

Elementary Education K–6

**Language Arts
Mathematics
Social Science
Science and Technology
Music, Visual Arts,
Physical Education, and Health**

Section 60

Elementary Education K–6 Language Arts and Reading Competencies and Skills

1 Knowledge of emergent literacy

1. Identify the content of emergent literacy (e.g., oral language development, phonological awareness, alphabet knowledge, decoding, concepts of print, motivation, text structures, written language development).
2. Identify instructional methods for developing emergent literacy.
3. Identify common difficulties in emergent literacy development.
4. Identify methods for prevention of and intervention for common emergent literacy difficulties.

2 Knowledge of reading

1. Identify the processes, skills, and phases of word recognition that lead to effective decoding (e.g., pre-alphabetic, partial alphabetic, full alphabetic, graphophonemic, morphemic, syntactic, semantic).
2. Identify instructional methods for promoting the development of decoding and encoding skills.
3. Identify the components of reading fluency (e.g., accuracy, automaticity, rate, prosody).
4. Identify instructional methods (e.g., practice with high-frequency words, timed readings) for developing reading fluency.
5. Identify instructional methods and strategies to increase vocabulary acquisition (e.g., word analysis, choice of words, context clues, multiple exposures) across the content areas.
6. Identify instructional methods (e.g., summarizing, monitoring comprehension, question answering, question generating, use of graphic and semantic organizers, recognizing story structure, use of multiple strategy instruction) to facilitate students' reading comprehension.
7. Identify essential comprehension skills (e.g., main idea, supporting details and facts, author's purpose, fact and opinion, point of view, inference, conclusion).
8. Identify appropriate classroom organizational formats (e.g., literature circles, small groups, individuals, workshops, reading centers, multiage groups) for specific instructional objectives.

9. Identify appropriate uses of multiple representations of information (e.g., charts, tables, graphs, pictures, print and nonprint media) for a variety of purposes.
10. Identify strategies for developing critical thinking skills (e.g., analysis, synthesis, evaluation).
11. Identify instructional methods to teach a variety of informational and literary text structures.

3 Knowledge of the process of constructing meaning from a variety of texts

Note* Due to the incorporation of the scientifically based reading research (SBRR) and the components of Florida's formula for reading success, Competency 3 was revised in 2006, and the skills became part of Competency 2, *Knowledge of reading*.

4 Knowledge of literature

1. Identify characteristics and elements of a variety of literary genres (e.g., short stories, poetry, plays, personal narratives).
2. Identify the terminology and appropriate use of literary devices.
3. Identify and apply professional guidelines for selecting multicultural literature.
4. Identify appropriate techniques for encouraging students to respond to literature in a variety of ways.

5 Knowledge of writing

1. Demonstrate knowledge of the developmental stages of writing.
2. Demonstrate knowledge of the writing process.
3. Distinguish between revising and editing.
4. Identify characteristics of the modes of writing (e.g., narrative, descriptive, expository, persuasive).
5. Select the appropriate mode of writing for a variety of occasions, purposes, and audiences.
6. Identify elements and appropriate use of rubrics to assess writing.

6 Knowledge and use of reading assessment

1. Identify measurement concepts, characteristics, and uses of norm-referenced, criterion-referenced, and performance-based assessments.
2. Identify oral and written methods for assessing student progress (e.g., informal reading inventories, fluency checks, think alouds, rubrics, running records, story retelling, portfolios).
3. Interpret assessment data (e.g., screening, progress monitoring, diagnostic) to guide instructional decisions.
4. Use individual student reading data to differentiate instruction.
5. Interpret a student's formal and informal assessment results to inform students and parents.
6. Evaluate the appropriateness (e.g., curriculum alignment, cultural bias) of assessment instruments and practices.

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Mathematics

Assessment of these competencies and skills will use real-world problems when feasible.

7 Knowledge of number sense, concepts, and operations

1. Associate multiple representations of numbers using word names, standard numerals, and pictorial models for real numbers (whole numbers, decimals, fractions, and integers).
2. Compare the relative size of integers, fractions, and decimals, numbers expressed as percents, numbers with exponents, and/or numbers in scientific notation.
3. Apply ratios, proportions, and percents in real-world situations.
4. Represent numbers in a variety of equivalent forms, including whole numbers, integers, fractions, decimals, percents, scientific notation, and exponents.
5. Recognize the effects of operations on rational numbers and the relationships among these operations (i.e., addition, subtraction, multiplication, and division).
6. Select the appropriate operation(s) to solve problems involving ratios, proportions, and percents and the addition, subtraction, multiplication, and division of rational numbers.
7. Use estimation in problem-solving situations.
8. Apply number theory concepts (e.g., primes, composites, multiples, factors, number sequences, number properties, and rules of divisibility).
9. Apply the order of operations.

