

NEW MEXICO TEACHER ASSESSMENTS™

TEST FRAMEWORK

FIELD 11: ELEMENTARY EDUCATION

Subarea	Range of Competencies	Test Proportion
I. Reading Instruction and Language Arts	0001–0010	28%
II. Literature and the Arts	0011–0014	12%
III. Mathematics	0015–0022	23%
IV. Science	0023–0028	17%
V. Social Studies	0029–0035	20%

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NEW MEXICO TEACHER ASSESSMENTS™

Field 11: Elementary Education

Reading Instruction and Language Arts
Literature and the Arts
Mathematics
Science
Social Studies

SUBAREA I—READING INSTRUCTION AND LANGUAGE ARTS

0001 Understand the reading process.

For example:

- recognize reading as a process of constructing meaning through dynamic interaction among reader, text, and the context of the reading situation
- recognize developmental stages in learning to read
- analyze factors that affect reading (e.g., cultural, social, linguistic, environmental)
- recognize the oral language foundation of reading and the interrelatedness of reading, writing, listening, and speaking

0002 Understand phonological skills and strategies related to reading.

For example:

- demonstrate how to foster students' phonemic awareness (i.e., ability to perceive and discriminate among sounds of the English language) through rhyming, blending, and segmenting sounds in words
- apply knowledge of instruction in letter-sound correspondence and systematic, explicit phonics
- apply strategies to promote students' rapid, automatic decoding through the application of phonics skills

0003 Understand skills and strategies related to word identification and vocabulary development.

For example:

- apply knowledge of word identification strategies (e.g., decoding, recognizing affixes, using context clues)
- implement strategies to help students master high-frequency and irregular sight words
- apply strategies for increasing students' vocabulary knowledge and their ability to use vocabulary knowledge in new contexts

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0004 Understand skills and strategies involved in reading comprehension.

For example:

- recognize factors affecting reading comprehension (e.g., prior knowledge, reading rate and fluency, vocabulary knowledge)
- demonstrate knowledge of literal, inferential, and evaluative comprehension skills
- apply strategies to facilitate comprehension before, during, and after reading (e.g., predicting, self-monitoring, questioning, rereading, sequencing)

0005 Understand reading instruction and study skills in the content areas.

For example:

- apply knowledge of reading strategies to promote learning in the content areas (e.g., activating and developing prior knowledge)
- apply strategies for reading for different purposes
- understand the teaching of study skills in the content areas (e.g., note-taking skills, interpretation of graphs, use of reference materials)

0006 Understand skills and strategies involved in writing for various purposes.

For example:

- recognize developmental stages of writing, including the use of pictures and developmental spelling
- analyze factors to consider in writing for a variety of audiences and purposes, including factors related to selecting topics and modes of written expression
- apply knowledge of the writing process (e.g., prewriting, gathering and synthesizing information, writing a first draft, revising, proofreading)
- apply knowledge of characteristic features and requirements associated with written materials in various formats (e.g., poem, letter, essay) and modes (e.g., persuasive, narrative, descriptive, evaluative)
- apply a variety of writing strategies (e.g., in relation to use of vivid language, figurative language, point of view)

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0007 Understand written work in relation to its stated purpose; evaluate areas in need of improvement; and revise written texts for style, clarity, and organization.

For example:

- evaluate the effectiveness of written material in relation to a given purpose (e.g., informative, persuasive)
- apply revision strategies to improve the unity and organization of written material (e.g., adding topic sentences, reordering sentences or paragraphs, using transitional words or phrases, deleting distracting details)
- apply revision strategies to improve the clarity, precision, and effectiveness of written material through changes in word choice

0008 Apply knowledge of English grammar and mechanics in revising texts.

For example:

- revise texts to correct errors in sentence structure (e.g., run-on sentences, misplaced or dangling modifiers, lack of parallel structure)
- revise texts to correct errors in subject-verb agreement and pronoun-antecedent agreement
- use standard verb forms, pronouns, adverbs, adjectives, and plural and possessive forms of nouns in context
- revise texts to correct errors in punctuation and capitalization

