ARIZONA ACADEMIC STANDARDS

GRADE 3

State of Arizona
Arizona Department of Education

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ARIZONA ACADEMIC STANDARDS
GRADE 3

CONTENTS

Additional information about the Arizona Academic Standards including glossaries of terms may be found at http://www.ade.az.gov/standards/contentstandards.asp.

The Arts Standard 2006

Grade 3

ARIZONA ACADEMIC STANDARDS IN THE ARTS
ARTICULATED FOR THIRD GRADE




Philosophy and Rationale for the Arts

The arts are essential in education for they provide students with the means to think, feel, and understand the world around them in ways unique and distinct from other academic disciplines. These skills have been recognized as essential to lifelong success both in and out of school by a variety of education and civic leaders, including the National Association of State Boards of Education, the Education Commission of the States, the Arts Education Partnership, and *BusinessWeek*.

Arts Education in Arizona

Arizona has recognized the importance of arts education for its students in a variety of ways, including:

- Requiring music and visual arts be taught in grades K-8
- Creating high quality certifications (endorsements) for teachers in the areas of dance, music, theatre and visual arts
- Requiring a fine arts high school credit for admission to our state's universities
- Adopting Academic Standards in the Arts, with rigorous, sequential guidelines for creating quality arts education for Arizona's students.

Arts Standards Articulation for Third Grade

- The Arts Standards are divided into four discipline areas: dance, music, theatre and visual arts.
- The Music Standard is articulated for general music by grade level for Kindergarten – 8th grade.
- The remaining Standards (Dance, Theatre, Visual Arts) are articulated by **skill level**, reflecting the variety of ways in which the arts are taught in Arizona schools. Included in this **Third Grade** packet are the **Beginning Skill Level Performance Objectives** for Dance, Theatre and Visual Arts. If your students are more advanced, or if you would like to see how these skill articulated standards build on one other, the Department encourages you to view the standards in their entirety at http://www.ade.az.gov/standards/contentstandards.asp.
- All Four Arts Standards are organized under three strands: **Create**, **Relate** and **Evaluate**.
  Create performance objectives refer to the creation and performance within the discipline.
  Relate performance objectives refer to the social/historical/interdisciplinary nature of the discipline.
  Evaluate performance objectives refer to the critique and criticism aspects of the discipline.

Additional Resources for Arts Education

Additional resources on arts education can be accessed at http://www.ade.az.gov/asd/arts/ or by calling the Department's Arts Education Specialist at 602-364-1534.

ARIZONA ACADEMIC STANDARDS IN THE ARTS
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BEGINNING DANCE

Strand 1 - Create

Concept 1: Body Beginning Objectives	
Healthy Practices	PO 101 Identify and apply healthy and safe dance practices (e.g. alignment, strength, endurance, proper nutrition, warming up the body, **somatic practices**).
Anatomy	PO 102 Perform isolated and coordinated dance movement for the head, neck, joints, and body parts of the torso and limbs.
Dynamic Alignment	PO 103 Identify and demonstrate the elements of **dynamic alignment** through basic movement patterns.
Fundamental Movement Patterns	PO 104 Identify and demonstrate basic fundamental movement patterns including breath, head/tail, core/distal, body half, upper/lower, front/back and cross/lateral
Body Skills	PO 105 Identify and demonstrate basic body skills including balance, strength, flexibility, coordination, endurance and agility.

Concept 2: Movement Skills Beginning Objectives	
Axial/Non-locomotor	PO 101 Identify and perform basic **axial /non-locomotor movements** (e.g. bending, twisting, reaching turning).
Locomotor	PO 102 Identify and perform basic **locomotor movements** (e.g. walk, run, hop, skip, jump, slide, gallop, leap, crawl, roll).
Axial and locomotor combinations	PO 103 Perform basic movement combinations that utilize both axial and locomotor movements.
Articulation of movement skills	PO 104 Identify and use breath support, initiation of movement, connectivity, and transition from one movement to another.

ARIZONA ACADEMIC STANDARDS IN THE ARTS
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Strand 1 – Create (continued)

Concept 3: Elements of Dance Beginning Objectives	
Time: Tempo *See also "Relating Dance and Music"*	PO 101 Demonstrate moving to a steady beat in different tempos.
Time: Meter	PO 102 Demonstrate the ability to organize beats into groups and move in time with the beats. (e.g. duple and triple time).
Time: Rhythm	PO 103 Demonstrate moving in relation to and coordination with changes in rhythms and meters.
Space: Direction, Facing, Pathway	PO 104 Identify and demonstrate movement in different directions (forward, back side).
Space: Level	PO 105 Identify and demonstrate shapes at low, middle and high level.
Space: Shapes	PO 106 Demonstrate and create a variety of solo shapes exploring the possibility of symmetrical, asymmetrical, twisted, curved, angular, flat etc.
Space: Size and Range	PO 107 Explore the possibilities of size and range in relation to shape and movement.
Space: Focus and Intent	PO 108 Discuss and identify various points of focus (e.g. inner/outer, near/far, single/multi)
Energy: Movement Qualities	PO 109 Use appropriate terminology to identify and demonstrate the 6 qualities of movement (e.g. swing, suspend, sustained, percussive, collapse, vibratory)
Energy: Effort	PO 110 Use appropriate terminology to identify and demonstrate the Laban effort principles (e.g. bound/free, sudden/sustained, direct/indirect, strong/light

Strand 1 – Create (continued)

Concept 4: Improvisation/Choreography Beginning Objectives	
Improvisational Strategies	PO 101 Identify and apply **improvisational strategies** (e.g. leading/following, shadowing/mirroring, verbal cues, emotional response).
Using the Elements of Dance to Communicate	PO 102 Discuss and explore how the elements of dance can be used to communicate meaning.
Ideas and Themes	PO 103 Discuss and explore ideas and themes used to create dances (e.g. literal/abstract, emotions, stories, social themes, nature, text).
Choreographic Processes	PO 104 Identify the choreographic process used to create dances.
Choreographic Forms	PO 105 Identify various choreographic forms (e.g. Narrative, ABA, Suite, Recurring Theme, Abstract, Broken Form, Chance).
Choreographic Principles	PO 106 Identify the choreographic principles used in dance (e.g. contrast, unity, balance).
Technology	PO 107 Discuss and identify the ways to document dance (e.g. photography, video, writing, drawing, and computer programs).
	PO 108 Use technology as a motivator for improvisation or choreography.

Concept 5: Performance Values Beginning Objectives	
Focus and Concentration	PO 101 Identify and demonstrate concentration and focus in dance.
Kinesthetic and Spatial Awareness	PO 102 Discuss and explore the concept of personal and general space.
Performance Qualities	PO 103 Identify and perform dance with performance qualities of focus, performance energy and facial expression.

ARIZONA ACADEMIC STANDARDS IN THE ARTS
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Strand 1 – Create (continued)

Concept 6: Production Design Beginning Objectives	
Production terms, crew, elements	PO 101 Define **production terminology** and appropriate performance etiquette.
Marketing and budget	PO 102 Identify marketing tools and sequence for a dance production.
Technology	PO 103 Identify the ways that technology can be used in production.

Strand 2 - Relate

Concept 1: Dance Forms/History Beginning Objectives	
History and Development of Dance Forms	PO 101 Identify the origins of various dance forms and the individuals who helped develop them (e.g. ballet, modern, jazz, tap, hip-hop).
Technique and Theory of Various Dance Forms	PO 102 Identify and discuss the theoretical and technical differences of the various dance forms.
Technology	PO 103 Identify and discuss the ways in which technology is used in dance.

Concept 2: **Social and Cultural Influences** Beginning Objectives	
Cultural Dances	PO 101 Identify, practice, perform, and respond to dances from a variety of cultures, heritages and environments.
Meaning of Cultural Dances	PO 102 Identify the meaning, purpose and the roles people play in various **social/cultural** and **folk** dances.
Contemporary Cultural Dances	PO 103 Identify current dance styles in society and/or various cultures (see social/cultural dances).

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Strand 2 – Relate (continued)

Concept 3: Dance and Literacy Beginning Objectives	
Using text to create movement	PO 101 Use movement to express images, ideas, situations, and feelings from text (e.g. books, poetry, original writing, articles).
Using text to describe and understand movement	PO 102 Use words to express images, ideas and feelings that are danced.

Concept 4: Dance and other disciplines Beginning Objectives	
Using movement with other disciplines	PO 101 Use movement to express ideas, concepts, feelings and images (e.g. numbers, patterns, symbols, sounds, textures, animals) found in other disciplines.
Integrating dance and other art forms	PO 102 Respond to movement through a different art medium (e.g. draw a picture, write a poem, sing a song).
Careers	PO 103 Identify possible career opportunities in dance.

Concept 5: Dance and Music Beginning Objectives	
Elements of music	PO 101 Identify and explore (e.g. discussion, body percussion, locomotors, other body movements) the tempo and meter of various music examples.
Rhythmic Patterns/Variations	PO 102 Explore and respond physically to the ways in which movement can be used to mirror and/or contrast sounds, rhythms, and tempos.
Technology	PO 103 Explore the technology available for creating sound for dance.

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Strand 3 – Evaluate

Concept 1: Understanding Dance Beginning Objectives	
Dance Terminology	PO 101 After observing a brief movement study, use dance terminology to identify the movements and/or the **elements of dance** being used.
Production Elements	PO 102 After observing a dance, identify the production elements being used (e.g. lighting, sound, costumes, props, scenery).
Communicating Meaning	PO 103 Discuss how movement can be used to communicate main ideas, themes or feelings.
Evaluation Criteria	PO 104 Identify the criteria used to evaluate dance performance and technique (e.g. performance values, choreographic principles, elements of movement).
Personal Interpretation	PO 105 Identify your personal reaction to a dance through discussion, writing, movement or art making.
Technology	PO 106 Use technology to identify and discuss technical training and performance aspects in dance.

Concept 2: Professionalism Beginning Objectives	
Classroom, rehearsal and performance behaviors	PO 101 Identify and demonstrate appropriate **classroom, rehearsal and performance behaviors** (e.g. be attentive and respond appropriately to vocal, musical or observed cues, be on time, dress appropriately, work cooperatively, be respectful to self and others).
Audience Etiquette	PO 102 Identify and demonstrate appropriate **audience behavior** (e.g. watch attentively, remain quiet, appropriate applause).
Portfolio collection and maintenance	PO 103 At regular intervals, record and discuss movement skills acquired, choreography and performances. Maintain records for future use.

ARIZONA ACADEMIC STANDARDS IN THE ARTS
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GRADE 3 MUSIC

Strand 1: Create

Concept 1: Singing, alone and with others, music from various genres and diverse cultures.
PO 1. Singing **rounds** on **pitch** with an appropriate tone quality.
PO 2. Singing rhythmic patterns with words.
PO 3. Reading and singing using syllable names.
*PO 4. Responding properly to basic conducting **cues**. (e.g., start/stop).*

Concept 2: Playing instruments, alone and with others, music from various genres and diverse cultures.
PO 1 Playing music from memory.
PO 2. Playing a simple **ostinato accompaniment** using **dynamics**.
PO 3. Playing with correct rhythmic duration half notes, whole notes and corresponding rests.
PO 4. Responding properly to basic conducting cues. (e.g., stop/start).

Concept 3: Improvising rhythms, melodies, variations, and accompaniments
PO 1. **Improvising** simple **melodic phrases**.

Concept 4: Composing and arranging music.
PO 1. Creating a short song within specified guidelines choosing from a variety of sound sources (e.g., body percussion, found objects, non-pitched instruments, pitched instruments, computer generated sound sources).

Concept 5: Reading and notating music.
PO 2. Reading/decoding half notes, whole notes and corresponding rests.
PO 3. Identifying the letter names for the lines and spaces of the treble **clef**.
PO 4. Reading and notating music using standard musical notation.
PO 5. Identifying parts/symbols in a musical score: • dynamics • meter signatures

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Strand 2: Relate

Concept 1: Understanding the relationships among music, the arts, and other disciplines outside the arts.
PO 1. Performing a dance to a given piece of music that reflects its cultural heritage.
*PO 3. Recognizing **composers**' motivations for creating music*
PO 4. Exploring and analyzing the relationship of music to language arts, visual arts, literature

Concept 2: Understanding music in relation to history and culture.
PO 1. Identifying music from various **genres** and diverse cultures.
PO 4. Identifying different musical careers

Concept 3: Understanding music in relation to self and universal themes.
PO 1. Writing a story that is inspired by listening to a specific piece of music.
PO 2. Distinguishing music preferences (I like it because…) from music judgments (It is good because…).

Strand 3: Evaluate

Concept 1: Listening to, analyzing, and describing music.
PO 1. Identifying steps, skips, leaps and repeats within a given piece of music.
PO 2. Classifying instruments as band, orchestra or classroom.
PO 4. Describing changes in mood while listening to music.
PO 3. Describing **AB**, **ABA**, and rounds.

Concept 2: Evaluating music and music performances.
PO 1. Discussing/explaining personal preferences for music (I like it because vs. it is good because…).
PO 2. *Listening attentively while others perform and showing appropriate audience behavior for the context and style of the music performed.*

ARIZONA ACADEMIC STANDARDS IN THE ARTS
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BEGINNING THEATRE

Strand 1 - Create

Concept 1: Collaboration Beginning Objectives
PO 101. Demonstrate respect for others' opinions by respectfully listening while ideas are articulated.
PO 102. Cooperate in the dramatic process.
PO 103. Demonstrate the ability to collaborate while coming to consensus in the dramatic process.
PO 104. Follow established theatre safety rules.

Concept 2: Acting Beginning Objectives
PO 101. Imagine and describe **characters**, their relationships, what they want and why (e.g., through variations of **movement** and **gesture**, vocal **pitch**, **volume**, and **tempo**).
PO 102. Sustain a **scene** using appropriate language or **movement** with the teacher **role-**playing or giving clues (e.g., from literature or students' personal experiences).
PO 104. Describe or illustrate recalled sensory experiences.
PO 105. Work cooperatively and follow established safety rules.

Concept 3: Theatre Technology and Design Beginning Objectives
PO 101. Describe and/or document the **setting**/**environment** of a story to be dramatized (e.g., through words, drawings, technical elements).
PO 102. Establish a playing **space** and an **audience space**.
PO 103. Illustrate the use of line, shape, texture, color, **space**, and **balance** to represent the **environment** of a story.
PO 104. Select/document/arrange materials (e.g., **props**, furniture, **costumes**, **sound**) to create the **setting**/**environment** of the story to be dramatized.
PO 108. Use available art materials, tools, and resources to convey the characters through costumes, accessories, and make-up designs for a scene or production.

ARIZONA ACADEMIC STANDARDS IN THE ARTS
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Strand 1 – Create (continuted)

Concept 4: Playwriting Beginning Objectives
PO 101. Identify various sources (e.g., books, family stories, nature, imagination, paintings, poetry) for theatrical work.
PO 102. Retell a story including its **theme**, **setting**, storyline, **plot**, physical descriptions of the **characters**, and **theme**.
PO 103. Improvise by imitating life experiences, knowledge of literature, social issues, and/or historical situations, and create imaginary **scenes** that include **characters**, **setting**, and storyline.
PO 104. Create original, brief stories through **improvisation** that include a storyline and **characters**.
PO 105. Describe or illustrate recalled sensory experiences to create **characters** and **plot**.

Concept 5: Directing Beginning Objectives
PO 101. Lead peers in **warm-ups** and theatre games.
PO 102. Demonstrate leadership skills in small group work.
PO 103. Lead small groups in planning a **scene** and rehearsing the **scene** for in-class **performance**.
PO 106. Conduct exercises for actors in sensory recall.
PO 107. Develop an understanding and discuss the role of the director in the production process.

Strand 2 – Relate

Concept 1: **Collaboration** Beginning Objectives
PO 101. Describe, illustrate and/or implement how the use of collaboration affects daily life and different **environments**.

Concept 2: Acting Beginning Objectives
PO 101. Describe how the **characters** in a situation might be similar to or different from a real life experience.
PO 102. Describe how place and time affect **characters** and story in class **improvisations**, **scripts**, and productions of theatre and/or other media.
PO 103. Identify current and historical periods and cultures (e.g., western/eastern traditions) in dramatic **scenes**, **scripts**, and informal and **formal productions**.
PO 104. Demonstrate how interrelated conditions (time, place, other **characters**, and the situation) influence the **characters** and stories in **informal productions** of theatre, film/video, and **electronic media**.
PO 105. Infer a character's motivations and emotions and predict future action.

Strand 2 – Relate (continued)

Concept 3: Theatre Technology and Design Beginning Objectives
PO 101. Compare and contrast the historic setting, culture, and geography of a story, and how they influence and affect the visual/aural representation of it in a classroom, on **stage**, or in media.
PO 102. Identify and explain the historical and cultural influences on the visual/aural elements from a variety of works (e.g., fairy tales, books, **plays**) for dramatizations.

Concept 4: Playwriting Beginning Objectives
PO 101. Read and analyze stories and short **plays** from a variety of cultures and historical periods to identify their essential playwriting elements (e.g., storyline, **conflict**, **characters**, **theme**).
PO 102. Determine how place, time, and social and cultural conditions affect **characters** and the storyline in class **improvisations**, **scripts**, and productions of theatre and/or other media.
PO 103. Describe how a **character**'s **motivation** and emotions can predict future **action** or the resolution to a **conflict** in the story.
PO 104. Discuss story **themes**, **plot**, **characters**, **dialogue**, and **actions** and how they compare/contrast to real life situations.
PO 105. Identify current and historical periods and cultures (e.g. western/eastern traditions) in dramatic scenes, scripts, and informal and formal productions.
PO 106. Describe how place and time affect characters and story in class improvisations, scripts, and productions of theatre and/or other media.

Concept 5: Directing Beginning Objectives
PO 101. Identify and explain the influence of time and place (history and **environment**) on the **characters** and the story to be dramatized.
PO 102. Use a variety of sources (e.g., pictures, music, poetry, **texts**, library, artifacts) to research the **characters**, story, and **environment** for a dramatization.
PO 103. Evaluate research materials for appropriateness and usefulness to support **character**, story development, and **design**.
PO 104. Identify and explain the roles of the different artists in theatre (actor, **designer**/technician, playwright, director).
PO 105. Identify current and historical periods and cultures (e.g., western/eastern traditions) in dramatic scenes, scripts, and informal and formal productions.

ARIZONA ACADEMIC STANDARDS IN THE ARTS
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Strand 3: Evaluate

Concept 1: Collaboration Beginning Objectives
PO 101. Describe the ways in which the group participated in the collaborative process.

Concept 2: Acting Beginning Objectives
PO 101. Demonstrate respectful **audience** behavior.
PO 102. Describe the believable **actions** and **dialogue** of improvised **characters** in classroom **scenes**.
PO 103. Identify and describe the **characters**, **environment**, and story elements in a variety of written and performed **events**.
PO 104. Justify the perception of a **performance** and critique its production elements.
PO 105. Evaluate and justify, with examples, the meanings constructed from a dramatic text or performance relating to daily life.

Concept 3: Theatre Technology and Design Beginning Objectives
PO 101. Evaluate the playing **space** and **setting** used for a variety of dramatic works, classroom **scenes**, and informal or **formal productions**.
PO 103. Evaluate how line, shape, texture, color, **space**, **balance**, and/or pattern help illustrate the **environment** of a story.
PO 104. Evaluate the **environment**, **setting**, **lights**, **sound**, **costumes** and **props** in a variety of performed dramatic works to determine the mood and meaning of the story.
PO 105. Evaluate the **environment** for safety issues that may effect the production

Concept 4: Playwriting Beginning Objectives
PO 101. Recall and evaluate the storyline of a class **improvisation** or **performance**.
PO 102. Recall and evaluate the **character**'s **actions** in a class **improvisation** or **performance**.
PO 103. Describe how **plot**, **character**, and **environment** in **plays**, film/video, and **electronic media** are related to personal life.
PO 104. Identify by **genre** a dramatic concept, **script**, classroom, or **formal production**.
PO 105. Identify and describe the characters, environment, and story elements in a variety of written and performed events.

Concept 5: Directing Beginning Objectives
PO 101. Explain and justify the basic elements of a dramatic **text** (e.g., problem/solution, beginning, middle and end, **characters**, and **environment**) and **performance** essentials (e.g., visibility and audibility of actors, appropriateness of **setting**).
PO 102. Explain and justify personal preferences for specific elements and/or moments in dramatizations.
PO 103. Identify and describe the **characters**, **environment**, and story elements in a variety of written and performed **events**.

ARIZONA ACADEMIC STANDARDS IN THE ARTS
ARTICULATED FOR THIRD GRADE

BEGINNING VISUAL ARTS

Strand 1: Create

Concept 1: Creative Process - The student will develop, revise, and reflect on ideas for expression in his or her own artwork
Beginning Objectives
PO 101. Contribute to a discussion about ideas for his or her own artwork .
PO 102. Make and explain revisions in his or her own artwork .

Concept 2: Materials, Tools, and Techniques - The student will use materials, tools, and techniques in his or her own artwork .
Beginning Objectives
PO 101. *Identify and experiment with materials, tools, and techniques in his or her own artwork .*
PO 102*. Use materials, tools, and techniques appropriately in his or her own artwork .*

Concept 3: Elements and Principles - The student will judge the effectiveness of the artist's use of elements of art and principles of design in communicating meanings and/or purposes, in artworks.
Beginning Objectives
PO 101. *Identify and use **elements*** and **principles** *in his or her own artwork .*

Concept 4: Meanings or Purposes - The student will judge an artist's success in communicating meaning or purpose in their artwork.
Beginning Objectives
PO 101. Select and use subject matter and/or **symbols** in his or her own artwork .

Concept 5: Quality - The student will apply criteria for judging the quality of specific artwork.
Beginning Objectives
PO 101. *Identify successful aspects of his or her own artwork and possible revisions.*
PO 102. Use criterion to assess an aspect of his or her own artwork .

Strand 2 - Relate

Concept 1: Artworlds - The student will describe the role that art plays in culture and how it reflects, records, and interacts with history in various times, places, and traditions.
Beginning Objectives
PO 101. *Contribute to a discussion about who artists are, what they do, and why they create art*.
PO 102. *Discuss how artworks are used to communicate stories, ideas, and emotions.*
PO 103. Discuss what an **artworld** is and its place in a culture.
PO 104. Identify and discuss members of the local **artworld** community.
PO 105. Make connections between art and other curricular areas (e.g., clay production relates to science, contextual information relates to social studies).

ARIZONA ACADEMIC STANDARDS IN THE ARTS
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Strand 2 – Relate (continued)

Concept 2: Materials, Tools, and Techniques • The student will use materials, tools, and techniques in his or her own artwork .
Beginning Objectives
PO 101. Identify the relationship between tools, materials, and/or techniques.
PO 102. Describe what tools, materials ,and techniques were used to create artwork from diverse cultures and times.

Concept 3: Elements and Principles - The student will judge the effectiveness of the artist's use of elements of art and principles of design in communicating meanings and/or purposes, in artworks.
Beginning Objectives
PO 101. *Identify visual/tactile characteristics of artworks from* diverse cultures, different places, or times.

Concept 4: Meanings or Purposes - The student will judge an artist's success in communicating meaning or purpose in their artwork.
Beginning Objectives
PO 101. *Interpret meanings and/or purposes of an artwork using subject matter and* ***symbol****s.*
PO 102. Discuss **themes** in artworks that illustrate common human experiences that transcend culture, time, and place.

