

What It Means to Be Kindergarten Ready in the U.S.

—*Patricia Lozano[†]*

Parents, educators, and policymakers are increasingly focused on the importance of ensuring that children are well prepared for kindergarten. But there is no national standard for Kindergarten Readiness¹ (KR); rather, each state independently defines what it means to be kindergarten ready. This paper presents an unprecedented, comprehensive analysis of Kindergarten Readiness across all 50 states that reveals substantial common ground across the U.S.² By bringing some clarity to a complex picture, this document can also serve as a useful resource for the early childhood community.

Definitions of Kindergarten Readiness

Some experts define Kindergarten Readiness (KR) as “stages” or “levels” of development, or as a set of “skills” and “competencies” in children.³ Others define it as a relationship between a child’s level of social-emotional and intellectual development and the specific expectations of the program in which they are enrolled. Still others consider KR as a “process” in which a child’s family, the community, and a school influence the child’s physical, intellectual, and social-emotional

development. Common to almost all definitions of KR, however, is a group of skills and capacities across a range of child development domains that correlate to a child’s academic success in kindergarten and beyond.⁴

Domains of Kindergarten Readiness

Even though standards of Kindergarten Readiness vary, there is broad agreement in the early childhood education community regarding the categorization of KR skills and capacities as a set of child development domains. Early Learning Standards in most U.S. states include the following five domains, delineated by the National Education Goals Panel (NEGP).⁵

■ Language & Literacy

- i. Expressive language
- ii. Receptive language
- iii. Literacy, including phonological awareness, print awareness, letter recognition, and early writing.

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¹ Hair, E., Halle, T., Terry-Humen, E., Lavelle, B., & Calkins, J. (2006). Children’s school readiness in the ECLS-K: Predictions to academic, health, and social outcomes in first grade. *Early Childhood Research Quarterly*, 21, 431–454. Kurdek, L. & Sinclair, R. 2001. Predicting reading and mathematics achievement in fourth-grade children from kindergarten readiness scores. *Journal of Educational Psychology*, 93(3), 451–455. McClelland, M. M., Accock, A. C., & Morrison, F. J. (2006). The impact of kindergarten learning-related skills on academic trajectories at the end of elementary school. *Early Childhood Research Quarterly*, 21, 471–490.

² The common traits analysis and review was based on publicly available information on 2014 Early Learning Standards.

³ Boethel, M. Buttram, J., Donnelly, D., (2004) Readiness School, Family & Community Connections-Annual Synthesis 2004. Austin, TX: SEDL. Mary Ann Rafoth, PhD, NCSP, Erin L. Buchenauer, MEd, Katherine Kolb Crissman, MEd, & Jennifer L. Halko Indiana University of Pennsylvania. (2004) School Readiness—Preparing Children for Kindergarten and Beyond: Information for Parents Ensuring a healthy start. Promoting a bright future.

⁴ Elkind, D. (2008). Some misunderstandings of school readiness. *Exchange*, 180, 49–52.

⁵ Some states have additional domains, such as social studies, art, and science, and others organize their standards differently.

Cognitive & Math

- i. Cognitive skills include problem solving, exploring cause and effect, reproducing patterns, sorting objects, and reasoning.
- ii. Math includes counting, naming numbers and shapes, measuring, comparing quantities, and understanding words for spatial relationships and positions.

Physical Health & Motor Skills

- i. Physical Health refers to the ability to carry out personal care and cleanliness routines, being nourished and well rested, distinguishing between healthy and unhealthy foods, and understanding safety rules.
- ii. Motor Skills refers to the ability to perform both gross and fine muscle movements.

Social-Emotional

- i. Social Development includes developing friendships, taking turns, sharing, seeking assistance from adults, following routines, and showing concern for others.
- ii. Emotional Development refers to children's perceptions of themselves, being able to understand the feelings of others and to express their own, and demonstrating self-control/self-regulation.

