and measurement in a safe and appropriate manner. (f) Gather and convey information through oral, written, and graphic communication. (g) Be aware of the basic concepts in the life, physical, earth, and environmental sciences. (h) Be aware of careers in the sciences and the skills needed for jobs in science-related fields. (i) Cite and investigate scientific and technological issues which affect our lives. (j) Properly care for living organisms and show respect for life and property. (k) Be aware of the need for conservation, preservation, and the wise use of natural resources.

AREA	PRIMARY (typically 3rd grade)	INTERMEDIATE (typically 8th grade)
LIFE SCIENCE		(a) Appreciate all living things and their relationships to one another and the environment. (b) Observe, describe, compose, conclude, infer, and record from classroom, laboratory, and field experiences. (c) Be aware of some of the contributions of scientists working in life science and of careers in life science. (d) Demonstrate knowledge of kingdoms of living things and their basic characteristics, functions, diversity, and economic importance. (e) Understand levels of biological organizations, growth and development. (f) Demonstrate knowledge of reproductive processes, genetics, and heredity of living things. (g) Demonstrate knowledge of local flora and fauna. (h) Demonstrate knowledge and understanding of human growth and development, including the nine body systems and their functions, heredity and population genetics, behavior, and social and emotional growth. (i) Be familiar with laboratory tools and techniques used in life science. (j) Understand the interdependence of biological systems as they affect social issues.

AREA	PRIMARY (typically 3rd grade)	INTERMEDIATE (typically 8th grade)
PHYSICAL SCIENCE		(a) Understand and use basic measurements in science, including charting, graphing, and interpreting measurable data. (b) Design and carry out experiments that demonstrate physical and chemical changes. (c) Identify physical and chemical characteristics of various types of matter. (d) Understand and explain models of atoms, molecules, compounds, and mixtures. (e) Understand physical, chemical, and nuclear changes using the laws of conservation of matter and energy. (f) Understand the basic characteristics of light, sound, and mechanical waves. (g) Understand the scientific principles and technological applications of the laws of motion. (h) Understand the interrelationships of solar and galactic systems and of the earth-moon-sun system. (i) Demonstrate a workable knowledge of electricity and electronics and understand their importance to our human environment. (j) Apply basic physical and chemical principles to describe changes in common substances and devices. (k) Understand the effects of science and technology on humans and the environment. (l) Be aware of careers in the physical sciences.

SCIENCE MODEL LEARNER GOALS-SECONDARY

AREA	UPON GRADUATION
GENERAL SCIENCE	(a) Make quantitative and qualitative observations to accumulate and evaluate data. (b) Classify objects and events based on observable similarities and differences of selected properties. (c) Suggest explanations, reasons, or causes for events which have occurred, test them with additional observations or data, and establish the reality of the inferences. (d) Make predictions based on prior observations, inferences, or experiments. (e) Describe or compare objectives and events using quantitative measurement. (f) Communicate data obtained from observations using graphs, charts, pictures, and other types of media. (g) Use processes such as classification, prediction, inference, and communication to interpret data. (h) Identify problems or questions and state hypotheses which can be tested. (i) Perform experiments to test hypotheses under controlled conditions with limited variables. (j) Construct and interpret models, using them to describe and explain relationships of ideas; understand their limitations. (k) Recognize the processes of change, such as in weather systems, life cycles, evolution, chemical and physical changes, and the transformation of energy. (l) Be aware of the processes of equilibrium, such as physical cycles, ecosystems, homeostasis, chemical equilibria, rates of reaction, and the law of motion. (m) Cite the interrelationships among living and nonliving things and their environment. (n) Explain the organization of the physical and biological environment and the systems designed to describe them. (o) Demonstrate a knowledge of the effects of time and space on the environment's biological and physical properties. (p) Be aware of the diversity, variation, and consistency among living things and within the earth's physical and biological spheres. (q) Properly care for living organisms and show respect for life and property. (r) Be aware of the need for conservation, preservation, and the wise use of natural resources.

