



Early STEM Quality Self- Assessment

A reflection tool for early STEM leaders

Assess one program or body of work against the four foundations of quality, across the five pillars of the early STEM ecosystem, then set SMARTIE goals where the gaps are widest.

HOW TO USE THIS TOOL

1 Choose your focus

Identify an existing early STEM program or body of work that you lead or co-lead. This can be an initiative previously funded by Washington STEM or other early math/STEM initiatives you are engaged with in your region.

3 Evidence your greens

For every green area, add context and provide evidence or an explanation for how you are doing this.

2 Read, reflect, and rate

Read the questions in each area and fill in the rating for that area.

- Yes to most or all
- Yes to about half
- Yes to none or a few

4 Pick two areas to grow

After identifying red, yellow, or green for each area, select two of the red or yellow areas where you will set a SMARTIE goal.

Specific

Measurable

Ambitious or Achievable

Realistic or Relevant

Time-bound

Inclusive

Equitable

THE FOUR FOUNDATIONS: THESE CONDITIONS PROMOTE QUALITY

01 · Culturally Sustaining

02 · Anti-Racist

03 · Standards-Aligned

04 · Belonging

THE FIVE PILLARS: WHAT QUALITY OUTCOMES LOOK LIKE FOR EACH AUDIENCE IN THE EARLY STEM ECOSYSTEM

Children	Families	Educators	Community	Systems
Children have positive, culturally sustaining STEM learning opportunities.	Families are confident and engage in STEM learning with their children.	Educators have support to implement high quality STEM learning. Educators include early childhood educators, preschool teachers, child care providers, librarians, and others who work directly with children on an ongoing basis.	Adults across the community have positive math/STEM mindsets.	Systems provide leadership, support, and cross-system coordination. Systems include any that serve young children and families, including schools, districts, ECEAP programs, child care programs, libraries, CCA regions, ESDs, etc.

Culturally Sustaining

Culturally sustaining pedagogy means we value culture as a strength and enrich children's cultural identities and practices, rather than focusing on deficits. It means we support children to share and learn across multiple cultures, helping them succeed in our multicultural society.

Children



- Does it connect a child to their cultural heritage as they do STEM?
- Does it help children learn about STEM in the cultural heritages of other children in their class/community?
- Are there intentional opportunities for children to bring in their culture and traditions?
- Does it engage children in learning practical skills, like the value of money, telling time, etc.?

Families



- Does it have hands-on learning opportunities with materials that are familiar and easily accessible to families (which will vary across families)?
- Does it support parents to help their children learn STEM in ways that build on parents skills, comfort, and knowledge?
- Does it help parents talk about science, technology, engineering, or math ideas in daily life with children?

Educators



- Does it help educators center families and invite their STEM “Funds of Knowledge” or other frameworks that are locally relevant and culturally centered?
- Does it provide educators with tools and resources to improve culturally responsive teaching practices?
- Does it help educators adapt existing curriculum to integrate culturally significant practices?

Community



- Are there shared opportunities for participants across the child's community to access STEM guidance, activities, and materials together?
- Does it create STEM learning opportunities in locations throughout the child’s community? (STEM nights at libraries, STEM materials/books in little libraries, Math Anywhere, hELLO, etc.)
- Does the content demonstrate how STEM can be used to address local challenges and support community needs?

Systems



- Does it identify who is not being served in partnership with specific communities? Are priorities concerning program availability, goals, and delivery identified using community-centered approaches?
- Does it provide opportunities for educators and/or administrators across systems and communities to participate in PD and other supports together?
- Does it gather evidence on changes in culturally sustaining practices? Does it respond to this evidence by improving and advocating for culturally sustaining early STEM programs?

Anti-Racist

Anti-racism challenges the structures that maintain white supremacy. Anti-racism in STEM seeks to address the systemic barriers that gatekeep and exclude Black, Indigenous, Latine, and Asian Pacific Islander children from high-quality learning experiences. This is one way of working towards racial justice, which seeks to eliminate racial hierarchies altogether.

Children



Does it increase racial justice by centering (in classroom discussions, materials, books, and learning opportunities) the cultural contributions of Black, Indigenous, Latino/a, and/or Asian American Pacific Islander leaders from the STEM fields?

Does it position adults who share children's ethnic and racial identities as STEM thinkers and teachers?

Is it in the languages of children in the program/community?

Families



Does it increase racial justice by co-designing high quality STEM experiences with Black, Indigenous, Latino/a, and/or Asian Pacific Islander families?

Does it name white supremacy in the ways students and their parents have traditionally been engaged in STEM?

Does it help parents identify, undo, and replace white supremacy beliefs and practices with liberated beliefs and practices?

Is it in the languages of the families in the program/community?

Educators



Does it increase racial justice by partnering with Black, Indigenous, Latino/a, and/or Asian American/Pacific Islander educators to co-design and/or provide high quality STEM professional development experiences in ways that center their strengths and needs?

Does it name white supremacy in the ways students have traditionally been engaged in STEM?

Does it help educators identify, undo, and replace white supremacy beliefs and practices with liberated beliefs and practices?

