



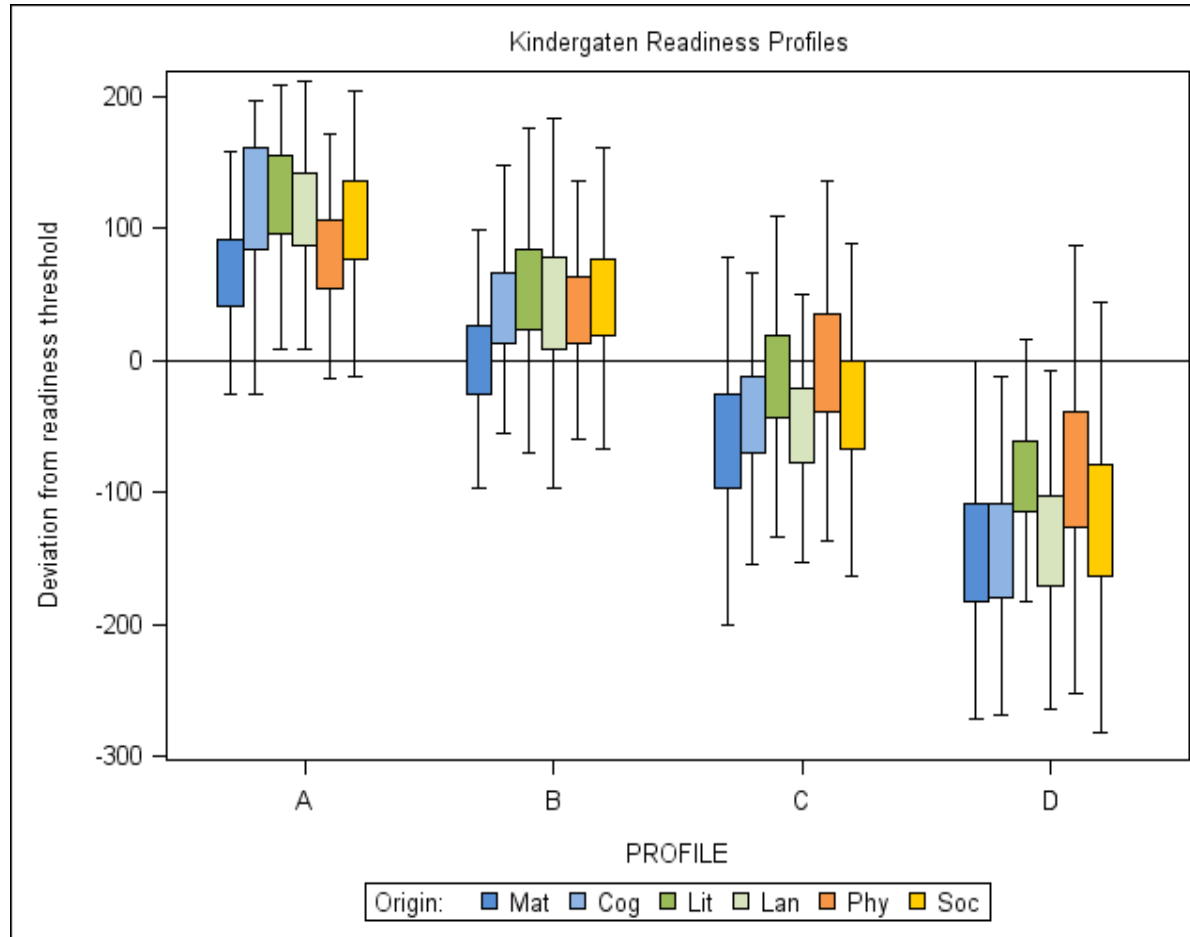






Kindergarten Readiness Profiles

Four profiles emerged based on similar patterns of scores across domains



- Profile A – average scores are consistently high across domains
- Profile B – average scores above cut scores across domains although about 50% are below in math
- Profile C – average scores are at or somewhat below cut scores in all domains
- Profile D – average scores are consistently and materially lower across domains
- Some students in Profile B and C may be kindergarten ready, but they are more similar to the other students in their respective profile groups than students in Profile A





Early Math

Washington Landscape

2019

www.dcyf.wa.gov



Washington State Department of
CHILDREN, YOUTH & FAMILIES



When do we use MATH?

How often do you ask yourself:

- When?
- How many?
- Where?

Math is Everywhere



Early Math Opportunity

“All young children have the capability to learn and become competent in mathematics, for most, the potential to learn mathematics in the early years of school is not currently realized...This is particularly the case for economically disadvantaged children...”

Source: National Research Council. (2009). Mathematics Learning in Early Childhood: Paths Toward Excellence and Equity



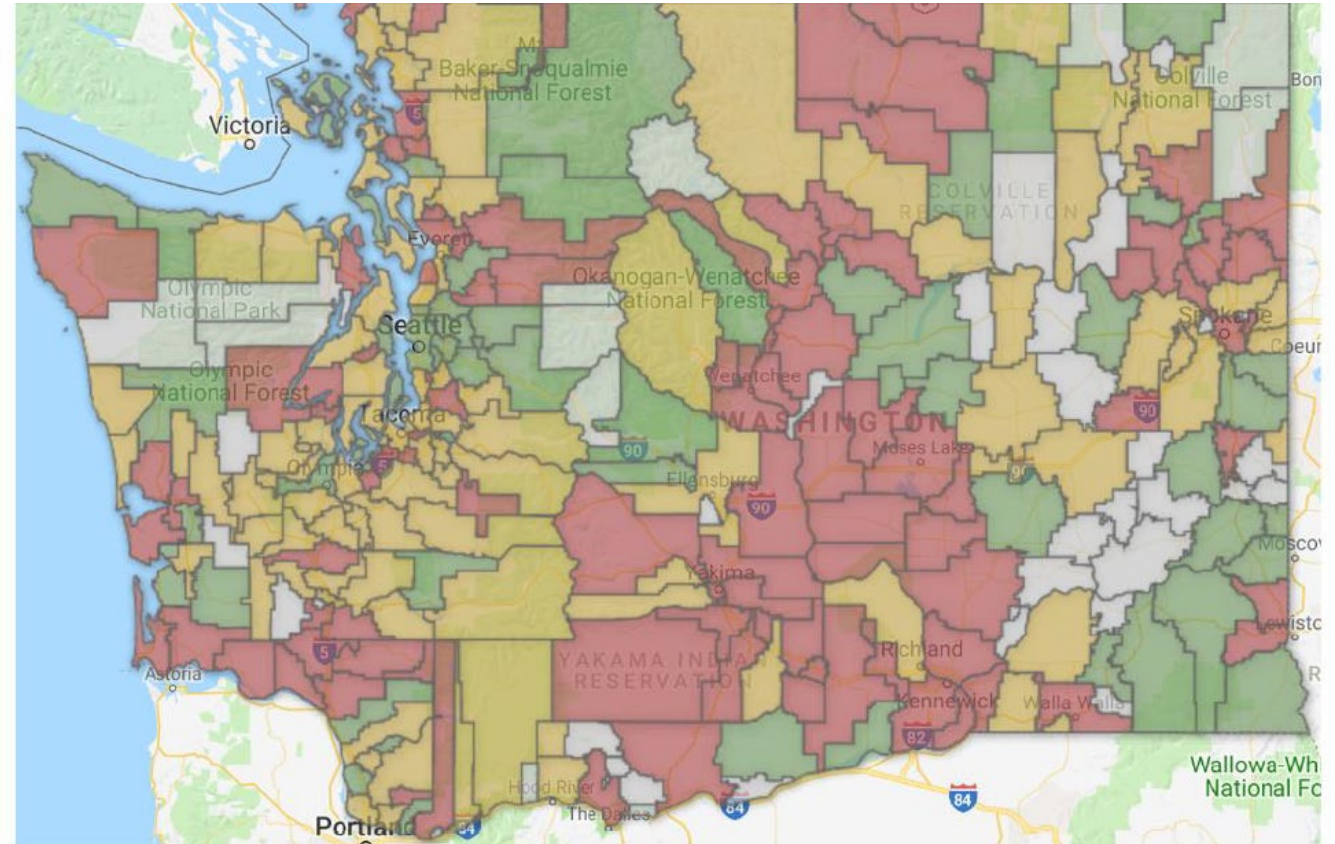
Washington Children

Early math achievement is one of the strongest predictors of later school and life success. Yet only 68% of children in Washington State arrive in kindergarten with the mathematics skills to start school ready.



School Readiness

- Children in diverse communities are least ready for Kindergarten
- DCYF is committed to eliminating race and income as predictors of readiness or success.



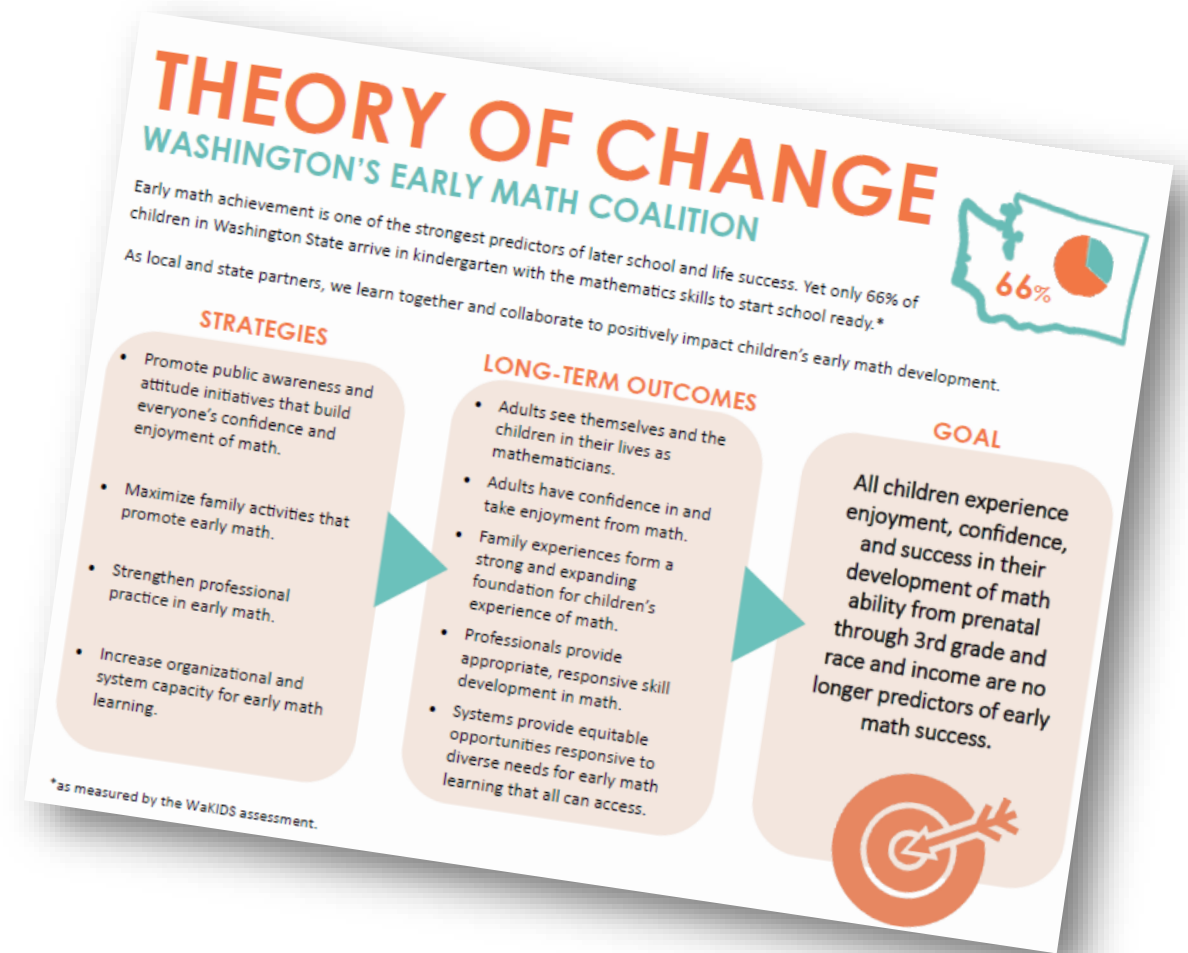
Legend: Scores not Available 0% - 59% K-Ready 60% - 79% K-Ready 80% - 100% K-Ready

