

READINESS MATTERS

INFORMING THE FUTURE

January 2017

MEETING THE CHALLENGES HEAD ON

Maryland is committed to helping each child start school on the path to academic success. The Kindergarten Readiness Assessment (KRA) is one of Maryland's many strategic investments that support this goal. The KRA gathers critical information about students' knowledge, skills, and abilities at school entry. It provides all stakeholders, including local school boards, teachers and families, with the data necessary to improve instruction, meet individual student learning needs, and address achievement gaps.

While 43% of Maryland's kindergarteners demonstrate readiness, far too many are coming to school unprepared to succeed. To elevate Maryland's school readiness, we need the help of jurisdictional leaders, policy makers, schools, early care and education programs, families, business leaders, and philanthropists. We encourage you to use the KRA 2016-2017 data, highlighted in this publication, to guide your decision-making, strengthen policies, and invigorate early childhood programming.

ON TRACK FOR SCHOOL SUCCESS

Prekindergarten and kindergarten mark the start of a child's formal education. How prepared children are when they first enter school often determines whether their school experience is successful.

Students who demonstrate age-appropriate knowledge, skills, and behaviors in math, reading, and social interaction at the start of kindergarten continue developing on track throughout their academic careers.¹ They are more likely than their peers to enjoy later academic success, attain higher levels of education, and secure employment.²

The absence of these kindergarten readiness skills may contribute to even greater disparities throughout students' school years. For example, gaps in math, reading, and vocabulary skills evident at kindergarten account for at least half of the racial gap in high school achievement scores.³

These school readiness outcomes suggest that students who do not enter kindergarten with age-appropriate abilities will need support to further develop their skills to keep them on track for school, career, and life success.

¹Rachel R. Schachter, Ph.D., Tara M. Strang, M.S., & Shayne B. Piasta, "Using the New Kindergarten Readiness Assessment" (The Schoenbaum Family Center and Crane Center for Early Childhood Research and Policy, The Ohio State University, Fall 2015).

²"Early School Readiness: Indicators on Children and Youth" (Child Trends Data Bank, July 2015).

³"Early School Readiness: Indicators on Children and Youth."



ABOUT READY FOR KINDERGARTEN (R4K)

Evidence suggests that data-based decision-making improves teaching practice and students' learning. More than 25 states, including Maryland, use readiness assessments to provide teachers with a snapshot of students' skills and abilities at kindergarten entry.⁴

In 2014-2015, Maryland introduced Ready for Kindergarten (R4K): Maryland's Early Childhood Comprehensive Assessment System to align with the State's rigorous PreK-12 College & Career-Ready Standards. R4K builds on the success of the Maryland Model for School Readiness (MMSR), which was the statewide kindergarten assessment tool in use from 2001 to 2013.

R4K provides a single coordinated system for measuring the learning progress (knowledge, skills, and behaviors) and identifying the needs of young children. R4K has two components:

1. **The Early Learning Assessment (ELA)** measures the progress of learning in young children, 36 to 72 months (3 to 6 years old), across nine levels in seven domains.
2. **The Kindergarten Readiness Assessment (KRA)** is a developmentally appropriate assessment tool administered to incoming public school kindergarteners that measures school readiness across four domains. The KRA looks at the knowledge, skills, and behaviors necessary to be successful in kindergarten and which should have been mastered prior to entering school.

KRA OFFERS CRITICAL GUIDANCE

The KRA provides vital information about the knowledge, skills, and behaviors of children entering kindergarten classrooms. The KRA:

Benefits Children. Assessing students at the start of kindergarten is one way to identify the strengths and challenges of individual children. The information obtained enables teachers to effectively instruct each student and provide additional supports and interventions, where needed.

Assists Teachers. The KRA gives teachers rich information about each child's knowledge, skills, abilities, and learning needs. The data help teachers monitor student progress toward the achievement of Maryland's standards. The KRA enables Maryland's teachers to differentiate instruction, provide support and practice where it is needed, address identified learning gaps of an individual child or groups of children, and better communicate with family members about their children.

Informs Families. Each assessed child's readiness for school is described in the Kindergarten Readiness Assessment's Individual Student Report (ISR). Teachers can use the ISR to initiate conversations with families about their child's progress and suggest ways to support their child's development at home.