AREA	UPON GRADUATION
EARTH SCIENCE (If offered)	(a) Understand the basic concepts of each science, including astronomy, geology, oceanography, and paleontology. (b) Understand the basic motions in the solar system and how they affect the earth's environment. (c) Understand the earth's history through the rock and fossil record and scientific dating methods. (d) Understand the earth's tectonic and structural forces. (e) Understand the earth's internal and surface processes, including weathering, erosion, volcanism, and deformation. (f) Understand the use of aerial photos, topographic and geologic maps, and survey systems. (g) Understand the earth's composition, including rocks and minerals. (h) Understand the physical and compositional changes of the earth's weather and climate. (i) Understand the oceans and their characteristics and development. (j) Understand surface water and ground water systems. (k) Understand that the flow of energy is basic to all earth science disciplines. (l) Use the tools and methods employed by earth scientists, through field and laboratory experiences. (m) Demonstrate how earth science relates to careers, personal uses, and social needs.
BIOLOGY (If offered)	(a) Use scientific methods to investigate biological phenomena. (b) Relate field experiences to an understanding of ecological principles. (c) Use microscopes, balances, and other biological instruments. (d) Apply biological principles to situations in daily life. (e) Understand the characteristic processes which define life. (f) Understand the relationship between organic compounds and the physiological needs of living organisms. (g) Understand the relation and interdependence of cell respiration and photosynthesis to food chains. (h) Understand the concept of hemostasis in cells, individuals, populations, communities, and ecosystems. (i) Understand cellular transport, cell structure, and cell functions. (j) Understand sexual and asexual reproduction and their relationship to ecological balances. (k) Understand heredity and the application of modern technology in medical genetics. (l) Understand the structure of DNA, its relationship to protein synthesis, and its role in living systems. (m) Understand the theory of evolution and its relationship to adaptation and speciation. (n) Categorize organisms representing the various kingdoms according to phyla. (o) Understand the relationship between structure and function as they relate to living things. (p) Trace the development of the major life functions through the various kingdoms. (q) Understand the importance of microbes and their relationship to other organisms. (r) Understand the importance of current issues in biology. (s) Be aware of careers in biology. (t) Use appropriate safety techniques when handling chemicals, equipment, and organisms.

AREA	UPON GRADUATION
CHEMISTRY (If offered)	(a) Be competent in laboratory skills, including setting up equipment and using materials and chemicals safely. (b) Understand atomic structure and periodicity. (c) Understand the phases and properties of matter, including solids, liquids, and gases. (d) Understand the mole concept and stoichiometry and demonstrate their practical use in the laboratory. (e) Understand bonding and energy relationships. (f) Use formulas and equations competently. (g) Understand acids, bases, solubility, and chemical equilibrium. (h) Understand the basic principles of thermodynamics and kinetics. (i) Understand oxidation and reduction. (j) Understand basic organic, nuclear, and radiochemistry. (k) Understand the role of chemistry in society and technology. (l) Be able to apply chemistry principles to situations in daily life. (m) Be aware of careers in chemistry and related fields.
PHYSICS (If offered)	(a) Solve problems in physics, using mathematics and critical thinking skills (b) Collect, analyze, and interpret physical data. (c) Use the appropriate instruments to measure physical quantities in a laboratory setting. (d) Understand the historic, social, and scientific events that contributed to the development of physics. (e) Understand that physics is a dynamic field in which concepts change as new data and new relationships are discovered. (f) Understand the character and central role of conservation principles such as momentum, energy, and electric charge. (g) Cite similarities and differences of wave and particle phenomena in nature. (h) Demonstrate a basic knowledge of modern physics concepts such as relativistic effects, nuclear radioactivity, and wave-particle duality. (i) Understand the basic principles of electricity and magnetism and their application to common occurrences. (j) Cite accepted explanations for common terrestrial and celestial observations, using the laws of motion. (k) Understand that the flow of energy is basic to all physical phenomena. (l) Understand the basic concepts of geometric and physical optics. (m) Understand the basic character of heat, temperature, and internal (thermal) energy. (n) Evaluate the impact of discoveries in physics. (o) Be aware of careers in physics and related fields. (p) Understand the importance of physics in current social issues and its application to the other sciences. (q) Be able to apply physics principles to situations in daily life.

SOCIAL STUDIES

Social studies draws on the social sciences (economics, history, political science, geography, sociology, anthropology, psychology) and the humanities (theory, literature, the arts, and philosophy). The social studies cover United States studies, global studies and the social science disciplines.

RULE 10.55.1601 SOCIAL STUDIES PROGRAM

(1) **A basic program in social studies gives the student an opportunity to:**

- (a) **Participate in meaningful first-hand and hands-on learning activities that draw on experiences in the home, school, neighborhood, and the world;**
- (b) **Participate in committee work, role playing, creative drama, classroom discussion, and interviews;**
- (c) **Develop research skills, which may include the gathering and recording of information from a variety of sources such as films, pictures, oral and written literature, music, and field trips;**
- (d) **Develop citizenship skills through sharing, acceptance of responsibility, cooperative learning, compromising, conflict resolution, and decision making;**
- (e) **Enhance his/her communication skills through drawing, acting, reading, writing, listening, and speaking;**
- (f) **Use topics that engage his/her interests and extend personal context for learning to a global realm. Learning activities are varied and involve the student intellectually, socially, and physically;**
- (g) **Nurture an understanding of the contemporary and historical traditions and values of Native American cultures and other minority cultures of significance to Montana and to society.**

SOCIAL STUDIES PROGRAM DEVELOPMENT

(1) The social studies curriculum shall be developed and evaluated according to the standards for all program areas.