Concept 5: Quality - The student will apply criteria for judging the quality of specific artwork.
Beginning Objectives
PO 101. *Contribute to a discussion about why artworks have been valued within the context of the culture in which they were made*
PO 102. *Demonstrate respect while responding to others' artwork.*

Strand 3 – Evaluate

Concept 1: Art Issues and Values - The student will justify general conclusions about the nature and value of art.
Beginning Objectives
PO 101. Form and support opinions about art (e.g., what art is and why it is important).
PO 102. *Distinguish art from other objects.*
PO 103. *Discuss reasons why people value art (e.g., sentimental, financial, religious, political, and historical).*

Concept 2: Materials, Tools, and Techniques - The student will reflect on, and determine how materials, tools, and techniques affect meanings, purposes, and value in artworks.
Beginning Objectives
PO 101. *Describe the visual effects created by an artist's use of tools, materials, and techniques in an artwork.*

ARIZONA ACADEMIC STANDARDS IN THE ARTS
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Concept 3: Elements and Principles - The student will judge the effectiveness of the artist's use of elements of art and principles of design in communicating meanings and/or purposes, in artworks.
Beginning Objectives
PO 101. *Identify an* ***element*** and **principle** *in an artwork that supports its meaning and/or purpose.*

Concept 4: Meanings or Purposes - The student will judge an artist's success in communicating meaning or purpose in their artwork.
Beginning Objectives
PO 101. Discuss how an artist communicates meaning and/or purpose in an artwork.

Concept 5: Quality - The student will apply criteria for judging the quality of specific artwork.
Beginning Objectives
PO 101. *Compare an original artwork with a reproduction (e.g., make a museum/artist's studio visit to compare details, size, luminosity, three dimensionality, surface texture).*

Comprehensive Health Education/ Physical Activity Standards 1997

Foundations (Grades 1-3)

Comprehensive Health Rationale

Parents and Guardians

It is understood that parents and guardians are the primary educators in their children's health; therefore, it is important to include the applicable statutes and state Board of Education rule in the comprehensive health education standards. Parents and guardians must be provided opportunities to preview school district policies, curriculum and take-home materials.

The ultimate goal of comprehensive health education is to help young people in Arizona achieve their fullest potential by attaining their highest level of health and wellness as students and adults. Basic to health education is the knowledge about the importance of the interrelationships of physical, behavioral, and social well-being and the prevention of diseases and other health problems. Students should learn to accept responsibility for personal health decisions and practices, work with others to maintain a healthy environment, as well as become informed consumers.

***Rationale for Standard 1**:* Students comprehend concepts related to health promotion and disease prevention.

Comprehension of health promotion strategies and disease prevention concepts enables students to become health literate, self-directed learners, which establishes a foundation for leading healthy and productive lives.

Rationale for Standard 2: Students demonstrate the ability to access accurate health information.

Accessing valid health information and health promoting products and services is important in the prevention, early detection and treatment of most health problems. Applying skills of information analysis, organization, comparison, synthesis and evaluation to health issues provides a foundation for individuals to move toward becoming health literate and responsible, productive citizens.

Rationale for Standard 3: Students demonstrate the ability to practice health-enhancing behaviors and reduce health risks.

Research confirms that many diseases and injuries can be prevented by reducing harmful and risk-taking behaviors. Accepting responsibility and practicing health-enhancing behaviors can contribute to a positive quality of life.

Rationale for Standard 4: Students analyze the influence of culture, media, technology and other factors on health.

Health is influenced by a variety of factors that coexist within society. The ability to analyze, evaluate and interpret the influence of culture, media and technology on health

is important in a rapidly changing world. The health literate, responsible and productive citizen draws upon the contributions of these factors to strengthen individual, family and community health.

Rationale for Standard 5: Students demonstrate the ability to use interpersonal skills to enhance health.

Personal, family and community health are enhanced through effective communication. The ability to organize and to convey information, beliefs, opinions, and feelings (both verbal and nonverbal) are skills that strengthen interactions and can reduce or avoid conflict. When communicating, individuals who are health literate demonstrate care, consideration, and respect for self and others.

Rationale for Standard 6: Students demonstrate the ability to use goal setting and decision-making skills to enhance health.

Decision-making and goal setting are essential lifelong skills needed to implement and sustain health-enhancing behaviors. These skills make it possible for individuals to transfer health knowledge into healthy lifestyles, thus improving the quality of life.

Rationale for Standard 7: Students demonstrate the ability to advocate for personal, family and community health.

Quality of life is dependent on an environment that protects and promotes the health of individuals, families and communities. Responsible citizens who are health literate communicate and advocate for positive health in their communities.

§ 15-102. Parental involvement in the school; definition

A. The governing board, in consultation with parents, teachers and administrators, shall develop and adopt a policy to promote the involvement of parents and guardians of children enrolled in the schools within the school district, including:
   1. A plan for parent participation in the schools which is designed to improve parent and teacher cooperation in such areas as homework, attendance and discipline.
   2. Procedures by which parents may learn about the course of study for their children and review learning materials.
   3. Procedures by which parents who object to any learning material or activity on the basis that it is harmful may withdraw their children from the activity or from the class or program in which the material is used. Objection to a learning material or activity on the basis that it is harmful includes objection to a material or activity because it questions beliefs or practices in sex, morality or religion.

B. The policy adopted by the governing board pursuant to this section may also include the following components:
   1. A plan by which parents will be made aware of the district's parental involvement policy and the provisions of this section, including:
      (a) Rights under the family educational rights and privacy act of 1974 relating to access to children's official records.
      (b) The parent's right to inspect the school district policies and curriculum.

2. Efforts to encourage the development of parenting skills.
3. The communication to parents of techniques designed to assist the child's learning experience in the home.
4. Efforts to encourage access to community and support services for children and families.
5. The promotion of communication between the school and parents concerning school programs and the academic progress of the parents' children.
6. Identifying opportunities for parents to participate in and support classroom instruction at the school.
7. Efforts to, with appropriate training, support parents as shared decision makers and to encourage membership on school councils.
8. The recognition of the diversity of parents and the development of guidelines that promote widespread parental participation and involvement in the school at various levels.
9. The development of preparation programs and specialized courses for certificated employees and administrators that promote parental involvement.
10. The development of strategies and programmatic structures at schools to encourage and enable parents to participate actively in their children's education.

C. For the purposes of this section, "parent" means the parent or person who has custody of the child.

R7-2-303. Sex Education

A. Instruction in sex education in the public schools of Arizona shall be offered only in conformity with the following requirements.

1. Common schools: Nature of instruction; approval; format.
   a. Supplemental/elective nature of instruction. The common schools of Arizona may provide a specific elective lesson or lessons concerning sex education as a supplement to the health course study.
      i. This supplement may only be taken by the student at the written request of the student's parent or guardian.
      ii. Alternative elective lessons from the state-adopted optional subjects shall be provided for students who do not enroll in elective sex education.
      iii. Elective sex education lessons shall not exceed the equivalent of one class period per day for one-eighth of the school year for grades K-4.
      iv. Elective sex education lessons shall not exceed the equivalent of one class period per day for one-quarter of the school year for grades 5-8.
   b. Local governing board approval. All elective sex education lessons to be offered shall first be approved by the local governing board.
      i. Each local governing board contemplating the offering of elective sex education shall establish an advisory committee with membership representative of district size and the racial and ethnic composition of the community to assist in the development of lessons and advise the local governing board on an ongoing basis.
      ii. The local governing board shall review the total instruction materials for lessons presented for approval.

iii. The local governing board shall publicize and hold at least two public hearings for the purpose of receiving public input at least one week prior to the local governing board meeting at which the elective sex education lessons will be considered for approval.

iv. The local governing board shall maintain for viewing by the public the total instructional materials to be used in approved elective sex education lessons within the district.

c. Format of instruction.

i. Lessons shall be taught to boys and girls separately.

ii. Lessons shall be ungraded, require no homework, and any evaluation administered for the purpose of self-analysis shall not be retained or recorded by the school or the teacher in any form.

iii. Lessons shall not include tests, psychological inventories, surveys, or examinations containing any questions about the student's or his parents' personal beliefs or practices in sex, family life, morality, values or religion.

2. High Schools: Course offering; approval; format.

a. A course in sex education may be provided in the high schools of Arizona.

b. The local governing board shall review the total instructional materials and approve all lessons in the course of study to be offered in sex education.

c. Lessons shall not include tests, psychological inventories, surveys, or examinations containing any questions about the student's or his parents' personal beliefs or practices in sex, family life, morality, values or religion.

d. Local governing boards shall maintain for viewing by the public the total instructional materials to be used in all sex education courses to be offered in high schools within the district.

3. Content of instruction: Common schools and high schools.

a. All sex education materials and instruction shall be age appropriate, recognize the needs of exceptional students, meet the needs of the district, recognize local community standards and sensitivities, shall not include the teaching of abnormal, deviate, or unusual sexual acts and practices, and shall include the following:

i. Emphasis upon the power of individuals to control their own personal behavior. Pupils shall be encouraged to base their actions on reasoning, self-discipline, sense of responsibility, self-control and ethical considerations such as respect for self and others; and

ii. Instruction on how to say "no" to unwanted sexual advances and to resist negative peer pressure. Pupils shall be taught that it is wrong to take advantage of, or to exploit, another person.

b. All sex education materials and instruction which discuss sexual intercourse shall:

i. Stress that pupils should abstain from sexual intercourse until they are mature adults;

ii. Emphasize that abstinence from sexual intercourse is the only method for avoiding pregnancy that is 100 percent effective;

iii. Stress that sexually transmitted diseases have severe consequences and constitute a serious and widespread public health problem;

iv. Include a discussion of the possible emotional and psychological consequences of preadolescent and adolescent sexual intercourse and the consequences of preadolescent and adolescent pregnancy;
v. Promote honor and respect for monogamous heterosexual marriage; and
vi. Advise pupils of Arizona law pertaining to the financial responsibilities of parenting, and legal liabilities related to sexual intercourse with a minor.

B. Certification of compliance. All districts offering a local governing board-approved sex education course of lesson shall certify, under the notarized signature of both the president of the local governing board and the chief administrator of the school district, compliance with this rule except as specified in paragraph (C). Acknowledgment of receipt of the compliance certification from the state Board of Education is required as a prerequisite to the initiation of instruction. Certification of compliance shall be in a format and with such particulars as shall be specified by the Department of Education.
C. All districts offering state Board approved sex education lessons or courses prior to the effective date of this rule shall comply with this rule on or before June 30, 1990.

§ 15-716. Instruction on acquired immune deficiency syndrome; department assistance

A. Each common, high and unified school district may provide instruction to kindergarten programs through the twelfth grade on acquired immune deficiency syndrome and the human immunodeficiency virus.
B. Each district is free to develop its own course of study for each grade. At a minimum, instruction shall:
   1. Be appropriate to the grade level in which it is offered.
   2. Be medically accurate.
   3. Promote abstinence.
   4. Discourage drug abuse.
   5. Dispel myths regarding transmission of the human immunodeficiency virus.
C. No district shall include in its course of study instruction which:
   1. Promotes a homosexual life-style.
   2. Portrays homosexuality as a positive alternative life-style.
   3. Suggests that some methods of sex are safe methods of homosexual sex.
D. At the request of a school district, the department of health services or the department of education shall review instruction materials to determine their medical accuracy.
E. At the request of a school district, the department of education shall provide the following assistance:
   1. A suggested course of study.
   2. Teacher training
   3. A list of available films and other teaching aids.
F. At the request of a parent, a pupil shall be excused from instruction on the acquired immune deficiency syndrome and the human immunodeficiency virus as provided in subsection A of this section. The school district shall notify all parents of their ability to withdraw their child from the instruction.

ADDENDUM

A Brief Description of Ten Major Content Areas in Comprehensive School Health Education

1. **Community Health** includes topics such as individual responsibility; healthful school, home and community environments; community health resources and facilities; official and nonofficial health agencies; health service careers; pollution control; community involvement; current issues; and trends in medical care.

2. **Consumer Health** addresses health care resources i.e., knowing what is available and how to be an educated consumer.

3. **Environmental Health** addresses individual and community responsibility, pollution, effects of environment on health, environmental protection agencies, population density, world health, waste disposal, sanitation, laws and career choices.

4. **Family Life Education** covers information about family dynamics, building relationships, child abuse, choices about relationships, family planning, parenting skills, sex education, and sexually transmitted diseases such as HIV infection and AIDS.

5. **Injury Prevention and Safety** includes learning about first aid and emergency health care and addresses the prevention of unintentional injuries. (Many schools include violence prevention and homicide as health issues within this content area.)

6. **Mental and Emotional Health** includes building self-esteem, effectively coping with stress, and communication skills, among others.

7. **Nutrition** addresses a balanced diet, food preparation, reading and understanding food labels, differences in nutritional needs for pregnant women, and more.

8. **Personal Health** includes physical fitness and lifetime activities, cardiovascular health, sleep, rest, relaxation, recreation, growth and development, oral health, vision and hearing, body systems and their functions, aging, personal wellness plans, and positive health habits and choices.

9. **Prevention and Control of Disease** addresses heart disease, stroke, diabetes, cancer, HIV/AIDS and others.

10. **Substance Use and Abuse** refers to the use and misuse of tobacco, alcohol, and other drugs and often includes topics such as positive decision-making, individual responsibility, substances beneficial to humankind, the classification of substances and their effects on the body, and the formation of habits and their influence.

The ten major content areas in this addendum are provided to assist local school districts in developing sequential curricula. It will be left to the discretion of the local district to determine the emphasis of each of the content areas. The Comprehensive Health Education and Physical Activity Standards are the required competency indicators, while the addendum is a tool to be used by school districts as a cross-reference.

COMPREHENSIVE HEALTH STANDARDS
FOUNDATIONS (GRADES 1-3)

STANDARD 1

Students comprehend concepts related to health promotion and disease prevention.

- **1CH-F1. Describe relationships between personal health behavior (e.g., sleep, diet, fitness and personal hygiene) and individual well-being**

  PO 1. Explain positive effects of a balanced, healthy lifestyle (e.g., being alert, rested, energetic, healthy)
  PO 2. Explain importance of personal health-promoting behaviors (e.g., covering sneezes and coughs, proper hand washing, adequate sleep, healthy diet, physical activity)

- **1CH-F2. Identify indicators of mental, emotional, social and physical health during childhood**

  PO 1. Describe how feelings affect behavior (e.g., anger, fear, pride, happiness, sadness, frustration)
  PO 2. Recognize the importance of developing friendships
  PO 3. Describe at least three ways to prevent the spread of germs

- **1CH-F3. Describe the basic structure and functions of the human body systems**

  PO 1. Identify the parts of the digestive and circulatory system
  PO 2. Describe the functions of the digestive and circulatory systems

- **1CH-F4. Describe how heredity, family life and individual lifestyle affect personal health**

  PO 1. Explain how hereditary traits are passed on from parents to children (e.g., high blood pressure, diabetes, poor eyesight)
  PO 2. Explain how eating/activity habits effect lifestyle

- **1CH-F5. Describe how environmental health and personal health are related**

  PO 1. Show relationships of behavior to environment (e.g., weather and appropriate dress, pollen and allergies/asthma, pollution and respiration, pollution and skin)

COMPREHENSIVE HEALTH STANDARDS
FOUNDATIONS (GRADES 1-3)

- **1CH-F6. Identify health problems that should be detected and treated early and the reasons why**

  PO 1. Describe health problems and early detection
  PO 2. Describe the benefits of early treatment

- **1CH-F7. Identify the characteristics, causes, prevention and treatment of common childhood injuries and illnesses**

  PO 1. List common childhood illnesses, their causes and prevention
  PO 2. List common childhood injuries, their causes, prevention and treatment
  PO 3. Illustrate ways to keep germs from spreading
  PO 4. Illustrate ways to prevent injuries

STANDARD 2

Students demonstrate the ability to access accurate health information.

- **2CH-F1. Identify characteristics of accurate health information (e.g., research-based, current) and health promoting products (e.g., weight scales, thermometers, eye glasses) and services (e.g., school meal program, school nurse, after school activities)**

  PO 1. List sources of accurate/reliable health information
  PO 2. List health promoting products
  PO 3. Name health promoting services that contribute to health

- **2CH-F2. Demonstrate the ability to locate resources from home, school and community that provide accurate health information**

  PO 1. Describe health/emergency agencies that provide services (e.g., community health agencies, schools, poison control centers, Web sites)

- **2CH-F3. Explain how media influences the selection and use of health information, products and services**

  PO 1. Describe how advertisement affects choices
  PO 2. Identify ways media (movies) influence health decisions

- **2CH-F4. Demonstrate the ability to locate home and school health helpers**

  PO 1. Convey how to access appropriate health/emergency services

COMPREHENSIVE HEALTH STANDARDS
FOUNDATIONS (GRADES 1-3)

- **2CH-F5. Locate and describe the roles of resources (health workers and organizations) from the school and community**

  PO 1. State appropriate agencies to contact
  PO 2. Identify resources (e.g., parents, health department, fire department)

- **2CH-F6. Describe the consequences of appropriate and inappropriate use of drugs and medicine**

  PO 1. Identify safe practices of taking medicine and storing it properly
  PO 2. Identify the harmful affects of inappropriate use of drugs and medicine

- **2CH-F7. Identify when and how to seek emergency medical assistance and shelter**

  PO 1. Demonstrate how to contact parents and/or emergency services in emergency situations
  PO 2. Recall emergency numbers

STANDARD 3

Students demonstrate the ability to practice health-enhancing behaviors and reduce health risks.

- **3CH-F1. Identify responsible health behaviors and compare them to risky/harmful behaviors (e.g., responsible: tooth brushing, exercise, sleep, nutrition; risky: the use of tobacco, alcohol and other drugs)**

  PO 1. Discuss responsible health behavior vs. risky or harmful behaviors

- **3CH-F2. Identify personal health needs and strategies to maintain or improve one's well-being**

  PO 1. Discuss good health habits
  PO 2. Discuss ways to promote and maintain good health habits
  PO 3. Establish a plan for personal health standards

- **3CH-F3. Identify hazards found in the home, school and community and demonstrate ways to avoid or reduce the threats**

  PO 1. List hazards found in the home, school, and community
  PO 2. Discuss ways to avoid and/or reduce the threats

COMPREHENSIVE HEALTH STANDARDS
FOUNDATIONS (GRADES 1-3)

- **3CH-F4. Apply skills to manage stress**

  PO 1. Identify causes of stress
  PO 2. Describe ways to reduce stress

- **3CH-F5. Demonstrate first aid procedures and appropriate responses to common emergencies in the home, school and community**

  PO 1. Describe a minimum of three first aid procedures
  PO 2. Determine correct response in case of accident or sudden illness

STANDARD 4

Students analyze the influence of culture, media, technology and other factors on health.

- **4CH-F1. Describe personal health behaviors (e.g., nutrition, exercise) in a variety of cultures**

  PO 1. Demonstrate awareness of individual and ethnic variation of food choices and exercise

- **4CH-F2. Explain how the media influence health behaviors**

  PO 1. Describe how advertising influences health behavior
  PO 2. Describe how movies and cartoons influence health behavior

- **4CH-F3. Describe ways technology can influence personal health**

  PO 1. Explain how technology has influenced personal health (e.g., 911 system, X-rays, blood pressure cuffs, thermometers)

- **4CH-F4. Explain how information from school and family influences health**

  PO 1. Same as concept

STANDARD 5

Students demonstrate the ability to use interpersonal skills to enhance health.

- **5CH-F1. Distinguish between verbal and nonverbal communication**

  PO 1. Describe differences between nonverbal and verbal communication

COMPREHENSIVE HEALTH STANDARDS
FOUNDATIONS (GRADES 1-3)

- **5CH-F2. Describe characteristics needed to be a responsible friend and family member**

  PO 1. Explain what it means to care and be a friend
  PO 2. List characteristics needed to be responsible

- **5CH-F3. Describe ways to communicate care, consideration, and respect of self and others**

  PO 1. Explain how one communicates feelings (nonverbal and verbal)
  PO 2. Show use of effective "I" messages

- **5CH-F4. Demonstrate healthy ways to express needs, wants and feelings, and identify a variety of ways to deal with them constructively and appropriately**

  PO 1. Resolve conflict in socially acceptable ways
  PO 2. Formulate self-esteem building skills

- **5CH-F5. Demonstrate attentive listening skills to build and maintain healthy relationships**

  PO 1. Explain characteristics of attentive listening
  PO 2. Illustrate effective listening skills

- **5CH-F6. Describe refusal skills to enhance mental, emotional and physical health**

  PO 1. Explain how refusal skills enhance mental, emotional and physical health
  PO 2. Practice positive behavior towards others

- **5CH-F7. Identify negative and positive behaviors exhibited in conflict situations and strategies for mediating and resolving the conflict**

  PO 1. List negative and positive behaviors exhibited in conflict situations and strategies for mediating and resolving the conflict
  PO 2. Explain the difference between negative and positive behaviors exhibited in conflict situations and strategies for mediating and resolving the conflict

STANDARD 6

Students demonstrate the ability to use goal setting and decision-making skills to enhance health.

- **6CH-F1. Apply a sound decision-making process to resolve health issues and problems**

PO 1. Explain positive strategies to resolve problems
PO 2. Describe positive strategies to resolve health issues
PO 3. Demonstrate positive decision-making to resolve a health issue or problem

- **6CH-F2. Explain the effects of personal health care choices**

  PO 1. Identify the effects of personal health choices (positive and negative)

- **6CH-F3. Set a personal health goal and track progress toward its achievement**

  PO 1. List a personal health goal
  PO 2. Chart progress toward achievement

STANDARD 7

Students demonstrate the ability to advocate for personal, family and community health.

- **7CH-F1. Describe a variety of methods to convey accurate health information and ideas**

  PO 1. Same as concept

- **7CH-F2. Collect information about health issues**

  PO 1. State health issues (safety, personal care, disease prevention, substance abuse prevention, nutrition, emotional and family life)

- **7CH-F3. List a variety of ways to support others in making positive health choices (e.g., exercising, making healthy food choices, hand washing)**

  PO 1. Same as concept

Physical Activity Standards Rationale

A wealth of information has been accumulated to point to the importance of physical activity in promoting health and wellness. Evidence also indicates that habits (lifestyles) established in youth are likely to influence adult lifestyles and associated health and wellness. Physical activity, a primary risk factor for many chronic health conditions, is an integral part of comprehensive school health education but also must be promoted as an important educational goal. Meeting physical activity standards includes both promotion of physical activity among youth and promotion of lifelong physical activity that will enhance workplace skills, fitness and wellness associated with quality of life. Achieving lifetime physical activity standards results in learning real life skills. Higher order skills include decision-making and problem solving required to become informed, lifetime physical activity consumers.

Rationale for Standard 1: Students demonstrate proficiency and the achievement of higher order cognitive skills necessary to enhance motor skills.

Movement competence implies the development of sufficient ability to enjoy participation in physical activities and re-establish a foundation to facilitate continued motor skill acquisition and increased ability to engage in developmentally appropriate daily physical activities. In addition to achieving competence in a few movement forms, which increases the likelihood of lifetime activity participation, the students apply concepts from exercise science disciplines that will help them achieve independence in developing movement competence in new movement forms. The focus is on movement forms appropriate for lifetime activity involvement and the establishment of personal competence.

Rationale for Standard 2: Students comprehend basic physical activity principles and concepts that enable them to make decisions, solve problems and become self-directed lifelong learners who are informed physical activity consumers.

Accessing accurate physical activity information, products and services is important to become informed, responsible physical activity consumers.

Rationale for Standard 3: Students exhibit a physically active lifestyle.

The intent of this standard is to establish patterns of regular participation in meaningful physical activity. This standard connects what is taught in school with students' choices for physical activity outside of school. Students are more likely to participate in physical activities if they have had opportunities to develop interests that are personally meaningful to them.

Rationale for Standard 4: Students achieve and maintain a health-enhancing level of physical fitness.

The intent of this standard is for the student to achieve a health-enhancing level of physical fitness. Students should be encouraged to develop personal fitness levels above those necessary for health-enhancement, based on unique personal needs and interests and necessary for many work situations and active leisure participation. Health-related fitness components include cardio-respiratory endurance, muscular strength and endurance, flexibility, and body composition. Expectations for students' fitness levels should be established on a personal basis, taking into account variation in entry levels, rather than setting a single standard for all children at a given grade level.

