

STANDARDS FOR ELEMENTARY TEACHERS

Introduction

The standards contained in this document are based upon the core standards outlined in *Every Child's Teacher in North Carolina: Core Standards for the Teaching Profession*, which was developed by the North Carolina Professional Teaching Standards Commission. They are **also correlated with the North Carolina Standard Course of Study**, the national mathematics, social studies, science, and English standards, the National Board for Professional Teaching Standards (NBPTS), the Interstate New Teacher Assessment and Support Consortium (INTASC) standards, and the National Council for Accreditation of Teacher Education (NCATE) standards. The standards describe what beginning elementary teachers in North Carolina should know and be able to do to ensure students learn.

Elementary English Language Arts teachers know the fundamentals of the English language and demonstrate knowledge of the acquisition, development, and extension of language/literacy. They understand how elementary children develop and learn to read, write, speak, view, and listen effectively. Subsequently, elementary teachers provide instruction in and opportunities for elementary students to develop effective communication skills.

Teachers possess the essential mathematical knowledge and concepts and are able to communicate their understanding and appreciation of mathematics by integrating content through the use of problem solving, communication, connections, reasoning/proof and representation. They know, understand, and use the major concepts, procedures, and reasoning processes of mathematics that define number systems and number sense, geometry, measurement, statistics, and probability, and algebra in order to foster students' understanding and use of patterns, quantities, and spatial relationships that represent phenomena, solve problems, and manage data.

Teachers prepare students for the demands of a changing world by providing a strong foundation in mathematics. They value all students by recognizing and accommodating their individual needs in understanding mathematics. Teachers assess, plan, and evaluate in a manner that encourages students to develop mathematical thinking.

Additionally, teachers should have knowledge of how technology, including computer software, calculators, and the Internet, can influence the mathematics that is taught and their students' understanding of the mathematics. This requires teachers to understand the research related to technology and how it can be used to enhance the mathematics curriculum. They select appropriate software and decide when and how technology should be used.

Elementary teachers know, understand, and use fundamental concepts in the subject matter of science including life, physical, and earth sciences. They also know and understand concepts in science and technology, science in personal and social perspectives, the history and nature of science, the unifying concepts of science, and the inquiry processes that scientists use when discovering knowledge that can be used to build a base for scientific and technological literacy.

In quality science teaching, providing active inquiry experiences should be emphasized. Science teachers should understand the developmental characteristics and needs of students and be able to use appropriate strategies for teaching science. Students cannot just read and/or be told about science--they must do science. All students should experience the excitement of science as they try to understand the natural world.

As a result of activities in the elementary school, all students should develop an understanding of:

- ❖ Science as a human endeavor; and
- ❖ Science as inquiry with abilities necessary to use the process skills of science (observation,

classification, use of numbers, communication, measurement, inference, prediction, interpretation, experimentation, use of time-space relation, control of variables, formulation of hypotheses, formulation of models, and definition of operations).

Schools are becoming microcosms of the larger world. The communication media bring the world into homes and schools and it is vital that science teachers understand the strengths that diversity brings into a classroom. The effective science teacher helps students appreciate the similarities and differences in others. Elementary teachers should be aware of the diverse cultures that have contributed to the body of scientific knowledge. They should help students see science as a subject available for further study to all people.

Elementary social studies teachers know, understand, and teach the major concepts in history, geography, anthropology, archaeology, economics, political science, psychology, and sociology; as well as, other related areas such as humanities, law, philosophy, religion, mathematics, science, and technology. Teachers are able to use knowledge, skills, and dispositions from social studies to organize and provide integrated instruction in grades K-6 for the study of major themes, concepts and modes of inquiry drawn from academic fields that address: (1) culture; (2) time, continuity, and change; (3) people, places, and environment; (4) individual development and identity; (5) individuals, groups, and institutions; (6) power, governance, and authority; (7) production, distribution, and consumption; (8) science, technology, and society; (9) global connections; and (10) civic ideals and practices.

The *North Carolina Standard Course of Study* for social studies is a developmentally appropriate framework for establishing the curriculum at the local level. Social studies in grades KB3 focuses on the development of identity, from self to communities. Basic concepts in geography, history, and economics are introduced. Opportunities for exploring cultures through the arts and literature abound. Social studies in grades 4B6 is a study of North Carolina and world regions based on human and physical geography. History, economics, and political systems are also a part of the curriculum.