Instructs Community Leaders and Policy Makers. Stakeholders at the community, jurisdictional, and state levels gain important information about how well-prepared their children are for kindergarten. This valuable information enables stakeholders to make well-informed programmatic, policy, and funding decisions to ensure that all children are fully prepared for kindergarten and school success.

Advise School Leaders and Early Childhood Programs.

The data offer schools and programs information about the learning needs of children. It enables them to address any achievement gaps and plan appropriate supports or interventions. The data are also used to inform professional development, curricular enhancements, and appropriate transition practices.

ADMINISTERING THE KRA

At the start of each school year, kindergarten teachers measure readiness by observing children during the day, asking them to answer selected-response items, and engaging them in performance-based activities. The KRA's innovative touchscreen technology makes the selected-response activities appealing to young children.

The KRA was first administered in school year 2014-2015. Based on the feedback from teachers, curriculum experts, and data specialists from local school systems, MSDE made minor adjustments to the KRA and reduced the length of the assessment by approximately 20 percent – from 63 items to 50 items – for school year 2015-2016. In these first two years of administration, teachers assessed all incoming kindergarteners.

In 2016, the Maryland General Assembly passed legislation that required the Maryland State Department of Education (MSDE) to administer the KRA as a "representative sample," rather than to all kindergarteners. The statute also allowed for local boards of education and individual schools to administer the KRA to all incoming students. To align with the new regulations, MSDE advised jurisdictions to select one of the following administration methods for school year 2016-2017:

- **Census Administration.** Administering the KRA to all incoming kindergarteners, assessing each student's knowledge, skills, and abilities.
- **Randomized Sample Administration.** Administering the KRA to a random sample of students in each classroom.

The administration type (i.e. census or sample) dictates how teachers, families, early childhood professionals, schools, community leaders, and policy makers can use the KRA data.

⁴Schachter.

MEASURING KINDERGARTEN READINESS

Maryland's Kindergarten Readiness Assessment (KRA) measures the knowledge, skills, and behaviors that children bring with them to school and should have mastered prior to entering kindergarten. Kindergarten readiness levels are identified as:

- **Demonstrating Readiness** – a child demonstrates the foundational skills and behaviors that prepare him/her for curriculum based on the kindergarten standards.
- **Approaching Readiness** – a child exhibits some of the foundational skills and behaviors that prepare him/her for curriculum based on the kindergarten standards.
- **Emerging Readiness** – a child displays minimal foundational skills and behaviors that prepare him/her for curriculum based on the kindergarten standards.

Children whose readiness knowledge, skills, and behaviors are “approaching” and/or “emerging” require differentiated instruction, as well as targeted supports or interventions to be successful in kindergarten.

INTERPRETING THE RESULTS

While the KRA data are reported with confidence and accuracy, and the findings are statistically comparable to the student population in Maryland and in each jurisdiction, it is important to use caution in interpreting the results.

First, this year's flat readiness levels do not mean that kindergarteners are less prepared than students from previous years. Maryland faces many challenges in pursuing school readiness for all kindergarteners. Among them are an ever diversifying population, with higher numbers of students from low-income households and with language barriers.

Second, Maryland's PreK-12 College & Career-Ready Standards are much more rigorous than in previous years and recognize the substantive changes in the expectations for kindergarteners. Over the last 15 years, for example, we've moved from a prevailing view that incoming kindergarteners require little in the way of cognitive knowledge and skills, to a standard that demands that kindergarteners are equipped with the skills required to learn to read and initiate basic algebraic problem-solving, among others, at school entry.

The academic risk factors, coupled with the new kindergarten standards and other challenges, contribute to the current school readiness data. It will take time to improve these numbers and see the benefits of Maryland's strategic investments in early learning. Fortunately, Maryland remains deeply committed to making improvements so that more children will enter school ready to succeed.

In addition, it must be reiterated that the current KRA administration process, which assesses only a sample of Maryland's kindergarten students (34%), limits the value and use of the data. Local school boards – and more importantly teachers and families – do not have an accurate academic baseline for *every child* entering the public school system.