Rationale for Standard 5: Students develop self-initiated behaviors that promote effective personal and social interactions in physical activity settings.

The intent of this standard is achievement of self-initiated behaviors that promote personal and group success in activity settings. Behaviors such as safe practices, adherence to rules and procedures, etiquette, cooperation and teamwork, ethical behavior in sports, and positive social interaction are necessary for all students to develop effective communication skills.

Rationale for Standard 6: Students demonstrate understanding and respect for differences among people in physical activity settings.

The intent of this standard is to develop respect for similarities and differences through positive interaction among participants in physical activity. Similarities and differences include characteristics of culture, ethnicity, motor performance, disabilities, physical characteristics (e.g., strength, size, shape), gender, race and socioeconomic status.

Rationale for Standard 7: Students develop behavioral skills (self-management skills) essential to maintaining a physically active lifestyle.

The intent of this standard is for students to develop an awareness of the intrinsic benefits of participation in lifelong physical activity. Physical activity can provide opportunities for enjoyment, physical fitness and personal challenge.

PHYSICAL ACTIVITY STANDARDS
FOUNDATIONS (GRADES 1-3)

STANDARD 1

Students demonstrate proficiency and the achievement of higher order cognitive skills necessary to enhance motor skills.

- **1PA-F1. Demonstrate mature form in all locomotor patterns and selected manipulative and nonlocomotor skills**

  PO 1. Perform all eight locomotor skills with mature form (walk, run, hop, jump, skip, slide, gallop and leap)
  PO 2. Perform four manipulative skills with mature form
  PO 3. Perform four nonlocomotor skills with mature form
  PO 4. Perform movement skills to a rhythm

- **1PA-F2. Adapt a skill area (e.g., dribbling, passing, dance sequence) to the demands of a game-like situation**

  PO 1. Demonstrate the ability to adapt movement skills to changing environmental conditions and expectations (e.g., partner needs for force production, tossing a ball to a moving partner, rising and sinking while twisting, using different rhythms)
  PO 2. Combine a variety of physical activities (e.g., various travel patterns in relation to music, locomotor and nonlocomotor combinations)

- **1PA-F3. Demonstrate beginning skills of a few specialized movement forms**

  PO 1. Dribble and pass a variety of objects to self and around stationary objects (hands, feet and equipment)
  PO 2. Throw and kick using mature form
  PO 3. Strike a ball repeatedly with hand or object
  PO 4. Toss and catch a ball alone or with a partner

- **1PA-F4. Combine movement skills in applied settings**

  PO 1. Demonstrate control in traveling activities, weight bearing, and balance activities on a variety of body parts
  PO 2. Demonstrate skills of chasing, fleeing, dodging to avoid others

PHYSICAL ACTIVITY STANDARDS
FOUNDATIONS (GRADES 1-3)

- **1PA-F5. Apply critical elements to improve personal performance in fundamental and selected specialized movement skills**

  PO 1. Demonstrate critical elements of a fundamental skill (e.g., throwing, kicking, striking)
  PO 2. Use concepts of space, effort, and relationships that vary the quality of movement

- **1PA-F6. Use critical elements of fundamental and specialized movement skills to provide feedback to others**

  PO 1. Use feedback to improve personal performance
  PO 2. Recognize the critical elements of a fundamental movement or skill performed by a fellow student and provide feedback to that student

- **1PA-F7. Apply concepts that impact the quality of increasingly complex movement performance (e.g., maintaining a wide base of support in a balance activity)**

  PO 1. Understand that appropriate practice improves performance (e.g., a ball must be passed in front of a moving player; the lower the center of gravity, the more stable an object).

STANDARD 2

Students comprehend basic physical activity principles and concepts that enable them to make decisions, solve problems and to become self-directed lifelong learners who are informed physical activity consumers.

- **2PA-F1. Identify several activities related to each component of health-related physical fitness**

  PO 1. Identify the components of health-related physical fitness (i.e., cardio-respiratory endurance, muscular strength, muscular endurance, flexibility, body composition)
  PO 2. Identify and demonstrate several activities related to each component of physical fitness

- **2PA-F2. Explain that muscles produce movement and begin to identify muscles**

  PO 1. Name and locate large muscle groups
  PO 2. Demonstrate activities that utilize specific muscle groups

- **2PA-F3. Demonstrate how to perform physical fitness tests**

  PO 1. Demonstrate correct form when performing physical fitness activities

PHYSICAL ACTIVITY STANDARDS
FOUNDATIONS (GRADES 1-3)

STANDARD 3

Students exhibit a physically active lifestyle.

- **3PA-F1. Select and participate regularly in physical activities for the purpose of improving skill and health**

  PO 1. Participate regularly in physical activity for the purpose of improving skill performance
  PO 2. Participate regularly in physical activity for the purpose of developing a healthy lifestyle

- **3PA-F2. Identify the benefits derived from regular physical activity**

  PO 1. Describe health benefits that result from regular and appropriate participation in physical activity
  PO 2. Identify benefits of at least one activity they regularly participate in

- **3PA-F3. Identify several moderate to vigorous physical activities that provide personal pleasure**

  PO 1. Same as concept

STANDARD 4

Students achieve and maintain a health-enhancing level of physical fitness.

- **4PA-F1. Accomplish the health-related fitness standards as defined by Fitnessgram**

  PO 1. Identify the components of health-related physical fitness, (i.e., cardio-respiratory endurance, muscular strength, muscular endurance, flexibility, body composition)
  PO 2. Identify and demonstrate several activities related to each component of physical fitness

- **4PA-F2. Participate regularly in physical activity for the purpose of improving physical fitness (goal setting)**

  PO 1. Engage in appropriate physical activity that results in the improvement of health-related physical fitness

PHYSICAL ACTIVITY STANDARDS
FOUNDATIONS (GRADES 1-3)

STANDARD 5

Students develop self-initiated behaviors that promote effective personal and social interactions in physical activity settings.

- **5PA-F1. Follow, with few reminders, activity-specific rules, procedures and etiquette**

  PO 1. Respond positively to an occasional reminder about a rule/infraction
  PO 2. Use expected behaviors in physical activity settings

- **5PA-F2. Utilize safety principles in activity situations**

  PO 1. Stop activity immediately at the signal to do so
  PO 2. Demonstrate and use equipment safely and responsibly
  PO 3. Use the rules of physical education on the playground

- **5PA-F3. Work cooperatively and productively with a partner or small group**

  PO 1. Use respect during all physical activity
  PO 2. Work cooperatively with another to complete an assigned task

- **5PA-F4. Work independently and on-task for short periods of time**

  PO 1. Demonstrate specific teacher-directed skills until a signal is given to end task
  PO 2. Demonstrate the ability to share equipment with other students before repeating a turn

- **5PA-F5. Interact with peers while participating in group activities**

  PO 1. Treat others with respect during physical activity
  PO 2. Resolve conflicts in socially acceptable ways

STANDARD 6

Students demonstrate understanding and respect for differences among people in physical activity settings.

- **6PA-F1. Participate in multicultural physical activities**

  PO 1. Identify one's own cultural/ethnic roots
  PO 2. Apply variations in activities and games enjoyed in classmates' homes and neighborhoods

- **6PA-F2. Explain the attributes that individuals with differences can bring to group activities**

  PO 1. Display consideration of others' abilities in physical activity settings

PHYSICAL ACTIVITY STANDARDS
FOUNDATIONS (GRADES 1-3)

- **6PA-F3. Describe differences and similarities among the activities of a variety of national, cultural and ethnic backgrounds**

  PO 1. Share with peers an activity, dance or game in which he/she has participated with family or friends

STANDARD 7

Students develop behavioral skills (self-management skills) essential to maintaining a physically active lifestyle.

- **7PA-F1. Practice activities to increase skill and fitness competence (goal setting)**

  PO 1. Select activities that are personally challenging and rewarding
  PO 2. Explain how repeated practice will lead to skill and fitness success
  PO 3. Explain how gained competence provides increased enjoyment in movement and fitness activities

- **7PA-F2. Associate results of fitness testing to personal health status and ability to perform various activities**

  PO 1. Same as concept

Foreign and Native Language Standards 1997

Foundations (Grades 1-3)

Foreign and Native Language* Standards Rationale

Today's students prepare for the tomorrow in which they will need to function in varied contexts. The constant shrinking of the globe will expand their experience beyond that of previous generations to include contacts with other languages and cultures, both in their private lives and in their work. Languages are increasingly demanded in a wide range of professions. To succeed, students will need new tools, many of which are available primarily, if not solely, through the study of other languages. They include:

- ***the ability to communicate well for varied purposes*.** In other languages, as well as in English, effective communication requires an understanding of both the target language and culture under study and one's own, which implies the ability to interact confidently within many arenas, including the workplace and communities where the language is spoken.

- ***a solid foundation in basic subject matter and skills*.** All core subjects must contribute to this end, in an integrated fashion, to aid students in realizing the connections among the parts of their education. Basic subject matter includes the development of verbal reasoning, and listening skills and knowledge of the great achievements of human cultures, e.g., artistic, literary, scientific. The study of another language has been shown to enhance student performance in other academic fields. Learnings from other fields can also be reinforced in the foreign language classroom.

- ***an understanding and appreciation of the diversity of languages and cultures, including one's own*.** These tools aid students to function as responsible, informed, and confident citizens and enhance their personal development. They allow the finding of one's own place in the wider world.

Introduction to the Foreign Language Standards

The foreign language standards state what students need to know about languages and cultures, including their own; what students need to be able to do; and how this knowledge and these abilities relate to the subject matter of other core areas. The standards are stated clearly and in measurable terms:

- what students need to **know** in order to function successfully as they enter a new millennium that promises major changes in communications and contacts with other languages and cultures;

- what students need to be able to **do**. Knowing about a language and its culture(s), while essential, is not sufficient; students will develop skills for functioning effectively in varied contexts; and

- the integration of foreign languages into the rest of the curriculum so that the connections are clear and so that learning in all areas is facilitated, including the development of a deeper understanding of one's own language and culture. The five strands under which the standards are organized–Communication, Culture, Connections, Comparisons and Communities–are meant to be interwoven among themselves as well, rather than taught as separate entities. Meeting the standards for each one will contribute to reaching the standards of the others.

These standards for foreign language study are highly challenging for all students. They assume an extended sequence of learning throughout the students' school career, thus reflecting the likely nature of schools in the future. Meeting these standards will require the study of grammar–the forms and structures of the language–as well as effective learning strategies. Students will also need to use technologies that will bring the language and the culture to them in new ways and enhance their opportunities to learn.

In these standards we refer to "the target language," which may stand for "world language," "foreign language," "second language," or "heritage language" (i.e., the language that is the predominant language in the home).

Descriptions of Language Abilities for Each Level

Readiness

Students use basic vocabulary related to people, places, things and actions close to their own lives. They express themselves in phrases, short sentences and memorized material. Their language is characterized by an emerging control of the most common basic grammatical forms and structures. Because comprehension of oral and written language normally exceeds production, students are able to comprehend simple descriptions, narratives, and authentic materials such as advertisements, on topics studied in class. Pronunciation and fluency are such that students often might not be understood by native speakers. They are able to write accurately what they can say.

Foundations

Students speak and write extemporaneously using short sentences and sentence strings in present tense on topics within their experience with the language. They can describe, ask and answer questions; engage in simple conversations; and carry out simple realistic functions such as ordering a meal, buying something, or introducing themselves or others to a group. Since their knowledge of the forms and structures of the language has grown rapidly but their practice has been limited, their speech is likely to contain numerous linguistic errors. Students are comprehensible to sympathetic listeners who have experience with non-native speakers of their language. Their written language still mirrors their oral language, although they may be able to express more ideas more accurately in writing, given time to reflect, review and revise.

Essentials

Students speak with somewhat longer utterances and begin to display an ability to connect phrases and sentences to show relations between ideas expressed. Although patterns of errors are still common, students now speak and write extemporaneously in past, present and future time, using vocabulary related to their own lives and interests. Accent and intonation are generally accurate, although pauses and false starts may be common, as students give simple instructions and directions, make comparisons, solve problems together, and engage in conversations on a range of topics including leisure activities, professions and current events. In written work, students' spelling and punctuation are mostly accurate; and they organize their ideas well.

Proficiency

Students use paragraph-length connected discourse to narrate, describe, and discuss ideas and opinions. On topics of interest to them and within their experience, they show few patterns of linguistic errors, they are generally comprehensible to native speakers of the language, and their vocabulary is sufficient to avoid awkward pauses. They are able to circumvent linguistic gaps or lapses by "finding another way to say it." Given time to reflect and revise, they are able to express their ideas completely and interestingly in writing, with generally accurate grammar, vocabulary, spelling, accents and punctuation. They comprehend most authentic expository and fictional material produced for contemporary native speakers.

Distinction

Students show almost no patterns of linguistic errors and are able to carry out almost any task that they can execute in English, albeit with less fluency and control or breadth of vocabulary and grammar. They can argue a point effectively and extemporaneously, explaining their point of view in detail. In writing, their ideas are well organized and clearly, completely, and interestingly presented, with accurate use of the language's writing system. They can comprehend any non-technical material produced for the general public of native speakers in the standard language.

FOREIGN AND NATIVE LANGUAGE STANDARDS
FOUNDATIONS (GRADES 1-3)

STANDARD 1: COMMUNICATION
Students understand and interpret written and spoken communication on a variety of topics in the target language.

- **1FL-F1. Comprehend and interpret a brief narrative or poem**
- **1FL-F2. Comprehend brief written messages and short personal notes**
- **1FL-F3. Comprehend simple recorded material**
- **1FL-F4. Follow simple written instructions**
- **1FL-F5. Identify parts of a short story, e.g., climax, main idea, conflict**
- **1FL-F6. Comprehend the main ideas or themes and identify and describe the main characters in selected literary texts**

STANDARD 2: COMMUNICATION
Students engage in oral and written exchanges which include providing and obtaining information, expressing feelings and preferences, and exchanging ideas and opinions in the target language.

- **2FL-F1. Express feelings**
- **2FL-F2. Give and follow directions to carry out a specific task and ask questions for clarification**
- **2FL-F3. Exchange information about personal events and memorable experiences**
- **2FL-F4. State opinions about objects, people and events present in their everyday lives**
- **2FL-F5. Acquire goods or information through interaction**

FOREIGN AND NATIVE LANGUAGE STANDARDS
FOUNDATIONS (GRADES 1-3)

STANDARD 3: COMMUNICATION
Students present information and ideas in the target language on a variety of topics to listeners and readers.

- **3FL-F1. Perform short plays, poems and songs**
- **3FL-F2. Write or orally present brief messages that provide information**
- **3FL-F3. Present basic (biographical) information about self or others in front of a group**
- **3FL-F4. Read and recite short poems with appropriate expression and rhythm**
- **3FL-F5. Share their interpretations, reactions and feelings about a piece of literature**

STANDARD 4: CULTURE
Students know "what to do when" and "what to say while doing it" in the culture and use this knowledge to interact appropriately. They also understand the relationships between cultural perspectives, products and practices within cultures.

- **4FL-F1. Identify and discuss (in English, if necessary) typical behaviors from the target culture in a variety of specific settings**
- **4FL-F2. Identify on a map the countries where the target language is spoken and the major cities and geographical features**
- **4FL-F3. Use culturally appropriate language and behaviors in basic school and social situations**
- **4FL-F4. Interpret cultural messages expressed in signs, symbols, advertisements, etc., in the target language**

STANDARD 5: CONNECTIONS
Students use the target language and authentic sources to reinforce and/or learn other content from the other subject areas.

- **5FL-F1. Discuss topics in other school subjects in the target language including geographical terms, historical facts, mathematical terms and problems, and scientific information**
- **5FL-F2. Comprehend articles or short videos in the target language on topics being studied in other classes**

FOREIGN AND NATIVE LANGUAGE STANDARDS
FOUNDATIONS (GRADES 1-3)

STANDARD 6: COMPARISONS
Students develop insights into their own language and their own culture through the study of the target language.

- **6FL-F1. Identify and compare (in English, if necessary) cultural perspectives of people in both their own culture and the culture being studied relating to family, school, work and play**

- **6FL-F2. Recognize (in English, if necessary) the process of word/idea borrowing from one language by another**

- **6FL-F3. Distinguish between the sound system and the writing system of the target language and the same elements in their own language**

- **6FL-F4. Compare appropriate gestures in the target language and culture studied to their own**

STANDARD 7: COMMUNITIES
Students use the target language within and beyond the school setting.

- **7FL-F1. Use the library to select books, magazines, CDs, etc., in the target language; share their content with others**

- **7FL-F2. Identify people in the community who use the target language in their work; invite them to share information with the class and ask the questions**

- **7FL-F3. Create original materials (e.g., short stories, poems, crafts) to exchange with classes in other communities or countries**

- **7FL-F4. Present information to others (in English, if necessary) about the target language and culture**

Reading Standard Articulated by Grade Level 2003

Grade 3

Reading Standard Articulated by Grade Level

INTRODUCTION

Reading is a complex skill that involves learning language and using it effectively in the active process of constructing meaning embedded in text. It requires students to fluently decode the words on a page, understand the vocabulary of the writer, and use strategies to build comprehension of the text. It is a vital form of communication in the 21st century and a critical skill for students of this "information age" as they learn to synthesize a vast array of texts.

The Reading Standard Articulated by Grade Level will provide a clear delineation of what students need to know and be able to do at each grade level. This allows teachers to better plan instructional goals for students at any grade.

BACKGROUND

The state Board of Education adopted the Arizona Academic Standards in 1996 to define what Arizona's students need to know and be able to do by the end of twelfth grade. Developed by committees comprised of educators, parents, students, and business and community leaders, these standards were written in grade-level clusters with benchmarks at grades 3, 5, 8, and high school.

RATIONALE

Requirements in the *No Child Left Behind Act of 2001* (NCLB) and the standard practice of conducting periodic review of the state academic standards prompted the decision by the Arizona Department of Education to refine and articulate the academic standards for mathematics and reading by grade level. This refinement and articulation project was started in July 2002, and was completed in March 2003.

METHODOLOGY

Work teams for reading consisted of a representative sample of educators from around the state designed to include large and small schools, rural and urban schools, and ethnic diversity. National reading consultants, university professors, and test company consultants advised the teams. The goal was to articulate, or align, the current academic standards by grade level (K-12).

The Reading Articulation Teams utilized information from the National Council of Teachers of English and the findings of the National Reading Panel, which promote quality instruction, based on current, pedagogical, and researched practices.

The articulation process included a restructuring of the Arizona Academic Content Standards to better facilitate the alignment of performance objectives by grade level, while maintaining the content integrity of the existing standards. Over a period of

months, the articulation team and smaller sub-committees of the teams refined the documents. Reasonableness, usefulness, and appropriateness were the guidelines for the articulation process.

External reviews by nationally recognized consultants brought a broad perspective to the articulation process. Internal reviews by university and local experts provided additional validation.

Another important step in the project was the request for public comment. In December 2002, drafts of the Standards Articulated by Grade Level, along with a survey to gather feedback, were posted on the Arizona Department of Education website. This provided the public with easy access to the documents, and the survey allowed reviewers a means for submitting comments. The public and all educators had the opportunity to submit comments and suggestions, either electronically or in writing, until the survey closing date of January 31, 2003. In January, six public hearings were held throughout the state, offering further opportunities for public input.

After all the public comments were collected and organized by topic, the articulated teams met one last time to determine what modifications to the standards documents would be appropriate, based on this information. All public comments were given equal consideration.

The completion of the standards articulation process was followed by the development of rationales, glossaries, and crosswalks. These additional documents were designed to assist educators with the transition from the 1996 standards to the Reading Standard Articulated by Grade Level.

READING STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 1: Reading Process

Reading Process consists of the five critical components of reading, which are Phonemic Awareness, Phonics, Fluency, Vocabulary and Comprehension of connected text. These elements support each other and are woven together to build a solid foundation of linguistic understanding for the reader.

Concept 1: Print Concepts
Demonstrate understanding of print concepts.

PO 1. Alphabetize a series of words to the third letter.

PO 2. Recognize the distinguishing features of a paragraph (e.g., indentation of first word, topic sentence, supporting sentences, concluding sentences).

Concept 2: Phonemic Awareness
Identify and manipulate the sounds of speech.

(Grades K-2)

Concept 3: Phonics
Decode words, using knowledge of phonics, syllabication, and word parts.

PO 1. Read multi- syllabic words fluently, using letter-sound knowledge.

PO 2. Apply knowledge of basic syllabication rules when decoding four- or five-syllable written words (e.g.,
in/for/ma/tion, mul/ti/pli/ca/tion, pep/per/o/ni).

PO 3. Apply knowledge of the following common spelling patterns to read words:

- that drop the final e and add endings such as: –ing, -ed, or –able (e.g., use/using/used/usable)
- with final consonants that need to be doubled when adding an ending (e.g., hop/hopping)
- that require changing the final y to i (e.g., baby/babies)
- that end in –tion, -sion, (e.g., election, vision)
- with complex word families (e.g., -ight, -ought); and
- that include common prefixes, suffixes and root words.

PO 4. *Read common abbreviations* (e.g., *Wed., Sept.) fluently*.

PO 5. Recognize high frequency words and irregular sight words.

PO 6. Use knowledge of word order (syntax) and context to confirm decoding.

READING STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Concept 4: Vocabulary

Acquire and use new vocabulary in relevant contexts.

PO 1. Use knowledge of prefixes to (e.g., un-, re-, in-, dis-) to determine the meaning of words.

PO 2. Use knowledge of suffixes (e.g., -ful, -ly, -less) to determine the meaning of words.

PO 3. Recognize words represented by common abbreviations (e.g., Mr. Ave., Oct.).

PO 4. Identify the words that comprise a contraction (e.g., can't=can not, it's=it is, aren't=are not).

PO 5. Determine the meaning of compound words, using knowledge of individual words (e.g., lunchtime, daydream, everyday).

PO 6. Determine the meaning of common synonyms, antonyms, and homonyms.

PO 7. Determine the meanings and other features of words (e.g., pronunciation, syllabication, synonyms, parts of speech) using the dictionary, thesaurus, and CD-ROM and Internet when available.

Concept 5: Fluency

Read fluently.

PO 1. *Consistently read grade level text with at least 90 percent accuracy.*

PO 2. Read aloud from familiar prose and poetry with fluency and appropriate rhythm, pacing, intonation, and
vocal patterns.

Concept 6: Comprehension Strategies

Employ strategies to comprehend text.

PO 1. Predict events and actions, based upon prior knowledge and text features.

PO2. Compare a prediction about an action or event to what actually occurred within a text.

PO 3. *Ask relevant questions in order to comprehend text.*

PO 4. Answer clarifying questions in order to comprehend text.

PO 5. Extract information from graphic organizers (e.g., webs, Venn diagrams, flow charts) to comprehend text.

PO 6. Connect information and events in text to experience and to related text and sources.

READING STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 2: Comprehending Literary Text

Comprehending Literary Text identifies the comprehension strategies that are specific in the study of a variety of literature.

Concept 1: Elements of Literature

Identify, analyze, and apply knowledge of the structures and elements of literature.

PO 1. Compare (and contrast) literary elements across stories, including plots, settings, and characters.

PO 2. Describe characters (e.g., traits, roles, similarities) within a literary selection.

PO 3. Sequence a series of events in a literary selection.

PO 4. Make relevant connections (e.g., relationships, cause/effect, comparisons) between earlier events and later events in text.

PO 5. Identify the speaker or narrator in a literary selection.

PO 6. Identify rhyme, rhythm, repetition, and sensory images in poetry.

PO 7. Distinguish between/among fiction, nonfiction, poetry, plays, and narratives, using knowledge of their structural elements.

