

Science Methods Performance Assessment Rubric

The purpose of this science assignment is to demonstrate your ability to: plan, implement, and reflect on inquiry-based learning experiences reflecting concepts in either life science, physical science, earth/space science, or engineering based upon your understanding of student learning, content, inquiry, applications of science, and the nature of science.

	3	2	1	0
<p>Written Communication Skills</p> <p>Candidates demonstrate a high level of competence in written communication skills.</p>	<p>Candidate’s writing communicates a clear understanding of what is required for instruction and is free of any grammar, usage, spelling, and punctuation mistakes.</p>	<p>Candidate’s writing communicates a clear understanding of what is required for instruction with no more than three grammar, usage, spelling, and punctuation mistakes per page, and these mistakes do not undermine the meaning of the writing.</p>	<p>Candidate’s written communication contains multiple grammar, usage, spelling, and punctuation mistakes but these mistakes do not undermine the meaning of the writing, in general.</p>	<p>Candidate’s writing skills contain multiple grammar, usage, spelling, and punctuation mistakes, and these mistakes undermine the meaning of the writing, in general.</p>
<p>CAEP 1.a</p> <p>Candidates use their understanding of how children, grow, develop and learn to plan and implement developmentally appropriate and challenging learning experiences within environments that consider the individual strengths and needs of children.</p>	<p>Candidates’ plans demonstrate deep understanding of how children grow and develop across developmental domains (cognitive, linguistic, social, emotional, ethical, and physical). Candidates’ plans include learning experiences that meet the developmental needs of a diverse range of children in their classrooms.</p>	<p>Candidates’ plans demonstrate some understanding of how children grow and develop across developmental domains (cognitive, linguistic, social, emotional, ethical, and physical). Candidates’ plans include learning experiences that meet the developmental needs of children in their classrooms.</p>	<p>Candidates’ plans demonstrate basic understanding of how children grow and develop across developmental domains (cognitive, linguistic, social, emotional, ethical, and physical). Candidates’ plans include learning experiences that meet the developmental needs of children in their classrooms.</p>	<p>Candidates’ plans demonstrate little understanding of how children grow and develop across developmental domains (cognitive, linguistic, social, emotional, ethical, and physical). Candidates’ plans do not include learning experiences that meet the developmental needs of children in their classrooms.</p>
<p>CAEP 1.b</p> <p>Candidates use their understanding of individual differences and diverse families, cultures, and communities to plan and implement inclusive learning experiences and environments that build on children’s strengths and</p>	<p>Candidates’ plans demonstrate understanding of diverse experiences of students and provide authentic connections between these experiences and the learning experiences and environments they provide for students. Candidates’ plans include appropriate and meaningful support for students with particular learning needs and differences that allows for</p>	<p>Candidates’ plans demonstrate some understanding of diverse experiences of students and provide some connections between these experiences and the learning experiences and environments they provide for students. Candidates’ plans include appropriate and meaningful support for students with particular learning needs and differences that allows for</p>	<p>Candidates’ plans demonstrate understanding of diverse experiences of students, but connections between these experiences and the learning experiences and environments they provide for students are lacking. Candidates’ plans include some support for students with particular learning needs and differences/ Candidates’ plans include some support for students</p>	<p>Candidates’ plans demonstrate little understanding of diverse experiences of students. Candidates’ plans include little support for students with particular learning needs and differences/ Candidates’ plans include little support for students who are English Language Learners.</p>

	3	2	1	0
address their individual needs.	<p>authentic engagement with the content.</p> <p>Candidates' plans include appropriate and meaningful support for students who are English Language Learners that allows for authentic engagement with the content.</p>	<p>engagement with the content.</p> <p>Candidates' plans include appropriate and meaningful support for students who are English Language Learners that allows for engagement with the content</p>	who are English Language Learners.	
CAEP 2.c – Candidates demonstrate and apply understandings and integration of the three dimensions of science and engineering practices, cross-cutting concepts, and major disciplinary core ideas, within the major content areas of science.	<p>Candidates' plans include scientifically accurate representations of the disciplinary core ideas that are part of the lesson.</p> <p>Candidates' plans include appropriate and meaningful integration across the three dimensions of science and engineering practices, cross-cutting concepts, and disciplinary core ideas.</p>	<p>Candidates' plans include reasonably accurate representations of the disciplinary core ideas that are part of the lesson but may contain minor scientific errors.</p> <p>Candidates' plans include integration across the three dimensions of science and engineering practices, cross-cutting concepts, and disciplinary core ideas.</p>	<p>Candidates' plans are lacking one or more key ideas related to the disciplinary core ideas that are part of the lesson.</p> <p>Candidates' plans refer to three dimensions of science and engineering practices, cross-cutting concepts, and disciplinary core ideas, but they are not well integrated.</p>	<p>Candidates' plans are lacking one or more key ideas and include misconceptions related to the disciplinary core ideas that are part of the lesson.</p> <p>Candidates' plans do not include one or more of the three dimensions of science and engineering practices, cross-cutting concepts, and disciplinary core ideas.</p>
CAEP 3.a – Candidates administer formative and summative assessments regularly to determine students' competencies and learning needs.	<p>Candidates' plans include appropriate assessments of all learning goals (what students know and are able to do) which include indicators of student performance.</p> <p>Candidates' plans include a variety of (pre, formative, and summative) assessments that are implemented throughout the lesson.</p>	<p>Candidates' plans include appropriate assessments of most learning goals (what students know and are able to do) which include indicators of student performance.</p> <p>Candidates' plans include a variety of (pre, formative, and summative) assessments that are implemented throughout the lesson.</p>	<p>Candidates' plans include appropriate assessments of some learning goals (what students know and are able to do) and/or plans do not include indicators of student performance.</p> <p>Candidates' plans lack variety in the type of assessments that are included and/or assessments are not implemented throughout the lesson.</p>	Candidates' plans are lacking appropriate assessment plans.
CAEP 3.c – Candidates plan instruction including goals, materials, learning activities and assessments.	<p>Candidates' plans include:</p> <ul style="list-style-type: none"> -Appropriate learning goals (what students know and are able to do); -Complete list of necessary materials to effectively implement the 	<p>Candidates' plans include:</p> <ul style="list-style-type: none"> -Learning goals (what students know and are able to do); -List of necessary materials to effectively 	<p>Candidates' plans include:</p> <ul style="list-style-type: none"> -Learning goals (what students know and are able to do); -List of necessary materials to effectively 	<p>Candidates' plans do not include one or more of the following aspects:</p> <ul style="list-style-type: none"> -Learning goals (what students know and are able to do); -List of necessary