Heat Map from Thrive Early Learning System and Resource Analysis based on the percentage of students who demonstrated expected math skills entering kindergarten; 2018

Partners Are Committed to Change This

Organizations and individuals across Washington are striving to meet this goal by:

- ✓ Raising awareness and promoting positive attitudes about math
- ✓ Engaging families
- ✓ Supporting professionals in their work
- ✓ Strengthening system capacities



Partners in Early Math

Statewide Organizations and Agencies	Professional Preparation and Continuing Learning	Community-Family Programs
<ul style="list-style-type: none">• DCYF• OSPI• Washington STEM• Washington Communities for Children• Educational Service Districts• Child Care Aware	<ul style="list-style-type: none">• Educational Service District Regions• Child Care Aware Regions• UW Inspire• UW Cultivate• Higher Education	<ul style="list-style-type: none">• Zeno• Reach Out and Read• Math for Love• Woodland Park Zoo• Libraries• Early Learning Regional Coalitions• STEM Networks

Seeking Insights from the Field



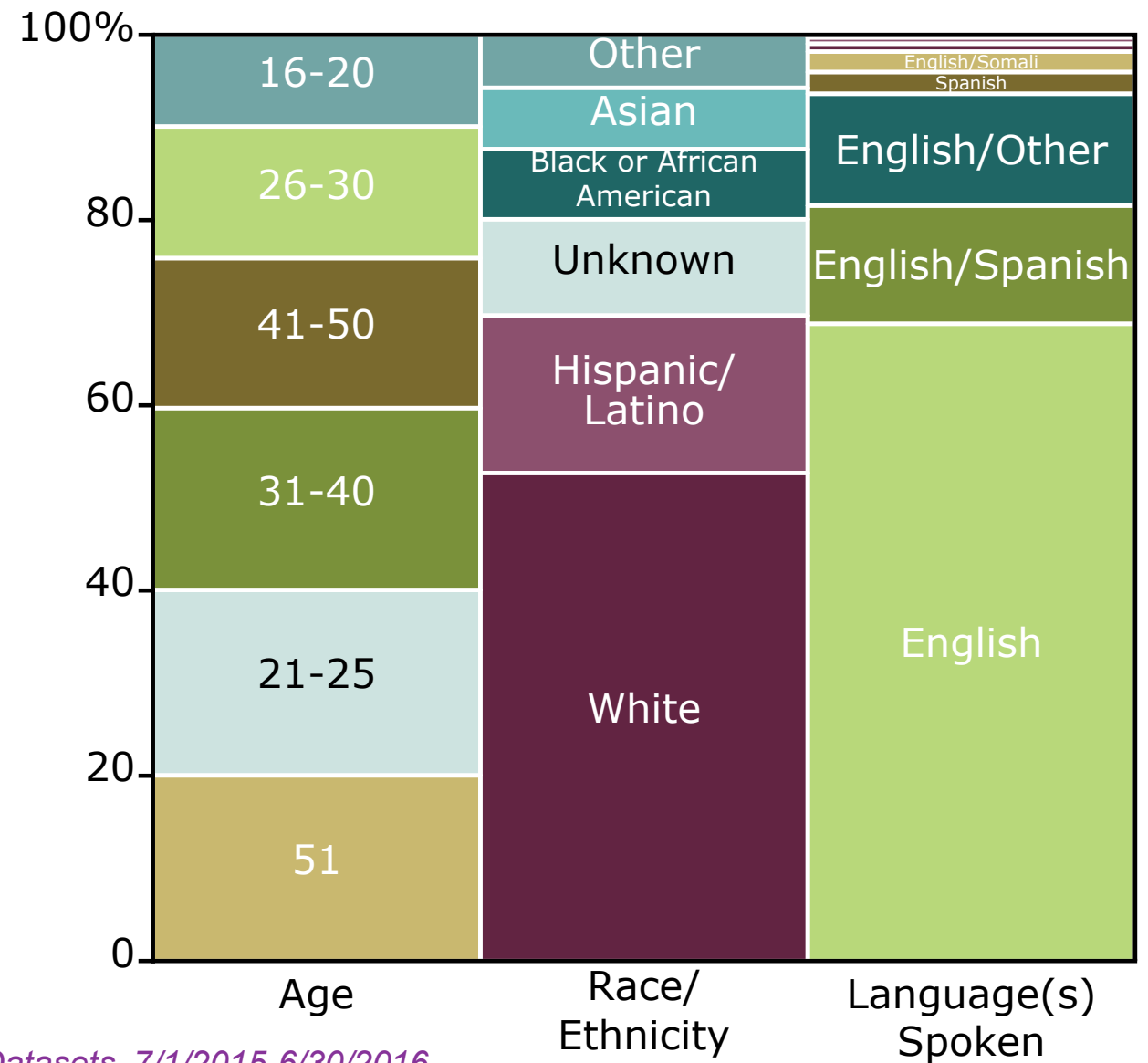
Landscape Highlights

Agency	Promising Programs
OSPI and ESD's	Early Math Modules
Reach Out and Read	Reach Out and Read
Child Care Resources	Play and Learn
ESD's	Early Learning Fellows
UW Inspire	Professional Learning Community
UW Cultivate	Circle Time Magazine
Project Child Success	Cook to Learn and Paint to Learn
ESD 112	Math Anywhere
DCYF	EA and FIND Coaching, ECEAP Early Math Modules, and Lead-Learn-Excel



The Educator Workforce Has Varying Demographics

37,341 active early learning educator workforce – licensed child care providers



Source: MERIT Datasets, 7/1/2015-6/30/2016

Regions are Providing Training in Home Language

Many educators speak a language other than English and/or English as a second language and need training in their home language.

Languages of All Training & Language Spoken by Workforce (in FY 2016)



Limited Math-Related Training is Available

- 10,000 training instances delivered from 2016-2018, 14% were reported as STEM related (1,440)
- Of the STEM-related training instances offered, 15% were focused specifically on math* (220)

**does not include all training delivered by ESD's or School Districts and is specific to in-service training recorded in MERIT*

We have some ideas about why this is -



Success – Cultivate Learning Circle Time Magazine



- 1,932 hours of training online since May 2017
- 27 educators throughout 13 Counties received STEAM trunks to use in implementation with the learning content.
- Participants stated they increased their math comfort, especially in geometry, measurement, and patterns.



Success – ECEAP Early Math Modules

Since 2018:

- 34 coaches attended training
- They work with 23 contractors across the state
- Who serves 136 sites



Professionals Say: Use of Language Related to Math Needs to be Clear

- Educators and trainers are doing lots of math – but many don't know and label it – many focus on counting only.
- Math terms used in introductory math trainings are sometimes too complex.
- Bad experiences cause many educators and trainers to have fear or anxiety about math.



Professionals Say: Families and Educators Have Common Needs

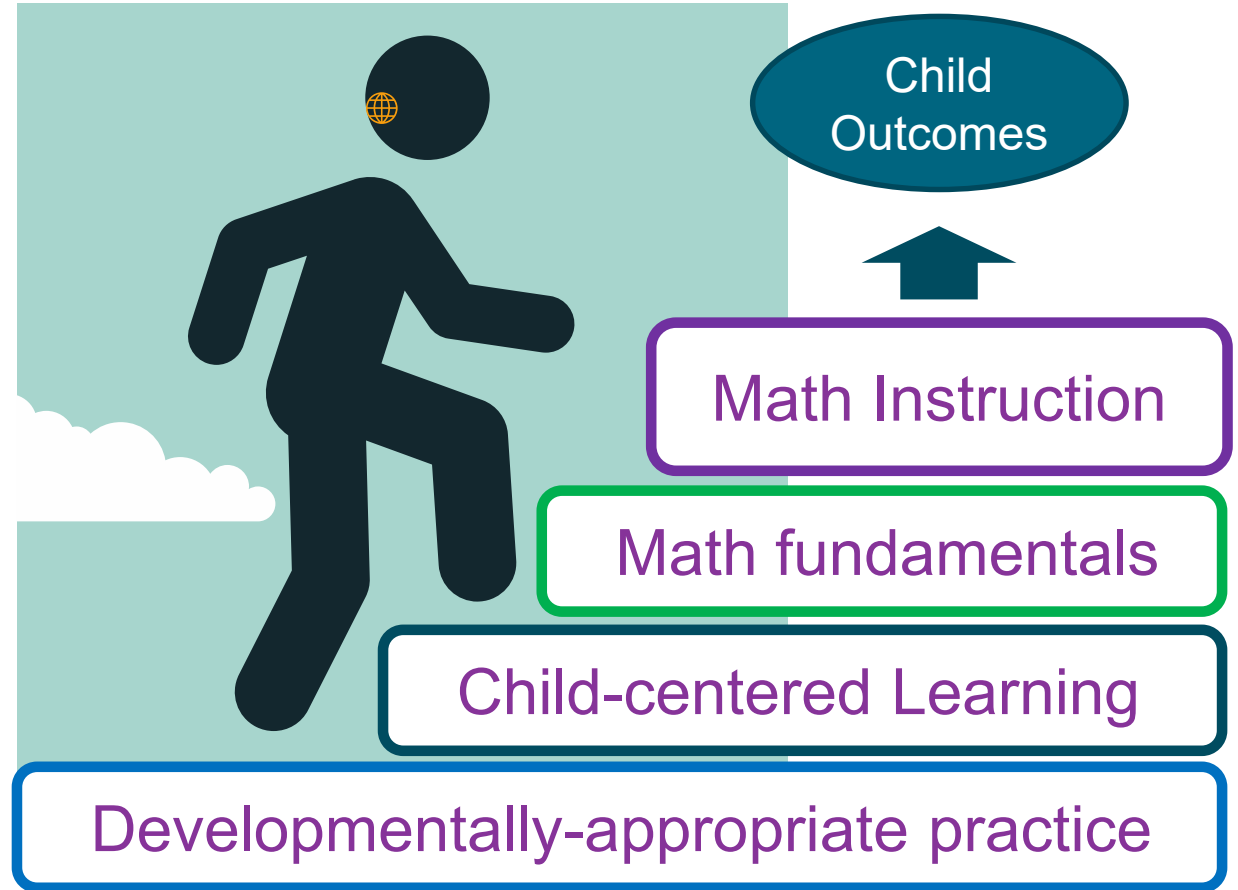


- Families and educators often believe the myth that ‘math is taught later’
- Family and educator priorities can make it hard to access training
- Families say they appreciate math activities and tools that educators provide
- Educators want to align what they do and what families do
- Educators want help engaging families in math