(2) Students shall be encouraged to take advantage of spontaneous curiosity as it occurs in order to foster learning from current issues and events.

(3) Teachers shall recognize the effectiveness of thematic units that integrate social studies into cross-curriculum learning.

(4) Instruction in the social studies shall take advantage of out-of-classroom programs and resource people, natural and field experiences, and public service activities that enhance student learning.

SOCIAL STUDIES MODEL LEARNER GOALS

AREA	PRIMARY By end of the primary level (typically the 3rd grade)	INTERMEDIATE (typically the 8th grade)
HISTORY AND WORLD CULTURE	(a) Begin to identify cultural characteristics such as social traditions, art forms, and language. (b) Demonstrate some basic knowledge about important chronological events in local, state, national, and world history. (c) Begin to provide examples of economic, cultural, political, and technological developments which have contributed to human progress. (d) Begin to identify individuals who played historical roles.	(a) Explain how technology, economic activities, and learned patterns of behavior, such as prejudice, discrimination, conformity, and acceptance, influence culture. (b) Demonstrate knowledge of the dynamics of preindustrial, transitional, industrial, and postindustrial societies. (c) Explain how the characteristics of culture are manifested in history, economics, government, arts, sciences, and religion. (d) Detail how invention, diffusion, and adaptation influence cultural change. (e) Explain the biological, affectual, economic, and social functions of families. (f) Demonstrate a knowledge of Montana history and of the state's diverse cultures.
LAW AND LEGAL RIGHTS	(a) List some of the basic characteristics of the U.S. Constitution. (b) Explain some of the freedoms contained in the Bill of Rights. (c) Understand the basic functions of the U.S. government. (d) Begin to identify different levels of government, such as city, county, state, tribal, and federal government. (e) Explain some of the basic sources of law, such as congress and state legislatures. (f) List basic public services provided by government. (g) Experience involvement in his/her community through active participation in a community group.	(a) List the functions of the three branches of government. (b) Explain the need for and function of separation of powers and checks and balances. (c) List the individual rights protected by the first ten amendments to the U.S. Constitution. (d) Give reasons why the Bill of Rights was added to the Constitution. (e) Explain how constitutional change is made. (f) Discuss the characteristics of federalism. (g) Identify how laws emanate from various authorities. (h) Explain the difference between civil and criminal law. (i) Discuss the importance of judicial review. (j) Explain the need for and provision of due process of law. (k) Discuss the fundamental principles of American democracy. (l) Continue his/her involvement in community groups, organizations, or services.

AREA	PRIMARY By end of the primary level (typically the 3rd grade)	INTERMEDIATE (typically the 8th grade)
ECONOMICS	(a) Provide some basic examples of the relationship between economics and human needs. (b) Cite some characteristics of supply and demand. (c) List the roles of people in the division of labor. (d) List basic economic systems, such as private enterprise and collective economies.	(a) Discuss the importance of economic goals, such as growth, employment, and efficiency. (b) Explain the causes and effects of economic problems such as scarcity, credit, and resource allocation. (c) Detail the relationship between specialization and careers and occupations. (d) List the basic resources of production. (e) Explain market interrelationships, such as cost/benefit, trade-offs, and distribution of goods and services. (f) Detail the characteristics of market and command economic systems and traditional economies.
GEOGRAPHY	(a) Begin to list the basic characteristics of natural, physical, and cultural environments. (b) Learn to explain the earth/sun relationship as an energy system. (c) List the seasons. (d) Explain the cause of night and day. (e) Determine geographical location, such as position, site, and distance. (f) Locate different cultural and physical regions. (g) List the basic characteristics of climate. (h) Identify the basic land forms and water bodies. (i) Give examples of the need for and benefits of natural resource conservation. (j) Provide examples of the influence of geography on population size and distribution. (k) Provide examples of land use. (l) Define habitat. (m) List the characteristics and use of maps.	(a) Discuss the interrelationships of environments, cultures, and weather and how people adapt to them. (b) Explain the relationship of the earth and sun. (c) Locate geographic positions, using latitude, longitude, strategic sites, and maritime and time zones. (d) Detail the effects of ocean currents, wind, mountains, and other physical and climatic elements on weather. (e) Explain the impact of geography on human settlement patterns. (f) Detail and discuss the characteristics of Montana geography and locate critical sites.