Approaches to Learning

- i. Initiative and Curiosity include willingness to try new activities; asking questions using who, what, where, why, how; expressing an interest in learning new ideas; and taking apart and reassembling materials.
- ii. Engagement and Persistence include the ability to maintain interest in a project or activity until completed, seeking assistance when the next steps seem unclear or difficult, and using different strategies in order to complete a task.⁶

In order to contribute to the national discussion of KR, Age of Learning, Inc., carried out an analysis of each state's standards in terms of a common framework so that they could be easily compared. Below is a summary of the main findings followed by tables presenting the full analysis (page 9).

Similarities and Differences Among State KR Standards

The following analysis of state KR standards in the five domains was performed through a review of publicly available information regarding 2014 Early Learning Standards (ELS) across all 50 states. Some states had specific standards for 4- and 5-year-olds, but others outlined different age groups (3- to 5-year olds, at around 60 months, 60 months to kindergarten entry). This analysis included the highest age grouping and skills described by the states.

The analysis showed that there were various common skills for each developmental domain among states. The charts below illustrate that the most common skills were in Language & Literacy, Cognitive & Math, and Physical Health & Motor Skills domains.

⁶ Daily, S., Burkhauser, M., & Halle, T. (2010). A Review of School Readiness Practices in the States: Early Learning Guidelines & Assessments. Child Trends—Early Childhood Highlights Volume 1, Issue 3.

Chart 1. Percentage of States Including Each Domain

Chart 2. Most Common Traits in Each Domain

Percentage of States that Included this Trait

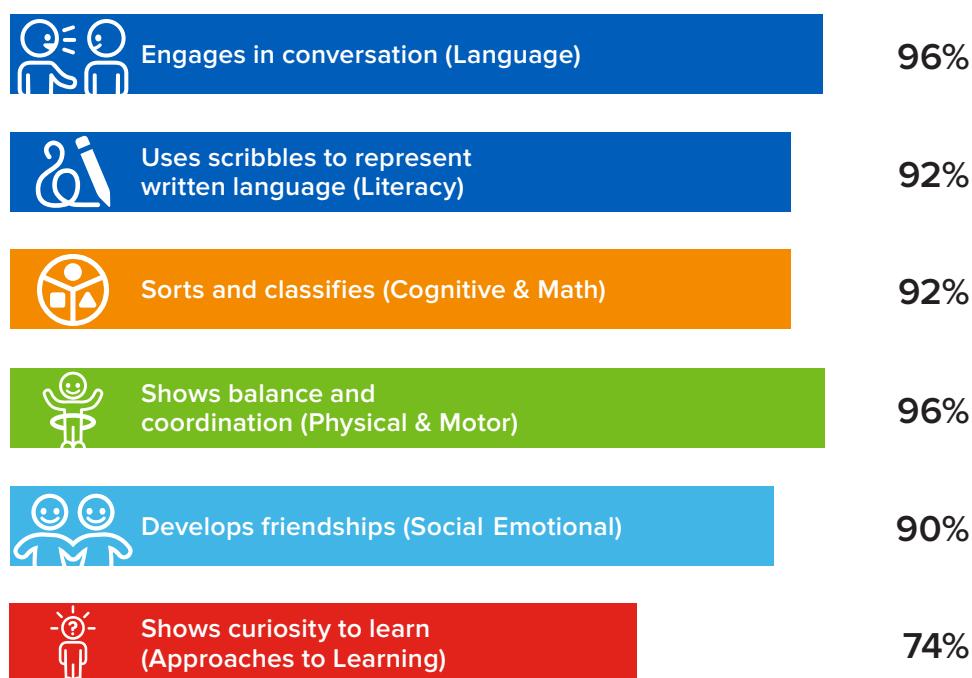


Chart 3. Language & Literacy⁷

Percentage of States that Included this Trait

	Engages in conversation	96%
	Uses scribbles to represent written language	92%
	Recognizes and names some upper and lowercase letters	90%
	Understands that print conveys a message	86%
	Knows how to handle books	86%
	Associates letters with their sounds	86%