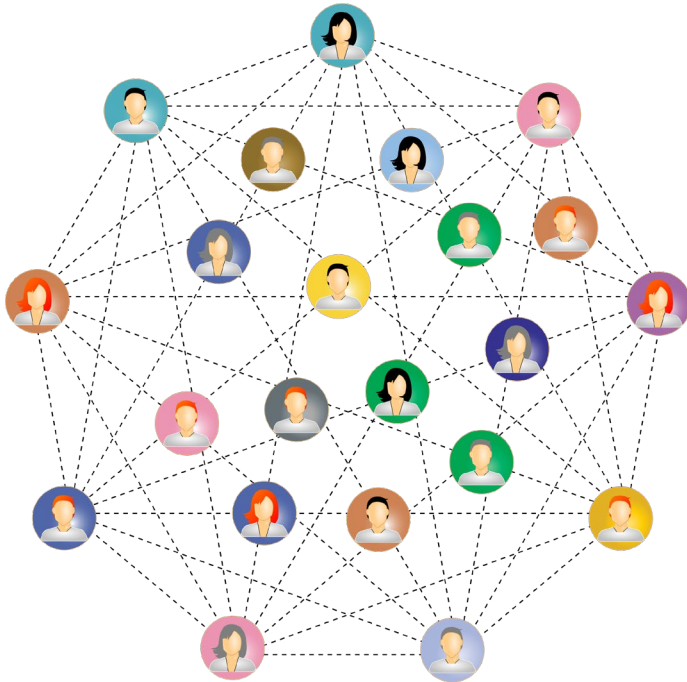


Professionals Say: Educators and Coaches Need a Strong Foundation

Educators, trainers and coaches need strong foundational preparation to be able to teach math well



Educators want Connection and Support



Access to Key Resources

- Materials, games, tools

Strong Networks

- Peer learning cohorts, classroom support

Advanced Training & Education

- Integrated, Job-embedded, specialized supports

Relevant Professional Learning Options

- Hands-on, practice with peers, reflects culture

Continue to remove Barriers

- Internet, technology, language, cost, substitutes



Take Time to Reflect

- What seems most significant from these insights that relates to your community?
- What opportunities are coming to mind?





Thank you



WaKIDS

Washington
Kindergarten Inventory
of Developing Skills

**What have we learned and
where are we going next?**



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Cognitive
Language
Literacy
Math
Physical
Social-Emotional



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- **Manages feelings**
- **Follows limits and expectations**
- **Takes care of own needs appropriately**
- **Interacts with peers**
- **Balances needs and rights of self and others**
- **Solves social problems**
- **Follows directions**
- **Speaks clearly**
- **Engages in conversations**
- **Attends and engages**
- **Persists**





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Objective 1 Regulates own emotions and behaviors

a. Manages feelings

Not Yet	1	2	3	4	5	6	7	8	9	10	11	12	13
		<p>Uses adult support to calm self</p> <ul style="list-style-type: none"> Calms self when touched gently, patted, massaged, rocked, or hears a soothing voice Turns away from source of overstimulation and cries but is soothed by being picked up 		<p>Comforts self by seeking out special object or person</p> <ul style="list-style-type: none"> Gets teddy bear from cubby when upset Sits next to favorite adult when sad 		<p>Is able to look at a situation differently or delay gratification</p> <ul style="list-style-type: none"> When the Block area is full, looks to see what other areas are available Scowls and says, "I didn't get to paint this morning." Pauses and adds, "I have an idea. I can paint after snack." 		<p>Controls strong emotions in an appropriate manner most of the time</p> <ul style="list-style-type: none"> Asserts, "I'm mad. You're not sharing the blocks!" Says, "I'm so excited! We're going to the zoo today!" while jumping up and down 		<p>Manages strong emotions using known strategies</p> <ul style="list-style-type: none"> When feeling overwhelmed, talks with teacher about a plan for completing an assignment Finds a quiet place in the classroom to read after a disagreement with a friend Talks to a friend about being reprimanded by the teacher 		<p>Demonstrates patience with personal limitations; controls feelings based on how they will affect others</p> <ul style="list-style-type: none"> When practicing cursive writing, says, "I need to go slowly when I write the letter Q so I won't get frustrated." Smiles and says, "thank you" for a gift, and then later tells an adult, "I already read that book, and I didn't like it." 	

Excerpt from *GOLD® Objectives for Development & Learning, Birth Through Third Grade*, p. 4.
 © 2016. Used by permission of Teaching Strategies, LLC.

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	[Red bar]		[Orange bar]			[Yellow bar]		[Green bar]		[Blue bar]		[Purple bar]	



Excerpt from *GOLD® Objectives for Development & Learning, Birth Through Third Grade*, p. 4.
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Readiness by Area

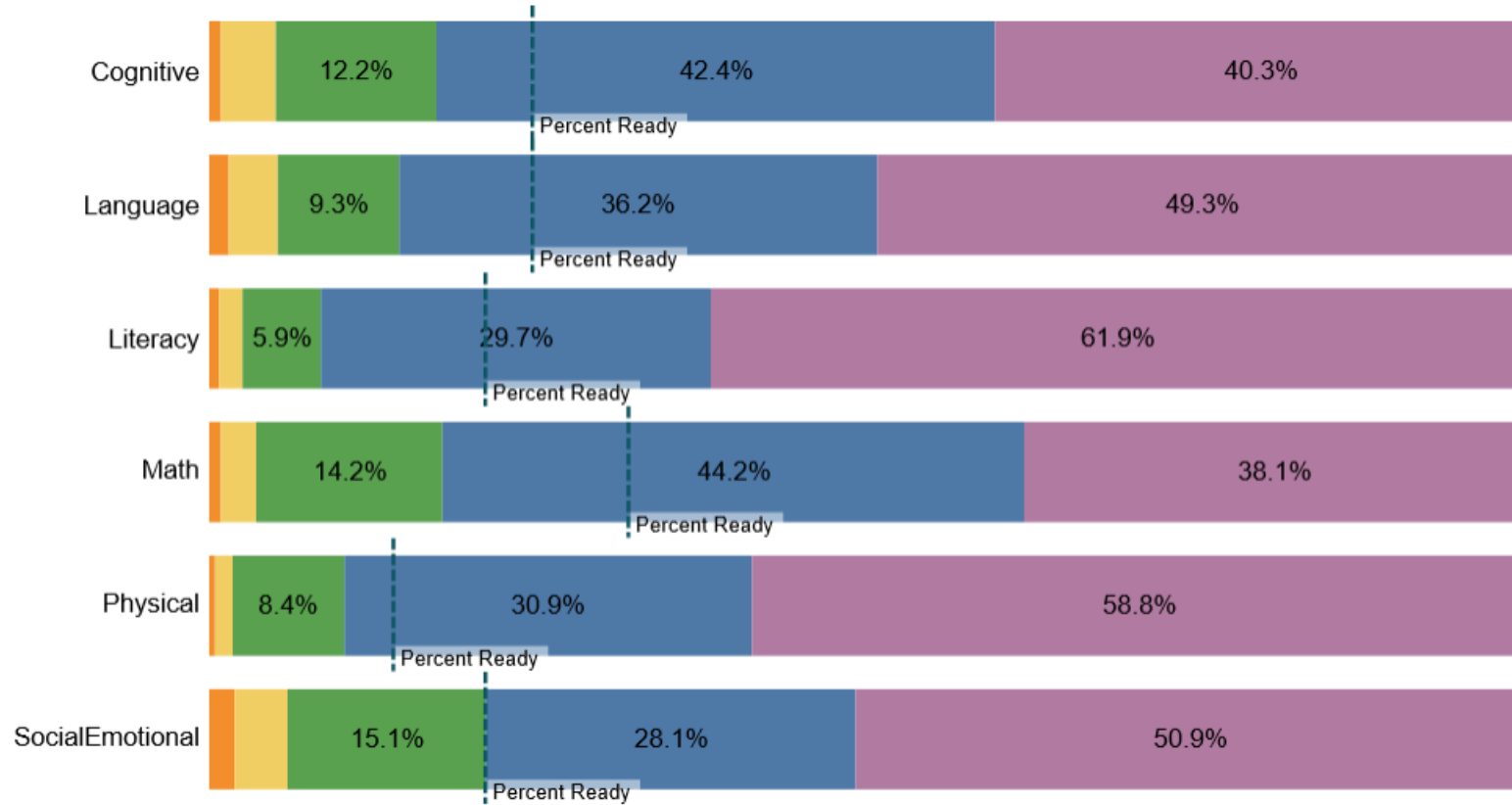
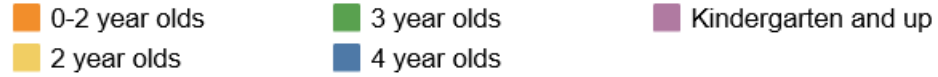
Washington State