AREA	PRIMARY By end of the primary level (typically the 3rd grade)	INTERMEDIATE (typically the 8th grade)
SOCIAL INSTITUTIONS	(a) Begin to identify the traits of socialization, such as psychological, individual, and group behavior. (b) List individual responsibilities, such as honesty, tolerance, and compassion. (c) List some of the basic social institutions, such as family, educational, and religious institutions. (d) Identify some of the basic differences between individual values and group norms. (e) Begin to discuss traits of interactive social processes, such as cooperation, competition, and conflict and how social roles of leadership, following, aggression, and submission affect these processes. (f) Identify some social classes and social groups, including ethnic and minority groups. (g) Give examples of social control, such as dependency, reward, and punishment.	(a) Discuss and give examples of the reasons for socialization. (b) Explain how basic differences between individual values and group norms impact social problems. (c) Explain the relationship of economics, politics, science, and religion to social institutions. (d) List examples of social interaction, such as peer pressure, group dynamics, assimilation, and accommodation. (e) Discuss how societies implement social control.

AREA	PRIMARY By end of the primary level (typically the 3rd grade)	INTERMEDIATE (typically the 8th grade)
CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING	(a) Classify information by sequence and in groups. (b) Interpret information by stating relationships, noting cause and effect, drawing inferences, and predicting outcomes. (c) Analyze information by organizing key ideas, separating major components, examining relationships, detecting bias, and comparing and contrasting ideas. (d) Summarize information by restating major ideas and forming opinions. (e) Synthesize information by communicating orally and in writing. (f) Evaluate information by using criteria such as source, objectivity, and technical correctness. (g) Apply decision making skills by securing needed factual information, recognizing values, identifying alternative courses and consequences, and taking action.	(a) Summarize information by combining critical concepts into a statement of conclusions and by stating a hypothesis. (b) Synthesize information by proposing a new plan or system and reinterpreting events in terms of what might have happened. (c) Use social and political participation skills to communicate effectively, recognize mutual relationships, set goals, plan, organize, and make decisions; keep informed, cooperate, negotiate, compromise, and accept responsibility.
STUDY AND RESEARCH SKILLS	Shall have had the opportunity to: (a) Identify key words and ideas and summarize them. (b) Apply research skills such as questioning and the use of library and other resources to find answers.	Shall have had the opportunity to: (a) Skim, outline, review, and take notes. (b) Use the library and other resources for research, refine topic selection and organize and present information in written formats to verify data. (c) Use technology appropriately, including databases.

SOCIAL STUDIES MODEL LEARNER GOALS-SECONDARY

AREA	UPON GRADUATION
HISTORY AND WORLD CULTURE	(a) Discuss the influence of social movements on the state, the nation, and the world. (b) Analyze contemporary world issues in order to make decisions governing one's own personal life. (c) Apply knowledge of history in determining plans of action for current and future concerns. (d) Use his/her understanding of local, national, and world culture in addressing modern social problems.
LAW AND LEGAL RIGHTS	(a) Participate in the American political process by running for office, by working on campaigns, or by voting. (b) Make informed political decisions based on knowledge and understanding of political philosophy, constitutional doctrine, and organization of local, state, and national government. (c) Apply an understanding of one's legal and civil rights in pursuing private and vocational endeavors.

AREA	UPON GRADUATION
ECONOMICS	(a) Understand how state and local taxes are both a product and a reflection of the economy. (b) Use his/her mastery of economic concepts in the conduct of daily life. (c) Make career decisions based on an understanding of the economic significance of particular vocational and professional positions.
GEOGRAPHY	(a) Demonstrate a knowledge of state, national, and world geography. (b) Make civic, vocational, and private decisions guided by an understanding of various global environments and cultural settings. (c) Analyze the importance of geographical implications when political and economic decisions are made.

AREA	UPON GRADUATION
SOCIAL INSTITUTIONS	(a) Understand and appreciate diverse worldwide social institutions. (b) Determine how current environmental, economic, and political changes affect various social changes throughout the world.

AREA	UPON GRADUATION
CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING	(a) Develop an ability to classify, interpret, and analyze information in the pursuit of his/her career, civic responsibilities, and economic and private endeavors. (b) Make decisions based on summarizing data and evaluating alternatives.
STUDY AND RESEARCH SKILLS	(a) Employ research, verbal, written, and technical skills in academic, career, and private endeavors.

VOCATIONAL/PRACTICAL ARTS

The Vocational/Practical Arts is a program of articulated, well-planned, coordinated, and sequential experiences that prepare students for successful participation in community, home, life, postsecondary education, and work.

The Vocational/Practical Arts include Agriculture, Business and Office Education, Home Economics and Wage Earning Home Economics, Industrial Arts and Technology, Marketing, Trades and Industry, and Traffic Education.

Vocational/Practical Arts serve students who want, need, and/or benefit from foundations for career planning; communication and computation skills and technical literacy; personal skills and attitudes; broad and specific occupational skills and knowledge; and employment skills, including self-employment.