Chart 4. Cognitive & Math

Percentage of States that Included this Trait

	Sorts and classifies objects	92%
	Measures using various measuring tools	84%
	Recognizes and names shapes	82%
	Knows one to one correspondence	82%
	Knows up, down, next to, on top, behind, etc.	80%

⁷ Scott-Little, C., Kagan, S. L., Frelow, V. S., & Reid, J. (2008). Inside the content of infant-toddler early learning guidelines: Results from analyses, issues to consider, and recommendations. Greensboro, NC: University of North Carolina at Greensboro. Available at: <https://www.uncg.edu/hdf/facultystaff/ScottLittle/FINAL%20FULL%20REPORT%20-%202.28.08.pdf>.

Data in this chart was obtained from a 50-state online search performed in 2014 by Age of Learning of publicly available information regarding early learning standards. States may have updated their standards after this chart was created. The search included the Early Learning Standards available for children who are between 4 and 5 years old.

Chart 5. Physical Health & Motor Skills

Percentage of States that Included this Trait



Chart 6. Social-Emotional Development

Percentage of States that Included this Trait



Chart 7. Approaches to Learning⁸

Percentage of States that Included this Trait



Other Subjects

Many states have KR standards in subjects beyond language, literacy, and mathematics; most frequently, these standards are in the areas of science, creative arts, and social studies. Our analysis identified commonalities in these as well, which are summarized in the charts below.

Chart 8.

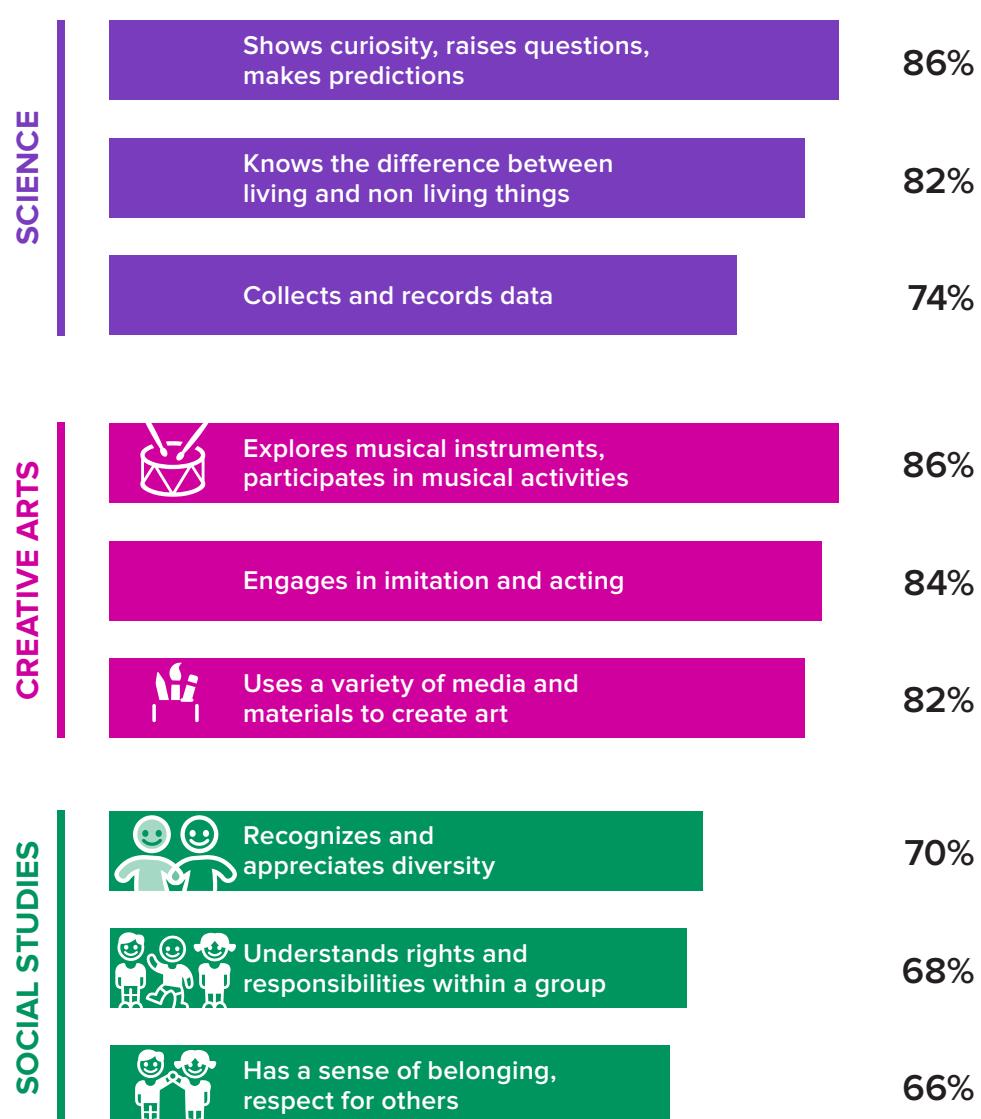
Percentage of States with Standards in Science, Creative Arts, or Social Studies