Elementary teachers understand the major concepts of the arts. They work alone, or with arts specialist teachers and/or other qualified arts professionals, to integrate the arts into the elementary curriculum. They understand the foundations of good health and help students understand the benefits of a healthy lifestyle.

Elementary teachers make connections across disciplines and are able to integrate study in the various curriculum areas. They help students see relationships across disciplines and encourage the application of learning to real world issues.

Elementary teachers are life-long learners who are interested in knowing more about the elementary curriculum and its effect on students. Although beginning teachers have not had much opportunity to assume extensive leadership roles, they should be collaborators who seek to work with others to improve the quality and effectiveness of instruction in elementary schools. They should continually reflect upon their practice in order to improve instruction and to become strong advocates for their roles as educators.

Standards and Indicators

Standard 1: Elementary teachers have a broad knowledge and understanding of the major concepts in English Language Arts and Literacy.

Indicator 1: Teachers know the developmental stages of language acquisition.

Indicator 2: Teachers know and understand influences on dialect.

Indicator 3: Teachers know and understand a diverse range of historical and contemporary literatures, including various genres of American, British, and World, as well as literatures written by women and authors of colors and works written for children and young adults.

Indicator 4: Teachers understand the elementary school child's social, cultural, linguistic, cognitive, and affective backgrounds as they relate to the ability to develop effective communication processes (listening, speaking, reading, and writing).

Indicator 5: Teachers know and understand that reading is taught as a process of constructing meaning through the interaction of the reader's existing knowledge, the information suggested by the written language, and the context of the reading situation.

Indicator 6: Teachers understand the importance of literacy for personal and social growth.

Indicator 7: Teachers know and understand that the English language continually changes.

Indicator 8: Teachers know and understand written and oral composition processes. They understand:

- ❖ The written language as a symbolic system.
- ❖ The phonemic, morphemic, semantic, syntactic, and pragmatic systems of language and their relation to the reading and writing process.
- ❖ The importance of teaching grammar and usage in context.

Standard 2: Elementary teachers have a broad knowledge and understanding of the major concepts in mathematics.

Indicator 1: Teachers have knowledge of number sense, numeration, and numerical operation.

Teachers:

- ❖ Illustrate, explain, and demonstrate prenumeration, numeration, fractions, decimals, rational numbers, integers, ratio, proportion, and percentages, and
- ❖ Apply four basic operations (addition, subtraction, multiplication, and division) with symbols and variables to solve problems and to model, explain, and develop computational algorithms.

Indicator 2: Teachers have knowledge of geometry and measurement. Teachers:

- ❖ Understand construction of simple geometric figures,
- ❖ Understand and apply concepts of relative position and relationships and geometric formulas, and
- ❖ Model appropriate measurement systems in various settings (standard, nonstandard, and metric system) in measuring length, perimeter, area, capacity, volume, weight, angle, time, money, and temperature.

Indicator 3: Teachers have knowledge of patterns, relationships, functions, symbols and models.

Teachers:

- ❖ Understand patterns, relationships, functions, systems, and models,
- ❖ Recognize and use likeness and differences in defining and describing patterns with actions, words, objects, numbers, and set,
- ❖ Create, extend, and predict using geometrical and numerical patterns and sequences,
- ❖ Construct tables to illustrate a relationship,
- ❖ Illustrate open number sentences by describing relationships,
- ❖ Identify and apply variables, expressions and relationships,
- ❖ Use problem solving to give meaning to patterns, functions and relationships, and
- ❖ Use appropriate software applications to extend and promote understanding of patterns, functions, and relationships.

Indicator 4: Teachers have knowledge of data, probability, and statistics. Teachers demonstrate an understanding of:

- ❖ The importance of formulating the proper question in order to obtain measurement and reliable answers through analysis,
- ❖ How to systematically collect, organize, analyze, and summarize data in order to predict outcomes,
- ❖ Various methods for reporting and representing data (graphs, charts, tables, and grids),
- ❖ The likelihood of an event occurring by completing simple probability experiments, and
- ❖ Ways to use appropriate software to extend and promote an understanding of data collection, analysis of data, and display of data.

Standard 3: Elementary teachers have a broad knowledge and understanding of the major concepts in science.