2019-20

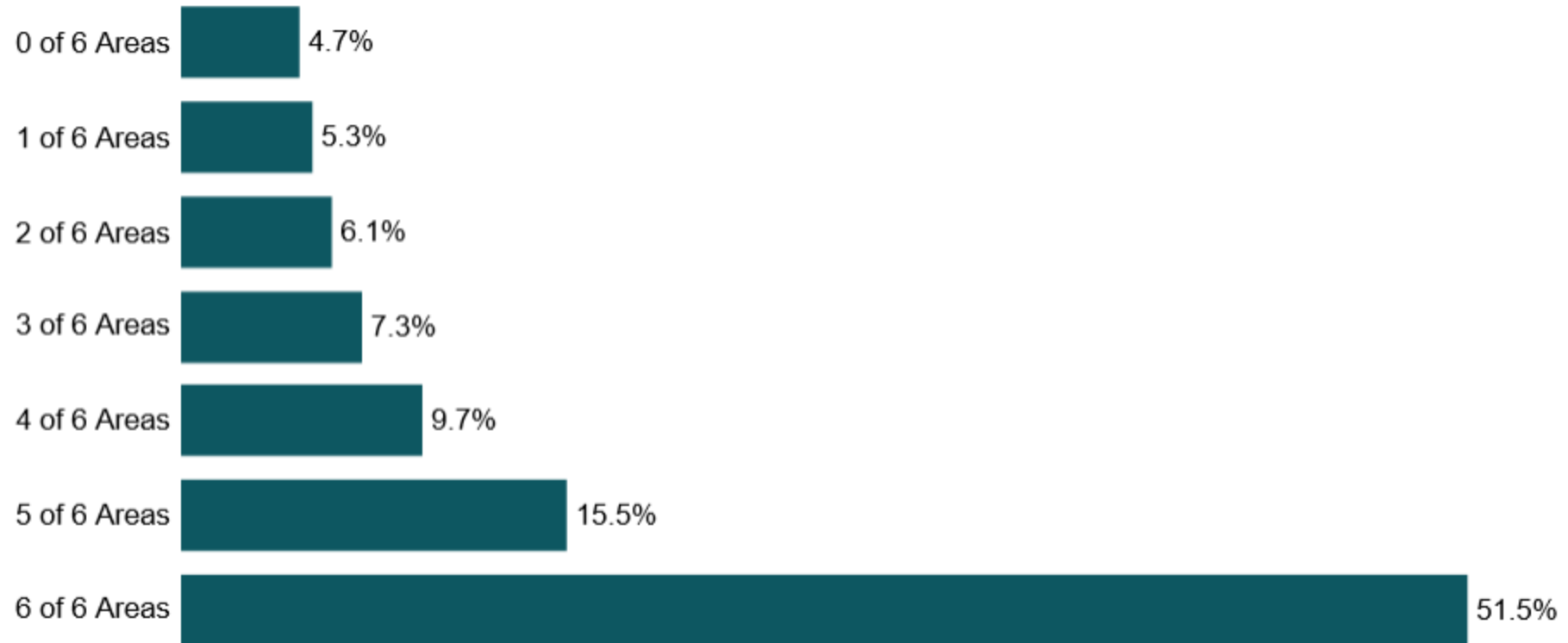


Range of Skills Washington State 2019-20

Demonstrating skills typical of



Number of Areas Ready Washington State 2019-20



Progression Activity





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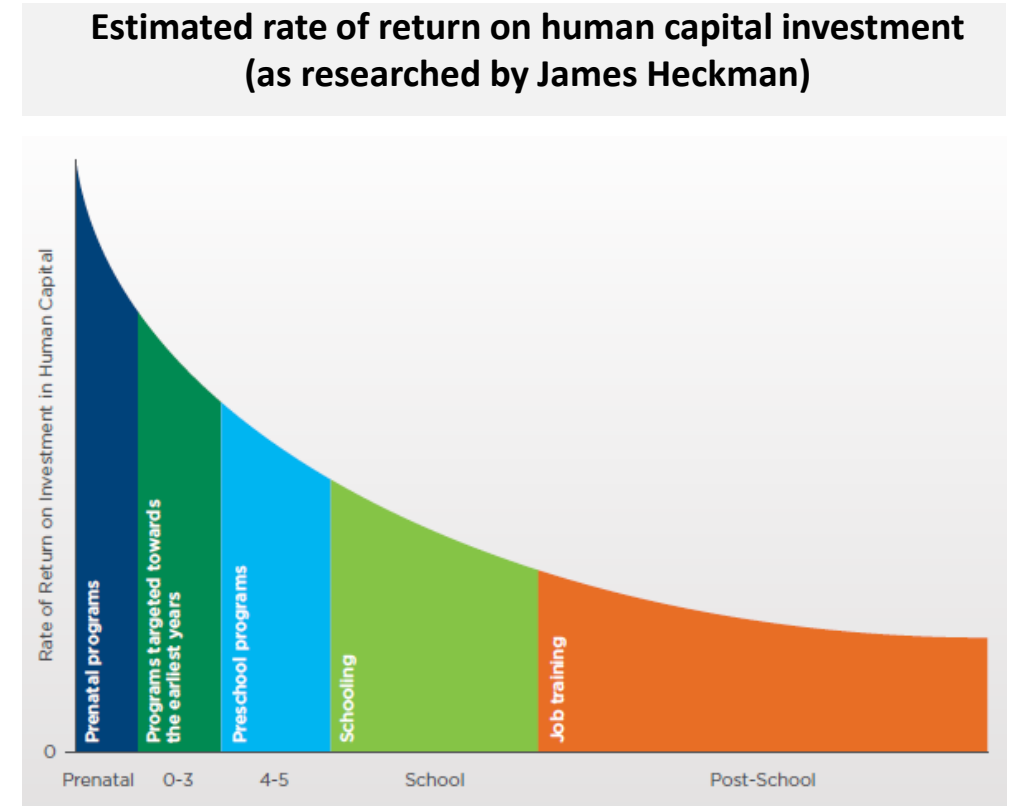
STEM Education Innovation Alliance

Andi Smith, Executive Director, Washington

February 13, 2020

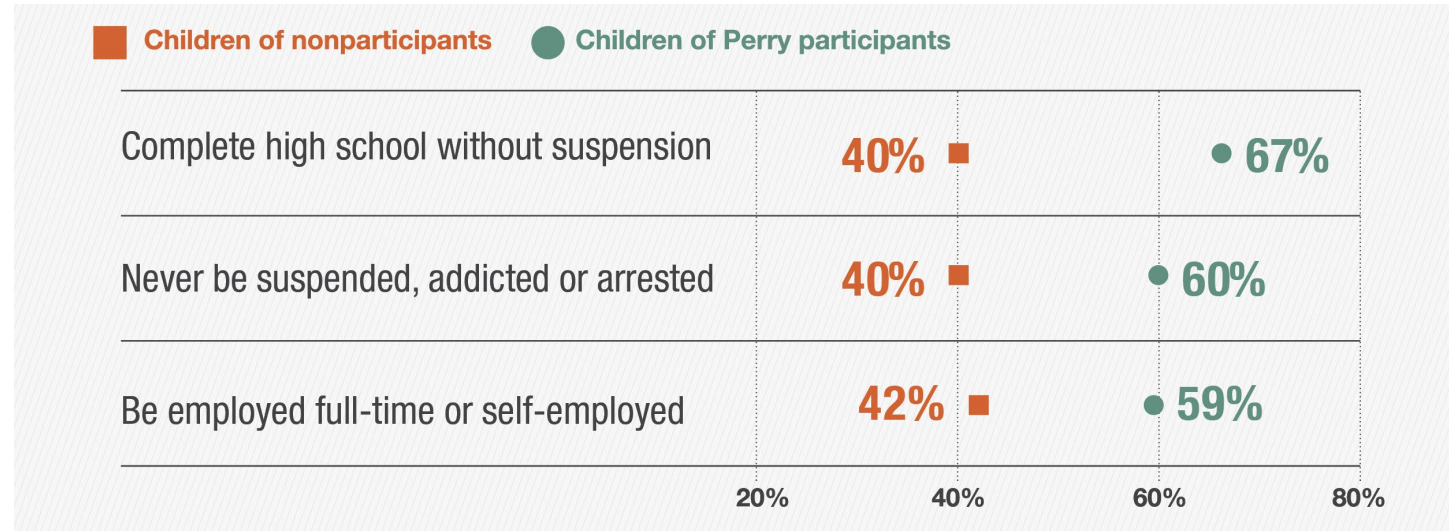
High Quality Early Interventions Have The Greatest Impact On A Child's Life Outcomes And The Highest ROI

- Children who enter kindergarten ready are **twice as likely to master basic skills by age 11**
- High quality early childhood education **reduces the need for costly and often ineffective interventions later in life**. Children who do not get quality early childhood experiences are:
 - 25% more likely to drop out of school
 - 40% more likely to become teen parents
 - 60% less likely to attend college
- **ECE Investments have a higher ROI than** at any other stage of life through better outcomes in education, health, reduced social spending and workforce productivity
 - High quality ECE has lasting impacts on cognitive, social emotional, and behavioral outcomes
 - A dollar invested in quality Pre-K education for low-income students provides taxpayers with 7-10% return per year
 - **Every dollar invested in high-quality birth-to-five early childhood education for disadvantaged children delivers a 13% annual return on investment**



Intergenerational Effects of ECE

- Perry Preschool: high quality ECE program for 4- and 5-year-olds
- Recent research tracked program participants into their 50s and found intergenerational effects, as most participants have children that are now adults
- Not only did the participants have more positive life outcomes, they passed those benefits along to their children.



Business Case For ECE

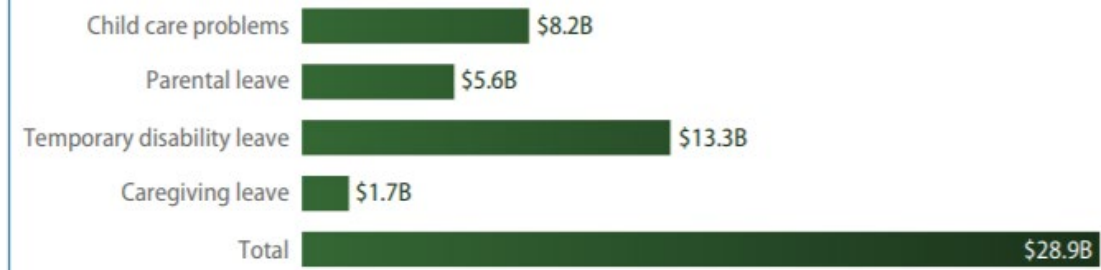
Impact on today's workforce

- Working families across country lose \$8.2B in wages annually due to inadequate child care access (reduction of work hours, forced to quit, firings)
- 74% of working parents said their jobs have been affected by childcare problems
- 2M parents of toddlers had quit a job, turned one down, or changed their position due to childcare issues in 2016.
- In Michigan, a study on labor force identified the three biggest barriers to workforce participation for families with modest income are 1) transportation, 2) lack of adequate skills, and 3) child care

Early childhood workforce

- Roughly 2 million adults, mostly women, comprise the early childhood workforce
- As states expand ECE systems, it's imperative that teachers are paid a living wage to create a thriving workforce.
- In 2016, more than half of child care workers were enrolled in public support and health care programs.