RULE 10.55.1701 VOCATIONAL/PRACTICAL ARTS PROGRAM

(1) In general a basic program in vocational/practical arts shall:

- **(a) Be an integral part of the education program and a complement to the academic program;**
- **(b) Motivate students, provide exploratory experiences, and increase career planning and employment skills;**
- **(c) Be a cooperative effort of business, industry, and schools, contributing to Montana's economic development.**

(2) The program shall give students the opportunity to:

- **(a) Develop their vocational aptitudes to the highest level possible in order to promote success in their postsecondary living experience;**
- **(b) Increase their abilities to function successfully in home, social, and consumer environment;**
- **(c) Develop student leadership skills through curricular and vocational organization activities that encourage active interest in the community and in the value of good citizenship;**
- **(d) Learn to use leisure time in a worthwhile manner;**
- **(e) Become motivated to master academic skills and demonstrate the practical application of those skills in a working and living environment;**
- **(f) Apply critical thinking, decision making, and problem-solving skills to vocational education and occupations;**
- **(g) Develop positive attitudes toward work, respect for quality workmanship, and effective interpersonal skills;**
- **(h) Develop an understanding of safe, efficient, and courteous highway use as a passenger, pedestrian, cyclist, or motor vehicle operator.**

VOCATIONAL/PRACTICAL ARTS PROGRAM DEVELOPMENT

(1) Vocational/practical arts curricula shall be developed and evaluated according to the standards for all program areas.

(2) The school district shall make an effort to give faculty time for preparing grant applications and funding and budgeting resources.

(3) The school district shall ensure that all programs, resources, and facilities meet applicable safety and health standards and that class size and time provide for reasonable safety and optimal use of equipment and facilities.

VOCATIONAL/PRACTICAL ARTS MODEL LEARNER GOALS

AREA	PRIMARY (typically 3rd grade)	INTERMEDIATE (Typically 8th grade)
GENERAL VOCATIONAL/PRACTICAL ARTS	(a) Be aware of various careers open to all students without regard to gender stereotyping. (b) Practically apply the oral and written communication skills related to vocational education. (c) Apply introductory skills in technical literacy. (d) Be aware of essential life and work skills, including acceptable social behavior, self-esteem, positive personal relationships, and respect for authority. (e) Be introduced to the relationship between academic knowledge and practical application. (f) Demonstrate introductory concepts, skills, attitudes, and values in traffic education.	(a) Be aware of a wide variety of career and postsecondary experiences. (b) Have a working knowledge of the skills, responsibilities, and applications of vocations. (c) Build technical literacy skills. (d) Develop a work ethic, which includes an understanding of the importance of health, time, money, and scarce resource management to life and work. (e) Understand and appreciate the values of cooperation and a positive attitude in the world of work and an appreciation for quality workmanship. (f) Demonstrate the relationship between academic knowledge and practical application. (g) Consistently demonstrate basic concepts, skills, attitudes, and values in traffic education.

VOCATIONAL/PRACTICAL ARTS MODEL LEARNER GOALS-SECONDARY

AREA	UPON GRADUATION
GENERAL VOCATIONAL/PRACTICAL ARTS	(a) Assess the labor market for information essential to career decisions based on personal interests, ability, and aptitude. (b) Show and use oral and written communication through work-related activities or simulations and apply the process of evaluation. (c) Apply decision making and critical thinking skills through work. (d) Integrate academic and technological concepts; apply technical literacy skills; access and interpret technological information and project it to the future; and integrate mathematical, scientific, and technical knowledge and concepts in areas of occupational interests. (e) Apply academic and consumer skills to manage personal/work environment. (f) Demonstrate and assess life skills and use leadership and citizenship skills. (g) Demonstrate employment seeking skills (job search, interview, resume, etc.) (h) Demonstrate procedural skills necessary for entry employment in his/her occupation and an appreciation for quality work. (i) Consistently apply appropriate traffic education concepts, skills, attitudes, and values for a lifetime of safe roadway use.