⁸ This chart shows that Approaches to Learning standards are the least common. The National Education Panel Study also stated that Approaches to Learning is an area that is not well understood or researched, but might be one of the most relevant domains of school readiness. Kagan, S. L., Moore, E., & Bredekamp, S. (Eds.). (1995). Reconsidering children's early learning and development: Toward common views and vocabulary. Report of the National Education Goals Panel, Goal 1 Technical Planning Group, pg. 28. No. ED 391 576. Washington, DC: U.S. Government Printing Office.

Chart 9. Top Three Common Standards within Science, Creative Arts, and Social Studies⁹

Percentage of States that Included this Trait



⁹ Snow, K.L. (2007). Integrative views of the domains of child function: Unifying school readiness. In R.C. Pianta, M.J. Cox, & K.L. Snow (Eds.), School Readiness & the Transition to Kindergarten in the Era of Accountability (pp. 197–216). Baltimore, Maryland: Paul H. Brookes Publishing Co.; National Research Council, (2008).

Conclusions

The state-by-state analysis suggests several research follow-ups and can support efforts to answer the important question: How can we best help parents and educators provide experiences that prepare their young children for success in kindergarten? Given the diversity of population and circumstances, there are undoubtedly many answers to this question, but when parents and educators are armed with a better understanding of what constitutes Kindergarten Readiness, they can better evaluate children's strengths and areas for further development and draw from available resources to nurture further growth.

Kindergarten Readiness Common Traits Among the United States

Domain: Language

Traits	Percentage of States that Included this Trait
Engages in back and forth conversation (e.g., initiates, expands, and continues conversations)	96%
Uses and understands an increasingly complex and varied spoken vocabulary (e.g., child states, “I want yogurt with blueberries please.” instead of “I’m hungry.”); identifies new meanings for familiar words and applies them accurately (e.g., knowing “drink” as a noun “Can I have a drink?”, and as a verb “Drink your milk.”)	78%
Uses appropriate tone, volume, turn taking, and matching listeners’ level of understanding when communicating with others (e.g., speaks quietly in a library, raises hand to talk in class, talks differently to a baby than to an adult)	78%
Speaks in increasingly complete sentences with appropriate grammar and syntax	70%
Asks and answers questions for multiple purposes	70%
Follows 2- to 3-step directions	64%
Participates in songs, finger plays, and rhyming activities	42%