Concept 2: Historical and Cultural Aspects of Literature

Recognize and apply knowledge of the historical and cultural aspects of American, British, and world literature.

PO 1. Compare events, characters and conflicts in literary selections from a variety of cultures to their experiences.

READING STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 3: Comprehending Informational Text

Comprehending Informational Text delineates specific and unique skills that are required to understand the wide array of informational text that is a part of our day-to-day experiences.

Concept 1: Expository Text

Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.

PO 1. Identify the main idea and supporting details in expository text.

PO 2. Locate facts in response to questions about expository text.

PO 3. Locate specific information by using organizational features (e.g., title, table of contents, headings, captions, bold print, key words, glossary, indices, italics, key words) in expository text. (Connected to Research Strand in Writing**)**

PO 4. Use a variety of sources (e.g., trade books, encyclopedias, magazines, atlases, almanacs, electronic source, textbooks) to answer specific questions, and/or gather information. (Connected to Research Strand in Writing)

PO 5. Interpret information from graphic features (e.g., charts, maps, diagrams, illustrations, tables, timelines) of expository text. (Connected to Research Strand in Writing)

Concept 2: Functional Text

Identify, analyze, and apply knowledge of the purpose, structures, clarity, and relevancy of functional text.

PO 1. *Follow a set of written multi-step directions.*

PO 2. Provide multi-step directions.

PO 3. Evaluate written directions for sequence and completeness.

PO 4. Interpret information in functional documents (e.g., maps, schedules, pamphlets) for a specific purpose.

Concept 3: Persuasive Text

Explain basic elements of argument in text and their relationship to the author's purpose and use of persuasive strategies.

PO 1. Distinguish fact from opinion in persuasive text (e.g., advertisements, product labels, written communications).

PO 2. Identify persuasive vocabulary (e.g., emotional words) used to influence readers' perspectives.

Writing Standard Articulated by Grade Level 2004

Grade 3

Writing Standard Articulated by Grade Level

INTRODUCTION

The purpose of the Writing Standard Articulated by Grade Level is to equip students with the skills and knowledge needed to participate in society as literate citizens. The ability to communicate effectively in writing will be essential to their success in their communities and careers. Students may realize personal fulfillment and enjoyment as they learn to become proficient writers and continue as writers throughout their lives.

Writing is a complex skill that involves learning language and using it effectively to convey meaning through text. This standard recognizes that students' abilities in writing develop from their earliest stages with phonetic spelling; to limited understanding of a certain genre; to the ability to produce conventional, coherent, unified documents. Their ideas are expressed in various forms, such as notes, lists, letters, journal writing, stories, web postings, instant messaging, essays, and reports. Effective writing may be evaluated by examining the use of ideas, organization, voice, word choice, sentence fluency, and conventions.

The Writing Standard Articulated by Grade Level will provide a clear delineation of what students need to know and be able to do at each grade level. This allows teachers to better plan instructional goals for students at any grade.

BACKGROUND

The state Board of Education adopted the Arizona Academic Standards in 1996 to define what Arizona's students need to know and be able to do by the end of twelfth grade. Developed by committees comprised of educators, parents, students, and business and community leaders, these standards were written in grade-level clusters with benchmarks at grades 3, 5, 8, and high school.

RATIONALE

Requirements in the No Child Left Behind Act of 2001 (NCLB) and the standard practice of conducting periodic review of the state academic standards prompted the decision by the Arizona Department of Education to refine and articulate the academic standards for mathematics, reading, writing, and science by grade level. This refinement and articulation project was started in December 2003, and was completed in June 2004.

METHODOLOGY

Writing Standard refinement began in January 2004, expanding the standard to include performance objectives for all grade levels, kindergarten through twelfth grade. The writing articulation teams consisted of educators from around the state, representing large and small schools, rural and urban schools, and ethnic diversity. National consultants, university professors, and Arizona Department of Education staff advised the teams. The goal was to articulate and align the current academic standards by grade level (K-12).

The Writing Articulation Committee utilized resources and information from current, effective classroom practices, from other states' standards, and from the National Council of Teachers of English, which promotes quality literacy instruction.

The articulation process included a restructuring of the Arizona Academic Content Writing Standards to better facilitate the alignment of performance objectives by grade level, while maintaining the content integrity.

Over a period of months, the articulation team and smaller subcommittees of the teams refined the documents. Reasonableness, usefulness, and appropriateness were the guidelines for the articulation process.

External reviews by nationally recognized consultants brought a broad perspective to the articulation process. Internal reviews by university and local experts provided additional validation.

Another important step in the project was the request for public comment. In May 2004, a draft of the Writing Standard Articulated by Grade Level, along with a survey to gather feedback, was posted on the Arizona Department of Education website. This provided the public with easy access to the documents, and the survey allowed reviewers a means for submitting comments. The public and all educators had the opportunity to submit comments and suggestions, either electronically or in writing, until the public review closing date of May 27, 2004. In May, three public hearings were held throughout the state, offering further opportunities for public input.

Based on public comment and online survey results, the articulation team met to determine necessary modifications to the standard. All public comments were given equal consideration.

Included in the standard articulation process the development of a rationale, glossary, and a crosswalk (correlation between the 1996 Writing Standard and revised, articulated standard). These additional documents were designed to assist educators with the transition from the 1996 Writing Standards to the 2004 Writing Standard Articulated by Grade Level.

WRITING STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 1: Writing Process

Research has established the major steps of the writing process. These steps are identified in the five concepts of this strand, each supported with specific performance objectives. While all steps are needed and used by effective writers as they compose text, different skills may be emphasized in individual assignments. These steps may be used recursively as a piece moves toward completion. Throughout the process, students should reflect on their own writing skills, set goals, and evaluate their own progress.

Concept 1: Prewriting Prewriting includes using strategies to generate, plan, and organize ideas for specific purposes.
PO 1. Generate ideas through a variety of activities (e.g., brainstorming, graphic organizers, drawing, writer's notebook, group discussion, printed material).
PO 2. Determine the purpose (e.g., to entertain, to inform, to communicate, to persuade) of a writing piece.
PO 3. Determine the intended audience of a writing piece.
*PO 4. Use organizational strategies (e.g., **graphic organizer**, **KWL chart**, log) to plan writing.*
PO 5. Maintain a record (e.g., lists, pictures, journal, folder, notebook) of writing ideas.
PO 6. Use **time management strategies**, when appropriate, to produce a writing product within a set time period.

Concept 2: Drafting Drafting incorporates prewriting activities to create a first draft containing necessary elements for a specific purpose.
PO 1. Use a **prewriting plan** to develop a draft with main idea(s) and supporting details.
PO 2. Organize writing into a logical sequence that is clear to the audience.

Concept 3: Revising Revising includes evaluating and refining the rough draft for clarity and effectiveness. (Ask: Does this draft say what you want it to say?)
PO 1. Evaluate the draft for use of ideas and content, organization, voice, word choice, and sentence fluency. (See Strand 2)
PO 2. Add details to the draft to more effectively accomplish the purpose.
PO 3. Rearrange words, sentences, and paragraphs to clarify the meaning of the draft.
PO 4. Use a combination of sentence structures (i.e., **simple**, **compound**) to improve sentence fluency in the draft.
PO 5. Modify word choice appropriate to the application in order to enhance the writing.
PO 6. Apply appropriate tools or strategies (e.g., **peer review**, checklists, **rubrics**) to refine the draft.
PO 7. Use resources and reference materials to select more precise vocabulary.

Italics denotes a repetition of a performance objective (learned in an earlier grade) that is to be applied to more complex writing.
The bulleted (lettered) items within a performance objective indicate specific content to be taught.
Words shown in bold print are referenced in the glossary.

WRITING STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Concept 4: Editing Editing includes proofreading and correcting the draft for conventions.
PO 1. Identify punctuation, spelling, and grammar and usage errors in the draft. (See Strand 2)
PO 2. Use resources (e.g., dictionary, word lists, spelling/grammar checkers) to correct conventions.
PO 3. Apply **proofreading marks** to indicate errors in conventions, although may be inconsistent or experimental.
PO 4. Apply appropriate tools or strategies (e.g., **peer review**, checklists, **rubrics**) to edit the draft.

Concept 5: Publishing Publishing includes formatting and presenting a final product for the intended audience.
PO 1. Prepare writing in a format (e.g., oral presentation, manuscript, multimedia) appropriate to audience and purpose.
PO 2. Share the writing with the intended audience.
PO 3. Use margins and spacing to enhance the final product.
PO 4. Write legibly.

Strand 2: Writing Elements

Strand 2 focuses on the elements of effective writing. Good writing instruction incorporates multiple performance objectives into an integrated experience of learning for the student. The order of the concepts and performance objectives is not intended to indicate a progression or hierarchy for writing instruction. Instructional activities may focus on just one concept or many.

Concept 1: Ideas and Content Writing is clear and focused, holding the reader's attention throughout. Main ideas stand out and are developed by strong support and rich details. Purpose is accomplished.
PO 1. Express ideas that are clear and directly related to the topic.
PO 2. Provide content and selected details that are well-suited to audience and purpose.
PO 3. Use relevant details to provide adequate support for the ideas.

Concept 2: Organization Organization addresses the structure of the writing and threads the central meaning and the patterns that hold the piece together.
*PO 1. Organize content in a selected format (e.g., **friendly letter**, **narrative**, expository text).* (See Strand 3)
PO 2. Create a beginning that captures the reader's interest.
PO 3. Place details appropriately to support the main idea.
*PO 4. Use **transitional words** and phrases (e.g., next, then, so, but, while, after that, because) to connect ideas.*
PO 5. Create an ending that provides a sense of **resolution** or closure.
PO 6. Construct a paragraph that groups sentences around a topic.

Italics denotes a repetition of a performance objective (learned in an earlier grade) that is to be applied to more complex writing.
The bulleted (lettered) items within a performance objective indicate specific content to be taught.
Words shown in bold print are referenced in the glossary.

WRITING STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Concept 3: Voice Voice will vary according to the type of writing, but should be appropriately formal or casual, distant or personal, depending on the audience and purpose.
PO 1. Show awareness of the audience through word choice and style.
PO 2. Convey a sense of originality, sincerity, liveliness, or humor appropriate to topic and type of writing.

Concept 4: Word Choice Word choice reflects the writer's use of specific words and phrases to convey the intended message and employs a variety of words that are functional and appropriate to the audience and purpose.
PO 1. Use a variety of specific and accurate words that effectively convey the intended message.
PO 2. Use descriptive words and phrases that energize the writing.
PO 3. Apply vocabulary and/or terminology appropriate to the type of writing.
PO 4. Use **literal** and **figurative language** in a variety of ways (e.g., imitating, creating new words, **rhyming**), although may be inconsistent or experimental.

Concept 5: Sentence Fluency Fluency addresses the rhythm and flow of language. Sentences are strong and varied in structure and length.
PO 1. Write **simple and compound sentences**.
PO 2. Write sentences that flow together and sound natural when read aloud.
PO 3. Vary sentence beginnings, lengths, and patterns to enhance the flow of the writing.

Concept 6: Conventions Organization addresses the structure of the writing and threads the central meaning and the patterns that hold the piece together.
PO 1. Use capital letters for: a. ***proper nouns*** *(i.e., names, days, months*) b. titles c. names of places d. abbreviations e. literary titles (i.e., book, story, poem)
PO 2. Punctuate endings of sentences using: *a. periods* *b. question marks* c. *exclamation points*
PO 3. Use commas to punctuate: *a. items in a series* *b. greetings and closings of letters* *c. dates*
PO 4. Use quotation marks to punctuate **dialogue**, although may be inconsistent or experimental.
PO 5. Use a colon to punctuate time.
PO 6. Use apostrophes to punctuate: a. contractions b. singular possessive

Italics denotes a repetition of a performance objective (learned in an earlier grade) that is to be applied to more complex writing.
The bulleted (lettered) items within a performance objective indicate specific content to be taught.
Words shown in bold print are referenced in the glossary.

Approved 6.28.04

WRITING STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

*PO 7. Spell **high frequency words** correctly.*
PO 8. Use common spelling patterns/generalizations to spell words correctly, including: a. **word families** b. **regular plurals** c. **r-controlled** d. **diphthong** e. **consonant digraphs** f. **CVC words** g. **CCVC** h. **CVCC** i. **affixes**
PO 9. Spell simple **homonyms** correctly in context.
*PO 10. Use resources (e.g., dictionaries, **word walls**) to spell correctly.*
*PO 11. Use the following parts of speech correctly in **simple sentences**:* *a. nouns* *b. action verbs* *c. personal pronouns* *d. adjectives*
*PO 12. Use subject/verb agreement in **simple sentences**.*

Strand 3: Writing Applications

Writing skills particular to the modes listed here may be taught across the curriculum, although some modes may lend themselves more readily to specific content areas. It is imperative that students write in all content areas in order to increase their communication skills, and ultimately to improve their understanding of content area concepts. When appropriate, other content standards are referenced to show interdisciplinary connections.

Concept 1: Expressive Expressive writing includes **personal narratives**, stories, poetry, songs, and dramatic pieces. Writing may be based on real or imagined events.
PO 1. Write a **narrative** based on imagined or real events, observations, or memories that includes: a. characters b. **setting** c. **plot** d. sensory details e. clear language f. logical sequence of events
PO 2. Write in a variety of expressive forms (e.g., poetry, skit) that may employ: a. **figurative language** b. **rhythm** c. **dialogue** d. **characterization** e. **plot** f. appropriate format

Italics denotes a repetition of a performance objective (learned in an earlier grade) that is to be applied to more complex writing.
The bulleted (lettered) items within a performance objective indicate specific content to be taught.
Words shown in bold print are referenced in the glossary.

WRITING STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Concept 2: Expository

Expository writing includes non-fiction writing that describes, explains, or summarizes ideas and content. The writing supports a **thesis** based on research, observation, and/or experience.

PO 1. Record information (e.g., observations, notes, lists, charts, map labels and legends) related to the topic.

PO 2. Write an expository paragraph that contains:
- a. a topic sentence
- b. supporting details
- c. relevant information

PO 3. Write in a variety of expository forms (e.g., summary, newspaper article, reflective paper, log, journal).

Concept 3: Functional

Functional writing provides specific directions or information related to real-world tasks. This includes letters, memos, schedules, directories, signs, manuals, forms, recipes, and technical pieces for specific content areas.

PO 1. Write a variety of functional text (e.g., directions, recipes, procedures, ***rubrics,*** *labels, graphs/tables).*
(See R03-S3C2; M03-S2C1)

PO 2. Write communications, including:
- a. *thank-you notes*
- b. ***friendly letters***
- c. **formal letters**
- d. messages
- e. invitations

PO 3. Address an envelope for correspondence that includes:
- a. an appropriate return address
- b. an appropriate recipient address

Concept 4: Persuasive

Persuasive writing is used for the purpose of influencing the reader. The author presents an issue and expresses an opinion in order to convince an audience to agree with the opinion or to take a particular action.

PO 1. Write persuasive text (e.g., advertisements, paragraph) that attempts to influence the reader.
(See R03-S3C3)

Italics denotes a repetition of a performance objective (learned in an earlier grade) that is to be applied to more complex writing.
The bulleted (lettered) items within a performance objective indicate specific content to be taught.
Words shown in bold print are referenced in the glossary.

WRITING STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Concept 5: Literary Response Literary response is the writer's reaction to a literary selection. The response includes the writer's interpretation, analysis, opinion, and/or feelings about the piece of literature and selected elements within it.
PO 1. Write a reflection to a literature selection (e.g., journal entry, book review). (See R03-S2C1)
PO 2. Write a book report or review that may identify the: a. **main idea** b. character(s) c. **setting** d. sequence of events e. problem/solution (See R03-S2C1)
PO 3. Write a response to a literature selection that connects: a. *text to self (personal connection)* b. *text to world (social connection)* c. *text to text (compare within multiple texts)* (See R03-S2C1)

Concept 6: Research Research writing is a process in which the writer identifies a topic or question to be answered. The writer locates and evaluates information about the topic or question, and then organizes, summarizes, and synthesizes the information into a finished product.
PO 1. Paraphrase information from at least one source (e.g., Internet, reference materials). (See R03-S3C1-03, -04, -05)
PO 2. Organize notes in a meaningful sequence. (See R03-S3C1-03, -04, -05)
PO 3. Write an informational report that includes **main idea**(s) and relevant details. (See R03-S3C1-03, -04, -05)

Italics denotes a repetition of a performance objective (learned in an earlier grade) that is to be applied to more complex writing.
The bulleted (lettered) items within a performance objective indicate specific content to be taught.
Words shown in bold print are referenced in the glossary.

Language Arts Standards 1996

Standard 3: Listening and Speaking
Standard 4: Viewing and Presenting

Foundations (Grades 1-3)

Language Arts Standards Rationale

A Vision for Arizona's Students

Arizona's students must be able to communicate effectively in their schools and communities. The communication skills of reading, writing, listening, speaking, viewing and presenting form the core of language and literacy. The ultimate purpose of the following language arts standards is to ensure that all students be offered the opportunities, the encouragement and the vision to develop the language skills they need to pursue lifelong goals, including finding personal
enrichment and participating as informed members of society. The language art standards presented in this document are organized into four areas:

- Reading
- Writing
- Listening and Speaking
- Viewing and Presenting

Reading, writing, listening and speaking are commonly recognized as language skills. Visual communication skills have long been applied in language arts classrooms through the use of media and visual resources. However, with the increase in the availability and variety of media, students are faced with numerous demands for interpreting and creating visual messages. In this document, viewing (interpreting visual messages) and presenting (creating visual messages) are the two aspects of visual communication. Resources available for teaching visual communication range from charts, graphs and photographs to the most sophisticated electronic media.

The interdependency of reading, writing, listening, speaking, viewing and presenting requires that language arts skills be integrated in two ways:

- Within language art
- Across other content areas

Students use language skills to understand academic subject matter and to enrich their lives. They develop literacy at different rates and in a variety of ways. Consequently, interdependent language arts skills and processes should be taught in a variety of learning situations.

Assessment of language arts skills and processes should be comprehensive, authentic and performance based. Multiple assessment methods should be used to evaluate a student's knowledge base and the application of reading, writing, listening, speaking, viewing and presenting. Assessment tasks should reflect those experiences encountered in the home, community and workplace. Issues concerning assessment of specific populations pose complex questions with no simple solutions. As programs and assessments are developed, these issues must be resolved to enable all students to meet the standards.

In conclusion, the standards in the language arts framework form the core of every student's ability to function effectively in society. Students will need a wide repertoire of communication strategies and skills to succeed as learners, citizens, workers and fulfilled individuals in the 21st century.

LANGUAGE ARTS STANDARD
STRAND 3 – LISTENING AND SPEAKING AND
STRAND 4 – VIEWING AND PRESENTING
FOUNDATIONS (GRADES 1-3)

STANDARD 3: LISTENING AND SPEAKING

Students effectively listen and speak in situations that serve different purposes and involve a variety of audiences.

- **LS-F1. Use effective vocabulary and logical organization to relate or summarize ideas, events and other information**
- **LS-F2. Give and follow multiple-step directions**
- **LS-F3. Prepare and deliver information by generating topics; identifying the audience; and organizing ideas, facts or opinions for a variety of speaking purposes such as giving directions, relating personal experiences, telling a story or presenting a report**

STANDARD 4: VIEWING AND PRESENTING

Students use a variety of visual media and resources to gather, evaluate and synthesize information and to communicate with others.

- **VP-F1. Recognize different types of visual media**
- **VP-F2. Plan and present a report, using two or more visual media**
- **VP-F3. Access, view and respond to visual forms such as computer programs, videos, artifacts, drawings, pictures and collages**
- **VP-F4. Interpret visual clues in cartoons, graphs, tables and charts that enhance the comprehension of text**

Mathematics Standard Articulated by Grade Level 2008

Grade 3

Mathematics Standard Articulated by Grade Level

The Arizona Mathematics Standard Articulated by Grade Level describes a connected body of mathematical understandings and competencies that provide a foundation for all students. This standard is coherent, focused on important mathematics, and well articulated across the grades. Concepts and skills that are critical to the understanding of important processes and relationships are emphasized.

The need to understand and use a variety of mathematical strategies in multiple contextual situations has never been greater. Utilization of mathematics continues to increase in all aspects of everyday life, as a part of cultural heritage, in the workplace, and in scientific and technical communities. Today's changing world will offer enhanced opportunities and options for those who thoroughly understand mathematics.

Communication, problem solving, reasoning and proof, connections, and representation are the process standards as described in the *Principles and Standards for School Mathematics* from the National Council of Teachers of Mathematics (NCTM). These process standards are interwoven within each of the content strands of the Arizona Mathematics Standard and are explicitly connected to the teaching of specific performance objectives in the grade level documents. The process standards emphasize ways to acquire and apply the content knowledge.
Mathematics education should enable students to fulfill personal ambitions and career goals in an informational age. In the NCTM *Principles and Standards* document it asks us to "*Imagine a classroom, a school, or a school district where all students have access to high-quality, engaging mathematics instruction. There are ambitious expectations for all, with accommodations for those who need it".*[1] The Arizona Mathematics Standard Articulated by Grade Level is intended to facilitate this vision.

BACKGROUND

The State Board of Education adopted the Mathematics Standard Articulated by Grade Level in 2003 to define what Arizona students need to know and be able to do at each grade level through the end of tenth grade. Developed by a committee comprised of a diverse group of educators, this standard was written in response to the requirements of *No Child Left Behind Act of 2001* (NCLB).

RATIONALE

In 2007 the State Board of Education began the process for increasing the high school graduation requirement in mathematics from two to four years. This requirement was approved in December 2007 effective with the graduating class of 2013. This increase, along with the need to complete a periodic review of the standard, prompted the Arizona Department of Education to initiate the process of refining and rearticulating the Mathematics Standard. This refinement and articulation project began in June 2007 and was completed in June 2008.

1 National Council of Teachers of Mathematics, Principles and Standards for School Mathematics, NCTM Publications, Reston, VA, 2000, p. 3.

METHODOLOGY

Work teams representing populations from around the state were formed. These groupings were comprised of large and small schools, rural and urban schools, and were ethnically diverse. Included were classroom teachers, curriculum directors, mathematics teacher leaders, Career and Technical Education teachers, second-career teachers, and university/community college faculty. The goal was to revise and articulate the Mathematics Standard K-12 to align with the increased state requirement of four years of high school mathematics.

The mathematics revision teams utilized the National Council of Teachers of Mathematics *Principles and Standards* as a reference in the development of the revised Mathematics Standard. Additionally, the findings and recommendations from the National Mathematics

Advisory Panel, the American Diploma Project Benchmarks, the National Assessment of Educational Progress Framework, the Curriculum Focal Points, the Framework for 21st Century Skills, and other states' frameworks were used as guiding documents.

The revision grade level teams created draft documents with performance objectives articulated to the appropriate grade levels. Over a period of months, these teams and smaller sub-committees of teams refined the draft documents based on clarity, cohesiveness, and comprehensiveness. Reasonableness, usefulness, and appropriateness were key guidelines for the articulation process. The measurability of each performance objective was also a consideration.

External reviews by nationally recognized consultants brought a broader perspective to the refinement process. Another important step in the process was the gathering of public comment. In March 2008, drafts of the Revised Mathematics Standard Articulated by Grade Level, along with a survey to gather feedback, were posted on the Arizona Department of Education website. This provided the public with easy access to the documents, and a survey allowed reviewers a means for submitting comments. Also, crosswalks were created from the Draft 2008 Mathematics Standard to the 2003 Mathematics Standard and were posted on the website. The public had the opportunity to submit comments and suggestions, either electronically or in writing, until the survey closing date of March 28, 2008. Additionally, five public hearings were held in March throughout the state offering further opportunities for public feedback.