AREA	UPON GRADUATION
PERSONAL/ADULT LIVING SKILLS (If Offered)	(a) Identify the responsibilities and privileges that characterize adulthood; recognize various roles of adults; and recognize skills and processes essential to functioning as an adult. (b) Given a problem situation, describe how the decision would be made if each of the processes and rules of decision making were followed. (c) Given a description of how decisions were made in allocating resources, identify principles of resource use applied in the decision. (d) List personal motivational sources and explain how they relate to personal management. (e) Describe the benefits of a positive self-concept. (f) Identify lifestyle choices as they exist today. (g) Identify and describe stages of individual development and analyze family function in relation to that stage. (h) Identify legal and moral commitments in beginning and ending a relationship. (i) Explain the social and psychological forces involved in mate selection. (j) Analyze male and female roles in a marriage. (k) Identify issues an individual and his/her future mate should discuss prior to marriage. (l) Describe family roles, functions, and interactions. (m) Recognize the normalcy and function of conflict in marriage and assess the resources available to help couples resolve conflict. (n) Describe the effect of employment on family life. (o) Interpret his/her attitude toward divorce as it will affect attitudes toward marriage. (p) Identify several factors involved in the decision to parent. (q) Describe child abuse and neglect; analyze causes and effects of child abuse and neglect; and identify services and legal aid available to the abused and abuser. (r) Interpret the role patterns of foster, adoptive, and step-parents. (s) Describe reasons for one-parent families. (t) Describe the growth and development of infants and children. (u) Describe the important influences on prenatal development. (v) Identify problem behavior in children in an effort to determine the goal of misbehavior and suggest positive techniques for guiding children's behavior. (w) Identify personal and family crises and describe resources which can help in coping with crisis. (x) Analyze the wise use of credit. (y) Design a budget for managing income and expenses. (z) Identify the financial services available to manage personal income. (aa) Appraise his/her need for life, health, auto, and property insurance. (bb) Evaluate housing choice based on personal needs.

AREA	UPON GRADUATION
AGRICULTURAL EDUCATION (If offered) Agriculture education develops entry-level knowledge, skills, attitudes, and experiences in agricultural business and production, including supplies and services and agricultural products, processing, resources, and mechanics, and horticulture or forestry. Agriculture education prepares the student for further education for self-employment or for other entry-level jobs at semi-skilled, skilled, or technical levels.	(a) Be able to select self-employment or an appropriate career in the area of agricultural business and production, including mechanics, supplies and services, products and processes, resources, or in horticulture or forestry. (b) Display leadership, citizenship, and cooperation developed through membership and participation in civic and vocational organizations. (c) Demonstrate knowledge, skills, attitudes, and practical experience as determined through task analysis for self-employment or for entry-level employment in: (i) Basic soils management; plant growth and reproduction; field crop production, marketing, and management; range management; horticulture; and forestry. (ii) Selection, breeding, and rearing of commercially important species of livestock; animal nutrition, health, and care; and the profitable management and marketing of livestock. (iii) Agricultural mechanization, including safety and care of hand and power tools, welding equipment, basic electricity, basic and applied power and farm machinery. (iv) Agricultural management, marketing, and economic principles; and business financial planning, including leasing, credit, depreciation, and machinery economics. (v) Propagation, management, and marketing of economically important horticulture crops. (vi) Forestry production, transportation, processing, marketing, and distribution.
BUSINESS AND OFFICE EDUCATION (If offered) Business and Office Education prepares students for directing, planning, organizing, and controlling all business and office systems and procedures. The program prepares students to use and apply the latest technologies in fulfilling their duties and responsibilities in a variety of work settings.	(a) Demonstrate the skills needed to apply for and obtain employment in one of the appropriate occupational areas (accounting, bookkeeping, banking, data processing, office supervision and management, secretarial, typing, general office, word information processing, electronic communications, general business, and related occupations). (b) Demonstrate knowledge of society's business economy and consumer systems. (c) Use equipment and technology that is currently used by industry. (d) Demonstrate the knowledge, skills, and attitudes necessary and appropriate for the business world. (e) Adapt and adjust to the changing needs and requirements of his/her occupation and of the business world in general, using tools such as employment projections and predictions. (f) Display leadership, citizenship, and cooperation developed through membership and participation in civic and vocational organizations. (g) Develop an understanding of the importance of lifelong learning and continued acquisition of appropriate skills.
HOME ECONOMICS & HOME ECONOMICS WAGE EARNING (If offered) Home economics education provides skills for home and family living and prepares students for home economics wage earning occupations. Consumer and homemaking programs help students establish and maintain a successful home and family life. Students learn management, priority setting, and interpersonal relationships skills in child development, family relations, clothing and textiles, foods and nutrition, housing, and consumer education. Wage earning home economics provides education for gainful employment in an occupation related to home economics. Wage earning programs are offered through secondary coursework and on-the-job experience.	(a) Be able to use skills which improve the quality of individual and family life. (b) Apply effective strategies for his/her future roles as employee/employer and home manager. (c) Use technology to meet personal and family needs. (d) Use applied learning to develop transferable job skills. (e) Develop an awareness of careers related to home economics. (f) Understand the world of work through entrepreneurship. (g) Understand the role of home economics and the family in economic development and worker productivity. (h) Develop consumer competence. (i) Develop leadership through civic and vocational organizations.

