District/School STEM Implementation Self-Assessment

Leadership

Leadership pursues opportunities to enhance STEM learning and minimize competing initiatives. Leadership's goals and resource allocations align to a STEM focus. School leaders ensure that teacher instructional practices align with integrated STEM education.

Desired Outcomes

L1: All teachers have access to job-embedded professional learning opportunities to build teacher capacity in content and pedagogy for integrated STEM teaching and learning as well as in teacher leadership.

Indicators	1	2	3	4
L1.1: District/school leaders assess teacher needs to inform content learning needs.				
L1.2: District/school leaders assess teacher needs to inform pedagogical learning needs.				
L1.3: District/school leaders focus professional learning opportunities on STEM content.				
L1.4: District/school leaders focus professional learning opportunities on STEM pedagogy.				
L1.5: District/school provides professional learning opportunities that promote cross-curricular connections among STEM content areas and other content areas.				
L1.6: Teacher leaders have support in learning to assist their colleagues with accessing and learning STEM content, STEM practices, and student-centered pedagogy.				

1	Not currently part of standard practice or local environment
2	Awareness and development of the indicator(s) is beginning
3	Collaboration occurs among stakeholders to develop and implement the indicator(s)
4	Indicator(s) are fully implemented and systemic change is occurring among stakeholders

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L2: Principals and teacher leaders have the capacity to monitor and improve the implementation of integrated STEM education.				
Indicators	1	2	3	4
L2.1: District leaders identify and support the development of STEM leaders throughout the district.				
L2.2: District leaders identify needs of administrators' for implementing and monitoring STEM education.				
L2.3: Principals and school leaders work with staff members to create a STEM education implementation plan.				
L2.4: Principal and school leaders understand and advocate for integrated STEM education.				
L2.5: Principal and school leaders assist staff in maintaining a focus around a shared vision of integrated STEM education.				
L3: The district supports the expansion of innovative K-12 STEM schools and/or K-12 STEM program models.				
Indicators	1	2	3	4
L3.1: District identifies innovative program models in schools.				
L3.2: District leaders and school board members actively work to develop promote, support, evaluate, and recognize integrated STEM education.				
L3.3: District leadership routinely communicates to the community about integrated STEM education.				
L3.4: District leadership has short-term and long-term plans for continued investment in STEM education.				

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L4: STEM schools and/or program models focus on equitable learning opportunities for ALL students.				
Indicators	1	2	3	4
L4.1: District/school partners with community resources and afterschool programs to engage underserved populations in integrated STEM experiences.				
L4.2: District/school leverages higher education resources that provide opportunities for underserved communities in STEM education.				
L4.3: District/school uses community role models and mentors to engage underserved populations in STEM in education.				

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District/School STEM Implementation Self-Assessment

Teaching and Learning

Curriculum, instruction and assessment support meaningful and authentic STEM learning for all students.

Desired Outcomes				
T1: All students are engaged in meaningful, authentic STEM related learning opportunities.				
Indicators	1	2	3	4
T1.1: Learning opportunities are: - Student-centered; - Project-based, problem-based, or inquiry-based; - Connected to real-world contexts and/or regional STEM partners; - Interesting to students; and - Grounded in the STEM relevant standards.				
T1.2: Students authentically use technology in multiple ways (collect data, solve problems, communicate, model, conduct research, collaborate).				
T1.3: Accelerated, rigorous and relevant STEM-related courses are available to every student.				
T1.4: Students are supported in the development of 21st Century Skills.				
T1.5: Students are challenged to authentically apply STEM practices and knowledge.				

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T2: Schools provide adequate instructional time in STEM-related content areas.				
Indicators	1	2	3	4
T2.1: Every school (K-12) supports the students' attainment of the Washington State 2013 Science Learning Standards (NGSS).				
T2.2: School leaders facilitate teacher interactions to foster cross-curricular unit development and/or modifications (e.g. teaching teams, planning meetings, etc.).				
T2.3: School leaders leverage time by emphasizing and supporting the integration of content areas.				
T3: All STEM related courses of study and instructional materials are rigorous, research-based, standards-based, and inclusive of ALL students.				
Indicators	1	2	3	4
T3.1: Teachers have access to and use high quality, research-based STEM instructional materials.				
T3.2: Instructional materials are aligned to the Washington State Learning Standards (CCSS ELA, Math & NGSS).				
T3.3: Integrated STEM instructional materials incorporate explicit big ideas from multiple disciplines in a cohesive storyline.				
T3.4: Course work offers opportunities for all students to reach and possibly exceed the standards.				
T3.5: Every student has the opportunity to take the appropriate middle and high school courses to prepare him/her for successful participation in STEM-related pathways.				