After all the public comments were collected, organized, and categorized by grade level and topic, the revision teams met to determine what modifications to the standard document would be appropriate. Upon completion of the revision work, crosswalks were created to assist educators with the transition from the 2003 Arizona Mathematics Standard Articulated by Grade Level to the revised 2008 Mathematics Standard.

ORGANIZATION OF THE MATHEMATICS STANDARD

The Mathematics Standard Articulated by Grade Level is divided into five main strands:

- Number and Operations
- Data Analysis, Probability, and Discrete Mathematics
- Patterns, Algebra, and Functions
- Geometry and Measurement
- Structure and Logic.

Each strand is divided into concepts that broadly define the skills and knowledge that students are expected to know and be able to do. Under each concept are performance objectives (POs) that more specifically delineate the ideas to be taught and learned.

The comprehensive document (K-12) is designed so that teachers can read the performance objectives across grade levels to incorporate learning from previous, current, and future grade levels. The standard is separated into two separate documents due to the addition of College Work Readiness (grades 11-12). The first document spans grade levels K through 6, and the second document covers grades 7 through College Work Readiness. Viewing the Mathematics Standard document from left to right helps the teacher to see the mathematics continuum across the grade levels. There is a purposeful clustering of performance objectives in order to emphasize certain key understandings. Every effort was made to eliminate repetitions. The intent was to build on the learning in previous grade levels, connect important ideas, and highlight new content each year. This coherency supports students in developing new understandings and skills. Looking down each individual column enables a teacher to see the performance objectives that students are expected to know and be able to do at any grade level.

This organization does not imply that the teaching and learning of mathematics should be fragmented or compartmentalized. Mathematics is a highly interconnected discipline; important mathematical ideas from all five mathematics strands need to be continuously integrated as needed to make meaning and connections to other concepts and performance objectives. In each grade level document, these connections are highlighted.

The order of the strands, concepts, and performance objectives (POs) in the Mathematics Standard document are not intended to be a checklist for mathematics instruction. Mathematical concepts develop with a spiraling of ideas/skills that are interconnected and dependent on each other, and this is reflected in the standard document. Effective instruction often incorporates several performance objectives into an integrated experience of learning for the student.
The content in College Work Readiness (grades 11-12) is a new addition to the Mathematics Standard. This content is separated into the five main strands. Performance objectives highlighted in italics in the document have been identified as core to an Algebra II course. As districts/schools create additional high school mathematics courses, they may select from the comprehensive set of performance objectives contained within the five strands.

New to the 2008 Mathematics Standard is the development of more comprehensive grade level documents. The format of these documents will support the implementation of the revised standard. After each concept statement, there are summary expectations appropriate for that specific grade level. These statements provide a roadmap for instruction. Teachers will notice that there are now three columns of information. The first column lists the performance objectives with accompanying strand/concept and content area connections. The middle column highlights explicit connections to Strand 5, Concept 2 performance objectives. These performance objectives are grounded in the core processes of logic, reasoning, problem-solving and proof. The third column provides instructional support to teachers in the form of explanation and examples.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Every student should understand and use all concepts and skills from the previous grade levels. The standard is designed so that new learning builds on preceding skills. Communication, Problem-solving, Reasoning & Proof, Connections, and Representation are the process standards that are embedded throughout the teaching and learning of all mathematical strands.

Strand 1: Number and Operations

Number sense is the understanding of numbers and how they relate to each other and how they are used in specific context or real-world application. It includes an awareness of the different ways in which numbers are used, such as counting, measuring, labeling, and locating. It includes an awareness of the different types of numbers such as, whole numbers, integers, fractions, and decimals and the relationships between them and when each is most useful. Number sense includes an understanding of the size of numbers, so that students should be able to recognize that the volume of their room is closer to 1,000 than 10,000 cubic feet. Students develop a sense of what numbers are, i.e., to use numbers and number relationships to acquire basic facts, to solve a wide variety of real-world problems, and to estimate to determine the reasonableness of results.

Concept 1: Number Sense

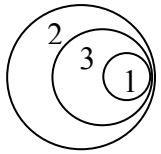
Understand and apply numbers, ways of representing numbers, and the relationships among numbers and different number systems.

In Grade 3, students build on their previous work with numbers and deepen their understanding of place value in various contexts. They extend their understanding of the base ten number system to larger numbers and apply this understanding by representing numbers in various equivalent forms. Students develop an understanding of the meanings and uses of fractions. They solve problems that involve comparing and ordering fractions and learn to represent fractions in different ways.

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 1. Express whole numbers through six digits using and connecting multiple representations. Connections: M03-S1C1-02, M03-S1C1-03, M03-S1C2-01, M03-S1C2-03, M03-S2C1-01, M03S3C2-02, M03-S3C3-01		Use models, pictures, symbols, spoken and written words, and expanded notation. Models may include money, place value charts, or physical objects such as base ten blocks. Continued on next page

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
		Examples: • If the diagram represents the number 231, how would you represent the number 4,521?  • The US Census Bureau estimates that the number of children between the ages of 5 and 13 in Arizona in 2006 was seven hundred ninety-one thousand, nine hundred thirty-one. What is this number written in numeric form?
PO 2. Compare and order whole numbers through six digits by applying the concept of place value. Connections: M03-S1C1-01, M03-S1C1-04, M03-S1C3-01, M03-S2C1-02, M03-S2C4-02, M03-S3C3-01	M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols.	Use comparative language and symbols (<, >, =, ≠).
PO 3. Count and represent money using coins and bills to $100.00. Connections: M03-S1C1-01, M03-S1C2-01, M03-S1C2-02, SS03-S5C2-01, SS03-S5C5-01	M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols.	

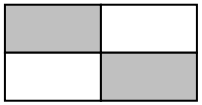
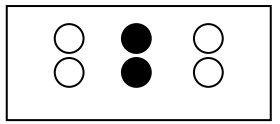
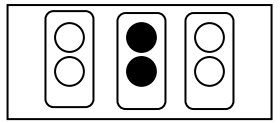
The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 4. Sort whole numbers into sets and justify the sort. Connections: M03-S1C1-02, M02-S1C2-04	M03-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions.	Numbers may be sorted into categories such as even and odd, magnitude (number between 1-9, numbers between 10-99, etc.), multiples of 5, digits in the numbers (all of the numbers in the first category have a 3 in the tens place). Sorting numbers by their divisibility can be used to reinforce multiplication and division facts. Examples: • Tarin drew the cards 4, 26, 18, 102, 75, 60, and 55 from a deck of cards labeled with the numbers 1 through 120. He sorted the cards into two groups. Group 1: 4, 26, 18, 60, 102 and Group 2: 75, 55. o What categories might Tarin have used to sort the cards? o Where would you place the card 57 if it were drawn next? • The numbers 1-20 can be sorted into numbers that have a factor of 3 and numbers that have a factor of 4. NOTE: 12 would belong in both sets.
PO 5. Express benchmark fractions as fair sharing, parts of a whole, or parts of a set. Connections: M03-S1C1-06, M03-S1C2-03	M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols.	Benchmark fractions include common fractions between 0 and 1 such as halves, thirds, fourths, fifths, sixths, eighths and tenths. Students are not expected to compute equivalent fractions but they should recognize that fractions can have more than one name. Examples: • Amy has 12 pencils. She is going to share the pencils fairly among 3 people. What fraction of the pencils will each person get? Continued on next page

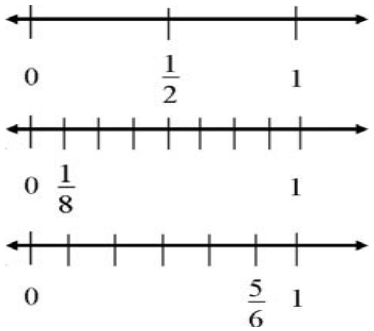
The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
		• What fraction of the rectangle is shaded? Write the fraction in numerals and words. How might you draw the rectangle in another way but with the same fraction shaded?  Solution: $\frac{2}{4}$ or $\frac{1}{2}$ What fraction of the set is black?  Solution: $\frac{2}{6}$  Solution: $\frac{1}{3}$

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 6. Compare and order benchmark fractions. Connections: M03-S1C1-05, M03-S1C3-01	M03-S5C2-03. Select and use one or more strategies to efficiently solve the problem and justify the selection.	Benchmark fractions include common fractions between 0 and 1 such as halves, thirds, fourths, fifths, sixths, eighths, and tenths. Fractions can be compared using benchmarks, common denominators, or common numerators. Symbols used to describe comparisons include <, >, =, ≠. Fractions may be compared using $\frac{1}{2}$ as a benchmark.  Possible student thinking: • $\frac{1}{8}$ is smaller than $\frac{1}{2}$ because when 1 whole is cut into 8 pieces, the pieces are much smaller than when 1 whole is cut into 2 pieces. • $\frac{5}{6} > \frac{1}{2}$ because $\frac{3}{6} = \frac{1}{2}$ and $\frac{5}{6} > \frac{3}{6}$. Continued on next page

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
	M03-S5C2-03. Select and use one or more strategies to efficiently solve the problem and justify the selection.	Fractions with common denominators may be compared using the numerators as a guide. • $\frac{2}{6} < \frac{3}{6} < \frac{5}{6}$ Fractions with common numerators may be compared and ordered using the denominators as a guide. • $\frac{3}{10} < \frac{3}{8} < \frac{3}{4}$

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 1: Number and Operations
Concept 2: Numerical Operations

Understand and apply numerical operations and their relationship to one another.

In Grade 3, students build on their previous work with numbers to understand the meanings of multiplication and division. Students apply basic multiplication facts and efficient procedures. They explore the relationship between multiplication and division as they learn related multiplication and division facts.

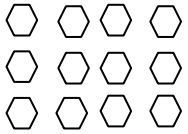
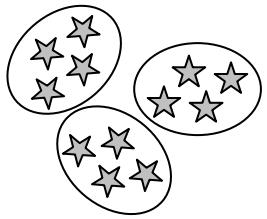
Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 1. Add and subtract whole numbers to four digits. Connections: M03-S1C1-01, M03-S1C1-03, M03-S1C2-02, M03-S1C3-01, M03-S2C1-02, M03-S2C4-02, M03-S2C4-03, M03-S3C1-01, M03-S3C1-02, M03-S3C2-01, M03-S3C3-01	M03-S5C2-03. Select and use one or more strategies to efficiently solve the problem and justify the selection. M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. M03-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.	Problems should include vertical and horizontal forms, including opportunities to apply the commutative and associative properties. Example: • Mary read 1,173 pages over her summer reading challenge. She was only required to read 899 pages. How many extra pages did Mary read over the challenge requirements? Continued on next page

The bulleted items within a performance objective indicate the specific content to be taught.

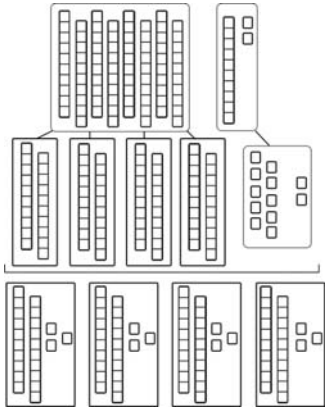
Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
		Students may solve the problem using the traditional algorithm. Here are four other methods students may use to solve the computation in the problem above. • 899 + 1 = 900, 900 + 100 = 1,000, 1000 + 173 = 1,173, therefore 1+ 100 + 173 = 274 pages (Adding Up Strategy) • 900 + 100 is 1,000; 1,000 + 173 is 1,173; 100 + 173 is 273 plus 1 (for 899, not 900) is 274 (Compensating Strategy) • Take away 173 from 1,173 to get to 1,000, take away 100 to get to 900, and take away 1 to get to 899. Then 173 +100 + 1 = 274 (Subtraction Strategy) • 899 + 1 is 900, 900, 1,000 (that's 100). 1,000, 1,100 (that's 200 total). 1,100, 1,110, 1,120, 1,130, 1,140, 1,150, 1,160, 1,170, (that's 70 more), 1,171, 1,172, 1,173 (that's 3 more) so the total is 1+200+70+3 = 274 (Adding by Tens or Hundreds Strategy)
PO 2. Create and solve word problems based on addition, subtraction, multiplication, and division. Connections: M03-S1C1-03, M03-S1C2-01, M03-S1C2-03, M03-S1C2-04, M03-S1C2-05, M03-S1C2-06, M03-S1C2-07, M03-S1C3-01, M03-S2C1-02, M03-S2C3-01, M03-S2C3-02, M03-S2C4-02, M03-S2C4-03, M03-S3C1-01, M03-S3C2-01, M03-S3C3-02, M03-S3C3-03, M03-S4C4-01, M03-S4C4-03, M03-S4C4-04, M03-S4C4-05	M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols.	Students use a variety of representations for creating and solving one-step word problems, i.e., numbers, words, pictures, physical objects, or equations. Students explain their thinking, show their work by using at least one of these representations, and verify that their answer is reasonable.

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 3. Demonstrate the concept of multiplication and division using multiple models. Connections: M03-S1C1-01, M03-S1C1-05, M03-S1C2-02, M03-S1C2-04, M03-S1C2-05, M03-S1C2-06, M03-S2C3-01, M03-S2C3-02, M03-S3C3-03, M03-S4C4-04	M03-S5C2-03. Select and use one or more strategies to efficiently solve the problem and justify the selection. M03-S5C2-04. Determine whether a problem to be solved is similar to previously solved problems, and identify possible strategies for solving the problem. M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols.	Students are expected to be familiar with multiple representations. The equation 3 x 4 = 12 could be represented in the following ways. • an array:  • equal sets:  • repeated addition or subtraction**:** 4 + 4 + 4 • three equal jumps forward from 0 on the number line to 12:  Continued on next page

The bulleted items within a performance objective indicate the specific content to be taught.

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
		Students should experience problems that involve both sharing and measurement. Examples: • This is an example of a partitive division or fair sharing problem: o The bag has 92 hair clips, and Laura and her three friends want to share them equally. How many hair clips would each person get?  • The following is an example of a measurement or repeated subtraction problem: o Max the monkey loves bananas. Molly, his trainer, has 24 bananas. If she gives Max 4 bananas each day, how may days will the bananas last?

Starting	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
24	24-4= 20	20-4= 16	16-4= 12	12-4= 8	8-4= 4	4-4= 0

Solution: The bananas will last for 6 days.

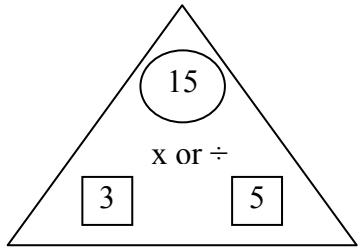
The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 4. Demonstrate fluency of multiplication and division facts through 10. Connections: M03-S1C2-02, M03-S1C2-03, M03-S1C2-05, M03-S1C2-06, M03-S1C2-07, M03-S2C3-01, M03-S2C3-02, M03-S3C1-01, M03-S3C1-02, M03-S3C2-01, M03-S3C3-03		Students demonstrate fluency with multiplication facts through 10 and the related division facts. Fact fluency includes working with facts flexibly, accurately, and efficiently. This means that students have quick recall using strategies that are efficient. Strategies for learning facts include: • Zeros and Ones • Doubles (2s facts), Doubling twice (4s), Doubling three times (8s) • Tens Facts • Five Facts (half of tens) • Skip Counting (counting groups of --) • Square Numbers (Ex: 3 x 3) • Nifty Nines • Turn-around Facts (Commutative Property) • Fact Families (Ex: 6 x 4 = 24; 24 ÷ 6 = 4; 24 ÷ 4 = 6; 4 x 6 = 24) • Missing Factors Students may be able to master multiplication facts more easily if they can relate new facts to prior knowledge. When students think about 6 X 8, they might think about the familiar fact of 5 X 8. They know 5 X 8 = 40, so then they add 8 more to 40. They arrive at the answer of 48.

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 5. Apply and interpret the concept of multiplication and division as inverse operations to solve problems. Connections: M03-S1C2-02, M03-S1C2-03, M03-S1C2-04, M03-S1C2-06, M03-S3C3-03	M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols.	Multiplication and division facts are inverse operations and that understanding can be used to solve the unknown. Fact family triangles demonstrate the inverse operations of multiplication and division by showing the four possible facts using the same three numbers. Examples: • 3 x 5 = 15 5 x 3 = 15 • 15 ÷ 3 = 5 15 ÷ 5 = 3 
PO 6. Describe the effect of operations (multiplication and division) on the size of whole numbers. Connections: M03-S1C2-02, M03-S1C2-03, M03-S1C2-04, M03-S1C2-05, M03-S1C3-01	M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. M03-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions. M03-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.	Multiplying whole numbers causes the quantity to increase. Dividing whole numbers causes the quantity to decrease. It is important to note that this is true for whole numbers, but not necessarily for all numbers.

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 7. Apply commutative, identity, and zero properties to multiplication and apply the identity property to division. Connections: M03-S1C2-02, M03-S1C2-04		Properties of multiplication can be used to help remember basic facts. • 5 x 3 = 3 x 5 (Commutative Property) • 1 x 5 = 5 or 5 x 1 = 5 (Identity Property) • 12 ÷ 1 = 12 • 0 x 5 = 0 or 5 x 0 = 0 (Zero Property)

Strand 1: Number and Operations
Concept 3: Estimation

Use estimation strategies reasonably and fluently while integrating content from each of the other strands.

In Grade 3, students build upon their previous experience with estimation of numbers and quantities. They use multiple strategies to make estimations. Students compare the reasonableness of their estimate to the actual computation. Multiple and continuous estimation experiences lead to greater understanding of number sense.

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 1. Make estimates appropriate to a given situation or computation with whole numbers.	M03-S5C2-03. Select and use one or more strategies to efficiently solve the problem and justify the selection. M03-S5C2-04. Determine whether a problem to be solved is similar to previously solved problems, and identify possible strategies for solving the problem.	Students estimate using all four operations with whole numbers. Students will also use estimation to compare fractions using benchmark fractions. Estimation strategies for comparing fractions extend from students' work with whole numbers. Estimation skills include identifying when estimation is appropriate, determining the level of accuracy needed, selecting the appropriate method of estimation, and verifying solutions or determining the reasonableness of situations using various estimation strategies. Continued on next page

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
	M03-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.	Estimation strategies include, but are not limited to: • front-end estimation with adjusting (using the highest place value and estimating from the front end making adjustments to the estimate by taking into account the remaining amounts), • clustering around an average (when the values are close together an average value is selected and multiplied by the number of values to determine an estimate), • rounding and adjusting (students round down or round up and then adjust their estimate depending on how much the rounding affected the original values), • using friendly or compatible numbers such as factors (students seek to fit numbers together - i.e., rounding to factors and grouping numbers together that have round sums like 100 or 1000), and • using benchmark numbers that are easy to compute (students select close whole numbers for fractions or decimals to determine an estimate). Specific strategies also exist for estimating measures. Students should develop fluency in estimating using standard referents (meters, yard, etc) or created referents (the window would fit about 12 times across the wall).

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 2: Data Analysis, Probability, and Discrete Mathematics
This strand requires students to use data collection, data analysis, statistics, probability, systematic listing and counting, and the study of graphs. This prepares students for the study of discrete functions as well as to make valid inferences, decisions, and arguments. Discrete mathematics is a branch of mathematics that is widely used in business and industry. Combinatorics is the mathematics of systematic counting. Vertex-edge graphs are used to model and solve problems involving paths, networks, and relationships among a finite number of objects.

Concept 1: Data Analysis (Statistics)

Understand and apply data collection, organization, and representation to analyze and sort data.

In Grade 3, students construct and analyze frequency tables, single bar graphs, and single line graphs in addition to pictographs and tally charts from previous grades and use them to solve problems. Students' understanding of number and operations are reinforced as they interpret information from the displays of data.

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 1. Collect, record, organize, and display data using frequency tables, single bar graphs, or single line graphs. Connections: M03-S1C1-01, M03-S2C1-02, SC03-S1C2-04, SC03-S1C2-05, SC03-S1C3-01, SS03-S4C1-05, SS03-S4C6-02	M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols.	Single bar graphs should be created horizontally as well as vertically. Determining appropriate scale and units should be emphasized and provides an opportunity to reinforce multiplication and division skills. The construction and interpretation of data displays can be reinforced during social studies and science.
PO 2. Formulate and answer questions by interpreting and analyzing displays of data, including frequency tables, single bar graphs, or single line graphs. Connections: M03-S1C1-02, M03-S1C2-01, M03-S1C2-02, M03-S1C3-01, M03-S2C1-01, SC03-S1C1-02, SC03-S1C3-02, SC03-S1C3-03, SS03-S4C1-02	M03-S5C2-01. Analyze a problem situation to determine the question(s) to be answered. M03-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions. M03-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.	

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 2: Data Analysis, Probability, and Discrete Mathematics
Concept 2: Probability

Understand and apply the basic concepts of probability.

In Grade 3, there are no performance objectives in this concept. Performance objectives begin in Grade 4.

Strand 2: Data Analysis, Probability, and Discrete Mathematics
Concept 3: Systematic Listing and Counting

Understand and demonstrate the systematic listing and counting of possible outcomes.

In Grade 3, students use lists and charts to systematically organize information and determine the outcomes of a given situation.

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 1. Represent all possibilities for a variety of counting problems using arrays, charts, and systematic lists; draw conclusions from these representations. Connections: M03-S1C2-02, M03-S1C2-03, M03-S1C2-04, M03-S2C3-02, SC03-S1C2-05	M03-S5C2-0 5. Represent a problem situation using words, numbers, pictures, physical objects, or symbols.	After students solve many of these types of counting problems, they should begin to organize their initial random enumeration of possibilities into a systematic way of counting possibilities, particularly through the organization of information in a chart (array) or systematic list. Ultimately, students should begin to make connections to the multiplication principle of counting. See the examples below. Continued on next page

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
		Examples: • Jan is hungry for a snack. A snack consists of one drink and one fruit. List all possible snacks that Jan could eat? **Drink** Milk, Juice **Fruit** Apple, Banana o **A Systematic List** Milk-Apple (MA), Milk-Banana (MB), Juice-Apple (JA), Juice-Banana (JB) o **A Chart (Array)** **Drink** / ***Fruit*** | **Milk** | **Juice** ***Apple*** | MA | JA ***Banana*** | MB | JB • List all the different two-topping pizzas that a customer can order from a pizza shop that only offers four toppings: pepperoni, sausage, mushrooms, and onion. o **A Systematic List** Mushroom-Onion Mushroom-Pepperoni Mushroom-Sausage Onion-Pepperoni Onion-Sausage Pepperoni-Sausage o **A Chart (Array)** | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | Pepperoni | x | | | x | x | | | | | Sausage | x | x | | | | x | | | | Mushroom | | x | x | x | | | | | | Onion | | | x | | x | x | | |

The bulleted items within a performance objective indicate the specific content to be taught.

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 2. Solve a variety of problems based on the multiplication principle of counting. Connections: M03-S1C2-02, M03-S1C2-03, M03-S1C2-04, M03-S1C3-01, M03-S2C3-01	M03-S5C2-03. Select and use one or more strategies to efficiently solve the problem and justify the selection. M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. M03-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.	Students should be able to solve problems based on everyday situations using models or manipulatives. Example: • How many outfits can be created using four different shirts and three different pants?

Strand 2: Data Analysis, Probability, and Discrete Mathematics
Concept 4: Vertex-Edge Graphs

Understand and apply vertex-edge graphs.

In Grade 3, students expand upon their previous experience with coloring pictures and maps in second grade to include more complex maps. Students should be able to justify how they know they used the least number of colors. Students learn that a street map can be represented by a vertex-edge graph and that routes can be represented by paths in graphs.