AREA	UPON GRADUATION
PREVOCATIONAL INDUSTRIAL/TECHNOLOGY EDUCATION (If offered) Industrial arts and technology education includes trade and industrial education and prevocational industrial arts, now in transition to a new curricular emphasis, Technology Education. Instruction covers occupations in communication, construction, manufacturing, and power/transportation.	(a) Be able to make informed and meaningful career and education choices relating to careers in construction, manufacturing, communication, and power/transportation. (b) Understand the importance of technology as it affects work and daily life, including the use of tools, how science and technology are related, and the ethical, sociological, and environmental issues technology has raised. (c) Understand that technology influences the future and requires personal and occupational adjustment. (d) Work with tools, materials, processes, and technical concepts safely and efficiently. (e) Make wise consumer decisions.
VOCATIONAL INDUSTRIAL EDUCATION (If offered)	(a) Perform entry-level tasks and possess the skills and knowledge of current technology necessary to succeed in a trade or industrial occupation equivalent to a second-year apprentice level. (b) Use tools and equipment safely and promote a work environment that reduces hazards. (c) Demonstrate knowledge of the related science and math concepts and communication skills.
MARKETING EDUCATION (If offered) Marketing education gives students the training and direct experiences needed for meaningful work and lifelong learning in wholesale and retail marketing. It prepares students to improve marketing practices; contribute to their community's economic development; and understand the value and responsibilities of entrepreneurism.	(a) Identify careers in marketing and in the interests, aptitudes, personal qualities, and other information necessary to make informed career choices. (b) Demonstrate the skills needed to successfully obtain and maintain employment in marketing occupations. (c) Identify the basic features of the American economic system and their impact on business practices. (d) Understand the purpose and use of marketing research. (e) Identify the main types of business ownership and the elements needed for a successful business venture. (f) Apply fundamental mathematics skills to problems encountered in marketing occupations. (g) Understand how to purchase goods for resale and the terminology used by product buyers. (h) Understand merchandise handling and inventory procedures used in businesses. (i) Apply the elements of design and principles of arrangement to the sale promotion areas of advertising and display. (j) Demonstrate how to satisfy customer needs through the use of selling techniques. (k) Complete and record sales transactions accurately. (l) Apply management theories to business situations.
TRAFFIC EDUCATION (If offered) Traffic education shall be an integrated K-12 curriculum that develops the concepts, skills, attitudes and values needed for a lifetime of safe, drug-free, courteous, and efficient use of roadways, as a passenger, pedestrian, bicyclist, or motor vehicle operator.	(a) Demonstrate an awareness that one's physical, emotional, and mental health are essential to the proper use of streets and highways. (b) Use the fundamental processes learned in earlier years. (c) Understand how to use road maps, how to read and interpret instructions, and how to compute speed and stopping distances; understand the laws of motion. (d) Understand that a person who can operate a vehicle safely and efficiently is a worthy family member, since American families depend on the automobile for a variety of occupational and recreational uses. (e) Be prepared to use a motor vehicle for occupational and recreational purposes. (f) Develop good citizenship by complying with laws; by exercising civic responsibility for improving laws through legislation; and by practicing the habits of fair play, courtesy, and maintenance of property. (g) Understand a driver's responsibility for the safety of others and exercise a respect for road ethics and the law.

A FINAL WORD:

The Office of Public Instruction continues to develop more comprehensive curriculum guides in the various program areas and the specialists there are also working on model assessments. The reader is encouraged to contact them for technical assistance. The reader is also encourage to contact the Rural Education Center at Western for additional models and specific technical assistance for small and rural schools.

This new curriculum guide would not have been possible without all the work of the original action groups of PROJECT EXCELLENCE and the editor wishes to thank those individuals for their hard work and vision. Thanks should also go to the members of the Board of Public Education during those years, 1987-89, who had the courage to allow such a public process to occur. Finally, appreciation must go to the 1987 Legislature of Montana who through House Joint Resolution 16 and its attendant appropriation, made possible PROJECT EXCELLENCE. With the publication of this document and the continued work of dedicated educators throughout Montana, we truly are "Designing Education for the Next Century."

Claudette Morton Ed.D.
Editor

IMPORTANT POINTS TO REMEMBER:

This new Curriculum Guide for Rural Schools is offered as just that: a guide for classroom educators to use as a beginning to develop their own materials appropriate to their own situation and students. The new accreditation standards require each school district to develop a curriculum in each program area and further to develop appropriate assessment for each program area. The rule discussing that requirement is listed below:

RULE 10.55.603 CURRICULUM DEVELOPMENT AND ASSESSMENT

(1) Local school districts are responsible for incorporating all required learner goals into their curriculum, defining and organizing the program area learner goals into specific curricula and for extending them to help students meet the challenges of the future, introducing the learner goals when appropriate, implementing them sequentially and developmentally, and building upon previous goals. Student assessment shall be used to examine the program and ensure its effectiveness.