0009 Understand skills and strategies involved in listening for various purposes.

For example:

- evaluate listening strategies in terms of their appropriateness for various contexts and purposes (e.g., acquiring information, appreciating literature read aloud, interpreting and evaluating information)
- analyze barriers to effective listening and apply strategies for active listening
- apply knowledge of factors that affect the ability to listen effectively and to construct meaning from oral messages in various listening situations (e.g., ability to recognize nonverbal cues, call upon prior knowledge, distinguish fact from opinion, recognize transitions, identify faulty reasoning)

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0010 Understand skills and strategies involved in speaking for various purposes.

For example:

- analyze ways in which features of oral language (e.g., word choice, rate, pitch, tone, volume) and nonverbal cues (e.g., body language, visual aids) affect communication in various situations
- apply methods for organizing and presenting thoughts, feelings, ideas, and information for different audiences and purposes (e.g., giving instructions, participating in group discussions, persuading an audience, entertaining)
- recognize how cultural or linguistic factors may affect communication
- apply knowledge of language conventions appropriate to various social situations (e.g., informal conversations, job interviews)

SUBAREA II—LITERATURE AND THE ARTS

0011 Understand characteristic features of children's literature and strategies to promote literary analysis.

For example:

- recognize major works, authors, and genres of children's literature
- apply strategies to develop students' enjoyment of and responses to literature (e.g., guided reading, reading logs, discussions about literature)
- analyze the use of children's literature to promote appreciation of diversity
- recognize and apply elements of literary analysis and criticism (e.g., analyzing story elements, recognizing features of different genres, interpreting figurative language)

0012 Understand concepts, techniques, and materials associated with the visual arts and analyze works of visual art.

For example:

- apply knowledge of basic tools, techniques, and technologies used to create different types of artwork
- explain how the illusion of space is created in two-dimensional works of art (e.g., linear perspective, shading)
- analyze works of art in terms of how specific effects are achieved

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0013 Understand concepts, techniques, and materials related to music, drama, and dance and analyze works of music, drama, and dance.

For example:

- compare various types of musical instruments (e.g., percussion, woodwind, computerized)
- recognize basic dramatic and theatrical forms
- define and apply terms related to music, drama, and dance
- relate characteristics of music (e.g., rhythm, tempo) to musical effects produced
- analyze ways in which technical aspects of drama or dance (e.g., costumes, props, lighting) affect the message or overall impression created by a performance

0014 Understand the arts in relation to history and culture and recognize connections among the arts.

For example:

- examine the role of the arts in various cultures and historical periods
- examine ways in which the arts can be used to explore other aspects of various cultures
- recognize interrelationships among the arts
- recognize connections between the arts and other disciplines

SUBAREA III—MATHEMATICS

0015 Understand formal and informal reasoning processes, including logic and simple proofs, and apply problem-solving techniques and strategies in a variety of contexts.

For example:

- analyze information to solve a problem
- apply inductive reasoning to make mathematical conjectures
- draw valid conclusions based on stated conditions
- judge the validity of mathematical arguments

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0016 Understand various approaches used to explore mathematical ideas and solve problems.

For example:

- evaluate the appropriateness of using estimation to solve a given problem
- select an appropriate model to illustrate a given problem
- evaluate the usefulness of a specific model or problem-solving strategy for exploring a mathematical idea or problem (e.g., manipulatives, working backward, guess and check, mental math)
- simplify problems to facilitate a solution

0017 Understand mathematical communication.

For example:

- use mathematical notation to represent a relationship
- use appropriate models, diagrams, tables, graphs, and symbols to represent mathematical concepts
- use appropriate vocabulary to express mathematical ideas and relationships

0018 Understand and apply skills and concepts related to numbers and numeration.

For example:

- understand number sense and number relations
- analyze the number properties used in operational algorithms (e.g., addition, subtraction, multiplication, division)
- use ratios, proportions, and percents to model and solve problems
- understand the relations among whole numbers, fractions, decimals, and percents
- solve problems using equivalent forms of numbers (e.g., integer, fraction, decimal, percent, exponential and scientific notation)

0019 Understand and apply the principles and properties of linear algebraic relations and functions.

For example:

- analyze mathematical relationships and patterns using tables, verbal rules, equations, and graphs
- apply knowledge of how algebraic expressions are used to represent real-world relationships and patterns
- use algebraic functions to describe graphs, plot points, and determine slopes
- perform algebraic operations to solve equations and inequalities

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0020 Understand and apply geometric principles and properties.

For example:

- apply the concepts of similarity and congruence to model and solve real-world problems
- apply knowledge of basic geometric figures to solve real-world problems involving more complex patterns
- apply inductive and deductive reasoning to solve real-world problems in geometry

0021 Understand and apply concepts, principles, skills, and procedures related to measurement, statistics, and probability.

For example:

- estimate and convert measurements using standard and nonstandard units
- solve measurement problems involving volume, time, or speed
- interpret graphic and nongraphic representations of frequency distributions, percentiles, and measures of central tendency
- determine probabilities and make predictions based on probabilities

0022 Understand mathematics instruction for students in the elementary grades.

For example:

- choose teaching techniques appropriate to given topics of mathematical study and needs of students
- analyze students' work in mathematics to determine areas of instructional need
- create classroom situations in which students learn to use various mathematical skills and concepts, including problem solving, reasoning, and logic
- use measurements and other data gathered by students as a basis for classroom activities
- use a variety of tools, technologies, and manipulatives to promote students' understanding of mathematics and ability to engage in problem solving

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SUBAREA IV—SCIENCE

0023 Understand interrelationships between the physical and life sciences and the connections among science, technology, and society.

For example:

- apply principles of mathematics, science, and technology to model a given situation (e.g., movement of energy and nutrients between a food chain and the physical environment)
- analyze the effects of changes in environmental conditions (e.g., temperature, availability of water and sunlight) on plant and animal health, growth, and development
- analyze the effects of human activities (e.g., burning fossil fuels, clear-cutting forests) on the environment and recognize the benefits and limitations of science and technology
- recognize the use of science and technology in solving problems related to the effects of human activities on the environment (e.g., recycling, energy conservation)

0024 Understand and apply the principles of life science.

For example:

- analyze relationships among the components of an ecological community
- recognize factors that contribute to change in organisms and species over time
- analyze processes that contribute to the continuity of life (e.g., life cycles; roles of growth, repair, and maintenance)
- relate concepts in life science to human health

0025 Understand and apply the principles of physical science.

For example:

- analyze factors and processes related to atmospheric and celestial phenomena (e.g., seasonal changes, the phases of the moon)
- analyze forces that shape the earth's surface (e.g., volcanism, erosion)
- distinguish between physical and chemical properties of matter and between physical and chemical changes in matter
- recognize the physical science principle (e.g., conservation of energy) illustrated in a given situation

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0026 Apply inquiry skills and processes to communicate scientific information and to interpret natural phenomena.

For example:

- formulate a hypothesis and make predictions
- use data presented in one or more graphs, charts, or tables to determine patterns or relationships
- use mathematical rules or formulas to analyze experimental or observational data
- draw conclusions and make generalizations based on examination of experimental results
- evaluate the appropriateness of different types of graphic representations for communicating scientific data

0027 Understand principles and procedures related to the design and implementation of observational and experimental scientific investigations.