8 Knowledge of measurement

1. Apply given measurement formulas for perimeter, circumference, area, volume, and surface area in problem situations.
2. Evaluate how a change in length, width, height, or radius affects perimeter, circumference, area, surface area, or volume.
3. Within a given system, solve real-world problems involving measurement, with both direct and indirect measures, and make conversions to a larger or smaller unit (metric and customary).
4. Solve real-world problems involving estimates and exact measurements.
5. Select appropriate units to solve problems.

9 Knowledge of geometry and spatial sense

1. Identify angles or pairs of angles as adjacent, complementary, supplementary, vertical, corresponding, alternate interior, alternate exterior, obtuse, acute, or right.
2. Identify lines and planes as perpendicular, intersecting, or parallel.
3. Apply geometric properties and relationships, such as the Pythagorean Theorem, in solving problems.
4. Identify the basic characteristics of, and relationships pertaining to, regular and irregular geometric shapes in two and three dimensions.
5. Apply the geometric concepts of symmetry, congruency, similarity, tessellations, transformations, and scaling.
6. Determine and locate ordered pairs in all four quadrants of a rectangular coordinate system.

10 Knowledge of algebraic thinking

1. Extend and generalize patterns or functional relationships.
2. Interpret tables, graphs, equations, and verbal descriptions to explain real-world situations involving functional relationships.
3. Select a representation of an algebraic expression, equation, or inequality that applies to a real-world situation.

11 Knowledge of data analysis and probability

1. Apply the concepts of range and central tendency (mean, median, and mode).
2. Determine probabilities of dependent or independent events.
3. Determine odds for and odds against a given situation.
4. Apply fundamental counting principles such as combinations to solve probability problems.
5. Interpret information from tables, charts, line graphs, bar graphs, circle graphs, box and whisker graphs, and stem and leaf plots.
6. Make accurate predictions and draw conclusions from data.

12 Knowledge of instruction and assessment

1. Identify alternative instructional strategies.
2. Select manipulatives, mathematical and physical models, and other classroom teaching tools.
3. Identify ways that calculators, computers, and other technology can be used in instruction.
4. Identify a variety of methods of assessing mathematical knowledge, including analyzing student thinking processes to determine strengths and weaknesses.

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Social Science

13 Knowledge of time, continuity, and change (history)

1. Identify major historical events that are related by cause and effect.
2. Evaluate examples of primary source documents for historical perspective.
3. Identify cultural contributions and technological developments of Africa; the Americas; Asia, including the Middle East; and Europe.
4. Relate physical and human geographic factors to major historical events and movements.
5. Identify significant historical leaders and events that have influenced Eastern and Western civilizations.
6. Identify the causes and consequences of exploration, settlement, and growth.
7. Identify individuals and events that have influenced economic, social, and political institutions in the United States.
8. Identify immigration and settlement patterns that have shaped the history of the United States.
9. Identify how various cultures contributed to the unique social, cultural, economic, and political features of Florida.

14 Knowledge of people, places, and environment (geography)

1. Identify the five themes of geography, including the specific terms for each theme.
2. Interpret maps and other graphic representations and identify tools and technologies to acquire, process, and report information from a spatial perspective.
3. Identify the factors that influence the selection of a location for a specific activity.
4. Identify the relationship between natural physical processes and the environment.
5. Interpret statistics that show how places differ in their human and physical characteristics.
6. Identify how conditions of the past, such as wealth and poverty, land tenure, exploitation, colonialism, and independence, affect present human characteristics of places.
7. Identify ways in which people adapt to an environment through the production and use of clothing, food, and shelter.

8. Identify how tools and technology affect the environment.
9. Identify physical, cultural, economic, and political reasons for the movement of people in the world, nation, or state.
10. Identify how transportation and communication networks contribute to the level of economic development in different regions.
11. Compare and contrast major regions of the world.

15 Knowledge of government and the citizen (government and civics)

1. Identify the structure, functions, and purposes of government.
2. Demonstrate knowledge of the rights and responsibilities of a citizen in the world, nation, state, and/or community.
3. Identify major concepts of the U.S. Constitution and other historical documents.
4. Identify how the legislative, executive, and judicial branches share powers and responsibility.
5. Demonstrate knowledge of the U.S. electoral system and the election process.
6. Identify the structures and functions of U.S. federal, state, and local governments.
7. Identify the relationships between social, economic, and political rights and the historical documents that secure these rights.
8. Demonstrate knowledge of the processes of the U.S. legal system.
9. Identify the roles of the United States in international relations.