Indicator 1: Teachers have knowledge of basic life science concepts including:

- ❖ Characteristics of living things
- ❖ Diversity of organisms and their environments
- ❖ Life cycles, mutations, and adaptations
- ❖ Structure and function of plants, animals, and their parts
- ❖ Growth and development of organisms
- ❖ Health and human biology
- ❖ Relationship between humans, organisms, and the environment (ecology)

Indicator 2: Teachers have knowledge of basic physical science concepts including:

- ❖ Systems of measurements, analysis, and interpretation of data
- ❖ Structure and properties of matter
- ❖ Factors affecting chemical reactions
- ❖ Forces of motion
- ❖ Electromagnetism
- ❖ Waves and optics (light, heat, and sound)
- ❖ Sources, forms, conservation of energy

Indicator 3: Teachers have knowledge of basic earth science concepts including:

- ❖ Planetary astronomy (objects in the sky, changes in the earth and sky, and weather)
- ❖ Properties of earth materials (rocks, minerals, fossils, water, air)
- ❖ Earth dynamics and systems
- ❖ Interaction of earth and living systems including management of natural resources and pollution

Indicator 4: Teachers have knowledge of controversial issues and how they impact learning, including evolution and genetics.

Standard 4: Elementary teachers have a broad knowledge and understanding of the major concepts in social studies.

Indicator 1: Teachers have a basic knowledge and understanding of the tapestry of world cultures. Teachers:

- ❖ Know and appreciate creative works of world cultures,
- ❖ Value the contributions of world cultures and religions,
- ❖ Have an awareness of, an appreciation for, and sensitivity to diverse cultures, and
- ❖ Recognize the impact of social diversity in a complex world.

Indicator 2: Teachers understand the social science disciplines. Teachers:

- ❖ Understand the interdisciplinary nature of social studies,
- ❖ Know spatial and temporal concepts and their relationships,
- ❖ Are aware of the rights and responsibilities of democratic citizenship, and
- ❖ Acquire new knowledge in the social sciences.

Indicator 3: Teachers know and understand the developmental progression from the individual to the nation: Self and family, home and school, neighborhoods, communities, state, nation

Indicator 4: Teachers have knowledge of and appreciation for multicultural children's literature. Teachers select appropriate literature that is free from racist and sexist bias.

Indicator 5: Teachers have a basic knowledge of local and national traditions.

Indicator 6: Teachers understand basic geographic concepts and how they can be integrated including:

- ❖ Map, globe and chart skills
- ❖ Five Themes of Geography
- ❖ Six Essential Elements of Geography
- ❖ Environmental issues and concerns

Indicator 7: Teachers understand basic economic concepts, including:

- ❖ Supply and demand
- ❖ Interdependence/international trade
- ❖ Limited resources B resource allocation
- ❖ Opportunity cost
- ❖ Economic Systems (Free enterprise/market economy, planned/command economy, mixed economy)
- ❖ Industrialization and technology
- ❖ Commercial and subsistence agriculture

Indicator 8: Teachers have a knowledge of history and historical concepts including:

- ❖ Sense of chronology
- ❖ Cause and effect
- ❖ Continuity and change
- ❖ North Carolina History
- ❖ United States History
- ❖ World History

Indicator 9: Teachers have a knowledge of political science, including:

- ❖ Comparative governments (*Government in a democratic society*)
- ❖ Local, state, and national governments
- ❖ International relations

Indicator 10: Teachers demonstrate a knowledge and understanding of physical, regional, and cultural geography and their effects on the relationship between people and their environments.

Indicator 11: Teachers promote the basic principles of being a citizen as vital to the development of responsible members of society by promoting an understanding of character development, including: Responsibility, Integrity, Self-discipline, Caring, Respect, Perseverance, Courage, and Citizenship.

Indicator 12: Teachers present historical perspectives. Teachers:

- ❖ Link current events to past events and future trends
- ❖ Highlight continuity in the human experience
- ❖ Foster a respect and appreciation for enduring traditions
- ❖ Demonstrate the ability of groups or individuals to initiate changes
- ❖ Develop experiences to help students learn about the historical development of democratic values

Indicator 13: Teachers enhance understanding of global interdependence. Teachers:

- ❖ Develop an understanding of our nation's place in the global economy
- ❖ Foster an understanding of our nation's role in global politics
- ❖ Shape an understanding of world environmental problems

Indicator 14: Teachers apply content to life skills. Teachers:

- ❖ Provide an environment that fosters critical thinking and effective use of information
- ❖ Emphasize the use of maps for practical purposes
- ❖ Require consideration of multiple views

Indicator 15: Teachers develop spatial perspectives. Teachers:

- ❖ Develop a sense of place - human and physical
- ❖ Aid understanding patterns of distributions among people, ideas, and resources

Standard 5: Elementary teachers have an understanding of the major concepts of healthful living.