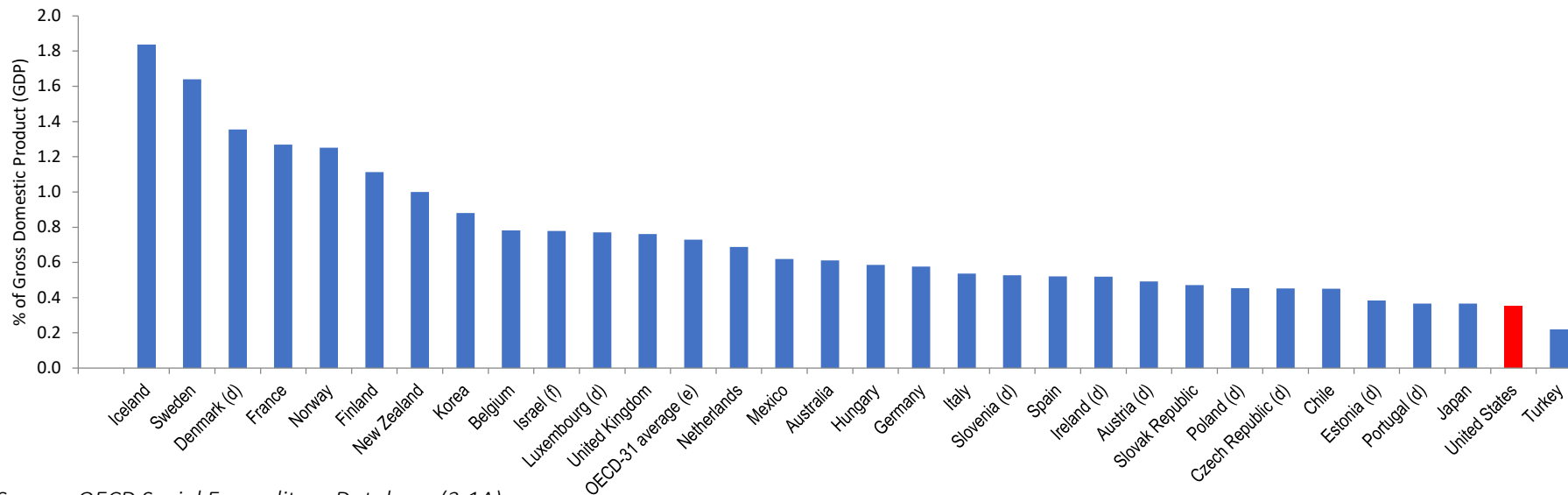
FIGURE 1
Estimated lost wages for workers ages 18 to 64 due to lack of work-family policies



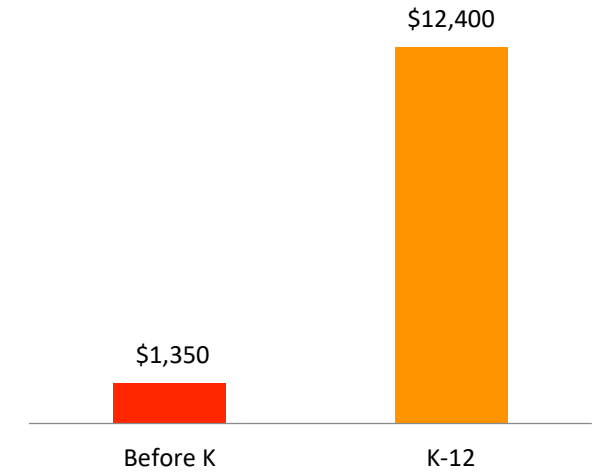
Source: Authors' analysis of Miriam King and others, "Integrated Public Use Microdata Series, Current Population Survey: Version 3.0," available at <https://cps.ipums.org/cps/index.shtml> (last accessed July 2016); U.S. Department of Labor, "Wage and Hour Division (WHD)," available at <https://www.dol.gov/whd/fmla/survey/> (last accessed July 2016).

United States Ranks Low Against Other Industrialized Nations in ECE Spending

Public spending on early childhood care and education as a % of GDP, 2013 and latest available



Average per child annual public expenditure for education in U.S. 2016

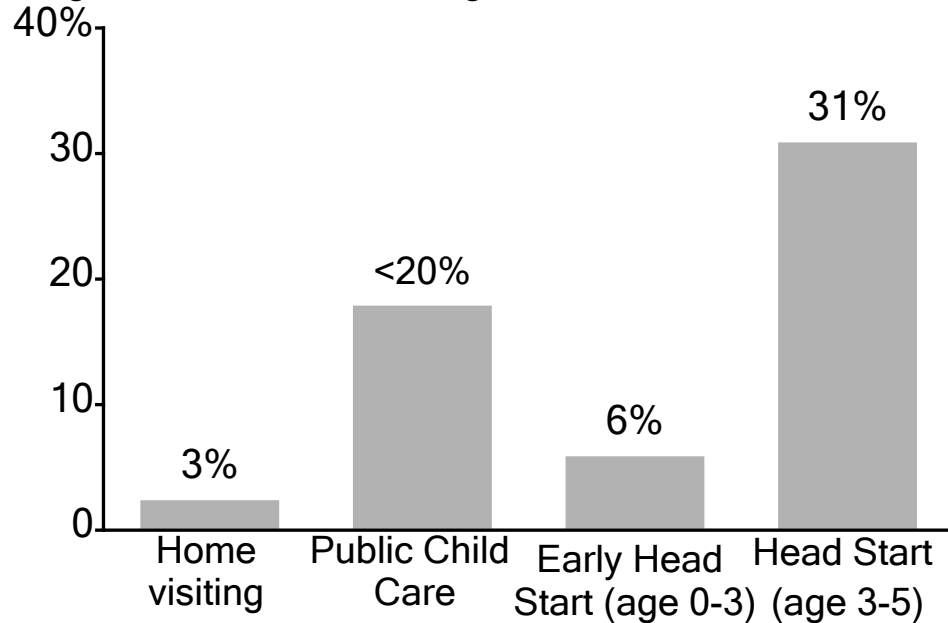


Source: OECD Social Expenditure Database (3.1A)

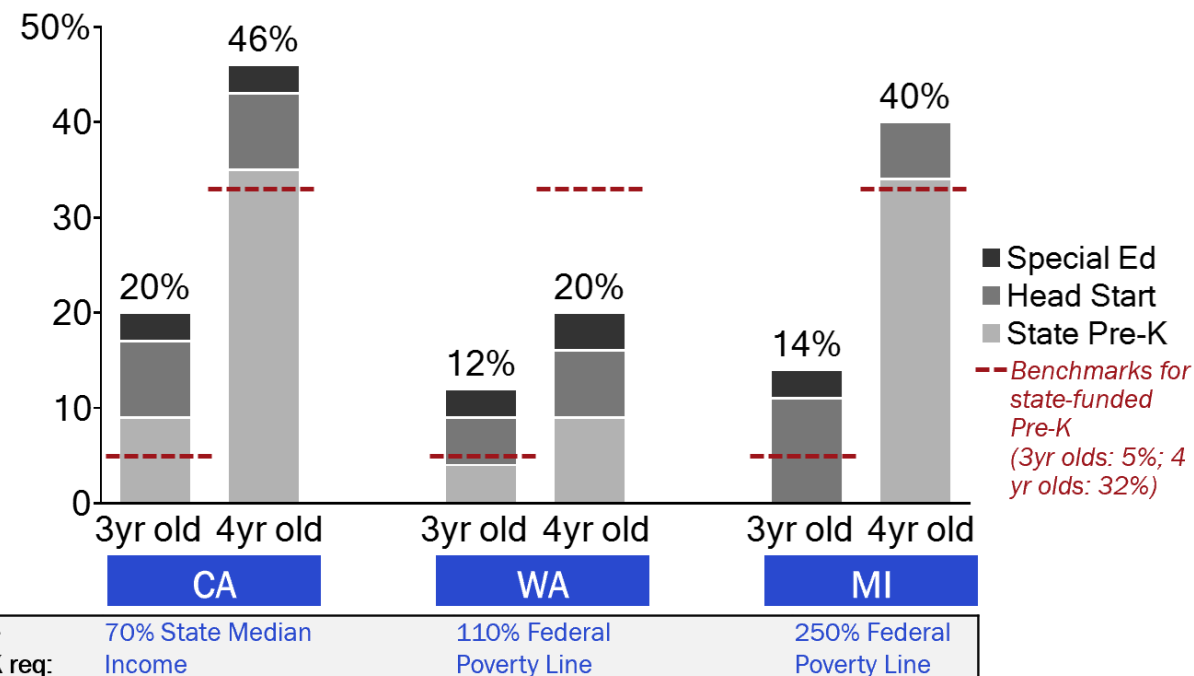
Note: Total expenditures include child care and pre-primary education expenditures

During Critical Development, Too Few Kids Have Access

Percentage of target population reached by targeted federal EC funding



Percentage of state population enrolled in publicly funded Pre-K



Note: Access for home visiting programs is approximated based on individuals enrolled in MIECHV (145K, including pregnant women) and number of children 0-3 in low-income families (5.2M). 1.4 million children access public child care benefits from all federal sources (TANF, CCDF, SSBG); eligibility is determined by family earning <85% of median state income. Eligibility for Early Head Start and Head Start is based on Federal Department of Health and Human Services poverty guidelines.

Sources: The State of Preschool 2016 (Rutgers); National Head Start Association (FY16); National Center for Children in Poverty, MIECHV enrollment; Child Care and Development Fund Performance Metrics

Washington is On The Right Track!!



- Washington's early learning programs –childcare, preschool and targeted childhood development programs for those who need it most –are based on brain science.
- The Legislature understands the importance of high-quality early learning experiences and has worked in a bi-partisan fashion to build a solid foundation.
- Washington has invested in building a high-quality system because the quality of care makes all the difference to child outcomes.

So What Is The Role Of Philanthropy?

A group of philanthropies have come together to align our strategies, coordinate our investments, and support a strong birth to five system in Washington that promotes school readiness.

Known informally as the “ABC Partners,” Bill & Melinda Gates Foundation, Ballmer Group, and the Perigee Fund are working together with a goal for Washington to significantly increase its investments to support high-quality early learning services that are developmentally appropriate and culturally and linguistically responsive to far more children and families.

Key Priorities

Vision:

All children in Washington are ready for Kindergarten and the gap in readiness based on race and family income is eliminated.

Goal:

Washington significantly increases its investments to support high-quality early learning services that are developmentally appropriate and culturally and linguistically responsive to far more children and families. The early learning system is built to meet the needs of children and families furthest from opportunity and those high-quality early learning opportunities should include:

What Are We doing?

- **We are working alongside advocates and legislators to help catalyze a shared vision for what our state needs to do and how much it will cost to implement early learning at scale.**
 - **Support the work of others by providing research, communication, resources, and other tools and tactics needed to achieve our shared goal. Our key activities include:**
- **Policy Analysis and Research:**
 - **support the strengthening of the tools and resources in Washington, including creating a cost model for scaling early learning services and research options for advancing the early learning system**
- **Advocacy Capacity:**
 - **support a strong advocacy voice for young children and families with existing advocacy partners build their capacity to be even more impactful**
- **Communications and Media:**
 - **build support and champions for early learning throughout the state through earned, paid and digital media awareness building, and support throughout the state**
- **Ambassadors:**
 - **support former elected officials (such as Rep. Ruth Kagi and Councilman Tim Burgess) to continue to champion early learning**
- **New Voices: bring new voices to the table to listen and learn about what is needed for young children and families**

Opportunities, Resources & Support

Learning Opportunities for Children: children and families access the affordable, high-quality preschool and childcare options that are right for them that include:

- High-quality engagement, instruction, curriculum and environments to support children's growth and development.
- Subsidies for more families with family co-pays capped at 7% of income.
- Mixed delivery options including programs within childcare facilities, community-based organizations, and public schools.
- A diverse, well trained and compensated workforce with access to resources, training and support to implement a high-quality program

Resources for Families: family resources, information, and services that are culturally and linguistically responsive that nurture their relationships and maximize their role as their child's first and most important teacher including:

- Home visiting programs for families that need additional services.
- Early intervention for children with additional needs.

Supportive Communities: community-based services that connect families to available resources:

- Community-based information, resources, and connections to needed supports for new families.
- Communities have tailored resource and referral services that are reflective of their unique community needs.
- Early learning options meet the needs of of Washington's diverse communities.