Domain: Literacy

Traits	Percentage of States that Included this Trait
Uses scribbles, letter-like forms, or letters/words to represent written language; may begin to write own name with assistance	92%
Recognizes and names some uppercase and lowercase letters, especially those in their name	90%
Understands that print conveys a message/meaning and can be used for multiple purposes	86%
Demonstrates how to handle books appropriately and with care (e.g., treats books with care, holds book right-side up, reads from left to right, turns pages from the front of the book to the back)	86%
Demonstrates emerging skills in phonological awareness (e.g., knows that words have syllables, associates letters with their sounds)	86%
Retells familiar stories	76%
Recognizes environmental print	70%
Demonstrates interest and engagement in books; independently chooses to read books	70%
Produces and recognizes rhyming words	64%
Recognizes printed name	62%
Experiments with a variety of writing tools and materials (e.g., pencils, crayons, markers, brushes, chalk) to create drawings, symbols, and/or letters	48%

Domain: Cognitive & Math

Mathematics

General Cognitive Knowledge

Traits	Percentage of States that Included this Trait
Mathematics	Sorts and classifies objects by more than one attribute (e.g., size, color, shape, texture)
	Measures using non-standard units (e.g., hands, bodies, containers) and various measuring tools
	Recognizes, names, and describes common shapes and their properties (e.g., identifies a variety of 2-D and 3-D shapes)
	Demonstrates one-to-one correspondence
	Demonstrates patterning (e.g., recognizes, creates, and copies patterns)
	Demonstrates knowledge of spatial relationships (e.g., up, down, next to, on top of, behind)
	Uses descriptive language for size, length, weight, etc.
	Uses comparative language (e.g., more than, less than, equal to, same, and different) to compare objects
	Counts 5–10 objects with increasing accuracy
	Demonstrates data analysis: the child collects, organizes, displays, and describes relevant data
	Demonstrates rote counting up to 20
	Demonstrates the ability to order and sequence
	Begins to recognize and name a few written numerals
	Uses real world examples and objects to model and solve addition and subtraction problems
	Shows understanding of time concepts (e.g., day, night, before, after, tomorrow, yesterday)
General Cognitive Knowledge	Demonstrates understanding of ordinal numbers in everyday activities
	Identifies quantity of 3–5 objects without counting
	Demonstrates problem-solving ability: finds multiple solutions to questions, tasks, problems, and challenges
	Demonstrates reasoning abilities: tries different ways to complete a task; experiments with trial and error
	Explores cause-and-effect relationships: tries multiple uses of same materials and observes differing results; explores cause-and-effect relationships by intentionally varying the action to change the reaction

Domain: Physical Health & Motor Skills

	Traits	Percentage of States that Included this Trait
Safety	Practices safety skills for different situations and identifies some safety rules (e.g., fire safety, traffic/pedestrian safety, dangerous objects/substances/activities)	90%
	Shows balance and coordination (e.g., throws and catches balls, climbs up and down equipment, walks a balance beam, rides a tricycle)	96%
Gross Motor	Runs, jumps, hops, and skips (locomotor movements)	74%
	Throws, kicks, bounces, and catches a ball	58%
Fine Motor	Demonstrates spatial awareness: having control over speed, direction, and the position of their body relevant to other objects or people	46%
	Uses fingers, hands, and wrists to manipulate smaller objects (e.g., puzzles, writing tools, blocks, stapler, hole puncher)	92%
Well-Being	Uses writing and drawing tools with control and intention (e.g., uses a mature pincer grasp, as in thumb to index finger grasp)	62%
	Practices personal care routines (e.g., toileting, washing hands, dressing)	90%
	Identifies and distinguishes between healthy and unhealthy foods (e.g., knows that certain foods like fruits and vegetables help them grow and make them strong), and eats a variety of foods	82%
	Develops the increased stamina and endurance needed for physical activities by spending extended periods of time playing vigorously	52%
	Identifies some body parts	30%