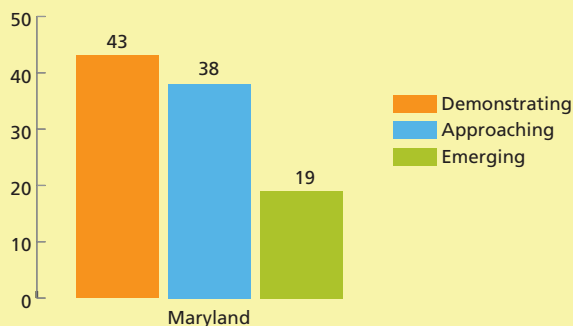
STATEWIDE KINDERGARTEN READINESS HIGHLIGHTS⁵



MORE THAN 63,000 CHILDREN ENTERED MARYLAND'S KINDERGARTEN CLASSROOMS IN SCHOOL YEAR 2016-2017. TEACHERS USED THE KRA TOOL TO ASSESS OVER 21,000 KINDERGARTENERS (34%) STATEWIDE.

This number represents the total number of kindergarteners assessed in local school systems, including systems administering the KRA to all children and those systems administering it by random sample.

Kindergarten Readiness, School Year 2016-2017



43%
DEMONSTRATE
KINDERGARTEN READINESS

Public School Demographics	Kindergarten Enrollment (Sept 1, 2016)	KRA Assessed for Reporting
Total Students	63,187	21,359 (33.8%)
Kindergarteners by Gender		
• Male	51.5%	51.4%
• Female	48.5%	48.6%
Kindergarteners by Ethnicity		
• American Indian	0.3%	0.3%
• Asian	6.8%	4.4%
• African American	32.6%	41.1%
• Native Hawaiian/Pacific Islander	0.1%	0.1%
• White	37.5%	37.0%
• Hispanic	17.8%	12.5%
• Two or More Races	4.9%	4.6%
Kindergarteners by Subgroup		
• Children with Disabilities	8.8%	9.0%
• English Language Learners	15.8%	10.0%
• Free/Reduced Priced Meals Status	43.5%	47.0%
Kindergarteners attending PreK in 2015-2016	27,145 (43.0%)	10,484 (52.8%)
• Full-Day Program	36.5%	
• Half-Day Program	63.5%	

⁵Maryland State Department of Education. KRA data is based on the number of children assessed for reporting (34% of kindergarteners). Figures may not total 100% due to rounding.

OVERALL READINESS

The 2016-2017 KRA data show:

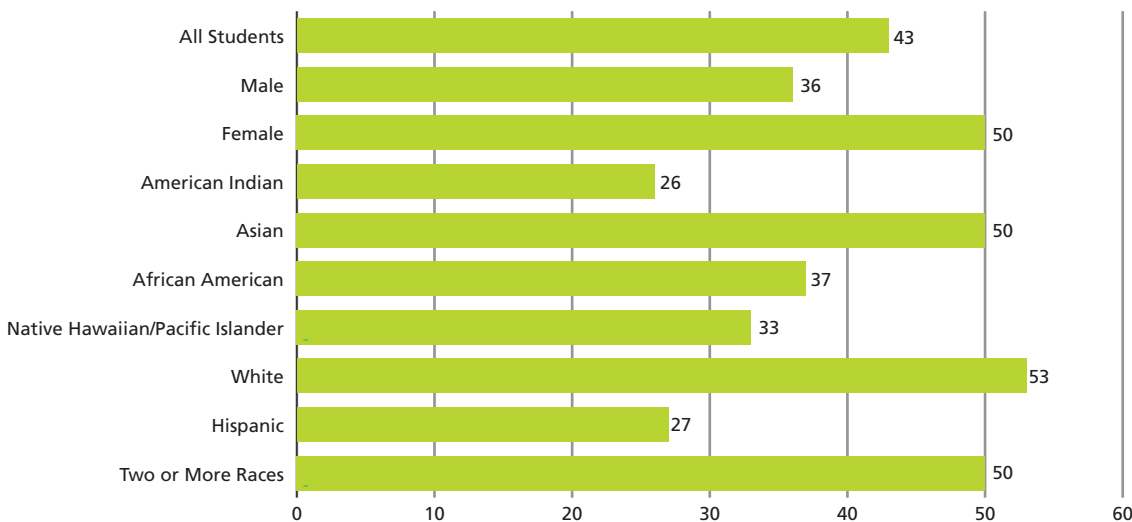
- 43% of Maryland's children entered kindergarten classrooms demonstrating the foundational knowledge, skills, and behaviors needed to fully participate in the kindergarten curriculum.
- A significant number of Maryland's children (19%) display minimal foundational skills and behaviors and require differentiated instruction, as well as targeted supports or interventions to be successful in kindergarten.
- 12 of Maryland's 24 jurisdictions meet or exceed the statewide average: Anne Arundel, Calvert, Caroline, Carroll, Frederick, Garrett, Howard, Kent, Montgomery, Queen Anne's, Somerset, and Worcester Counties. An additional two jurisdictions – Harford and St. Mary's Counties – are within 1 point of the statewide average.