16 Knowledge of production, distribution, and consumption (economics)

1. Identify ways that limited resources affect the choices made by governments and individuals.
2. Compare and contrast the characteristics of different economic institutions (e.g., banks, credit unions, stock markets, and the Federal Reserve).
3. Identify the role of markets from production, through distribution, to consumption.
4. Identify factors to consider when making consumer decisions.
5. Identify the economic interdependence among nations (e.g., trade, finance, and movement of labor).

6. Identify human, natural, and capital resources and how these resources are used in the production of goods and services.
7. Knowledge of instruction and assessment of the social sciences
8. Identify appropriate resources for teaching social science concepts.
9. Identify appropriate assessment methods in teaching social science concepts.

17 Knowledge of instruction and assessment of the social sciences

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Elementary Education K–6 Science and Technology

18 Knowledge of the nature of matter

1. Identify the physical and chemical properties of matter (e.g., mass, volume, density, and chemical change).
2. Identify the characteristics of elements, compounds, and mixtures and distinguish among the states of matter (solids, liquids, and gases).
3. Identify the basic components of the atom (i.e., electrons, neutrons, protons).

19 Knowledge of forces, motion, and energy

1. Apply knowledge of temperature and heat.
2. Identify the types and characteristics of contact forces (e.g., mechanical) and at-a-distance forces (e.g., magnetic, gravitational, and electrostatic).
3. Apply knowledge of simple machines to solve problems involving work.
4. Identify the properties and characteristics of sounds as they apply to everyday situations.
5. Apply knowledge of light and optics to practical applications (i.e., reflection, refraction, and diffusion).
6. Identify the regions of the electromagnetic spectrum and the relative wavelengths and energy associated with each region.
7. Identify characteristics and examples of static electricity.
8. Apply knowledge of currents, circuits, conductors, and insulators to everyday situations.
9. Identify types of magnets, their characteristics, and their applications to everyday situations.
10. Identify types of energy (e.g., chemical, electrical, nuclear, mechanical, magnetic, radiant, and solar).

20 Knowledge of processes that shape the Earth

1. Identify characteristics of geologic formations, the mechanisms by which they were formed, and their relationship to the movement of tectonic plates.
2. Identify how fossils are formed and how fossils are used in interpreting the past and extrapolating to the future.
3. Interpret geologic maps, including topographic and weather maps that contain symbols, scales, legends, directions, latitudes, and longitudes.
4. Identify the major groups of rocks, examples of each, and the processes of their formation.
5. Identify atmospheric conditions (e.g., air masses, wind patterns, cloud types, and storms) and properties of air.
6. Identify the movement of water in the water cycle, including types of precipitation and causes of condensation.
7. Identify ways in which land and water interact (e.g., soil absorption, runoff, leaching, percolation, sinkholes, aquifers, and reservoirs).

21 Knowledge of Earth and space

1. Identify the components of Earth's solar system and compare their individual characteristics.
2. Demonstrate knowledge of space exploration (e.g., history, purposes, and benefits).
3. Identify the phases of the moon and the moon's effect on Earth.
4. Identify Earth's orbital pattern and its effect on the seasons.

22 Knowledge of the processes of life

1. Compare and contrast living and nonliving things.
2. Distinguish among microorganisms (i.e., viruses, bacteria, and protozoans).
3. Differentiate structures and functions of plant and animal cells.
4. Identify the major steps of the plant physiological processes of photosynthesis, transpiration, reproduction, and respiration.
5. Identify the structures and functions of organs and systems of animals, including humans.
6. Identify the major steps of the animal physiological processes (e.g., respiration, reproduction, digestion, and circulation).

23 Knowledge of how living things interact with the environment

1. Identify parts and sequences of biogeochemical cycles of common elements in the environment (e.g., carbon, oxygen, hydrogen, and nitrogen).
2. Identify causes and effects of pollution.
3. Identify the living and nonliving factors that influence population density (e.g., food, space, predators, and climate).
4. Analyze various conservation methods and their effectiveness in relation to renewable and nonrenewable natural resources.

24 Knowledge of the nature and history of science

1. Demonstrate knowledge of basic science processes (e.g., observing, classifying, communicating, qualifying, inferring, and predicting).
2. Apply knowledge of the integrated science processes of manipulating variables, defining operationally, forming hypotheses, measuring (metric) and graphing, and interpreting data.
3. Apply knowledge of inquiry approaches to learning science concepts.
4. Identify the appropriate laboratory equipment for specific activities.
5. Identify state safety procedures for teaching science, including the care of living organisms and the accepted procedures for the safe preparation, use, storage, and disposal of chemicals and other materials.