Indicator 1: Teachers understand the foundations of good health and help students understand the benefits of a healthy lifestyle.

Indicator 2: Teachers are alert to major health issues related to children.

Standard 6: Elementary teachers have an understanding of the basic concepts of the arts.

Indicator 1: Teachers understand the basic vocabularies, materials, techniques, and thinking processes of each arts discipline (art, music, theatre, dance).

Indicator 2: Teachers have an informed acquaintance with exemplary works of art from a variety of

cultures and historical periods.

Standard 7 : Elementary teachers use developmentally appropriate strategies to design and deliver instruction in all areas of the elementary curriculum.

- Indicator 1: Teachers develop and implement the pacing and alignment of curriculum that is consistent with the NC SCOS, LEA standards and pacing guides, and national standards in all subject areas.
- Indicator 2: Teachers understand and use an interdisciplinary approach to teaching by connecting and integrating language arts, mathematics, science, social studies, healthful living, and arts concepts and processes, with appropriate technologies to enhance their teaching.
- Indicator 3: Teachers promote new learning by using students' prior knowledge, misconceptions, and interests when designing lessons.
- Indicator 4: Teachers implement a variety of teaching and communication strategies for instruction.
- Indicator 5: Teachers assist students in developing multiple learning strategies to address discipline specific content, critical thinking, and problem solving skills.
- Indicator 6: Teachers modify instruction and assessments to meet the needs of individual students.
- Indicator 7: Teachers develop and use a variety of formal and alternative assessment strategies as an integral part of instruction and learning appropriate for assessing individual, peer, team, and collaborative skills.

Standard 8: Teachers design instructional programs and strategies that build on students' experiences and existing language skills to help students become competent, effective users of language.

- Indicator 1: Teachers teach children to read with a balanced instructional program that includes an emphasis on the use of letter/sound relationships (phonics), context (semantic and syntactic), and text that has meaning for students.
- Indicator 2: Teachers help students use a variety of strategies to monitor their own reading comprehension.
- Indicator 3: Teachers guide and encourage students to think critically about what they write and read.
- Indicator 4: Teachers encourage students' enjoyment of reading.
- Indicator 5: Teachers provide students opportunities to explore the use of different genres of writing and speaking to a variety of audiences.
- Indicator 6: Teachers model Standard English.

Standard 9: Elementary teachers understand and use the processes of problem solving, reasoning and proof, communication, connection, and representation as the foundation for the teaching and learning of mathematics.

Indicator 1: Elementary teachers develop instruction in problem solving that enable all students to:

- ❖ Build new mathematical knowledge through problem solving;
- ❖ Solve problems that arise in mathematics and in other contexts;
- ❖ Apply and adapt a variety of appropriate strategies to solve problems;
- ❖ Monitor and reflect on the process of mathematical problem solving.

Indicator 2: Teachers develop instruction in reasoning that enables all students to:

- ❖ Recognize reasoning and proof as fundamental aspects of mathematics;
- ❖ Make and investigate mathematical conjectures;
- ❖ Develop and evaluate mathematical arguments and proofs;
- ❖ Select and use various types of reasoning and methods of proof.

Indicator 3: Teachers develop instruction in communication that enable all students to:

- ❖ Organize and consolidate their mathematical thinking through communication;
- ❖ Communicate their mathematical thinking coherently and clearly to peers, teachers, and others;
- ❖ Analyze and evaluate the mathematical thinking and strategies of others;
- ❖ Use the language of mathematics to express mathematical ideas precisely.

Indicator 4: Teachers develop instruction in making connections that enables all students to:

- ❖ Recognize and use connections among mathematical ideas;
- ❖ Understand how mathematical ideas interconnect and build on one another to produce a coherent whole;
- ❖ Recognize and apply mathematics in contexts outside of mathematics

Indicator 5: Teachers develop instruction in representation that enables all students to:

- ❖ Create and use representations to organize, record, and communicate mathematical ideas;
- ❖ Select, apply, and translate among mathematical representations to solve problems;
- ❖ Use representations to model and interpret physical, social, and mathematical phenomena

Standard 10: Teachers provide active inquiry experiences in the teaching of science by using various questioning skills and developing science processing skills (predicting, classifying, measuring, inferring, interpreting, analyzing, and synthesizing).