(2) In all program areas and at all levels, the school district shall:
   (a) Establish curriculum and assessment development processes as a cooperative effort of personnel certified in the program area and trustees, administrators, other teachers, students, specialists, parents, community and, when appropriate, state resource people.
   (b) Develop, in accordance with the schedule in subsection (3), written sequential curricula for each subject area. The curricula shall address learner goals as defined in ARM 10.55.602 and district educational goals.
   (c) Construct curriculum to include such parts of education: as content, skills and thinking.
   (d) Review curricula at intervals not exceeding five years and modify as needed to meet educational goals.
   (e) Establish a curriculum review cycle and timelines for curriculum development and evaluations.
   (f) Select materials and resources to include supplies, books, materials and equipment necessary for development and implementation of the curriculum and assessment that are consistent with the goals of the education program. These materials shall be reviewed at least every five years.

(3) By September 15, 1991, the school shall begin the curriculum development process in at least one program. School districts will continue to follow their approved plan to align programs until the school year 1999-2000, when all programs must be in alignment with the above curriculum development process. The schools shall submit a plan by the same date to the office of public instruction designating the subject areas to be considered each year and the anticipated completion. Any variation of the plan must be approved by the board of public education.

(4) In all program areas and at all levels, the school district shall:
   (a) Assess, in accordance with the schedule in subsection (5), student progress toward achieving learning goals including:
      (i) the content and data;
      (ii) the accomplishment of appropriate skills;
      (iii) the development of critical thinking and reasoning; and
      (iv) attitude.
   (b) Use assessment results to improve the educational program.
   (c) Use effective and appropriate tools for assessing student progress. This may include but is not limited to:
      (i) Standardized tests;
      (ii) Criterion-referenced tests;
      (iii) Teacher-made tests;
      (iv) Ongoing classroom evaluation;
      (v) Actual communication assessments such as writing, speaking, and listening assessments;
      (vi) Samples of student work and/or narrative reports passed from grade to grade;
      (vii) Samples of students' creative and/or performance work;
      (viii) Surveys of carryover skills to other program areas and outside of school.

(5) Not later than the school year immediately following the completion of a written sequential curricula in a subject area, the school shall begin the development of an assessment process for that subject area. Once begun, the assessment process for that subject area will be in place within two years until the school year 2000-2001, when all programs must be in alignment with the assessment process.

(6) Beginning 7/1/92 schools shall conduct follow-up studies of graduates and students no longer in attendance. The study results shall be considered in curriculum development and shared with staff and school consultants.

Also, the accreditation standards speak clearly to each school district's responsibility in regard to the development of each education program, so the editor has chosen to include that language as well.

SCHOOL PROGRAM -- PROGRAM AREA STANDARDS

Much of the accreditation process is based on a school's ability to meet the fundamental learner goals set forth in the Program Area Standards that follow. The standards are minimums and not the only goals a school should set for its students.

The Program Area Standards give guidance in identifying subject matter and degrees of sophistication to be emphasized at each level of the education program.

For organizational purposes, the Program Area Standards are outlined by learner areas. They do not intend to specify course titles unless noted otherwise.

RULE 10.55.1001 DISTRICT'S RESPONSIBILITIES FOR PROGRAM AREA STANDARDS

(1) It is the school district's task to:
   (a) incorporate all required learner goals, as defined in ARM 10.55.602, into its curriculum;
   (b) introduce the learner goals when appropriate, implement them sequentially and developmentally, and build upon previous goals. (At least one component a year, beginning 7/1/91; Eff. 7/1/99.)

RULE 10.55.1002 CROSS-CONTENT AND THINKING SKILLS

All disciplines in the education program are interdependent and empowered by the application of creative and critical thinking skills. Subjects cannot be taught in isolation; they do, in fact, overlap and find their greatest value when they are part of an integrated program of knowledge, skills, and opportunities that challenge students. To this end:

(1) Recognizing that the interdependence of skills and content is essential to an effective education program, the school district shall consider ways to develop curricula that integrate program area skills across curricular content and that give students opportunities to use these skills in meaningful contexts that relate to the world around them.

(2) The school district shall develop curricula at all grade levels and in all program areas that encourage students to understand and apply thinking and problem-solving skills. The curricula shall allow students to:
   (a) identify and define a problem;
   (b) Learn methods of gathering, analyzing, and presenting information;
   (c) Practice logical, creative, and innovative thinking and problem-solving skills in a variety of situations;
   (d) Apply the skills of decision making and reasoning. (At least one component a year, beginning 7/1/91; Eff. 7/1/99.)

The specific program areas address thinking skills in greater detail. Schools are encouraged to use these sections to guide total curricular development.