For example:

- distinguish among features of an experimental design (e.g., dependent and independent variables, control and experimental groups)
- evaluate the validity of conclusions drawn from scientific experimental investigations
- apply procedures for the care and humane treatment of animals and the safe and appropriate use of laboratory equipment
- evaluate the reasonableness of scientific predictions

0028 Understand science instruction for students in the elementary grades.

For example:

- use knowledge of the scientific method to develop students' abilities to identify and communicate a problem and to design, implement, and evaluate a solution
- use a variety of instructional techniques (e.g., cooperative learning, discovery learning, hands-on learning) to help all students build understanding about science and technology
- analyze students' work in science to identify instructional needs and develop instruction to address needs

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SUBAREA V—SOCIAL STUDIES

0029 Understand major ideas, eras, themes, developments, and turning points in the history of New Mexico, the United States, and the world.

For example:

- analyze social effects of major developments in world history (e.g., agricultural revolution, industrial revolution, information revolution)
- recognize major political, social, economic, and geographic characteristics of ancient civilizations and analyze connections among these civilizations
- analyze interactions among Native American peoples, Hispanic Americans, and European Americans in New Mexico, the western United States, and Mexico
- recognize the roles of diverse individuals and groups in U.S. social, political, economic, cultural, and religious life

0030 Understand basic geographic concepts and analyze relationships among geography, society, and culture in the development of New Mexico, the United States, and the world.

For example:

- analyze ways in which physical processes are continually reshaping the earth's surface
- analyze the development and interaction of social, cultural, political, and religious systems in different regions of New Mexico, the United States, and the world
- analyze the effects of human activity on the physical environment (e.g., industrial development, deforestation, conservation)

0031 Understand anthropological, psychological, and sociological concepts related to human development and interaction.

For example:

- analyze factors that contribute to the development of personal identity (e.g., family, group affiliations, socialization processes)
- recognize the roles and functions of social groups and institutions in the United States and analyze their influence on individuals and groups
- examine processes of social and cultural change

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0032 Understand and apply basic economic and political principles and concepts.

For example:

- recognize the basic structure, fundamental ideas, and accomplishments of the U.S. economic system
- recognize values, principles, concepts, and key features of the American constitutional democracy (e.g., individual freedom, separation of powers, separation of church and state, due process)
- compare and analyze different perspectives regarding economic and political issues and policies in New Mexico and the United States
- analyze relationships between the United States and other nations

0033 Understand the roles, rights, and responsibilities of citizenship in the United States and recognize the skills, knowledge, and attitudes necessary for successful participation in civic life.

For example:

- recognize personal and political rights contained in the Declaration of Independence, U.S. Constitution, New Mexico Constitution, and major civil rights legislation
- recognize basic features of the U.S. election process and examine the role of political parties, pressure groups, and special interests in the U.S. political system
- examine ways in which individuals and groups demonstrate social responsibility
- examine ways in which citizens' participation influences the political process in the United States
- analyze factors that expanded or limited the role of individuals in U.S. political and civic life in the twentieth century (e.g., women's suffrage, discriminatory laws, role of the media in elections)

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0034 Understand and apply skills related to social studies, including gathering, organizing, mapping, evaluating, interpreting, and displaying information.

For example:

- evaluate the appropriateness of various sources for meeting specific information needs (e.g., atlas, database, surveys, polls, the Internet)
- interpret information presented in one or more graphic representations (e.g., graph, table, map) and translate written or graphic information from one form to the other
- differentiate between primary and secondary sources and analyze point of view in a historical text
- apply knowledge related to copyright and correct attribution of sources and authorship

0035 Understand social studies instruction for students in the elementary grades.

For example:

- apply strategies to promote students' inquiry skills, including the use of multiple resources as part of the inquiry/research process
- provide students with opportunities to communicate social studies information and ideas in a variety of ways (e.g., writing, graphics, maps, drama)
- select instructional strategies to promote students' appreciation of the significance and historical development of democratic values and institutions
- analyze learning experiences that promote students' social awareness and appreciation of diverse perspectives and that prompt students to become active participants in local, state, national, and global issues
- implement meaningful learning opportunities in social studies that focus on inquiry, authenticity, and collaboration