25 Knowledge of the relationship of science and technology

1. Identify the interrelationship of science and technology.
2. Identify the tools and techniques of science and technology used for data collection and problem solving.

26 Knowledge of technology processes and applications

1. Identify the purposes and functions of common computer software (e.g., word processor, spreadsheet, database, multimedia, communication, and publishing).
2. Identify ways technology can be used by students to represent understanding of science concepts.
3. Identify telecommunications terminology, processes, and procedures.
4. Demonstrate knowledge of legal and ethical practices as they relate to information and technological systems (e.g., copyright, privacy, and plagiarism).

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Music, Visual Arts, Physical Education, and Health

27 Knowledge of skills and techniques in music and visual arts

1. Identify appropriate vocal literature (e.g., age-appropriate range and vocal ability; diverse cultures, genres, and styles).
2. Identify developmentally appropriate singing techniques (e.g., posture, breath support, tone quality, and vocal range).
3. Identify correct performance techniques for rhythmic and melodic classroom instruments (e.g., nonpitched percussion, recorder, autoharp, and/or keyboard).
4. Read and interpret simple, traditional and nontraditional music notation (e.g., melodic, rhythmic, and harmonic).
5. Select safe and developmentally appropriate media, techniques, and tools to create both two-dimensional and three-dimensional works of art.
6. Identify appropriate uses of art materials and tools for developing basic processes and motor skills.

28 Knowledge of creation and communication in music and visual arts

1. Identify the elements of music (e.g., rhythm, melody, form, texture, timbre, and dynamics) and ways they are used in expressing text; ideas; emotions; and settings, time, and place.
2. Demonstrate knowledge of strategies to develop creative responses through music to ideas drawn from text, speech, movement, and visual images.
3. Demonstrate knowledge of strategies to develop creative responses through art to ideas drawn from text, music, speech, movement, and visual images.
4. Identify the elements of art and principles of design (e.g., line, color, shape, form, texture, balance, and movement) and ways they are used in expressing text, ideas, meanings, and emotions.

29 Knowledge of cultural and historical connections in music and visual arts

1. Identify characteristics of style in musical selections.
2. Demonstrate knowledge of how music reflects particular cultures, historical periods, and places.
3. Identify characteristics of style in works of art.
4. Demonstrate knowledge of how visual arts reflect particular cultures, historical periods, and places.

30 Knowledge of aesthetic and critical analysis of music and visual arts

1. Identify strategies for developing students' analytical skills to evaluate musical performance.
2. Identify strategies for developing students' analytical skills to evaluate works of art.

31 Knowledge of appropriate assessment strategies in music and visual arts

1. Identify a variety of developmentally appropriate strategies and materials to assess skills, techniques, creativity, and communication in music.
2. Identify a variety of developmentally appropriate strategies and materials to assess skills, techniques, creativity, and communication in art.

32 Knowledge of personal health and wellness

1. Demonstrate knowledge of the interrelatedness of physical activity, fitness, and health.
2. Demonstrate basic knowledge of nutrition and its role in promoting health.
3. Identify the process of decision making and goal setting in promoting individual health and wellness.
4. Demonstrate knowledge of common health problems and risk behaviors associated with them.

33 Knowledge of physical, social, and emotional growth and development

1. Identify the structure, function, and interrelatedness of the systems of the human body.
2. Identify the principles of sequential progression of motor skill development.
3. Demonstrate knowledge of human growth and development and its relationship to physical, social, and emotional well-being.

4. Identify major factors associated with social and emotional health (e.g., communication skills, self-concept, fair play, conflict resolution, character development, and stress management).
5. Identify problems associated with physical, social, and emotional health.
6. Identify factors related to responsible sexual behavior.

34 Knowledge of community health and safety issues

1. Identify factors contributing to substance use and abuse and identify signs, symptoms, effects, and prevention strategies.
2. Demonstrate knowledge of resources from home, school, and community that provide valid health information, products, and services.
3. Identify appropriate violence prevention strategies in the home, school, and community.
4. Identify appropriate safety and injury prevention strategies in the home, school, and community.

35 Knowledge of subject content and appropriate curriculum design

1. Distinguish between developmentally appropriate and inappropriate instructional practices that consider the interaction of cognitive, affective, and psychomotor domains.
2. Identify various factors (e.g., environment, equipment, facilities, space, safety, and group diversity) to consider when planning physical activities.
3. Analyze the influence of culture, media, technology, and other factors when planning health and wellness instruction.