READINESS BY GENDER AND ETHNICITY

KRA data based on gender and ethnicity show:

- A higher percentage of female kindergarteners (50%) demonstrate kindergarten readiness than males (36%).
- Approximately half of Asian kindergarteners (50%), white kindergarteners (53%), and kindergarteners reporting two or more races (50%) demonstrate readiness.
- While fewer African American children (37%) demonstrate readiness, they are within 6 points of the statewide average.
- A lower percentage of Hispanic children demonstrate readiness overall (27%) and in the cognitive domains – language & literacy (22%) and mathematics (21%) – than their Maryland peers (43% overall, 40% in language & literacy, and 38% in mathematics).

Percentage of Kindergarteners Demonstrating Readiness by Gender and Ethnicity



READINESS BY DOMAIN

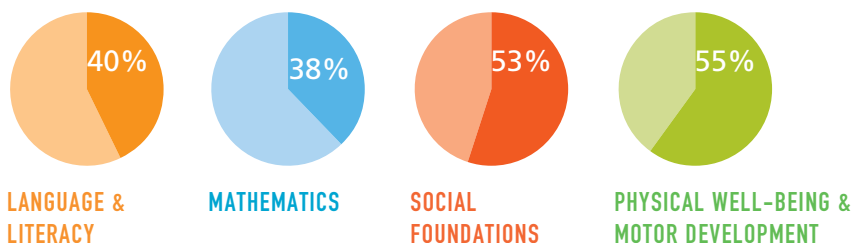
In 2016-2017, the percentage of kindergarteners demonstrating foundational knowledge, skills, and behaviors in the four domains are:

- Language & Literacy: 40%
- Mathematics: 38%
- Social Foundations: 53%
- Physical Well-being & Motor Development: 55%

Demonstrating readiness in these core academic and non-academic areas, which are interrelated and interdependent, at kindergarten entry are related to future school success. For example, there is an empirical relationship between children's school-entry math skills and their math achievement many years later.⁶ Similar correlations can be observed for language & literacy and reading. Research also shows the connection between social-emotional readiness and long-term success. For instance, kindergarteners rated high in social competence are more likely to graduate from high school, get a college degree and be employed by age 25. Kindergarten readiness can influence the way a child relates to others for the rest of his or her life.⁷

These domains form the basis for learning, and it is important to identify those kindergarteners who struggle as early as possible. Success or failure at this stage can affect a child's well-being, self-esteem and motivation in the future.⁸

Percentage of Kindergarteners Demonstrating Readiness by Domain



DOMAINS ASSESSED BY THE KRA

LANGUAGE & LITERACY

Talking and listening to adults and other children; speaking clearly; understanding stories; identifying letters and letter sounds.

MATHEMATICS

Counting; identifying shapes and numbers; classifying (sorting or grouping); sequencing (ordering); copying patterns; measuring; demonstrating an understanding of addition and subtraction; solving problems; using math vocabulary.

SOCIAL FOUNDATIONS

Getting along with others; following rules, routines, and multi-step directions; handling emotions and feelings; independent decision making and self-direction; showing patience and self-control; staying on task.

PHYSICAL WELL-BEING & MOTOR DEVELOPMENT

Running, jumping, climbing, and playing ball; buttoning a shirt or zipping up a jacket; using scissors; drawing; writing numbers and letters; using good health and safety skills.

⁶Drew H. Bailey, "What's the Point of Teaching Math in Preschool?" (Brookings, 2014).

⁷"Kindergarten readiness assessments help teachers know what students need to be successful in school," Kindergarten Transition, *Children Now*, 23 Dec. 2016, <https://www.childrennow.org>.

⁸"Kindergarten readiness assessments help teachers know what students need to be successful in school."

⁹"Early School Readiness: Indicators on Children and Youth."