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T4: Teachers use student-centered, engaging, high-quality STEM-relevant instructional practices.				
Indicators	1	2	3	4
T4.1: Teachers have the skills and knowledge to enact instruction that is: - Student-centered; - Project-based, problem-based, or inquiry-based; - Connected to real-world contexts and/or regional STEM partners; - Interesting to students; and - Grounded in the STEM relevant standards.				
T4.2: Teachers facilitate student discourse in order to elicit student ideas and make instructional decisions.				
T4.3: Teachers are able to differentiate instruction based on learners' needs and contexts.				
T4.4: Teachers have the requisite pedagogical content knowledge to enact the curriculum.				
T5: Authentic performance-based assessments are used to gauge learning and mastery.				
Indicators	1	2	3	4
T5.1: Formative assessments are routinely used as an integral part of STEM instruction.				
T5.2: Teachers use formative assessments to inform instructional decisions.				
T5.3: Assessments are aligned to the standards, the instructional curriculum and the classroom instruction.				

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T6: Culturally relevant activities and strategies are integrated into the STEM learning experiences.				
Indicators	1	2	3	4
T6.1: Students of all demographics have equal access to content and materials in the classroom.				
T6.2: Teachers connect to students' background, culture, and life experiences.				
T6.3: Schools support the use of cultural artifacts and community resources in ways that are academically meaningful and culturally relevant to the STEM program.				
T6.4: STEM program is presented through multiple representations and multimodal experiences.				
T6.5: School support systems include STEM role models and mentors of similar racial or ethnic backgrounds.				

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District/School STEM Implementation Self-Assessment

Community Awareness and Partnerships

Partnerships with STEM professionals and the community enrich learning opportunities for all students.

Desired Outcomes

C1: Community members value and support a STEM education.

Indicators	1	2	3	4
C1.1: Community members recognize that STEM literacy is important to everyday life.				
C1.2: Community members can identify STEM occupations, activities, professionals and opportunities within their community.				
C1.3: Community members recognize the value of STEM education for ALL students.				

C2: Every parent and student understands that STEM in education is essential regardless of a student's career choice.

Indicators	1	2	3	4
C2.1: All students and their families have the opportunity to participate in STEM related experiences.				
C2.2: All students and parents have the opportunity to engage in discussions about STEM-related academic opportunities within the P-16 education system.				
C2.3: Every student has adequate academic and career guidance.				

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C3: The school district has partnerships with businesses, community organizations, and higher education.				
Indicators	1	2	3	4
C3.1: District/school identifies and communicates areas in which community and professional STEM support is needed or could be complementary to classroom objectives.				
C3.2: District/school identifies STEM community, business, and higher education resources.				
C3.3: Stakeholders are providing and/or supporting P-12 STEM activities.				
C3.4: Business, higher education, and community partners offer STEM resources and opportunities to enhance teachers' content and pedagogical content knowledge.				
C3.5: Business, higher education, and community partners support innovative partnerships and apprenticeship programs for schools and/or districts.				
C3.6: Business, higher education, and community partners provide enrichment opportunities for students such as internships, summer programs, extended-day programs, etc.				

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District/School STEM Implementation Self-Assessment

School Culture and Structures

The entire school community supports the desired outcomes of all four critical components (Leadership, STEM Teaching & Learning, Community Awareness & Partnerships, and School Culture & Structures).

Desired Outcomes

S1: A strong collaborative and innovative culture is evident in student and staff actions and interactions.

Indicators	1	2	3	4
S1.1: Students and staff show clear respect for one another.				
S1.2: Communication, collaboration, critical thinking, and creativity are encouraged and supported across all stakeholders.				
S1.3: School leadership nurtures a safe environment in which teacher innovation and risk-taking flourish.				
S1.4: School-wide norms reflect a STEM culture where students believe that trying and applying new strategies (inventor mindset) and risk-taking and innovation are important.				
S1.5: Members of the school culture construct a supportive environment where teachers are trustworthy, students value hard work, and expectations are high for all.				
S1.6: Students, teachers, administrators, and parents believe that STEM is for all learners.				
S1.7: When hiring, candidates are actively recruited who are aligned with the school's STEM vision and instructional practices.				

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S2: The school has schedules, structures, and resources in place to support their vision for integrated STEM education.

Indicators	1	2	3	4
S2.1: District supports changes in school structures that are needed to implement the integrated STEM education vision.				
S2.2: Structures exist for student STEM enrichment experiences (in-school and out-of-school time).				
S2.3: The elementary school schedule provides sufficient time for science instruction and teachers use that time to teach science.				
S2.4: Principals and school leaders support collaborative time for teachers to develop capacity for implementing and assessing innovative STEM learning experiences.				
S2.5: Principals and school leaders expect to see science taught in elementary classrooms and provide teachers with necessary time, resources, and feedback.				
S2.6: Teachers are provided the support and resources necessary to engage in professional learning opportunities that enhance their abilities to implement a STEM program or course of study.				
S2.7: Teachers are provided ongoing opportunities and logistical support to observe peers and collectively reflect on the implementation of integrated STEM education.				
S2.8: Career certification programs that lead to dual credits in high school and college are available to every student.				

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