Questions?

Andi Smith

Executive Director, Washington

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206.851.2281

What is ECEAP?



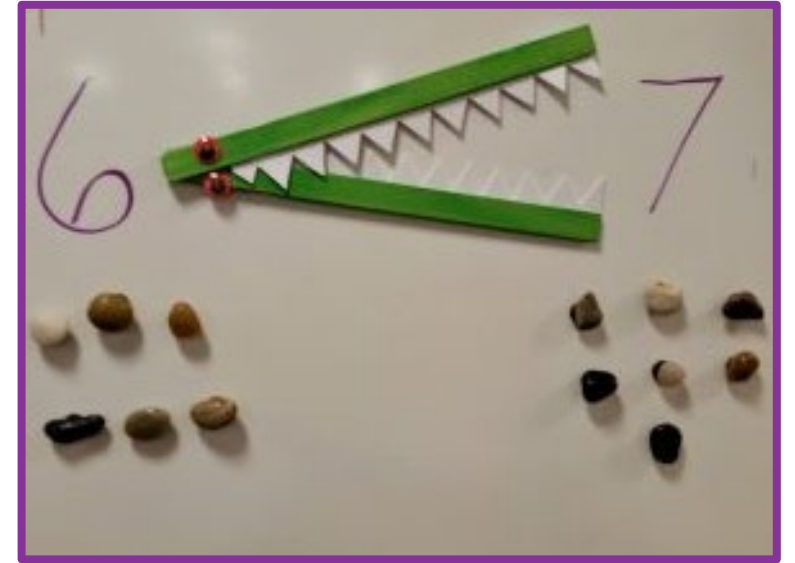
ECEAP is Washington's pre-kindergarten program that prepares 3- and 4-year-old children furthest from opportunity for success in school and in life.



Partnering with OSPI

2016-2017

- Partnership meetings with OSPI for co-planning
- Creation of the ECEAP training based on OSPI training
 - Counting and Cardinality
 - Geometry
 - Operations and Algebraic Thinking



The less/more alligator was part of a Sound to Harbor Monthly Math kit. It can be used to build on symbolic math skills. Photo credit: Holly Porter

ECEAP Numeracy Training

Year One 2017-2018

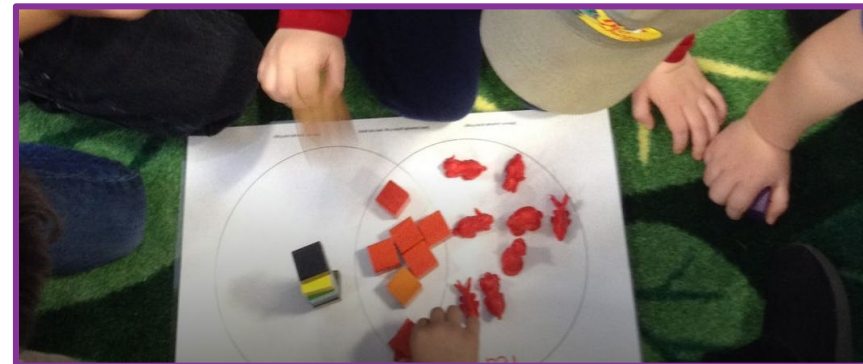
ECEAP provided 2 trainings to coaches

- Kent – 17 participants
- Spokane – 9 participants
 - 16 Contractors and 110 sites

Year Two 2018-2019

ECEAP provided 1 training to coaches

- Longview – 8 participants
 - 7 Contractors and 26 sites



Monthly Math Fun: Sound to Harbor's Monthly Math Kits Photo
Courtesy: Sound to Harbor Early Learning Programs

ECEAP Contractor STEM curricula

Science 19.79%

- **Early Childhood Hands on Science (ECHOS)**
- **Growing Up Wild**
- **Creative Curriculum**
- **Forest school - pilot**
- **Litera-Sci**
- **Montessori**



Building with ramps helps children begin to understand concepts of physics. Photo courtesy: Sound to Harbor Early Learning Programs



ECEAP Contractor STEM curricula

Math 26.22%

- **Big Math for Little Kids**
- **Building Blocks**
- **Early Childhood Hands On Science (ECHOS)**
- **Engage NY/Eureka Math**
- **Every Day Math Pre-K**
- **High Five Mathematize**
- **Math Connects: MacMillan/McGraw-Hill**
- **NY/Eureka Math**
- **Bridges in mathematics**
- **Family Math Innovations**
- **Houghton Mifflin**
- **Math activities/Progression designed by Snohomish County ECEAP**
- **Montessori**
- **Snohomish County Early Math Progressions**



Math - Numeracy Cohort Sites

Fall 2017

Spring 2018

Age	Average scale score	# Below WHE	# Meets WHE	# Exceeds WHE	Average scale score	# Below WHE	# Meets WHE	# Exceeds WHE	Growth in Scale Score
3's	278.43	350	576	20	357.07	55	549	233	78.64
4's	344.02	1290	493	19	433.49	282	1146	177	89.47
Total	321.44	1640	1069	39	407.31	337	1695	410	85.87

Math - All Other ECEAP Sites

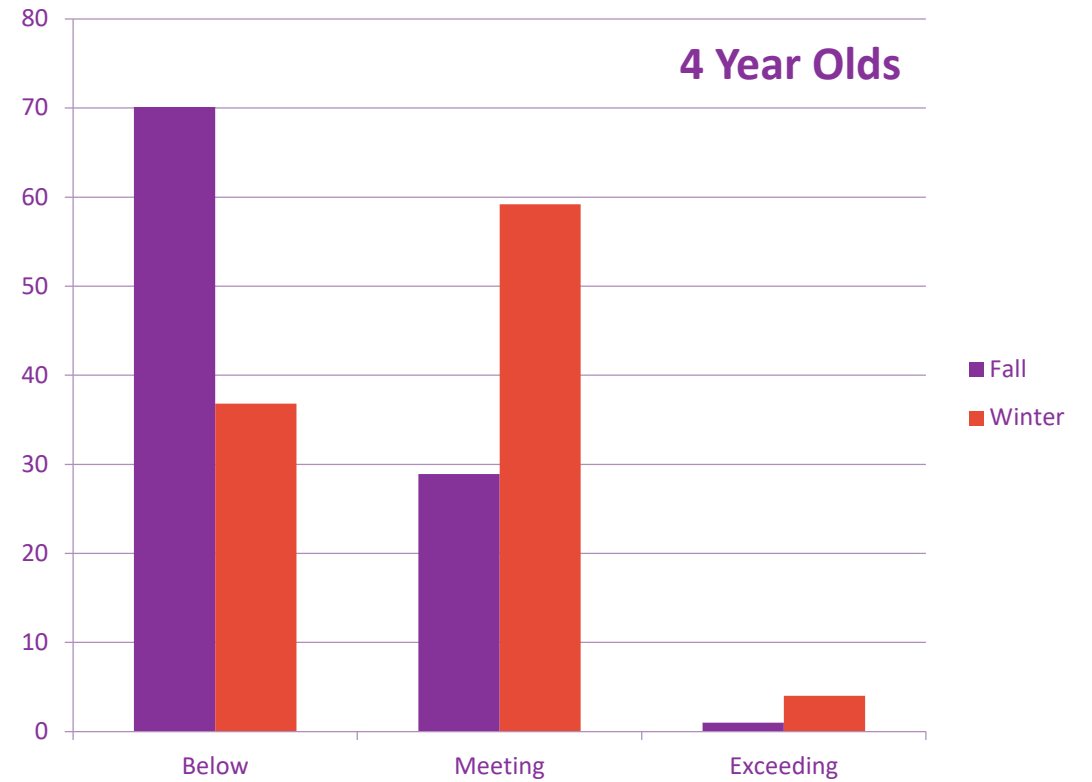
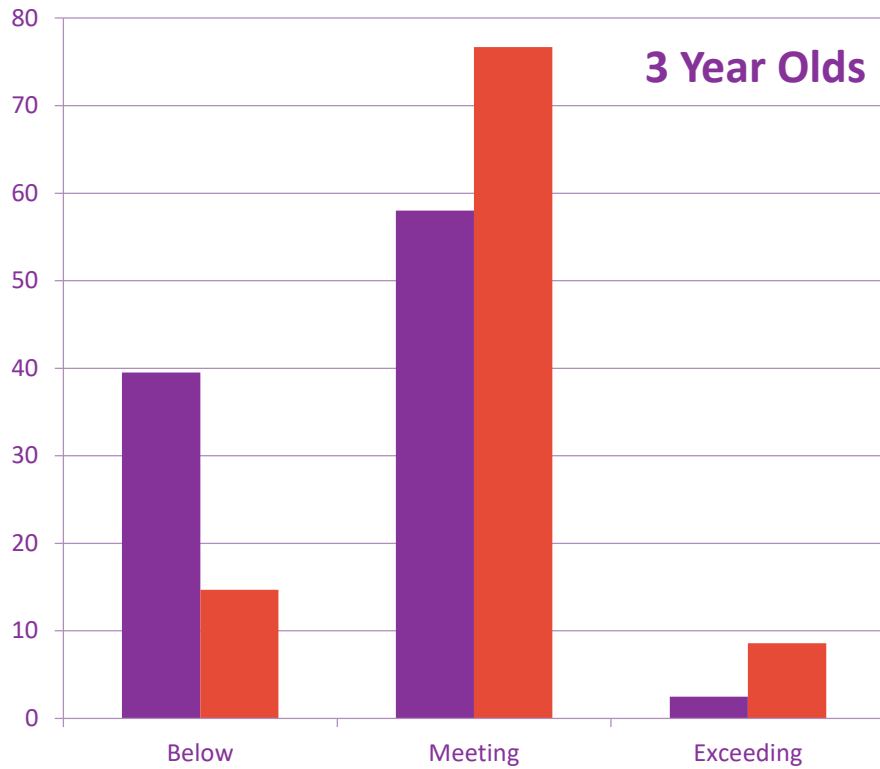
Fall 2017

Spring 2018

Age	Average scale score	# Below WHE	# Meets WHE	# Exceeds WHE	Average scale score	# Below WHE	# Meets WHE	# Exceeds WHE	Growth in Scale Score
3's	266.37	1460	1486	54	340.21	268	1896	522	73.84
4's	331.4	4527	1395	37	423.08	1259	3575	604	91.68
Total	309.62	5987	2881	91	389.65	1527	5471	1126	80.03



2017-2018



2017-2018 Numeracy Cohort Sites (2748 children – 23%)