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 1. Color complex maps using the least number of colors and justify the coloring. Connections: SS03-S4C1-01	M03-S5C2-03. Select and use one or more strategies to efficiently solve the problem and justify the selection.	Students should be given many opportunities to explore and color different types of maps and make conjectures about patterns they notice. Continued on next page

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
	M03-S5C2-04. Determine whether a problem to be solved is similar to previously solved problems, and identify possible strategies for solving the problem. M03-S5C2-08. Make and test conjectures based on data (or information) collected from explorations and experiments.	Examples: • County map of Arizona • Map of United States
PO 2. Investigate properties of vertex-edge graphs • circuits in a graph, • weights on edges, and • shortest path between two vertices. Connections: M03-S1C1-02, M03-S1C2-01, M03-S1C2-02, SS3-S4C1-03	M03-S5C2-02. Identify relevant, missing, and extraneous information related to the solution to a problem. M03-S5C2-04. Determine whether a problem to be solved is similar to previously solved problems, and identify possible strategies for solving the problem. M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. M03-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions. M03-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.	It is very important to give students multiple opportunities to find paths and circuits in graphs, before adding weights to the graphs. Once weights are added to the graphs, students can reinforce their addition skills. In social studies, students construct maps of familiar places. These maps can easily be connected to vertex-edge graphs. Definitions of properties of vertex-edge graphs include: • path – connected sequence of edges that starts at a vertex and ends at a vertex • circuit in a graph – path that starts and ends at the same vertex • weight on an edge – value (or some number of objects) placed along an edge in a vertex-edge graph to represent some quantity such as distance, time, cost, or number of traffic lights Continued on next page

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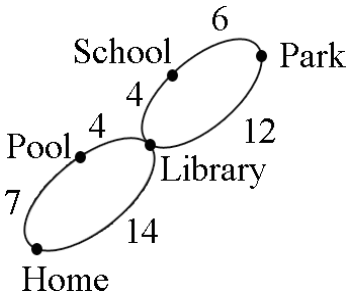
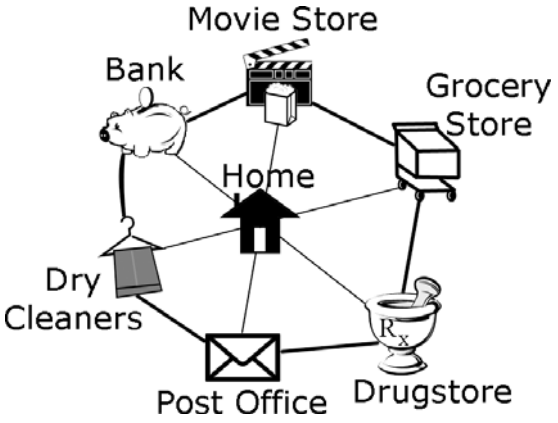
MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
		Example: • What is the shortest path (in minutes) from home to school?  The weights (values) on the graph represent time in minutes. Example: • If Liz leaves her home and visits all the locations on the graph only once and then returns home, she has traveled a circuit. List all the possible circuits. 

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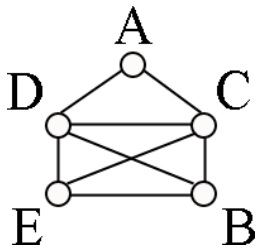
MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 3. Solve problems using vertex-edge graphs. Connections: M03-S1C2-01, M03-S1C2-02, M03-S1C3-01, SS3-S4C1-03	M03-S5C2-01. Analyze a problem situation to determine the question(s) to be answered. M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. M03-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions. M03-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.	Example: • How many different paths can be traveled from point A to point B based on the graph below?  This problem can be made more complex by adding weights to the edges and directing the students to find the shortest path. Addition skills can be reinforced with this type of activity.

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 3: Patterns, Algebra, and Functions
Patterns occur everywhere in nature. Algebraic methods are used to explore, model and describe patterns, relationships, and functions involving numbers, shapes, iteration, recursion, and graphs within a variety of real-world problem solving situations. Iteration and recursion are used to model sequential, step-by-step change. Algebra emphasizes relationships among quantities, including functions, ways of representing mathematical relationships, and the analysis of change.

Concept 1: Patterns

Identify patterns and apply pattern recognition to reason mathematically while integrating content from each of the other strands.

In Grade 3, students understand that logical patterns exist and are a regular occurrence in mathematics. Students recognize, extend, and generalize numerical sequences with both words and symbols.

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 1. Recognize, describe, extend, create, and find missing terms in a numerical sequence. Connections: M03-S1C2-01, M03-S1C2-02, M03-S1C2-04, M03-S3C1-02, M03-S3C2-01, M03-S4C1-01, SC03-S1C1-02	M03-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions.	Working with missing terms in sequences provides an opportunity to reinforce addition, subtraction, multiplication, and division facts. Examples: • 3, ___, 9, 12, 15, … • 80, 72, 64, __, __, __, … Possible descriptions for the second pattern include: • Each number is 8 less than the previous number. • The first term is 8 x 10. The second is 8 x 9. The 3rd term is 8 x 8. So, the next term must be…
PO 2. Explain the rule for a given numerical sequence and verify that the rule works. Connections: M03-S1C2-01, M03-S1C2-04, M03-S1C3-01, M03-S3C1-01, M03-S3C2-01, M03-S4C1-01	M03-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions.	Example: • What is the rule for the pattern? 2, 4, 6, 8, 10, … o rule: *add 2 to the previous term* o verification: 2 + 2 = 4, 4 + 2 = 6, 6 + 2 = 8

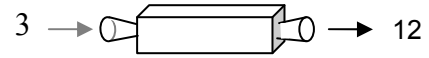
The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 3: Patterns, Algebra, and Functions
Concept 2: Functions and Relationships

Describe and model functions and their relationships.

In Grade 3, students build on the ideas of functions from second grade. Students focus on the relationship between two quantities and how different representations are related.

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 1. Recognize and describe a relationship between two quantities, given by a chart, table or graph, in which the quantities change proportionally, using words, pictures, or expressions. Connections: M03-S1C1-01, M03-S1C2-01, M03-S1C2-02, M03-S1C2-04, M03-S1C3-01, M03-S3C1-01, M03-S3C1-02, M03-S3C2-02, M03-S4C1-01	M03-S5C2-02. Identify relevant, missing, and extraneous information related to the solution to a problem. M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. M03-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions.	The relationship can be given by a table, model, or input/output (function) machine. Examples: • What rule is shown by the input/output machine?  In Out 1 4 2 8 3 12
PO 2. Translate between the different representations of whole number relationships, including symbolic, numerical, verbal, or pictorial. Connections: M03-S3C2-01, M03-S3C3-02, M03-S4C1-01, SC03-S1C2-05, SC03-S1C3-02, SS03-S4C1-05	M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. M03-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions.	Students can represent whole number functions using pictures, numbers, symbols, and words. • Pictures  Continued on next page

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MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

<table>
<tr><th><u>Performance Objectives</u></th><th><u>Process Integration</u></th><th><u>Explanations and Examples</u></th></tr>
<tr><td>Students are expected to:</td><td></td><td></td></tr>
<tr><td></td><td></td><td>

Symbols
The number of points equals 5 x n (if n = the number of stars)
Words
Each star has 5 points. In order to figure out the total number of points, you multiply the number of stars by 5.
Table

<table>
<tr><th>Stars</th><th>Number of Points</th></tr>
<tr><td>1</td><td>5</td></tr>
<tr><td>2</td><td>10</td></tr>
<tr><td>3</td><td>15</td></tr>
<tr><td>4</td><td>20</td></tr>
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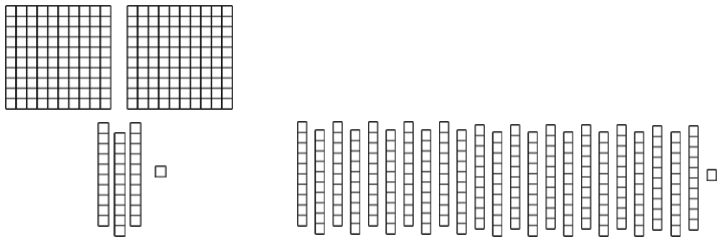
MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 3: Patterns, Algebra, and Functions
Concept 3: Algebraic Representations

Represent and analyze mathematical situations and structures using algebraic representations.

In Grade 3, students use a variety of representations to illustrate mathematical situations and relationships. These representations help students conceptualize ideas and solve problems.

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 1. Record equivalent forms of whole numbers to six digits by constructing models and using numbers. Connections: M03-S1C1-01, M03-S1C1-02, M03-S1C2-01	M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols.	Students may use manipulatives, pictures, or symbols to model whole numbers and their equivalent forms. Examples: • 142,350 = 100,000 + 40,000 + 2,000 + 300 + 50 • 3 x 8 = 6 x 4 • 3 x 8 = 15 + 9 • 20 = 10 + 5 + 5; 10 x 2; 10 + 10, 5 x 4; 10 + 10, etc. • Base Ten Model: 231 2 – 100's; 3 -10's +1 or 23 – 10's + 1 

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MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 2. Use a symbol to represent an unknown quantity in a given context. Connections: M03-S1C2-02, M03-S3C2-02, M03-S3C3-03	M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols.	Example: • Chen baked 25 crackers. His friend ate some of the crackers. Chen now has 9 crackers. $25 - \Delta = 9$
PO 3. Create and solve simple one-step equations that can be solved using addition and multiplication facts. Connections: M03-S1C2-02, M03-S1C2-03, M03-S1C2-04, M03-S1C2-05, M03-S3C3-02	M03-S5C2-01. Analyze a problem situation to determine the question(s) to be answered. M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols.	Students may create story problems or equations. When crafting story problems, students should carefully consider the question(s) to be asked and answered. Examples: • Solve the equations below: $6 \times \Delta = 24$ $a \times 2 \times 2 = 24$ $78 + \Delta = 92$ • Rachel has 3 bags. There are 4 marbles in each bag. How many marbles does Rachel have altogether? $3 \times 4 = m$

Strand 3: Patterns, Algebra, and Functions
Concept 4: Analysis of Change

Analyze how changing the values of one quantity corresponds to change in the values of another quantity.

In Grade 3, there are no performance objectives in this concept. Performance objectives begin in Grade 4.

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

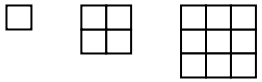
Strand 4: Geometry and Measurement

Geometry is a natural place for the development of students' reasoning, higher thinking, and justification skills culminating in work with proofs. Geometric modeling and spatial reasoning offer ways to interpret and describe physical environments and can be important tools in problem solving. Students use geometric methods, properties and relationships, transformations, and coordinate geometry as a means to recognize, draw, describe, connect, analyze, and measure shapes and representations in the physical world. Measurement is the assignment of a numerical value to an attribute of an object, such as the length of a pencil. At more sophisticated levels, measurement involves assigning a number to a characteristic of a situation, as is done by the consumer price index. A major emphasis in this strand is becoming familiar with the units and processes that are used in measuring attributes.

Concept 1: Geometric Properties

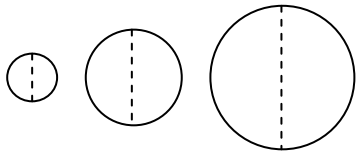
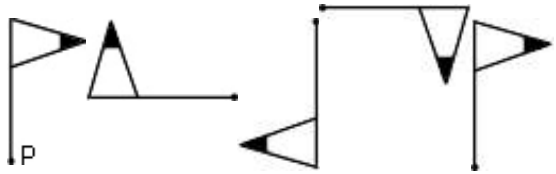
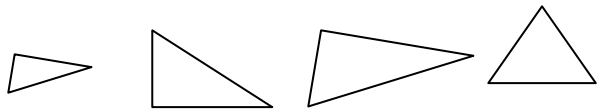
Analyze the attributes and properties of 2- and 3- dimensional figures and develop mathematical arguments about their relationships.

In Grade 3, students describe, analyze, compare, and classify two-and three-dimensional shapes.

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 1. Describe sequences of 2-dimensional figures created by increasing the number of sides, changing size, or changing orientation. Connections: M03-S3C1-01, M03-S3C1-02, M03-S3C2-01, M03-S3C2-02, M03-S4C1-02, M03-S4C2-01, M03-S4C4-04, M03-S4C4-05	M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. M03-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions.	Examples: • Describe how the length and area of the figures shown below are changing.  **Side Length** / **Area** 1 / 1 2 / 4 3 / 9 Continued on next page

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
		Example of description: As the side length of the square increases, the area increases. • Describe the pattern shown in the figures.  • Describe the pattern shown in the figures. 
PO 2. Recognize similar figures. Connections: M03-S4C1-01	M04-S5C2-04. Determine whether a problem to be solved is similar to previously solved problems, and identify possible strategies for solving the problem. M03-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions.	At this level students can only determine if a figure appears to be similar by observing the attributes. They need multiple opportunities to evaluate figures in different orientations. Example: • Which of the figures shown below are similar? How do you know? 

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

<table>
<tr><th>Performance Objectives</th><th>Process Integration</th><th>Explanations and Examples</th></tr>
<tr><td>Students are expected to:</td><td></td><td></td></tr>
<tr><td>PO 3. Identify and describe 3-dimensional figures including their relationship to real world objects: sphere, cube, cone, cylinder, pyramids, and rectangular prisms.

Connections: M03-S4C1-04</td><td>M03-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions.</td><td></td></tr>
<tr><td>PO 4. Describe and compare attributes of two- and three-dimensional figures.

Connections: M03-S4C1-03</td><td>M03-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions.</td><td>Attributes include:

<table><tr><th>2-D Figures</th><th>3-D Figures</th></tr><tr><td>vertices</td><td>vertices</td></tr><tr><td>sides</td><td>edges</td></tr><tr><td>lines of symmetry</td><td>faces</td></tr><tr><td></td><td>base</td></tr><tr><td></td><td>surfaces</td></tr></table>
Students should understand that 2-D figures have perimeter and area and 3-D figures have surface area and volume. At this grade level, area can be described using an array model (M03-S4C4-04). The concepts of surface area and volume should be discussed but not computed.</td></tr>
</table>

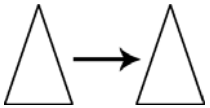
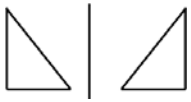
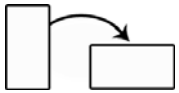
The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 4: Geometry and Measurement
Concept 2: Transformation of Shapes

Apply spatial reasoning to create transformations and use symmetry to analyze mathematical situations.

In Grade 3, students begin to apply their understanding of spatial reasoning and recognize how the positions of 2-dimensional figures change in terms of translations, reflections, and rotations.

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 1. Identify a translation, reflection, or rotation and model its effect on a 2-dimensional figure. Connections: M03-S4C1-01, M03-S4C2-02	M03-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions. M03-S5C2-08. Make and test conjectures based on data (or information) collected from explorations and experiments.	Students recognize that the shape remains the same when translated, reflected, or rotated. Translation (Slide)  Reflection (Flip)  Rotation (Turn)-Shape moves about a point 

The bulleted items within a performance objective indicate the specific content to be taught.

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 2. Identify, with justification, all lines of symmetry in a 2-dimensional figure. Connections: M03-S4C2-01	M03-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions. M03-S5C2-08. Make and test conjectures based on data (or information) collected from explorations and experiments.	Students need experiences with figures which are symmetrical and non-symmetrical. Figures include both regular and non-regular polygons. Folding cut-out figures will help students determine whether a figure has one or more lines of symmetry.

Strand 4: Geometry and Measurement
Concept 3: Coordinate Geometry

Specify and describe spatial relationships using rectangular and other coordinate systems while integrating content from each of the other strands.

In Grade 3, there are no performance objectives in this concept. Performance objectives begin in Grade 4.

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 4: Geometry and Measurement
Concept 4: Measurement

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.

In Grade 3, students form an understanding of perimeter and area. They select appropriate units, strategies, and tools to solve problems involving perimeter and area. In upper grades, they will calculate area and perimeters of more complex figures.

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 1. Determine elapsed time • across months using a calendar • by hours and half hours using a clock. Connections: M03-S1C2-02, M03-S1C3-01	M03-S5C2-01. Analyze a problem situation to determine the question(s) to be answered. M03-S5C2-03. Select and use one or more strategies to efficiently solve the problem and justify the selection. M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. M03-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.	

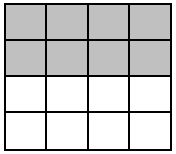
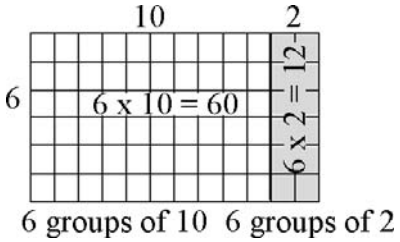
The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 2. Apply measurement skills to measure length, weight, and capacity using US Customary units. Connections: M03-S1C3-01, M03-S4C4-03, M03-S4C4-05, SC03-S1C2-04	M03-S5C2-03. Select and use one or more strategies to efficiently solve the problem and justify the selection. M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. M03-S5C2-08. Make and test conjectures based on data (or information) collected from explorations and experiments	Measurement skills include: • selecting appropriate unit of measure • selecting the appropriate tool, and • estimating, measuring, and comparing estimate to actual measure.
PO 3. Convert units of length, weight, and capacity • inches or feet to yards, • ounces to pounds, and • cups to pints, pints to quarts, quarts to gallons. Connections: M03-S1C2-02, M03-S1C3-01, M03-S4C4-02	M03-S5C2-02. Identify relevant, missing, and extraneous information related to the solution to a problem. M03-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.	

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 4. Determine the area of a rectangular figure using an array model. Connections: M03-S1C2-02, M03-S1C2-03, M03-S1C3-01, M03-S4C1-01, M03-S4C4-05	M03-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. M03-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.	Students should be able to determine the possible rectangles with a given area. Examples: Array models can assist students with understanding square numbers. Students should recognize that a square is also composed of two rectangles. • 4 x 4 = (2 x 4) + (2 x 4)  • A rectangle with an area of 24 could be arrays of 1 x 24, 2 x 12, 3 x 8, 4 x 6, 2 x 12, 3 x 8, 4 x 6. • 6 X 12 = (6 X 10) + (6 X 2) 

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:		
PO 5. Measure and calculate perimeter of 2-dimensional figures. Connections: M03-S1C2-02, M03-S1C3-01, M03-S4C1-01, M03-S4C4-02, M03-S4C4-04	M03-S5C2-04. Determine whether a problem to be solved is similar to previously solved problems, and identify possible strategies for solving the problem.	Students may use objects to represent length, such as string. A shape can be outlined with string and stretched into a straight line. The length can be measured with a ruler. This reinforces the concept that perimeter is a linear measure.

Strand 5: Structure and Logic
This strand emphasizes the core processes of problem solving. Students draw from the content of the other four strands to devise algorithms and analyze algorithmic thinking. Strand One and Strand Three provide the conceptual and computational basis for these algorithms. Logical reasoning and proof draws its substance from the study of geometry, patterns, and analysis to connect remaining strands. Students use algorithms, algorithmic thinking, and logical reasoning (both inductive and deductive) as they make conjectures and test the validity of arguments and proofs. Concept two develops the core processes as students evaluate situations, select problem solving strategies, draw logical conclusions, develop and describe solutions, and recognize their applications.

Concept 1: Algorithms and Algorithmic Thinking

Use reasoning to solve mathematical problems.

In Grade 3, there are no performance objectives in this concept. Performance objectives begin in Grade 4.

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 5: Structure and Logic
Concept 2: Logic, Reasoning, Problem Solving, and Proof

Evaluate situations, select problem-solving strategies, draw logical conclusions, develop and describe solutions, and recognize their applications.

In Grade 3, students describe, explain, and justify their solution processes which may include numbers, words (including mathematical language), pictures, physical objects, or equations. Students use all of these representations as needed. For a particular solution, students should be able to explain or show their work using at least one representation and verify that their answer is reasonable.

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:	Some of the Strand 5 Concept 2 performance objectives are listed throughout the grade level document in the Process Integration Column (2nd column). Since these performance objectives are connected to the other content strands, the process integration column is not used in this section next to those performance objectives.	
PO 1. Analyze a problem situation to determine the question(s) to be answered.		
PO 2. Identify relevant, missing, and extraneous information related to the solution to a problem.		Any time students approach a problem, they should consider what information is most important and decipher how the information is related to the question to be answered.
PO 3. Select and use one or more strategies to efficiently solve the problem and justify the selection.		Students should be exposed to multiple problem-solving strategies and be able to choose which ones to use.
PO 4. Determine whether a problem to be solved is similar to previously solved problems, and identify possible strategies for solving the problem.		This problem-solving process should be continuously reinforced throughout instruction. This will help students connect to prior learning and consider which problem-solving strategy might be more efficient in a particular case.

The bulleted items within a performance objective indicate the specific content to be taught.

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Performance Objectives	***Process Integration***	***Explanations and Examples***
Students are expected to:	Some of the Strand 5 Concept 2 performance objectives are listed throughout the grade level document in the Process Integration Column (2nd column). Since these performance objectives are connected to the other content strands, the process integration column is not used in this section next to those performance objectives.	
PO 5. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols.		
PO 6. Summarize mathematical information, explain reasoning, and draw conclusions.		Summarizing information, explaining your thinking, and drawing logical conclusions are all interconnected and difficult tasks for students to accomplish. These process skills form the foundation of "doing" mathematics and should be encouraged from a very young age.
PO 7. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.		Students often do not check their solutions or evaluate whether their answers make sense. These processes should become common practice for efficient problem-solvers.
PO 8. Make and test conjectures based on data (or information) collected from explorations and experiments.		Making and testing conjectures closely connects to M03-S5C2-06 and these are all critical processes to help students create meaning.

The bulleted items within a performance objective indicate the specific content to be taught.

Science Standard Articulated by Grade Level 2004

Grade 3

Science Standard Articulated by Grade Level

INTRODUCTION

Students are naturally curious about the world and their place in it. Sustaining this curiosity and giving it a scientific foundation must be a high priority in Arizona schools. Application of scientific thinking enables Arizona students to strengthen skills that people use every day: solving problems creatively, thinking critically, working cooperatively in teams, using technology effectively, and valuing lifelong learning.

Science education is much more than merely learning content. It is the active process of investigation and the critical review of evidence related to the world around us, both visible and invisible. Science is a dynamic process of gathering and evaluating information, looking for patterns, and then devising and testing possible explanations. Active engagement in scientific investigation leads students to think critically and to develop reasoning skills that allow them to become independent, lifelong learners. Science methods and thought processes have application well beyond the bounds of science and support learning goals in all subject areas.

The Arizona Science Standard Articulated by Grade Level has been written for ALL students. The science standard is set with the expectation that science instruction occurs at all grade levels – beginning in early grades with simple exploration, progressing to increasingly organized and sophisticated science investigations in higher grades.

Underlying all of the science standard strands are the five unifying concepts as identified in the National Science Education Standards (1995):

- Systems, Order, and Organization
- Evidence, Models, and Explanation
- Constancy, Change, and Measurement
- Evolution and Equilibrium
- Form and Function

This conceptual framework provides students with productive and insightful ways of considering and integrating a range of basic ideas that explain the natural world. Because the understanding and abilities associated with major conceptual and procedural schemes need to be developed over an entire education, the unifying concepts and processes transcend disciplinary boundaries.

These unifying concepts can be introduced in early grades and developed appropriately through the elementary grades and high school. Students should be explicitly shown how each of these unifying concepts apply to and connect life, physical, and Earth and space sciences. These science content areas can be taught in conjunction with each other, as well as with other subject areas in an interdisciplinary approach. The unifying concepts in science education help focus instruction and provide a link to other disciplines.

BACKGROUND

The state Board of Education adopted the Arizona Academic Standards in 1998 to define what Arizona's students need to know and be able to do by the end of twelfth grade. Developed by committees comprised of educators, parents, students, and business and community leaders, these standards were written in grade-level clusters with benchmarks at 3, 5, 8, and high school.