Is it in the languages of educators in the program/community?

Community



Does it increase racial justice by partnering with organizations that specialize in serving Black, Indigenous, Latino/a, and/or Asian American Pacific Islander communities, and provide high quality STEM experiences?

Does it help community members identify, undo, and replace white supremacy beliefs and practices with liberated beliefs and practices?

Is it in the languages of children and families in the community?

Systems



Does it increase racial justice by providing resources (money, peer connections, admin support, etc.) to programs skilled in providing high quality STEM experiences to Black, Indigenous, Latino/a, and/or Asian American Pacific Islander communities?

Does it help system actors identify, undo, and replace white supremacy beliefs and practices with liberated beliefs and practices?

Are leadership teams at the systems level ethnically, racially, and linguistically inclusive? Are provisions made to ensure inclusion (i.e. targeted outreach, relationship building, translation, accessible meeting times/locations)?

Does it gather evidence on changes in anti-racist practices? Does it respond to this evidence by improving and advocating for anti-racist early STEM programs?

Standards-Aligned

Standards alignment ensures that early STEM curriculum, instructional practices, and content are consistent with the developmental milestones (knowledge, skills, and abilities) outlined in statewide learning standards.

Children



Does it prioritize opportunities for children to observe and explore, expanding their natural curiosity about the world?

Is it developmentally appropriate and responsive to the individual needs of children?

Does it align with early STEM related standards as appropriate from any of the following?

- WA State Early Learning Guidelines (birth - age 8)
- Head Start Early Learning Outcomes Framework (birth - age 5)
- OSPI's Learning Pathways in Numeracy (birth - grade 3)
- OSPI's Science and Math K-12 Learning Standards (as appropriate for children K-3)

Families



Does it empower families to expect and advocate for high quality STEM education in their children's schools?

Does it support parents in helping their children complete STEM related homework?

Does it align with family engagement approaches described in any of the following?

- WA State Early Learning Guideline
- WA State Core Competencies for Early Care and Education Professionals
- WA State Early Achievers Quality Standards

Educators



Does it help educators identify, acquire, receive training on, and implement effective STEM teaching and learning practices? Does it go beyond this to to help educators adopt high quality curriculum?

Does it increase educators' knowledge of early STEM developmental milestones and trajectories?

Does it engage educators in formative assessment through cycles of observation, reflection, and planning for early STEM learning?

Does it provide educators with the classroom or other materials needed for early STEM learning?

Does it align with the Washington State Core Competencies for Early Care and Education Professionals?

Community



Systems



Does it increase organizational leadership capacity by engaging leaders to understand the importance of early STEM, prioritize it in their program, and provide resources (time, money, materials)?

Does it prepare coaches and trainers to support educators in their STEM practices?

Does it support the overall quality of early learning programs (licensed child care, ECEAP, and/or Head Start) as outlined in the Early Achievers Quality Standards.

Does it strengthen cross-system alignment (i.e. early learning programs like child care or ECEAP to K-3, early grades to middle school grades) by aligning curriculum, assessment, professional development, standards, and/or other elements of early STEM quality?

Does it gather evidence on changes in early STEM standards alignment? Does it respond to this evidence by improving and advocating for standards-aligned early STEM programs?

Belonging

Belonging is the sense that one's identity is holistically valued and respected. Individuals feel belonging in STEM when they can engage and succeed in learning environments as their authentic selves.

Children



- Does it help children develop and exercise a growth mindset?
- Is the content aligned with children's interests and daily activities?
- Do children's ideas, perspectives, and motivations shape their learning environment?
- Does it provide opportunities for children to initiate and lead activities?
- Does it strengthen children's relationships with caregivers and/or educators?

Families



- Does it heal the harm caused by previous negative experiences that have created negative math/STEM mindsets?
- Does it bring families together for shared learning and community-building?
- Are families invited and welcomed as meaningful contributors in their child's school or learning community? This includes identifying clear roles for families to engage with program planning and decision-making.
- Does it create or sustain consistent feedback and communication loops between families and other adults in their child's learning community?

Educators



- Does it help educators identify and reinforce their professional strengths?
- Does it expand educators' professional and social support networks?
- Does it position educators as STEM content experts and provide them with leadership opportunities?
- Does it support positive mindsets about math/STEM for educators?

Community



- Does it create new professional and social connections between families, educators, and community leaders?
- Does it integrate STEM content into existing community gatherings and events?
- Does it bring awareness to other STEM programs and resources in the community?
- Is it accessible to families, educators, and community members? Examples include:
 - Available at no cost to participants
 - Hosted at a time that accomodates working hours
 - Training and resources available to access online
 - Community advisors compensated for their time

Systems



- Does it model shared decision-making and community outreach practices that system-level actors can adopt?
- Does it bring educational leaders and decision makers together to learn about belonging?
- Does it direct more resources (e.g. time, money, partnership) to regional community-based efforts that foster belonging for children, families, and educators?
- Does it gather evidence on changes in belonging? Does it respond to this evidence by improving and advocating for regional early STEM programs that foster belonging?