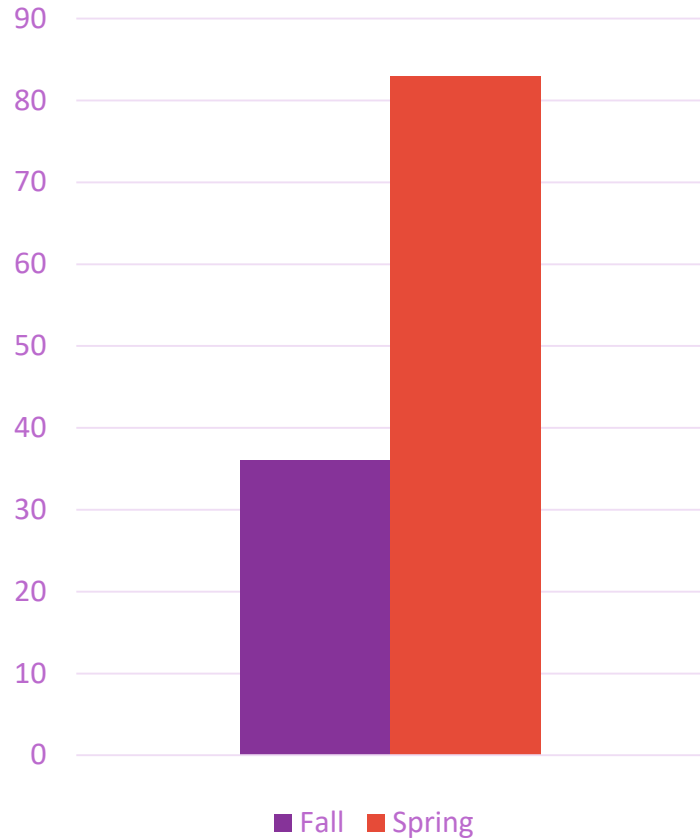
Scale Growth Score	Math	Literacy	Physical	Social-Emotional	Language	Cognitive
3's	78.64	97.61	105.14	65.44	79.99	88.18
4's	89.47	104.15	128.24	77.06	102.5	110.03
Total	85.87	101.95	120.55	73.23	94.98	100.66

2017-2018 Other ECEAP Sites (8959 children – 77%)

Scale Growth Score	Math	Literacy	Physical	Social-Emotional	Language	Cognitive
3's	73.84	88.15	94.8	59.08	71.91	81.54
4's	91.68	107.89	131.86	79.8	102.59	109.16
Total	80.03	93.95	112.08	67.93	86.19	92.27



All ECEAP Sites Math 2018-2019



Thank you!





Washington State Early Learning Fellows



AESD ASSOCIATION OF
EDUCATIONAL
SERVICE DISTRICTS

Nine ESDs. One Network.
Supporting Washington's Schools and Communities.



Washington Office of Superintendent of
PUBLIC INSTRUCTION

Mission

The Fellows are a growing network of Washington State educational leaders who expand their capacity to **improve student learning through on-going professional learning and leadership development** within their local context and in **partnership with school districts, educational service districts, community agencies and state organizations.**

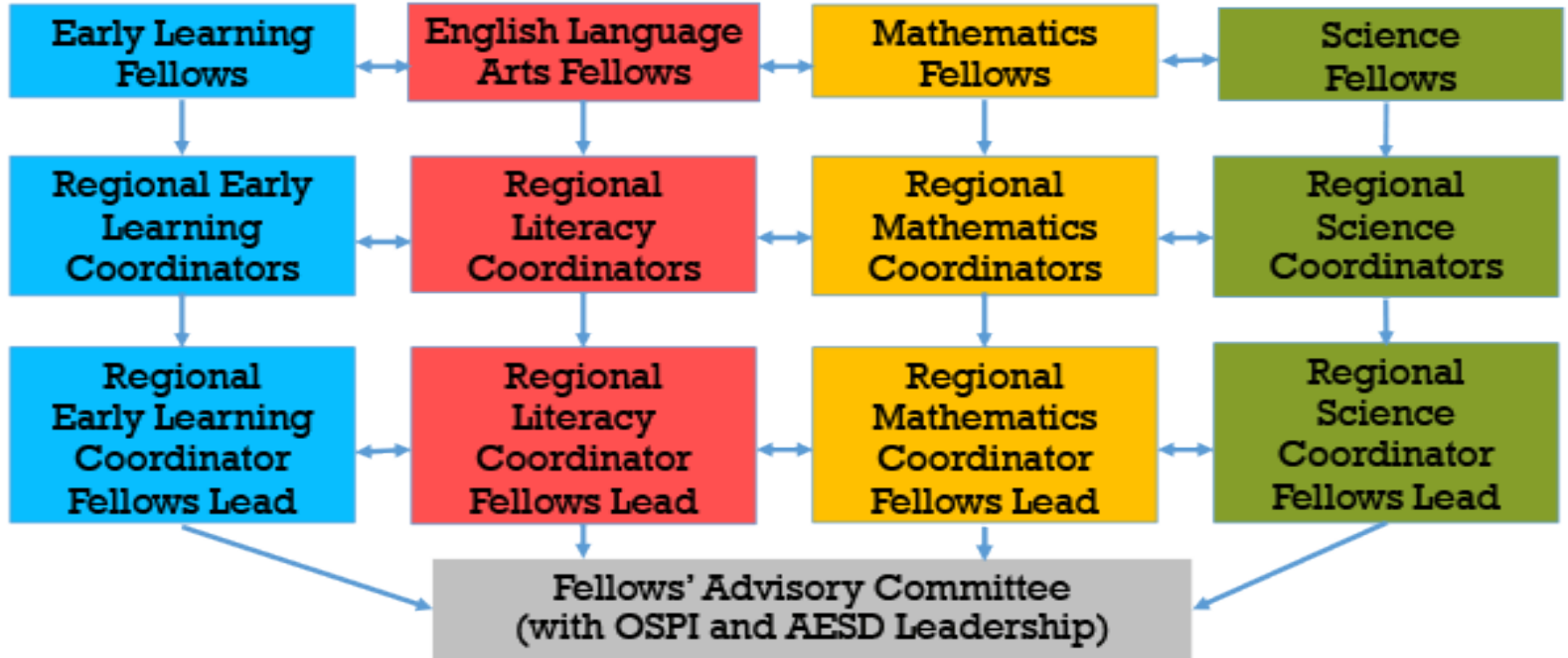


Vision

The work of the Fellows will result in measurable growth for every student in every learning environment in Washington.



The Fellows Structure

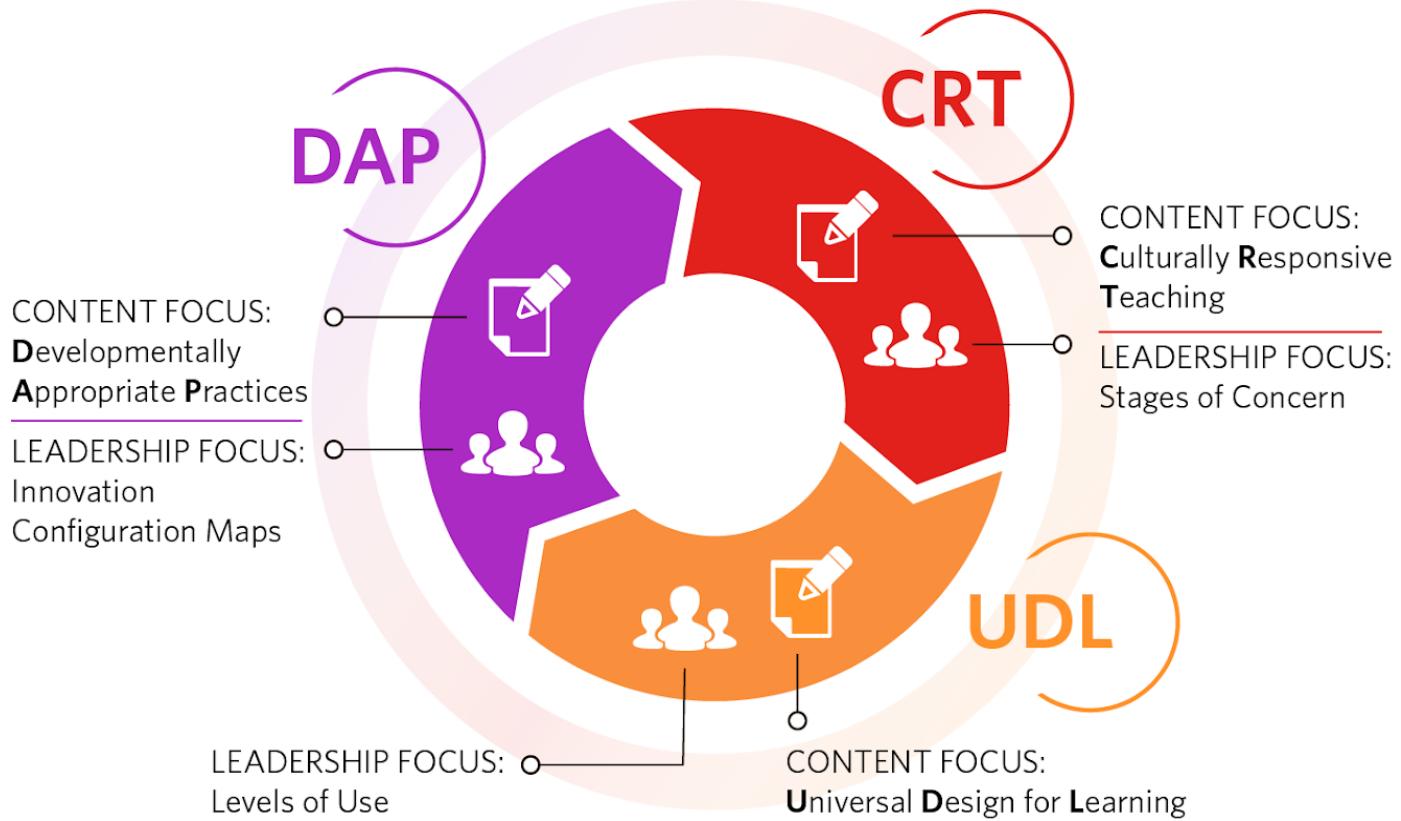


Fellows Commitment

- Three-year commitment
- Attend four convenings facilitated by content coordinators
- Collaborate with district/school/organization on action plan and support professional learning to impact student achievement
- Implement learning from convenings to support their own instructional practice and that of their colleagues



Early Learning Fellows 3-year Framework



Who are the Early Learning Fellows?

- 182 across 78 school districts
- P-3 teachers
- P-3 administrators
- Special education teachers and administrators
- TOSAs and Early Achievers coaches
- EL providers: Childcare, ECEAP, and Head Start
- Higher Ed. Faculty
- Child Care Aware trainers



What's the Impact?



Strategies and Recommendations

Michelle Roberts, DCYF

Carlin Lorente, Washington STEM



Washington State Department of
CHILDREN, YOUTH & FAMILIES

WASHINGTON'S EARLY MATH COALITION

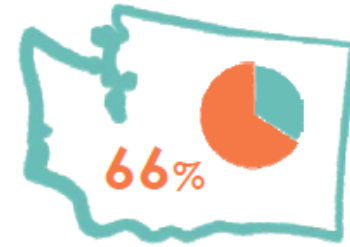
As local and state partners, we came together in August 2017 to positively impact children's early math development with the goal that:

All children experience enjoyment, confidence, and success in their development of math ability from prenatal through 3rd grade and race and income are no longer predictors of early math success.