RATIONALE

Requirements in the *No Child Left Behind Act of 2001* (NCLB) and the need for periodic review of the state academic standards prompted the decision by the Arizona Department of Education (ADE) to refine and articulate the academic standard for science by grade level. This refinement and articulation project was started in April 2003, and was completed in May 2004.

METHODOLOGY

The Science Standard Revision Committee was composed of a statewide representation of scientists and science educators to reflect school districts large and small, rural and urban, as well as the ethnic diversity of Arizona. National science consultants, university professors, and community members advised the committee and provided valuable reviews of the work in progress. The goal was to articulate, or align, the current academic standards by grade level (K-8) and in high school with the state requirement of two years of high school science.

The committee utilized several nationally recognized publications to establish content guidelines during the development of the draft:

- National Research Council (NRC)
    - *National Science Education Standards*
    - *Inquiry and the National Science Education Standards*
    - *Designing Mathematics or Science Curriculum Programs*
- The American Association for the Advancement of Science
    - *Atlas of Science Literacy*
    - *Benchmarks for Science Literacy*
    - *Design for Science Literacy*
    - *Science for All Americans*
- *Science Framework for the 1996 and 2000 National Assessment of Educational Progress (NAEP)*

The committee created draft documents by first reviewing the existing standards. The performance objectives were articulated, or aligned, to the appropriate grade levels. Over a period of months, subcommittees, composed of representatives of the full committee, met to refine the documents. A guiding principle in the articulation process

was whether a performance objective was reasonable, useful, and appropriate. The measurability of each performance objective was also considered.

External reviews by nationally recognized consultants and reviews by university and local experts provided additional guidance and perspective to the committees.

Public review of the Science Standard Articulated by Grade Level occurred during the month of February 2004. A draft of the standard was placed on the ADE website with the option for individuals to make comments online. Six public hearings occurred throughout the state to collect additional comments. After all public comments were collected and organized, the committee met to review them and to recommend appropriate modifications to the standard. This final draft was presented to the state Board of Education in May 2004 for adoption as the Arizona Science Standard Articulated by Grade Level.

SCIENCE STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

The goal in the development of the standard was to assure that the six strands and five unifying concepts are interwoven into a fabric of science that represents the true nature of science. Students have the opportunity to develop both the skills and content knowledge necessary to be scientifically literate members of the community.

Strands 1, 2, and 3 are designed to be explicitly taught *and* embedded *within* each of the content Strands 4, 5, and 6, and are not intended to be taught in isolation. The processes, skills, and content of the first three strands are designed to "umbrella" and complement the content of Life Science, Physical Science, and Earth and Space Science.

Strand 1: Inquiry Process

Inquiry Process establishes the basis for students' learning in science. Students use scientific processes: questioning, planning and conducting investigations, using appropriate tools and techniques to gather data, thinking critically and logically about relationships between evidence and explanations, and communicating results.

Concept 1: Observations, Questions, and Hypotheses

Observe, ask questions, and make predictions.

PO 1. Formulate relevant questions about the properties of objects, organisms, and events of the environment using observations and prior knowledge.
(See M03-S2C1-01)

PO 2. Predict the results of an investigation based on observed patterns, not random guessing.

Concept 2: Scientific Testing (Investigating and Modeling)

Participate in planning and conducting investigations, and recording data.

PO 1. Demonstrate safe behavior and appropriate procedures (e.g., use of instruments, materials, organisms) in all science inquiry.

PO 2. Plan a simple investigation (e.g., one plant receives adequate water, one receives too much water, and one receives too little water) based on the formulated questions.

PO 3. Conduct simple investigations (e.g., related to plant life cycles, changing the pitch of a sound, properties of rocks) in life, physical, and Earth and space sciences.

PO 4. Use metric and U.S. customary units to measure objects.
(See M03-S4C4-04)

PO 5. Record data in an organized and appropriate format (e.g., t-chart, table, list, written log).
(See W03-S3C2-01 and W03-S3C3-01)

SCIENCE STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Concept 3: Analysis and Conclusions
Organize and analyze data; compare to predictions.

PO 1. Organize data using the following methods with appropriate labels:
- bar graphs
- pictographs
- tally charts

(See M03-S2C1-02)

PO 2. Construct reasonable interpretations of the collected data based on formulated questions.
(See M03-S2C1-03)

PO 3. Compare the results of the investigation to predictions made prior to the investigation.

PO 4. Generate questions for possible future investigations based on the conclusions of the investigation.

PO 5. Record questions for further inquiry based on the conclusions of the investigation.

Concept 4: Communication
Communicate results of investigations.

PO 1. Communicate investigations and explanations using evidence and appropriate terminology.
(See W03-S3C2-01)

PO 2. Describe an investigation in ways that enable others to repeat it.
(See W03-S3C2-01 and LS-F1)

PO 3. Communicate with other groups to describe the results of an investigation.
(See LS-E1)

Strand 2: History and Nature of Science

Scientific investigation grows from the contributions of many people. History and Nature of Science emphasizes the importance of the inclusion of historical perspectives and the advances that each new development brings to technology and human knowledge. This strand focuses on the human aspects of science and the role that scientists play in the development of various cultures.

Concept 1: History of Science as a Human Endeavor
Identify individual and cultural contributions to scientific knowledge.

PO 1. Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., John Muir [naturalist], supports Strand 4; Thomas Edison [inventor], supports Strand 5; Mae Jemison [engineer, physician, astronaut], supports Strand 6,; Edmund Halley [scientist], supports Strand 6).

PO 2. Describe science-related career opportunities.

Italics denote a repetition of a performance objective (learned in an earlier grade) that is to be applied to grade level content or at a higher level of complexity.
The bulleted items within a performance objective indicate specific content to be taught.

SCIENCE STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Concept 2: Nature of Scientific Knowledge
Understand how science is a process for generating knowledge.

PO 1. Describe how, in a system (e.g., terrarium, house) with many components, the components usually influence one another.

PO 2. Explain why a system may not work if a component is defective or missing.

Strand 3: Science in Personal and Social Perspectives

Science in Personal and Social Perspectives emphasizes developing the ability to design a solution to a problem, to understand the relationship between science and technology, and the ways people are involved in both. Students understand the impact of science and technology on human activity and the environment. This strand affords students the opportunity to understand their place in the world – as living creatures, consumers, decision makers, problem solvers, managers, and planners.

Concept 1: Changes in Environments
Describe the interactions between human populations, natural hazards, and the environment.

PO 1. Describe the major factors that could impact a human population (e.g., famine, drought, disease, improved transportation, medical breakthroughs).

PO 2. Describe the beneficial and harmful impacts of natural events and human activities on the environment (e.g., forest fires, flooding, pesticides).

Concept 2: Science and Technology in Society
Understand the impact of technology.

PO 1. Identify ways that people use tools and techniques to solve problems.

PO 2. Describe the development of different technologies (e.g., communication, entertainment, transportation, medicine) in response to resources, needs, and values.

PO 3. Design and construct a technological solution to a common problem or need using common materials.

Italics denote a repetition of a performance objective (learned in an earlier grade) that is to be applied to grade level content or at a higher level of complexity.
The bulleted items within a performance objective indicate specific content to be taught.

SCIENCE STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 4: Life Science

Life Science expands students' biological understanding of life by focusing on the characteristics of living things, the diversity of life, and how organisms and populations change over time in terms of biological adaptation and genetics. This understanding includes the relationship of structures to their functions and life cycles, interrelationships of matter and energy in living organisms, and the interactions of living organisms with their environment.

Concept 1: Characteristics of Organisms

Understand that basic structures in plants and animals serve a function.

PO 1. Describe the function of the following plant structures:

- roots – absorb nutrients
- stems – provide support
- leaves – synthesize food
- flowers – attract pollinators and produce seeds for reproduction

Concept 2: Life Cycles

Understand the life cycles of plants and animals.

PO 1. Compare life cycles of various plants (e.g., conifers, flowering plants, ferns).

PO 2. Explain how growth, death, and decay are part of the plant life cycle.

Concept 3: Organisms and Environments

Understand the relationships among various organisms and their environment.

PO 1. Identify the living and nonliving components of an ecosystem.

PO 2. Examine an ecosystem to identify microscopic and macroscopic organisms.

PO 3. Explain the interrelationships among plants and animals in different environments:

- producers – plants
- consumers – animals
- decomposers – fungi, insects, bacteria

PO 4. Describe how plants and animals cause change in their environment.

PO 5. Describe how environmental factors (e.g., soil composition, range of temperature, quantity and quality of light or water) in the ecosystem may affect a member organism's ability to grow, reproduce, and thrive.

Concept 4: Diversity, Adaptation, and Behavior

Identify plant and animal adaptations.

PO 1. Identify adaptations of plants and animals that allow them to live in specific environments.

PO 2. Describe ways that species adapt when introduced into new environments.

PO 3. Cite examples of how a species' inability to adapt to changing conditions in the ecosystem led to the extinction of that species.

Italics denote a repetition of a performance objective (learned in an earlier grade) that is to be applied to grade level content or at a higher level of complexity.
The bulleted items within a performance objective indicate specific content to be taught.

SCIENCE STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 5: Physical Science

Physical Science affords students the opportunity to increase their understanding of the characteristics of objects and materials they encounter daily. Students gain an understanding of the nature of matter and energy, including their forms, the changes they undergo, and their interactions. By studying objects and the forces that act upon them, students develop an understanding of the fundamental laws of motion, knowledge of the various ways energy is stored in a system, and the processes by which energy is transferred between systems and surroundings.

Concept 1: Properties of Objects and Materials

Classify objects and materials by their observable properties.

No performance objectives at this grade level

Concept 2: Position and Motion of Objects

Understand spatial relationships and the way objects move.

No performance objectives at this grade level

Concept 3: Energy and Magnetism

Investigate different forms of energy.

PO 1. Demonstrate that light can be:
- reflected (with mirrors)
- refracted (with prisms)
- absorbed (by dark surfaces)

PO 2. Describe how light behaves on striking objects that are:
- transparent (clear plastic)
- translucent (waxed paper)
- opaque (cardboard)

PO 3. Demonstrate that vibrating objects produce sound.

PO 4. Demonstrate that the pitch of a sound depends on the rate of the vibration (e.g., a long rubber band has a lower pitch than a short rubber band).

Italics denote a repetition of a performance objective (learned in an earlier grade) that is to be applied to grade level content or at a higher level of complexity.
The bulleted items within a performance objective indicate specific content to be taught.

SCIENCE STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 6: Earth and Space Science

Earth and Space Science provides the foundation for students to develop an understanding of the Earth, its history, composition, and formative processes, and an understanding of the solar system and the universe. Students study the regularities of the interrelated systems of the natural world. In doing so, they develop understandings of the basic laws, theories, and models that explain the world (NSES, 1995). By studying the Earth from both a historical and current time frame, students can make informed decisions about issues affecting the planet on which they live.

Concept 1: Properties of Earth Materials

Identify the basic properties of Earth materials.

PO 1. Identify the layers of the Earth:
- crust
- mantle
- core (inner and outer)

PO 2. Describe the different types of rocks and how they are formed:
- metamorphic
- igneous
- sedimentary

PO 3. Classify rocks based on the following physical properties:
- color
- texture

PO 4. Describe fossils as a record of past life forms.

PO 5. Describe how fossils are formed.

PO 6. Describe ways humans use Earth materials (e.g., fuel, building materials, growing food).

Concept 2: Objects in the Sky

Identify objects in the sky.

No performance objectives at this grade level

Concept 3: Changes in the Earth and Sky

Understand characteristics of weather conditions and climate.

No performance objectives at this grade level

Italics denote a repetition of a performance objective (learned in an earlier grade) that is to be applied to grade level content or at a higher level of complexity.
The bulleted items within a performance objective indicate specific content to be taught.

Social Studies Standard Articulated by Grade Level 2006

Grade 3

Social Studies Standard Articulated by Grade Level

INTRODUCTION

To maintain the Union that supports our freedoms, we must rely on the knowledge, skills, and character of its citizens and those they elect to public office. Critical to the preservation and improvement of America's republican form of government is the study of our founding principles, namely those detailed in the United States Constitution, the Declaration of Independence, and *The Federalist Papers*. The standard includes the study of rich and diverse contributions that people of many backgrounds have made to American life and institutions while emphasizing our shared heritage. Well-informed citizens understand our political, cultural and economic interaction with the rest of the world. Geographic knowledge expands the understanding of our development and identity in the world. The standard requires that students attain knowledge of essential facts, concepts, people, and events as well as a firm grasp of reasoning, inquiry, and research skills. Students must learn how to frame and test hypotheses, distinguish logical from illogical reasoning, develop informed opinions based on different points of view, and employ reflective thinking and evaluation. In this way students will be prepared to fulfill their responsibilities as citizens of our democratic republic. The standard presents academic content and skills in the four interrelated disciplines of history, geography, civics/government, and economics that are essential to an understanding of our human experience, past and present.

BACKGROUND

The state Board of Education began the development process for the Arizona academic standards in 1996 to define what Arizona students need to know and be able to do by the end of twelfth grade. The Social Studies Standards were adopted in 2000 and partially revised in 2003. Developed by committees comprised of educators, subject matter experts, and business and community leaders, the Social Studies Standard was fully revised and written in articulated grade-specific performance objectives in 2004 - 2005.

RATIONALE

Requirements in the *No Child Left Behind Act of 2001* (NCLB) and the practice of periodic review of the state academic standards prompted the decision by the Arizona Department of Education to refine and articulate the academic standards for mathematics, reading, writing, and science by grade level. An articulation of the social studies standard was included in the process in order to provide consistency across content areas. The skills and content of social studies are not only a critical component of a comprehensive curriculum they also support student success in other areas.

METHODOLOGY

A committee to articulate the social studies standard was formed consisting of a representative sample of educators from around the state. It represented large and small schools, rural and urban districts, and ethnic diversity. Subject matter experts, university professors, and community members advised the committees. The goal was to articulate, or align, the current academic standards by grade level (K-12).

The Social Studies Articulation Committee utilized information from the National Council for the Social Studies, the National Council for Geographic Education, the Arizona Council on Economics Education, the Arizona Geographic Alliance, the Bill of Rights Institute, and other sources to promote quality instruction based on current, pedagogical, and research-based practices.

The articulation process included a restructuring of the Arizona Academic Content Standards to better facilitate the alignment of performance objectives by grade level, while maintaining the content integrity of the existing standards. Over a period of months, the articulation committees and smaller sub-committees refined the documents. Reasonableness, usefulness, and appropriateness were the guidelines for the articulation process.

External reviews by nationally recognized consultants and reviews by university and local experts provided additional guidance and perspective to the committee.

SOCIAL STUDIES STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Third Grade History Strands introduce the reasons for and effects of the exploration of North America to provide a foundation for further study in fourth and fifth grades. The idea of freedom is explored through the study of our nation from the Civil War through late19th and early 20th century immigration. The development of cultures and civilizations and their contributions are expanded through the introduction of ancient Greece and Rome.

Strand 1: American History

A study of American History is integral for students to analyze our national experience through time, to recognize the relationships of events and people, and to interpret significant patterns, themes, ideas, beliefs, and turning points in Arizona and American history. Students will be able to apply the lessons of American History to their lives as citizens of the United States.

Concept 1: Research Skills for History

Historical research is a process in which students examine topics or questions related to historical studies and/or current issues. By using primary and secondary sources effectively students obtain accurate and relevant information. An understanding of chronological order is applied to the analysis of the interrelatedness of events. These performance objectives also appear in Strand 2: World History. They are intended to be taught in conjunction with appropriate American or World History content, when applicable.

PO 1. Use timelines to identify the time sequence of historical data.

PO 2. Recognize how archaeological research adds to our understanding of the past.

PO 3. Use primary source materials (e.g., photos, artifacts, interviews, documents, maps) and secondary source materials (e.g., encyclopedias, biographies) to study people and events from the past.

PO 4. Retell stories to describe past events, people and places.

Concept 2: Early Civilizations Pre 1500

The geographic, political, economic and cultural characteristics of early civilizations made significant contributions to the later development of the United States.

No performance objectives at this grade

Concept 3: Exploration and Colonization 1500s – 1700s

The varied causes and effects of exploration, settlement, and colonization shaped regional and national development of the U.S.

PO 1. Discuss technological advances (e.g., compass, printing press) that facilitated exploration of the New World.

PO 2. Recognize that European countries explored the New World for economic and political reasons.

PO 3. Discuss European explorers (e.g., Samuel Champlain, Henry Hudson, John Cabot, Jacques Cartier, Ponce de Leon, Hernan de Soto) and their discoveries in the New World.

PO 4. Recognize how European exploration affected Native Americans in the Eastern regions (e.g., way of life, loss of land).

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SOCIAL STUDIES STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Concept 4: Revolution and New Nation 1700s – 1820

The development of American constitutional democracy grew from political, cultural, and economic issues, ideas, and events.

No performance objectives at this grade.

Concept 5: Westward Expansion 1800 – 1860

Westward expansion, influenced by political, cultural, and economic factors, led to the growth and development of the U.S.

No performance objectives at this grade.

Concept 6: Civil War and Reconstruction 1850 – 1877

Regional conflicts led to the Civil War and resulted in significant changes to American social, economic, and political structures.

PO 1. Recognize that there were issues (e.g., slavery, states' rights, South seceded from the Union) associated with the Civil War.

PO 2. Discuss contributions of people (e.g., Abraham Lincoln, Jefferson Davis, Robert E. Lee, Ulysses S. Grant, Harriet Tubman, Sojourner Truth, Frederick Douglass) during the Civil War era.

Concept 7: Emergence of the Modern United States 1875 – 1929

Economic, social, and cultural changes transformed the U.S. into a world power.

PO 1. Discuss reasons (e.g., famine, political discord, religious persecution, economic opportunity) why people left their home country to start a new life in the United States.

PO 2. Describe the experiences (e.g., new language, customs, opportunities, hardships) in immigrants' lives after settling in the United States during the late 19th and early 20th centuries.

Concept 8: Great Depression and World War II 1929 – 1945

Domestic and world events, economic issues, and political conflicts redefined the role of government in the lives of U.S. citizens.

No performance objectives at this grade.

Concept 9: Postwar United States 1945 – 1970s

Postwar tensions led to social change in the U.S. and to a heightened focus on foreign policy.

(Note: Civil Rights leaders were introduced in Grade 1.)

PO 1. Recognize that individuals (e.g., Susan B. Anthony, Jackie Robinson, Rosa Parks, Martin Luther King Jr., César Chavez) worked for and supported the rights and freedoms of others.

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Approved 9.26.05 Updated 5.22.06

SOCIAL STUDIES STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Concept 10: Contemporary United States 1970s – Present

Current events and issues continue to shape our nation and our involvement in the global community.

PO 1. Describe current events using information from class discussions and various resources (e.g., newspapers, magazines, television, Internet, books, maps).

PO 2. Discuss the connections between current events and historical events and issues from content studied in Strand 1 using information from class discussions and various resources (e.g., newspapers, magazines, television, Internet, books, maps).

Strand 2: World History

A study of World History is integral for students to analyze the human experience through time, to recognize the relationships of events and people, and to interpret significant patterns, themes, ideas, beliefs, and turning points in American and world history. Students should be able to apply the lessons of World History to their lives as citizens of the United States and members of the world community.

Concept 1: Research Skills for History

Historical research is a process in which students examine topics or questions related to historical studies and/or current issues. By using primary and secondary sources effectively students obtain accurate and relevant information. An understanding of chronological order is applied to the analysis of the interrelatedness of events. These performance objectives also appear in Strand 1: American History. They are intended to be taught in conjunction with appropriate American or World History content, when applicable.

PO 1. Use timelines to identify the time sequence of historical data.

PO 2. Recognize how archaeological research adds to our understanding of the past.

PO 3. Use primary source materials (e.g., photos, artifacts, interviews, documents, maps) and secondary source materials (e.g., encyclopedias, biographies) to study people and events from the past.

PO 4. Retell stories to describe past events, people and places.

Concept 2: Early Civilizations

The geographic, political, economic and cultural characteristics of early civilizations significantly influenced the development of later civilizations.

PO 1. Recognize how government (beginnings of democracy), mythology, art, architecture, and the Olympics in Ancient Greece contributed to the development of their own and later civilizations.
Connect with: Reading Strand 2 Concept 2

PO 2. Discuss the contributions of Ancient Greek teachers/philosophers (e.g., Socrates, Plato, Aristotle) whose thinking contributed to the development of their own and later civilizations.

PO 3. Recognize how representative government, mythology, architecture (e.g., aqueducts), and language (e.g., Latin) in Ancient Rome contributed to the development of their own and later civilizations.

PO 4. Discuss the contributions of political and military leaders of Ancient Rome (e.g., Julius Caesar, Augustus, Constantine) whose actions influenced their own and later civilizations.

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SOCIAL STUDIES STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Concept 3: World in Transition

People of different regions developed unique civilizations and cultural identities characterized by increased interaction, societal complexity and competition.

No performance objectives at this grade.

Concept 4: Renaissance and Reformation

The rise of individualism challenged traditional western authority and belief systems resulting in a variety of new institutions, philosophical and religious ideas, and cultural and social achievements.

No performance objectives at this grade.

Concept 5: Encounters and Exchange

Innovations, discoveries, exploration, and colonization accelerated contact, conflict, and interconnection among societies world wide, transforming and creating nations.

(Note: Explorers such as Magellan and Marco Polo traveling to new places in the world was introduced in Kindergarten and Second Grade.)

PO 1. Describe how the search for a Northwest Passage to Asia led to the exploration and settlement of Canada.

PO 2. Discuss European global explorations (e.g., Columbus, Magellan, Henry Hudson, Vasco da Gama, Balboa). Connect with Strand 1 Concept 3

Concept 6: Age of Revolution

Intensified internal conflicts led to the radical overthrow of traditional governments and created new political and economic systems.

No performance objectives at this grade.

Concept 7: Age of Imperialism

Industrialized nations exerted political, economic, and social control over less developed areas of the world.

No performance objectives at this grade.

Concept 8: World at War

Global events, economic issues and political ideologies ignited tensions leading to worldwide military conflagrations and diplomatic confrontations in a context of development and change.

No performance objectives at this grade.

Concept 9: Contemporary World

The nations of the contemporary world are shaped by their cultural and political past. Current events, developments and issues continue to shape the global community.

PO 1. Describe current events using information from class discussions and various resources (e.g., newspapers, magazines, television, Internet, books, maps).

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SOCIAL STUDIES STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 3: Civics/Government

The goal of the civics strand is to develop the requisite knowledge and skills for informed, responsible participation in public life; to ensure, through instruction, that students understand the essentials, source, and history of the constitutions of the United States and Arizona, American institutions and ideals (ARS 15-710). Students will understand the foundations, principles, and institutional practices of the United States as a representative democracy and constitutional republic. They will understand the importance of each person as an individual with human and civil rights and our shared heritage in the United States. Students will understand politics, government, and the responsibilities of good citizenship. Citizenship skills include the capacity to influence policies and decisions by clearly communicating interests and the ability to build coalitions through negotiation, compromise, and consensus. In addition, students will learn that the United States influences and is influenced by global interaction.

Concept 1: Foundations of Government

The United States democracy is based on principles and ideals that are embodied by symbols, people and documents.

PO 1. Describe national symbols and monuments that represent American democracy and values:

a. Statue of Liberty
b. Ellis Island
c. Lincoln Memorial
d. the U. S. Capitol

PO 2. Recognize that people in the United States have varied backgrounds but may share principles, goals, customs and traditions.

PO 3. Describe how people in the community and state work together to achieve common goals.

PO 4. Describe the significance of national holidays:

a. Presidents' Day
b. Martin Luther King, Jr. Day
c. Veterans' Day
d. Memorial Day
e. Constitution Day
f. Labor Day

Concept 2: Structure of Government

The United States structure of government is characterized by the separation and balance of powers.