READINESS BY ACADEMIC RISK FACTOR

The 2016-2017 kindergarten enrollment data indicate substantial demographic shifts in Maryland. Schools are grappling with the challenge of educating an increasing number of students who come from low-income families, receive special education services, and are learning to speak English. In Maryland:

- 5,547 Maryland kindergarteners (9%) have a disability and/or receive special education services through an Individualized Education Program (IEP) – a 10% increase in the past five years.
- 16% of Maryland's kindergarten population (9,998 children) are English Language Learners (ELLs); this represents a 16% five-year rise in the number of students who are not English proficient.
- More than 27,500 kindergarteners (44%) receive Free and Reduced Price Meals – an 11% increase since 2011-2012.

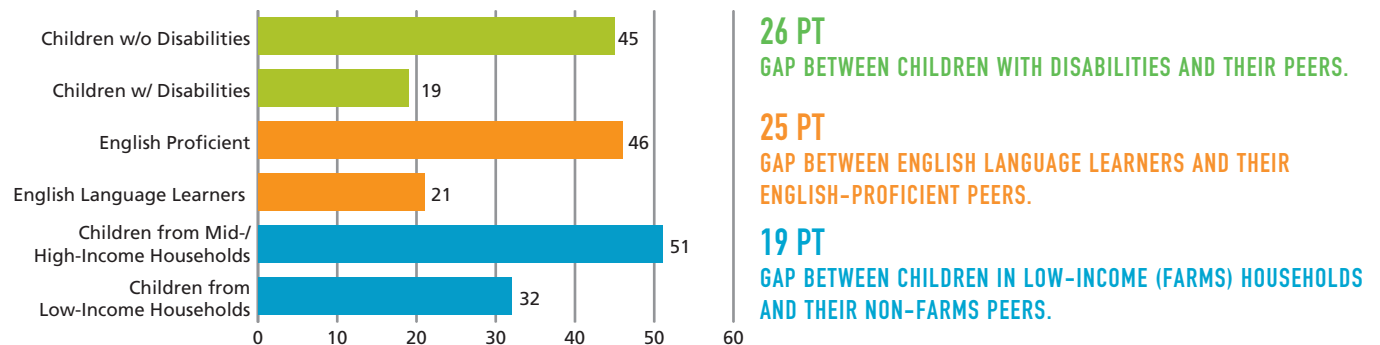
Children with these early academic risk factors, which affect as many as one of every three Maryland kindergarteners, exhibit lower levels of school readiness. Poverty has been shown to be particularly detrimental to children's educational and other life course outcomes. Young pre-kindergarten children from low-income households are much less likely to have cognitive

and early literacy readiness skills than are children living above the poverty threshold.⁹ The resulting achievement gaps are likely to continue throughout K-12 education without high-quality instructional supports.

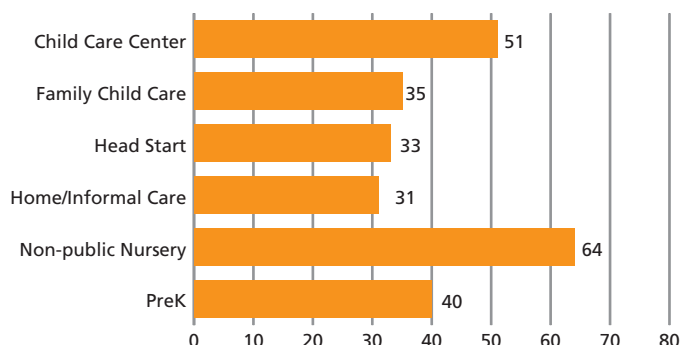
The 2016-2017 data reveal:

- **Readiness by Disability Status.** Nineteen percent (19%) of kindergarteners receiving special education services through an Individualized Education Program (IEP) demonstrate readiness, compared with 45% of kindergarteners who do not have an IEP – a 26-point achievement gap.
- **Readiness by Language Status.** Among ELLs, 21% demonstrate the foundational skills and behaviors that are essential for kindergarten success, compared with 46% of English proficient kindergarteners. This represents a 25-point achievement gap between ELLs and their English proficient peers.
- **Readiness by Free and Reduced Priced Meals Status.** A 19-point achievement gap exists along income lines: 32% of children from low-income households (as indicated by FARMs status) demonstrate kindergarten readiness, compared with 51% of children from mid- to high-income households.