THEORY OF CHANGE

WASHINGTON'S EARLY MATH COALITION



Early math achievement is one of the strongest predictors of later school and life success. Yet only 66% of children in Washington State arrive in kindergarten with the mathematics skills to start school ready.*

As local and state partners, we learn together and collaborate to positively impact children's early math development.

STRATEGIES

- Promote public awareness and attitude initiatives that build everyone's confidence and enjoyment of math.
- Maximize family activities that promote early math.
- Strengthen professional practice in early math.
- Increase organizational and system capacity for early math learning.

LONG-TERM OUTCOMES

- Adults see themselves and the children in their lives as mathematicians.
- Adults have confidence in and take enjoyment from math.
- Family experiences form a strong and expanding foundation for children's experience of math.
- Professionals provide appropriate, responsive skill development in math.
- Systems provide equitable opportunities responsive to diverse needs for early math learning that all can access.

GOAL

All children experience enjoyment, confidence, and success in their development of math ability from prenatal through 3rd grade and race and income are no longer predictors of early math success.



*as measured by the WaKIDS assessment.

STRATEGY 1



Promote initiatives that build everyone's CONFIDENCE in and ENJOYMENT of math

Create specific early math messaging strategies with and for key stakeholder groups

Collect and lift up examples of programs that are effectively shifting attitudes to build awareness and create partnerships to expand

Collaborate with families, educators, and other sectors



Lifting Up Examples

Agency	Promising Programs
OSPI and ESD's	Early Math Modules
Reach Out and Read	Reach Out and Read
Child Care Resources	Play and Learn
ESD's	Early Learning Fellows
UW Inspire	Professional Learning Community
UW Cultivate	Circle Time Magazine
Project Child Success	Cook to Learn and Paint to Learn
ESD 112	Math Anywhere
DCYF	EA and FIND Coaching, ECEAP Early Math Modules, and Lead-Learn-Excel

STRATEGY 2



Expand FAMILY activities that promote math

Identify and understand the diversity of what families think, know, and do to support math development

Distribute the national family math initiative landscape analysis and identify how we are talking about early math

Gather and review data about what is offered now (and disparities in access and opportunity)

STRATEGY 3



Strengthen PROFESSIONAL practice in early math

Strengthen math training content based on whole-child, play-based, and culturally- & developmentally-appropriate approaches

Develop an Early Math PD ‘toolkit’ to guide development of professional learning content

Develop shared resource portal for hosting of high-quality content as it is gathered, synthesized, curated, etc.



STRATEGY 4



Increase organizational and SYSTEM capacity and alignment for early math

Focus and align actions that strengthen systems and organizations

Implement interagency agreement for use and promotion of shared resource portal

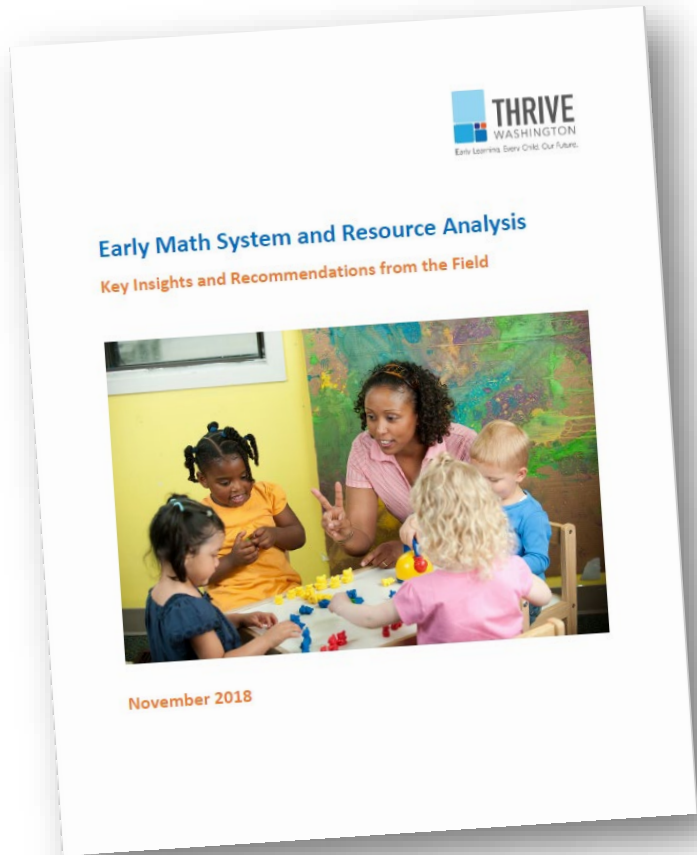
Facilitate a broad learning group to review recent challenges and successes and articulate an aligned comprehensive approach

Success Means Our System has:

- Equity
- Alignment
- Shared Framework
- Adequate Funding
- Consistent Tracking
- Shared Data
- Shared Resources



Success – Strategic and Coordinated Reports



Washington Early Mathematics Coalition
TBD
7 members | 10 affiliated resources
Contribute to this Group
Manage Group

Group Resources | Discussions | Members | Information | Recent Activity

All Group Resources

Search Shared Items | Per page 20 | Filter by All Resources

- Math at Home - lessons, environments, training videos, and resources**
(View Complete Item Description)
Material Type: Teaching/Learning Strategy
Author: Michelle Roberts
- Zeno Math Toolbox**
(View Complete Item Description)
Material Type: Teaching/Learning Strategy
Author: Michelle Roberts
- DREME - Storybook Guides - Sept. 8, 2019, 11:25 a.m. draft**
(View Complete Item Description)
Material Type: Reading, Teaching/Learning Strategy
Author: Michelle Roberts
- ERIKSON - Idea Library - Sept. 8, 2019, 11:27 a.m. draft**
(View Complete Item Description)
Author: Michelle Roberts

Success – Early Math Resource Hub

- Educators can share and find resources
- Intentional alignment
- Promote access
- Shared professional development and bridge PD systems
- Set a common vision for early math

Recommendations Align with our Strategies

- Intersect family and professional supports
- Expand access, opportunities, and resources for educators
- Strengthen cross-system efforts



Equity and Math Mindset

- Willingness to challenge historical assumptions about what it means to be good at math – and who can be good at math
- Support educator confidence and mindset
- Math is everywhere and for everyone
- Belief that students', families', and communities' ways of knowing, including their language and culture, serve as intellectual resources and contribute greatly to learning high-quality mathematics
- Educators focus on children's thinking and learning based on what they are capable of rather than a deficit

Celedón-Pattichis, Sylvia & Peters, Susan & Lunney Borden, Lisa & R. Males, Joshua & Pape, Stephen & Chapman, Olive & Clements, Douglas & Leonard, Jacqueline. (2018). Asset-Based Approaches to Equitable Mathematics Education Research and Practice. Journal for Research in Mathematics Education.



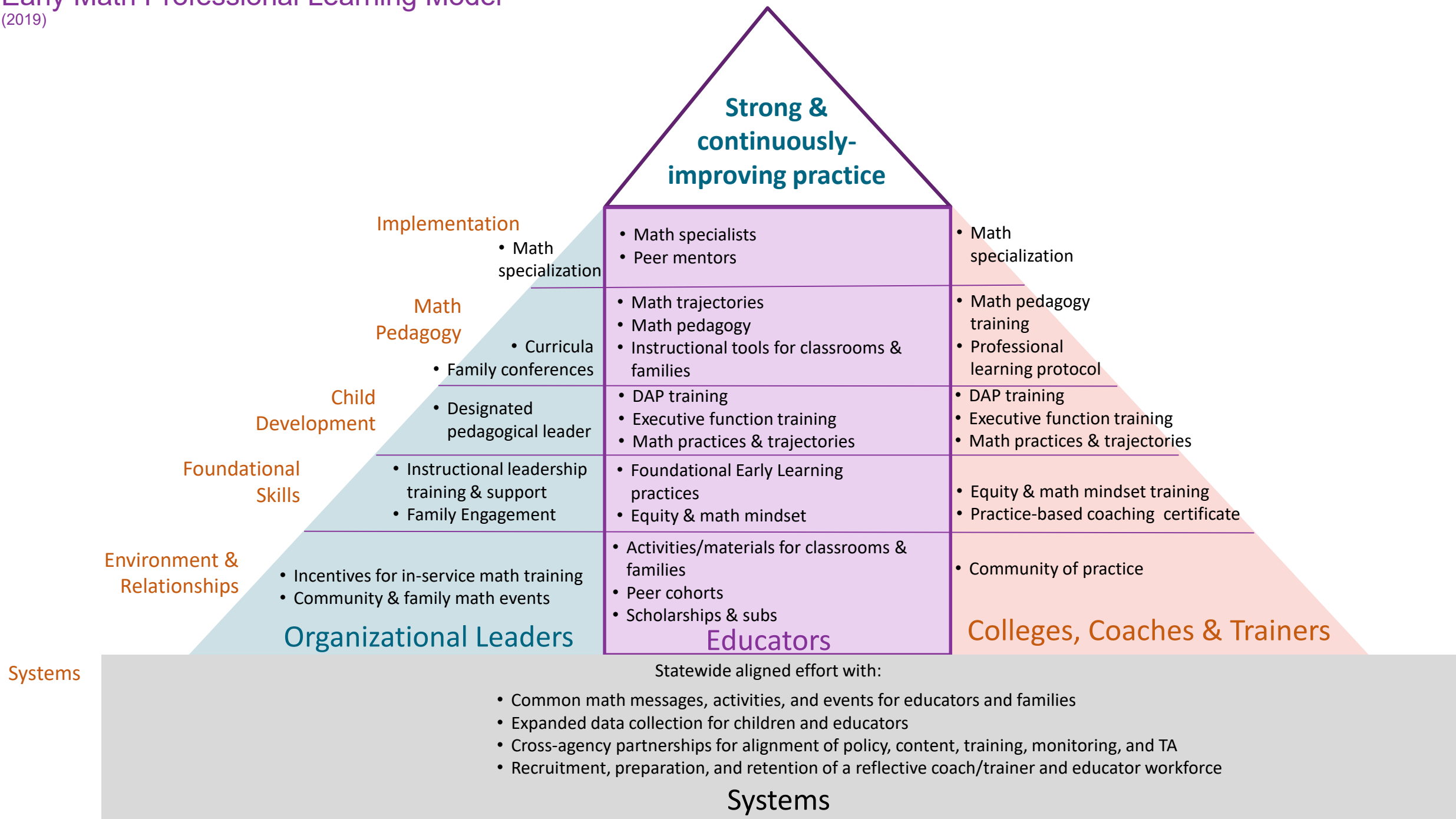


Strategies to Increase Support

- Facilitate and strengthen instructional leadership
- Add peer learning cohorts and coaching with training
- Support access to professional learning—help to pay, substitutes
- Include materials and activities incentives
- Integrate math activities with existing efforts and frameworks
- Build specialized classroom supports in math instruction from coaches with expertise



Early Math Professional Learning Model (2019)



“When educators have the time and opportunity to see their children as individuals, sense makers, and mathematicians, they realize that they underestimated what they can do. It is a generative moment. It increases curiosity and exploration. The teacher becomes a facilitator of experiences rather than an imparter of wisdom.”

~ Trainer