PO 1. Discuss the three branches of state and national government:

a. Executive
b. Legislative
c. Judicial

PO 2. Recognize that there are different levels of government (e.g., local, tribal, county, state, national).

Concept 3: Functions of Government

Laws and policies are developed to govern, protect, and promote the well-being of the people.

PO 1. Identify the basic concept of how laws are made (e.g., law proposed, discussed, amended, voted on).

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SOCIAL STUDIES STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Concept 4: Rights, Responsibilities, and Roles of Citizenship

The rights, responsibilities and practices of United States citizenship are founded in the Constitution and the nation's history.

PO 1. Describe the rights and responsibilities of citizenship:

a. good sportsmanship
b. participation and cooperation
c. rules and consequences
d. voting

PO 2. Describe the importance of students contributing to a community (e.g., *service projects,* cooperating, volunteering).

PO 3. Identify traits of character (e.g., *honesty, courage, cooperation,* respect, trustworthiness, responsibility, citizenship) *that are important to the preservation and improvement of democracy.*

Concept 5: Government Systems of the World

Different governmental systems exist throughout the world. The United States influences and is influenced by global interactions.

No performance objectives at this grade.

Strand 4: Geography

The goal of the geography strand is to provide an understanding of the human and physical characteristics of the Earth's places and regions and how people of different cultural backgrounds interact with their environment. Geographic reasoning is a way of studying human and natural features within a spatial perspective. Through the study of geography, students will be able to understand local, national, regional, and global issues. Students will interpret the arrangement and interactions of human and physical systems on the surface of the Earth. As these patterns have changed over time and are important to governments and economies, geographic reasoning will enhance students' understanding of history, civics, and economics.

Concept 1: The World in Spatial Terms

The spatial perspective and associated geographic tools are used to organize and interpret information about people, places and environments.

PO 1. Discuss that different types of maps (e.g., political, physical, thematic) serve various purposes.

PO 2. Interpret political and physical maps using the following elements:

a. alpha-numeric grids
b. title
c. *compass rose -cardinal* and intermediate directions
d. symbols
e. legend
f. scale

PO 3. Construct a map of a familiar place (e.g., school, home, neighborhood, fictional place) that includes a title, compass rose, symbols, and legend.

PO 4. Construct maps using symbols to represent human and physical features.

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SOCIAL STUDIES STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

PO 5. Construct charts and graphs to display geographic information.

PO 6. Recognize characteristics of human and physical features:

a. *physical* (i.e., *ocean, continent*, *river, lake, mountain range, coast, sea*, *desert*, gulf, bay, strait, plain, valley, volcano, peninsula)

*b. human (*i.e., *equator, Northern and Hemispheres, North and South Poles,* city*)*

PO 7. Locate physical and human features using maps, illustrations, images, or globes:

a. *physical* (i.e., seven continents, four oceans, *river, lake, range, coast, sea*, *desert*, gulf, bay, strait, peninsula)

*b. human (*i.e., *equator, Northern and Southern Hemispheres, North South Poles, city, state, country,* roads, railroads)

Concept 2: Places and Regions

Places and regions have distinct physical and cultural characteristics.

PO 1. Locate major physical and human features from content studied (e.g., Greece, Canada, Spain, United States) on maps and globes.

PO 2. Describe how physical and human characteristics of places change from past to present.

Concept 3: Physical Systems

Physical processes shape the Earth and interact with plant and animal life to create, sustain, and modify ecosystems. These processes affect the distribution of resources and economic development. Science Strands are summarized as they apply to Social Studies content in Grades K-8. In High School, the Performance Objectives are a summary of skills and content for grades 9 -12. These concepts are reinforced in Social Studies classes, but assessed through Science.

(Science Strands are summarized below as they apply to Social Studies content in Grades K-8. These concepts are reinforced in Social Studies classes, but assessed through Science.)

Connect with:

Science Strand 3 Concept 1
Describe major factors that impact human populations and the environment.

Science Strand 4 Concept 3
Explain the relationships among plants and animals in different environments.

Science Strand 4 Concept 4
Describe ways species adapt to environments and what happens if they cannot adapt.

Science Strand 6 Concept 1
Identify the basic properties of earth materials (rocks, fossils, layers of the earth).

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SOCIAL STUDIES STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Concept 4: Human Systems

Human cultures, their nature, and distribution affect societies and the Earth.

PO 1. Describe changes over time in transportation (e.g., animal, boat, train, motorized vehicle, aircraft).

PO 2. Describe changes over time in communication networks (e.g., telegraph, telephone, postal, internet).

PO 3. Recognize there are differences in political units and hierarchies (i.e., community, city, county, state, country, continent).

PO 4. Describe elements of culture of a community or nation (e.g., food, clothing, housing, sports, customs, beliefs) in areas studied. Connect with: Reading Strand 2 Concept 2

PO 5. Discuss that Ancient Civilizations have changed from past to present.

PO 6. Discuss the major economic activities and land use (e.g., harvesting natural resources, *agricultural, industrial, residential, commercial, recreational) of areas studied.*

Concept 5: Environment and Society

Human and environmental interactions are interdependent upon one another. Humans interact with the environment- they depend upon it, they modify it; and they adapt to it. The health and well-being of all humans depends upon an understanding of the interconnections and interdependence of human and physical systems.

PO 1*. Identify ways* (e.g., farming, building structures and dams, creating transportation routes, overgrazing, mining, logging) *in which humans depend upon, adapt to, and impact the earth.*

PO 2. Describe ways of protecting natural resources.

PO 3. Identify resources that are renewable, recyclable, and non-renewable

Concept 6: Geographic Applications

Geographic thinking (asking and answering geographic questions) is used to understand spatial patterns of the past, the present, and to plan for the future.

PO 1. *Discuss geographic concepts related to current events.*

PO 2. Use geography concepts and skills (e.g., recognizing patterns, mapping, graphing) to find solutions for local, state or national problems (e.g., shortage or abundance of natural resources).

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SOCIAL STUDIES STANDARD ARTICULATED BY GRADE LEVEL
GRADE 3

Strand 5: Economics

The goal of the economics strand is to enable students to make reasoned judgments about both personal economic questions and broader questions of economic policy. Students will develop an economic way of thinking and problem solving to understand and apply basic economic principles to decisions they will make as consumers, members of the workforce, citizens, voters, and participants in a global marketplace. This will prepare students to weigh both short-term and long-term effects of decisions as well as possible unintended consequences. The study of economics explains historical developments and patterns, the results of trade, and the distribution of income and wealth in local, regional, national, and world economies. Students will be able to analyze current issues and public policies and to understand the complex relationships among economic, political, and cultural systems.

Concept 1: Foundations of Economics

The foundations of economics are the application of basic economic concepts and decision-making skills. This includes scarcity and the different methods of allocation of goods and services.

PO 1. Identify how scarcity requires people to make choices due to their unlimited wants and needs.

PO 2. Identify opportunity costs in personal decision-making situations.

PO 3. Identify goods and services (e.g., fire and police protection, immunizations, library) provided by local government.

PO 4. Give examples of trade in the local community (e.g., farmers supply the grocer).

PO 5. Discuss reasons (e.g., labor, raw materials, energy resources) why some goods are made locally and some are made in other parts of the United States and world.
Connect with: Strand 1 Concept 6, Strand 4 Concept 4

PO 6. Discuss how producers use natural, human, and capital resources to create goods and services.

Concept 2: Microeconomics

Microeconomics examines the costs and benefits of economic choices relating to individuals, markets and industries, and governmental policies.

PO 1. Discuss different ways individuals can earn money.

Concept 3: Macroeconomics

Macroeconomics examines the costs and benefits of economic choices made at a societal level and how those choices affect overall economic well being.

No performance objectives at this grade.

Concept 4: Global Economics

Patterns of global interaction and economic development vary due to different economic systems and institutions that exist throughout the world.

No performance objectives at this grade.

Concept 5: Personal Finance

Decision-making skills foster a person's individual standard of living. Using information wisely leads to better informed decisions as consumers, workers, investors and effective participants in society.

PO 1. Discuss costs and benefits of personal spending and saving choices.

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Technology Standards 2000

Foundations (Grades 1-3)

Technology Education Standards Rationale

Technology encompasses the tools and strategies for solving problems, using information, increasing productivity and enhancing personal growth. The word *technology* summons an image of a variety of tools ranging from shovels to gene splitters. When asked to develop the original Technology Standards, adopted in 1997, the Committee did so without the benefit of seeing the integration of various technologies into other curricular standards. Over the past four years, significant advances in technology have occurred. These changes have caused many national organizations to review what students need to know and be able to do in relation to technology. Therefore, when asked to review the current standards, the Revision Committee examined national standards (National Educational Technology Standards, Information Power, Information Technology in Education and Technology for All Americans), along with current Arizona standards. The Revision Committee also analyzed current research on technology skills important to business and industry. The Revision Committee reviewed technology that is currently integrated into other content area standards with the vision that as other standards are revised, technology will be seamlessly integrated.

The goal is to help students live, learn and work successfully and responsibly in an increasingly complex, technology-driven society. These Technology Standards are designed to provide foundational skills and processes that students need in order to work productively and creatively in their studies, at work and at home. Research on the transfer of learning strongly supports the position that instruction and educational activities should closely parallel the final desired behavior. It is essential that technology instruction be an integral part of a student's educational experience. Education's role is to help students meet the challenge of the future. Arizona must encourage, assist and provide all students with the required tools and instruction to enable them to acquire knowledge, develop skills and apply these tools successfully in our world.

The following definition of technology is supported in this document:

Technology is the application of tools to solve problems that extend human potential for the benefit of society

TECHNOLOGY EDUCATION STANDARDS
FOUNDATIONS (GRADES 1-3)

STANDARD 1: FUNDAMENTAL OPERATIONS AND CONCEPTS
Students understand the operations and function of technology systems and are proficient in the use of technology.

- **1T-F1. Communicate about internal technology operations using developmentally appropriate and accurate terminology**
  See: Language Arts (VP-F), Science (1SC-F4, PO1-2) and Workplace Skills (1WP-F5)

  PO 1. Apply basic vocabulary related to the internal operations of the technology (e.g., disks, drives, RAM, ROM, CD-ROM port, CD-ROM and DVD)

- **1T-F2. Demonstrate functional operation of technology components**
  See: Comprehensive Health {Physical Activities} (1PA-F1) and Workplace Skills (7WP-F2)

  PO 1. Demonstrate correct ergonomic use of technology (e.g., correct posture, position of hands and feet, proper height of keyboard, proper lifting and moving of equipment)
  PO 2. Use multimedia resources (e.g., interactive books, educational software, elementary multimedia encyclopedias)
  PO 3. Access information sources (e.g., CD-ROMs, encyclopedias, pre-bookmarked Internet sites)
  PO 4. Communicate electronically, under teacher supervision (e.g., video, audio, e-mail) *(For Internet safety protocols see Technology 2T-F2, PO1)*

- **1T-F3. Use developmentally appropriate technology resources to access information and communicate electronically**
  See: Language Arts (VP-F), Mathematics (1M-F7) and Workplace Skills (7WP-F1)

  PO 1. Operate keyboard and other common input and output devices (including adaptive devices for special needs when necessary)
    a) Use device in response to software (e.g., point and click, arrow and enter/return keys)
    b) Use keyboard effectively (e.g., knows locations and function of keys, begins touch-typing strategies by grade three)
  PO 2. Retrieve and save information (e.g., text documents, digital photos, music, video)
  PO 3. Print documents, text or image

TECHNOLOGY EDUCATION STANDARDS
FOUNDATIONS (GRADES 1-3)

STANDARD 2: SOCIAL, ETHICAL AND HUMAN ISSUES

Students understand the social, ethical and human issues related to using technology in their daily lives and demonstrate responsible use of technology systems, information and software.

- **2T-F1. Demonstrate respect for other students while using technology**
  See: Social Studies (2SS-F3, PO1-3)

  PO 1. Describe and practice respect for other students while using technology (e.g., do not duplicate software or documents without authorization; report behaviors that threaten the ability of others to legitimately use resources; allow peers to work uninterrupted; do not erase or damage files, documents or projects)

- **2T-F2. Practice responsible use of software**

  PO 1. Use equipment appropriately (e.g., use for assignments and school work versus personal pleasure; do not send threats)
  PO 2. Describe and practice legal and ethical behaviors when using technology (e.g., do not copy, alter, delete or move another person's work)
  PO 3. Demonstrate and practice safe and correct security procedures (e.g., protect password)

- **2T-F3. Discuss common uses of technology in daily life and the advantages and disadvantages those uses provide**
  See: Comprehensive Health (4CH-F2), Science (3SC-F4), Social Studies (4SS-F2, PO4)

  PO 1. Describe three-to-five uses of technology in daily life
  PO 2. Discuss the positive and negative impact of technologies such as television and computers on daily life (e.g., negative health impact; safe Internet use, such as knowing what information is safe to share when using e-mail, "talking" to strangers)

TECHNOLOGY EDUCATION STANDARDS
FOUNDATIONS (GRADES 1-3)

STANDARD 3: TECHNOLOGY PRODUCTIVITY TOOLS

Students use technology tools to enhance learning, to increase productivity and creativity, and to construct technology-enhanced models, prepare publications and produce other creative works.

- **3T-F1. Use prescribed technology writing or drawing tools for communicating and illustrating**

  See: Language Arts (W-F1, PO5), Science (6SC-F7) and Social Studies (1SS-F1)

  PO 1. Use word processing to create a document and, where developmentally appropriate, use editing tools
  PO 2. Insert a graphic into a word processing document

- **3T-F2. Use prescribed technology tools for data collection and basic analysis**

  See: Mathematics 2M-F1 and 2M-F2)

  PO 1. Use a spreadsheet or database application to perform simple data analysis (e.g., comparisons, collections, graphs and charts)

- **3T-F3. Use prescribed technology tools for publishing and presenting information**

  PO 1. Use a pre-designed template or stationery to publish a document (e.g., newsletter, slide show, greeting card, certificate)
  PO 2. Create a multimedia product with support from teachers, family or student partners (e.g., slide show, hyperstack, video)

STANDARD 4: TECHNOLOGY COMMUNICATIONS TOOLS

Building on productivity tools, students will collaborate, publish, and interact with peers, experts and other audiences using telecommunications and media.

- **4T-F1. Communicate with others using telecommunications, with support from teachers, family members or student partners**

  See: Language Arts (W-F4)

  PO 1. Communicate information electronically with support from teachers, family members or student partners (e.g., e-mail, videoconferencing, Web page)

TECHNOLOGY EDUCATION STANDARDS
FOUNDATIONS (GRADES 1-3)

- **4T-F2. Use technology tools for individual and collaborative communication activities to share products with audiences inside and outside the classroom**
  See: Language Arts (W-F1)

  PO 1. Plan, design, and present an academic product to classroom or community (e.g., slide show, progressive story, drawings, story illustrations, video production, digital images)

STANDARD 5: TECHNOLOGY RESEARCH TOOLS

Students will utilize technology-based research tools to locate and collect information pertinent to the task as well as evaluate and analyze information from a variety of sources.

Note: The performance objectives described in Standard 5 rely upon the mastery of skills and understanding of concepts from Standards 1-4 of this document

- **5T-F1. Recognize electronic information sources**
  See: Arts {Theatre} (2AT-F1), Language Arts (W-F5) and Workplace Skills (7WP-E2)

  PO 1. Identify potential sources of information about a topic (e.g., video or cassette tapes, Web pages, CD-ROMs)
  PO 2. Locate information in a resource selected by the teacher (e.g., Web page, CD-ROM)

STANDARD 6: TECHNOLOGY AS A TOOL FOR PROBLEM SOLVING AND DECISION-MAKING

Students use technology to make and support decisions in the process of solving real-world problems.

Note: Problem solving is inherent in all disciplines. Technology Standard 6 is designed to provide a cumulative (capstone) experience
See: Science 3SC in its entirety and Workplace Skills 3WP in its entirety

- **6T-F1. Use technology resources for problem solving, self-directed learning and extended learning activities**

  PO 1. Based on a class-defined problem, use technology to:
    a) collect data
    b) interpret data
    c) express a solution to the problem

  PO 2. Based on a problem selected by the student, use technology to:
    a) collect data
    b) interpret data
    c) express a solution to the problem

Workplace Skills Standards 1997

Foundations (Grades 1-3)

Workplace Skills Standards Rationale

Most students will spend more than a third of their lives in a diverse and constantly changing workplace. Regardless of personal, career, or educational plans, students must demonstrate proficiency both in academics and the following workplace standards.

The Workplace Skills Standards are designed to be integrated into the traditional curriculum taught in schools at all levels and are most effectively learned in the context of an integrated effort involving parents, educators, business partners and members of the community. Student acquisition of critical workplace skills, with an emphasis on application, is a developmental process which encompasses an individual's entire lifetime. The demonstration of these skills is essential for individuals and contributes to the foundation of an educated citizenry.

WORKPLACE SKILLS STANDARDS
FOUNDATIONS (GRADES 1-3)

STANDARD 1
Students use principles of effective oral, written and listening communication skills to make decisions and solve workplace problems.

- **1WP-F1. Describe how the five senses are used in communications**

  PO 1. Identify the five senses
  PO 2. Provide examples of each sense in action

- **1WP-F2. Respond to oral presentations by formulating relevant questions and opinions and summarizing accurately**

  PO 1. Recognize the content of an oral presentation
  PO 2. Ask questions relating to content
  PO 3. State opinions relating to content
  PO 4. Develop summary of relevant content

- **1WP-F3. Apply critical listening skills (e.g., listening for content, long-term contexts, emotional meaning, following directions)**

  PO 1. Listen effectively
  PO 2. Analyze/evaluate orally received information
  PO 3. Respond appropriately

- **1WP-F4. Listen to an oral presentation, evaluate, and express an opinion orally**

  PO 1. Recognize the content of an oral presentation
  PO 2. Develop summary of relevant content

- **1WP-F5. Share ideas, opinions and information with a group, choosing vocabulary that communicates messages clearly, precisely and effectively**

  PO 1. Participate in groups
  PO 2. Speak to a group
  PO 3. Share writing with a group

- **1WP-F6. Write communications that have a definite audience and clear purpose, are well organized, and use appropriate conjunctions and transition words to tie ideas together**

WORKPLACE SKILLS STANDARDS
FOUNDATIONS (GRADES 1-3)

- **1WP-F7. Determine the main idea or essential message of a text**

  PO 1. Identify the main idea and relevant facts in a reading selection
  PO 2. Sequence a series of events from a reading selection
  PO 3. Compare characters (e.g., traits, roles, similarities, differences) in a reading selection
  PO 4. Identify the author's main purpose (e.g., to inform, to entertain, to persuade, to describe) in a reading selection

STANDARD 2

Students apply computation skills and data analysis techniques to make decisions and solve workplace problems.

Note: The Foundations Level is central to preparation for the workplace and is adequately covered in the Mathematics Standards document. The Proficiency and Distinction Levels include additional references to what students need to know and do as it relates to the workplace.

- **2M-F1. Collect and analyze data using the concepts of largest, smallest, almost often, least often and middle**

  PO 1. Collect and record data from surveys (e.g., favorite color or food, height, ages) or experiments
  PO 2. Organize (e.g., sorting, sequencing, tallying) information from surveys or experiments
  PO 3. Identify largest, smallest, most often recorded (i.e., mode), least often and middle (i.e., median) using sorted data
  PO 4. Formulate questions from organized data

WORKPLACE SKILLS STANDARDS
FOUNDATIONS (GRADES 1-3)

STANDARD 3

Students apply critical and creative thinking skills to make decisions and solve workplace problems.

- **3WP-F1. Address a specific problem by specifying their goals, devising alternative solutions, considering the risks of each and choosing the best course of action**

  PO 1. Apply problem solving techniques to determine a solution
  PO 2. Identify methods of initiating change
  PO 3. Define a variety of creative thinking skills
  PO 4. Practice a variety of creative thinking skills to identify potential solutions to workplace issues
  PO 5. Identify the need for data, obtaining it from existing sources such as the library, online databases or field research
  PO 6. Describe possible solutions to a variety of problems

- **3WP-F2. Identify methods for initiating change**

  PO 1. Give examples of methods to initiate change

- **3WP-F3. Define a variety of creative thinking skills**

  PO 1. Use creative thinking skills in a variety of situations

- **3WP-F4. Practice a variety of creative thinking skills to identify potential solutions to workplace issues**

  PO 1. Identify ways of using creative thinking skills
  PO 2. Apply creative thinking skills to solve workplace issues

- **3WP-F5. Identify the need for data, obtaining it from existing sources such as the library, on-line databases or field research**

  PO 1. Define data, database, library and data sources, and field research
  PO 2. Apply data from existing sources, such as the library, on-line database and field research

- **3WP-F6. Describe possible solutions to a variety of problems**

  PO 1. Identify possible solutions to a variety of problems
  PO 2. Apply problem solving techniques to determine a solution

WORKPLACE SKILLS STANDARDS
FOUNDATIONS (GRADES 1-3)

STANDARD 4

Students work individually and collaboratively within team settings to accomplish objectives.

- **4WP-F1. Understand and demonstrate the importance of dependability, trustworthiness, productivity and initiative in all areas of life and when interacting with others**

  PO 1. Demonstrate characteristics of positive behavior
  PO 2. Identify roles of team members
  PO 3. Interact collaboratively to obtain team results

- **4WP-F2. Identify the difference between decisions and accomplishments made by individuals and groups**

  PO 1. Compare individual versus group decisions
  PO 2. Compare individual versus group accomplishments

- **4WP-F3. Demonstrate teamwork skills by contributing ideas, suggestions and effort; resolving conflicts; and handling peer pressure**

  PO 1. Demonstrate skills necessary for positive group dynamics

- **4WP-F4. Recognize and participate in leadership roles**

  PO 1. Describe leadership
  PO 2. Give examples of leadership roles
  PO 3. Practice leadership roles

STANDARD 5

Students will demonstrate a set of marketable skills that enhance career options.

- **5WP-F1. Explore areas of interests and possible work choices**

  PO 1. Define “areas of interest”
  PO 2. Describe work choices
  PO 3. Discuss how interests can relate to work choices

- **5WP-F2. Demonstrate ability to make decisions which contribute to a productive school and work ethic**

  PO 1. Demonstrate being dependable, trustworthy, and productive while at school
  PO 2. Practice decision-making process

WORKPLACE SKILLS STANDARDS
FOUNDATIONS (GRADES 1-3)

- **5WP-F3. Demonstrate basic academic skills in reading, writing, listening, speaking and mathematics**

STANDARD 6

Students illustrate how social, organizational and technological systems function.

Definition: A system equals an organized framework made up of interrelated components acting together as a whole, in which a change in one component may affect the entire operation. Examples of systems are social (e.g., family, school) and technological (e.g., local area network, telephone).

- **6WP-F1. Identify the components and how they fit together in community and social systems**

  PO 1. Discuss the relationship between systems in the community (e.g., family, school, social, technological)

STANDARD 7

Students demonstrate technological literacy for productivity in the workplace.

- **7WP-F1. Identify the many uses of technology**

  PO 1. Give examples of the many uses of technology

- **7WP-F2. Use technology to access information, demonstrating basic computer skills (e.g., pull-down menus, icons, passwords, key word searches)**

  PO 1. Define/discuss/give examples of technology
  PO 2. Operate developmentally appropriate technologies to access information

STANDARD 8

Students apply principles of resource management and develop skills that promote personal and professional well-being.

- **8WP-F1. Understand the relationship between the goal-setting process and the allocation of time, money, material and human resources**

  PO 1. Define/discuss relationship between goal-setting and allocation of resources

- **8WP-F2. Plan class time to accomplish schoolwork goals**

  PO 1. Plan class time to accomplish schoolwork goals