Standard 11: Elementary teachers connect social studies with the broad curriculum.

Teachers use the scope and sequence of the social studies curriculum to teach skills through the integration of the social studies content with the areas listed below.

Indicator 1: Teachers incorporate communication in their lessons.

Indicator 2: Teachers enhance students understanding of the humanities.

Indicator 3: Teachers enhance social studies lessons by making connections with scientific discoveries and technological innovations.

Indicator 4: Teachers incorporate mathematics in their social studies lessons.

Indicator 5: Teachers incorporate technology skills in their social studies lessons through collecting data, organizing and sorting data, and displaying data in a variety of ways.

Standard 12: Working alone, or with arts specialist teachers and/or other qualified arts professionals, elementary teachers are able to integrate the arts into the elementary curriculum.

Standard 13: Working alone, or with healthful living specialists, elementary teachers create opportunities for student development and practice of skills that contribute to good health.

Standard 14: Elementary teachers develop strategies to address topics that are controversial to diverse groups.

Indicator 1: Teachers understand and respect that families and communities may have diverse attitudes about the educational process.

Indicator 2: Teachers promote the open-minded discussion of controversial issues by developing and using various strategies such as debates, use of data gathering and analysis for informed decision making, and recognition of bias and propaganda.

Indicator 3: Teachers guide students in developing rational solutions to controversial problems.

Indicator 4: Teachers explore multiple viewpoints and respect values consistent with a democratic community by recognizing and valuing the family roles in educating children of diversity.

Indicator 5: Teachers discourage prejudice, derogatory comments and stereotypical perspectives by modeling and selecting bias free instructional materials.

Indicator 6: Teachers search for more effective means of educating all students in creating effective instructional goals, methods, materials, and skills that match the diversity of students.

Standard 15: Elementary teachers encourage underrepresented groups to engage in the schooling process, especially math and science.

Indicator 1: Teachers use a variety of strategies to encourage underrepresented groups to engage in the schooling process, especially math and science. They:

- ❖ Utilize community resources
- ❖ Give personal attention and encouragement to underrepresented groups of students
- ❖ Use relevant and real-world applications that interest a diverse population
- ❖ Encourage underrepresented groups to assume leadership roles.

Standard 16: Elementary teachers develop as leaders in their schools and communities by staying informed about educational policy issues and supporting professional development. Elementary teachers participate in co-curricular activities, provide leadership in student and curriculum involvement, and connect these activities to the development of citizenship ideals in their students.

Indicator 1: When developing as leaders in their schools and communities, elementary teachers involve students in activities outside the classroom.

Indicator 2: Teachers participate in meetings that establish policy.

Indicator 3: Teachers communicate with parents, guardians, and caretakers to build partnerships between home and school.

Indicator 4: Teachers participate in the selection of textbooks and resource materials that augment the elementary curriculum such as atlases, maps, children's literature, and software.

Indicator 5: Teachers communicate with administrators concerning their needs including funds for field trips and guest speakers, materials unique to specific subjects and special projects, and professional development study and travel.

Indicator 6: Teachers welcome classroom observation by other professionals and initiate professional dialogue regarding teaching methods and instructional delivery.

Indicator 7: Teachers encourage participation in civic and volunteer activities.

Indicator 8: Teachers research and learn to apply best practices in elementary education and participate in the dissemination of those ideas.

Indicator 9: Teachers understand the importance of collaborating with colleagues to strengthen content, research, and pedagogy as well as with the community to provide quality instruction that meets state competencies.

Indicator 10: Teachers advocate for the rights and welfare of their students by involving appropriate school and community human resources in meeting the individual needs of each student.

Standard 17: Elementary teachers understand safety and liability issues in elementary and advocate for appropriate safety materials and enforcement practices in the classroom.

Indicator 1: Teachers ensure that safety issues are included in instruction and provide supervision during lab activities and field experiences.

Indicator 2: Teachers analyze the lab/activities for safety and research materials/chemicals to know safety issues before they are used.

Indicator 3: Teachers have a working knowledge and comply with the science *Safety Laws, Codes, and Standards*.

Indicator 4: Teachers model and communicate appropriate safety behaviors.

Indicator 5: Teachers develop a short and long-term plan for improvement of school safety.

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