Percentage of Kindergarteners Demonstrating Readiness by Subgroup



Percentage of Kindergarteners Demonstrating Readiness by Prior Care**



**As reported by families at kindergarten enrollment.

A young child with dark skin and short hair is smiling broadly, showing their teeth. They are wearing a blue and white striped shirt. In the background, other children are visible, though out of focus. The image is part of a larger graphic with blue geometric shapes on the right side.

READINESS BY PRIOR CARE

At kindergarten registration, family members indicate their child's prior care setting. Family-reported data and public school enrollment figures show:

- 78% of this year's kindergarteners attended a formal early learning setting the year prior to starting school, including a child care center, family child care, Head Start, non-public nursery school, or public pre-kindergarten (PreK).
- 43% of entering kindergarteners in 2016-2017 were enrolled in public PreK in 2015-2016, with 64% of those children participating in half-day programs.
- 17 jurisdictions currently offer a full-day option for some or all PreK children.
- Despite the proven benefits of formal early education opportunities, more than 13,000 children had no formal education experience before they entered a kindergarten classroom (22% of children were at home or received informal care the year prior to kindergarten).

Maryland understands that a child's early environment can dramatically influence kindergarten readiness in both cognitive and non-cognitive skills. High-quality early care and education programs, such as PreK, are known to prepare young children for school. In 2016-2017, an average of 46% of children enrolled in a formal, early learning setting the year prior to starting school demonstrate readiness, compared with 31% of their peers at home or in informal care.

PREK: A POWERFUL PREDICTOR

There is strong evidence that young children who participate in PreK programs enter kindergarten with higher levels of readiness than their peers from similar backgrounds. In fact, participation in PreK is a more powerful predictor of children's pre-reading and pre-writing scores than demographic variables.¹⁰ KRA data confirm:

- 40% of children enrolled in public PreK programs the year prior to starting school demonstrate the foundational skills and behaviors essential for kindergarten success and are within 3 points of the statewide average.
- Children who attended public PreK programs are better prepared for school than those in home or informal care the year prior to starting kindergarten (40% demonstrate readiness, compared with 31%).
- 6 of the 12 jurisdictions exceeding the statewide readiness levels serve a majority (over 50%) of their 4-year-old population through public PreK programs.

Because public PreK programs serve a high percentage of children with academic risk factors, these data are significant for addressing the achievement gaps. For example, children enrolled in public PreK programs the year before kindergarten – the majority of whom are from low-income households – outperform their peers at the same income level (40% demonstrate the foundational knowledge, skills and behaviors, compared with 32% of kindergarteners from low-income households).

⁹"Early School Readiness: Indicators on Children and Youth."

¹⁰Chrisanne Gayle, "The Research on Pre-K," (The Center for Public Education, 2008).

CALL TO ACTION

PROPELLING MORE STUDENTS TO READINESS

It is time to:

Assess All Kindergarteners. This critical baseline academic information is needed for every child; it supports student learning, informs families, and guides decision making.

Support Teachers. Provide guidance to teachers on ways to integrate the KRA into the beginning-of-the-year routines and with other assessment practices, as well as how to use the results to inform practice and instruction in a meaningful way.

Use the KRA Data to inform policy, programming, and practice.

Invest in PreK. Support Maryland's move toward high quality prekindergarten expansion.

Strengthen Early Care and Education Programs. Foster a better understanding of "kindergarten readiness" and how the data can identify early interventions and program enhancements.

Support Innovative Early Childhood Investment Strategies. Promote public-private partnerships and self-sustaining community involvement to stimulate action at the state, jurisdictional, community, and programmatic levels.

Show Business Leadership. Adopt business practices that support children and employees with young children. Make early care and education a key part of the company's philanthropic or corporate social responsibility efforts.

Advocate for specific legislation and funding for early care and education.

SIGNIFICANT CHANGE NEVER HAPPENS OVERNIGHT, BUT IF MARYLAND STAYS COMMITTED, WE WILL SEE HISTORIC IMPROVEMENTS IN KINDERGARTEN READINESS AND SCHOOL SUCCESS IN THE LONG-TERM.

¹⁰Chrisanne Gayle, "The Research on Pre-K," (The Center for Public Education, 2008).

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