



DISTRICT OF COLUMBIA
 OFFICE OF THE STATE SUPERINTENDENT OF
EDUCATION

OSSE Science Subject Area Program Standards Rubric

Introduction: This document enables educator preparation providers (EPPs) in the District of Columbia to provide information to the Office of the State Superintendent of Education (OSSE) regarding how the EPP aligns with the OSSE Science Subject Area Program standards. Consistent with 5A DCMR §1704.11, OSSE adopted these standards from the [National Science Teachers Association \(2020\)](#).

As the state education agency for the District, OSSE has an interest in ensuring that every student has an effective teacher and that every school has effective leaders. OSSE values the dedication of District EPPs to ensure schools are staffed with effective leaders and teacher leaders and strives to ensure programmatic excellence and candidate success. Establishing that each approved DC EPP is held to a uniform set of standards will help OSSE ensure that these aims are realized.

EPP Submission: The EPP should submit this rubric with its evidence for the state science subject area program review. In completing this form, the EPP should describe how its science program provides candidates coursework (assignments and assessments) and/or clinical and field experiences that demonstrate competency in each of the OSSE science program standards below.

EPP Information:

EPP name (in the box below)	EPP contact name, title and contact information (email and phone number in the box below)
Submission date (in the box below)	

EPP Notification: OSSE will notify the EPP of its state science program approval status within 60 calendar days of the subject area program review.

OSSE Science Subject Area Program Standards Alignment: The EPP must complete the table below aligning evidence to be submitted to each OSSE science program standard.

OSSE Standard	Description of how program meets standard	Applicable Course Name(s)/ Number(s)	Credit Hours
	<i>EPP: Please provide a concise, yet specific description (no more than 200 words) of how the EPP subject area program meets each of the standards and components below. Please attach evidence (course syllabi, reading lists, assessment examples) to this science program standards rubric.</i>		
Standard 1: Content Knowledge - Effective teachers of science understand and articulate the knowledge and practices of contemporary science and engineering. They connect important disciplinary core ideas, crosscutting concepts, and science and engineering practices for their fields of licensure.			
Component 1.A. - Candidates use and apply the major concepts, principles, theories, laws, and interrelationships of their fields of licensure and supporting fields. Explain the nature of science and the cultural norms and values inherent to the current and historical development of scientific knowledge.			
Component 1.B. - Candidates demonstrate knowledge of crosscutting concepts, disciplinary core ideas, practices of science and engineering, the supporting role of science-specific technologies, and contributions of diverse populations to science.			
Component 1.C. - Candidates demonstrate knowledge of how to implement science standards, learning progressions, and sequencing of science content for teaching their licensure level PK-12 students.			
Standard 2: Content Pedagogy - Effective teachers of science plan learning units of study and equitable, culturally-responsive opportunities for all students based upon their understandings of how students learn and develop science knowledge, skills, and habits of mind. Effective teachers also include appropriate connections to science and engineering practices and crosscutting concepts in their instructional planning.			
Component 2.A. - Candidates use science standards and a variety of appropriate, student-centered, and culturally-relevant science disciplinary-based instructional approaches that follow safety procedures and incorporate science and engineering			

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practices, disciplinary core ideas, and crosscutting concepts.			
Component 2.B. - Candidates incorporate appropriate differentiation strategies, wherein all students develop conceptual knowledge and an understanding of the nature of science. Lessons should engage students in applying science practices, clarifying relationships, and identifying natural patterns from empirical experiences.			
Component 2.C. - Candidates use engineering practices in support of science learning wherein all students design, construct, test and optimize possible solutions to a problem.			
Component 2.D. - Candidates align instruction and assessment strategies to support instructional decision making that identifies and addresses student misunderstandings, prior knowledge, and naïve conceptions.			
Component 2.E. - Candidates integrate science-specific technologies to support all students' conceptual understanding of science and engineering.			
Standard 3: Learning Environments - Effective teachers of science are able to plan for engaging all students in science learning by identifying appropriate learning goals that are consistent with knowledge of how students learn science and are aligned with standards. Plans reflect the selection of phenomena appropriate to the social context of the classroom and community, and safety considerations, to engage students in the nature of science and science and engineering practices. Effective teachers create an anti-bias, multicultural, and social justice learning environment to achieve these goals.			

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Component 3.A. - Candidates plan a variety of lesson plans based on science standards that employ strategies that demonstrate their knowledge and understanding of how to select appropriate teaching and motivating learning activities that foster an inclusive, equitable, and anti-bias environment.			
Component 3.B. - Candidates plan learning experiences for all students in a variety of environments (e.g., the laboratory, field, and community) within their fields of licensure.			
Component 3.C. - Candidates plan lessons in which all students have a variety of opportunities to investigate, collaborate, communicate, evaluate, learn from mistakes, and defend their own explanations of: scientific phenomena, observations, and data.			
Standard 4: Safety - Effective teachers of science demonstrate biological, chemical, and physical safety protocols in their classrooms and workspace. They also implement ethical treatment of living organisms and maintain equipment and chemicals as relevant to their fields of licensure.			
Component 4.A. - Candidates implement activities appropriate for the abilities of all students that demonstrate safe techniques for the procurement, preparation, use, storage, dispensing, supervision, and disposal of all chemicals/materials/equipment used within their fields of licensure.			

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Component 4.B. - Candidates demonstrate an ability to: recognize hazardous situations including overcrowding; implement emergency procedures; maintain safety equipment; provide adequate student instruction and supervision; and follow policies and procedures that comply with established state and national guidelines, appropriate legal state and national safety standards (e.g., OSHA, NFPA, EPA), and best professional practices (e.g., NSTA, NSELA).			
Component 4.C. - Candidates demonstrate ethical decision-making with respect to safe and humane treatment of all living organisms in and out of the classroom, and comply with the legal restrictions and best professional practices on the collection, care, and use of living organisms as relevant to their fields of licensure.			
Standard 5: Impact on Student Learning - Effective teachers of science provide evidence that students have learned and can apply disciplinary core ideas, crosscutting concepts, and science and engineering practices as a result of instruction. Effective teachers analyze learning gains for individual students, the class as a whole, and subgroups of students disaggregated by demographic categories, and use these to inform planning and teaching.			
Component 5.A. - Candidates implement assessments that show all students have learned and can apply disciplinary knowledge, nature of science, science and engineering practices, and crosscutting concepts in practical, authentic, and real-world situations.			

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Component 5.B. - Candidates collect, organize, analyze, and reflect on formative and summative evidence and use those data to inform future planning and teaching.			
Component 5.C. - Candidates analyze science-specific assessment data based upon student demographics, categorizing the levels of learner knowledge, and reflect on results for subsequent lesson plans.			
Standard 6: Professional Knowledge and Skills - Effective teachers of science strive to continuously improve their knowledge of both science content and pedagogy, including approaches for addressing inequities and inclusion for all students in science. They identify with and conduct themselves as part of the science education community.			
Component 6.A. - Candidates engage in critical reflection on their own science teaching to continually improve their instructional effectiveness.			
Component 6.B. - Candidates participate in professional development opportunities to deepen their science content knowledge and practices.			
Component 6.C. - Candidates participate in professional development opportunities to expand their science-specific pedagogical knowledge.			