Domain: Social-Emotional

Traits	Percentage of States that Included this Trait
Develops friendships and positive relationships with peers	90%
Demonstrates socially appropriate behaviors (e.g., turn taking, sharing, negotiating, cooperating)	86%
Expresses, describes, and recognizes a wide array of emotions in self (e.g., “I’m excited to play outside.” “I’m mad because Tommy took my truck.”)	84%
Trusted, interacts with, and seeks assistance from adults	82%
Demonstrates belief in their abilities (e.g., “I’m big enough to use scissors all by myself.”) and displays a sense of accomplishment (e.g., “I did it!”)	82%
Describes self by using several basic characteristics (e.g., identifies as boy/girl; knows his/her own age, hair color, eye color) and knows full name	80%
Demonstrates self-regulation/self-control	80%
Participates in conflict resolution and/or seeks assistance from adults	80%
Follows simple rules and routines, and manages transitions easily	74%
Demonstrates empathy and concern for others’ feelings	72%
Recognizes and appreciates differences, similarities, and emotions in others	60%
Respects other’s property and rights (e.g., “That’s Ava’s backpack!” “This is Trevor’s toy but he let me borrow it.”)	44%
Adapts to diverse and new situations	40%

Domain: Approaches to Learning

Traits	Percentage of States that Included this Trait
Demonstrates eagerness and curiosity to learn about and discuss a range of topics, ideas, and activities; shows interest in learning new things and trying new experiences	74%
Demonstrates persistence and the ability to maintain and sustain a challenging task despite setbacks and pursues challenges	70%
Demonstrates attentiveness and a capacity to maintain concentration for a meaningful period of time on a task, set of directions, or interactions, despite distractions and interruptions	64%
Demonstrates flexibility, inventiveness, imagination, and creativity in approaching tasks and activities	60%
Demonstrates self-direction, independence, and initiative	58%
Demonstrates the ability to recognize problems and finds solutions to problems, seeking adult assistance when support is needed	54%
Establishes goals, generates plans, and follows through to completion	52%
Learns from experiences and applies past knowledge to current challenges	50%
Asks questions and seeks new information	40%

Domain: Science

Traits	Percentage of States that Included this Trait
Demonstrates curiosity and raises questions; makes predictions and forms hypotheses from observations	86%
Understands life science concepts: difference between non-living and living things; respects living things; begins to understand life cycles, and understands that living things need water and air to survive	82%
Collects and records data; answers own questions and forms conclusions and generalizations	74%
Describes changes in objects, natural events in the environment, and in non-living and living things; sorts, categorizes, compares, and contrasts objects and events	74%
Investigates and conducts experiments to check predictions and answer questions	72%
Begins using some observations and measurement tools	68%
Begins to understand earth science concepts: weather changes, existence of the sun and moon, and Earth/natural elements	60%
Uses sensory observations (five senses)	54%

Domain: Creative Arts

Traits	Percentage of States that Included this Trait
Music: explores musical instruments, participates in musical activities such as singing, listening to music, and finger plays; responds to different patterns of beat and rhythm in music	86%
Dramatic Play and Theater Arts: engages in imitation and acting out social roles, experiences, and fantasy in creative and imaginative ways	84%
Visual Arts: uses a variety of media and materials to express self, and creates individual and original works of arts	82%
Movement and Dance: expresses self through movement and dancing; uses the body to show creativity	82%

Domain: Social Studies

Traits	Percentage of States that Included this Trait
Culture: recognizes and appreciates diversity, similarities, and differences in others	70%
Civic Responsibility: understands that everyone has rights and responsibilities within a group; demonstrates understanding that rules play an important role in promoting safety and protecting fairness	68%
Community: recognizes a sense of belonging, identifies community workers, and respects others' belongings	66%
Geography: describes physical features of the environment where the child lives including classroom, home, and landmarks; spatial understanding	66%
History: differentiates between past, present, and future	64%
Family: identifies self as part of their family and describes basic roles and responsibilities of families and family members	52%
Economics: demonstrates an understanding that money is needed for exchange and that resources are limited	48%
Environment/Ecology: cares for natural world and begins to understand scarcity; demonstrates responsible consumption of resources	46%