	3	2	1	0
	<p>lesson plan;</p> <ul style="list-style-type: none"> -Detailed description of learning activities; and -Complete assessment plans. <p>All aspects of candidates' plans support the identified learning goals for the lesson and reflect an understanding of content, pedagogy, and how students learn science.</p>	<p>implement the lesson plan;</p> <ul style="list-style-type: none"> -Description of learning activities; and -Assessment plans, but 1-2 areas are lacking the appropriate level of detail. <p>and/or</p> <p>Most aspects of candidates' plans support the identified learning goals for the lesson and reflect an understanding of content, pedagogy, and how students learn science.</p>	<p>implement the lesson plan;</p> <ul style="list-style-type: none"> -Description of learning activities; and -Assessment plans, but more than 2 areas are lacking the appropriate level of detail. <p>and/or</p> <p>Some aspects of candidates' plans support the identified learning goals for the lesson and/or reflect little understanding of content, pedagogy, and how students learn science.</p>	<p>materials to effectively implement the lesson plan;</p> <ul style="list-style-type: none"> -Description of learning activities; and -Assessment plans. <p>and/or</p> <p>Candidates' plans do not support the identified learning goals for the lesson and/or do not reflect an adequate understanding of content, pedagogy, and how students learn science.</p>
<p>CAEP 3.d – Candidates differentiate instructional plans to meet the needs of diverse students in the classroom.</p>	<p>Candidates' plans include sufficient and appropriate differentiation to meet the needs of diverse students in the classroom, including cultural, linguistic, and economic diversity as well as students with special needs.</p>	<p>Candidates' plans include some differentiation to meet the needs of diverse students in the classroom, including cultural, linguistic, and economic diversity as well as students with special needs.</p>	<p>Candidates' plans include little differentiation to meet the needs of diverse students in the classroom, including cultural, linguistic, and economic diversity as well as students with special needs.</p>	<p>Candidates' plans do not appropriate differentiation to meet the needs of diverse students in the classroom, including cultural, linguistic, and economic diversity as well as students with special needs.</p>
<p>CAEP 3.f – Candidates explicitly support motivation and engagement in learning through diverse evidence-based practices.</p>	<p>Candidates support student motivation and engagement by creating plans to share control with students, develop meaningful and relevant activities, and allow students to be self-directed.</p> <p>Candidates foster active engagement, deep thinking, and meaningful processing, while also providing ample opportunities for integration across content areas.</p> <p>Candidates design activities that will encourage self-efficacy (belief in one's capacity to learn), intrinsic motivation (internal</p>	<p>Candidates support student motivation and engagement and share some control with students. Candidates develop meaningful and relevant activities but do not allow for students to be self-directed.</p> <p>Candidates foster active engagement and deep thinking, but do not provide opportunities for integration and meaningful connections.</p> <p>Candidates design activities that encourage some of the following: self-efficacy, intrinsic motivation, valuing, social motivation, or mastery.</p>	<p>Candidates show some support for motivation and engagement, but do not share control with students. Candidates develop activities with some level of meaning and relevance.</p> <p>Candidates foster some level of engagement and deep thinking, but do not provide opportunities for integration or meaningful connections.</p> <p>Candidates design activities that encourage one or two of the following: self-efficacy, intrinsic motivation, valuing, social motivation, or mastery.</p>	<p>Candidates do not demonstrate support for motivation and engagement. No control is shared with students. Candidates do not develop activities that are meaningful or relevant.</p> <p>Candidates do not foster engagement, deep thinking, or integration.</p> <p>Candidates do not design activities that encourage self-efficacy, intrinsic motivation, valuing, social motivation, or mastery.</p>

	3	2	1	0
	interest and ownership of learning), valuing (enjoying the benefits of learning), social motivation (sharing with peers), and mastery (developing high proficiency).			
CAEP 4.a – Candidates use a variety of instructional practices that support the learning of every child.	<p>Candidates differentiate instruction based on the diverse backgrounds, knowledge, and characteristics of each child. In addition, candidates use learning theories and the students’ strengths and areas for growth to implement a variety of instructional practices which could include any of the following: problem-based learning, direct instruction, inquiry-based learning, project-based learning.</p> <p>Candidates consider aspects of the whole child and cater instruction to meet varied needs including social, emotional, physical, cultural, and academic.</p>	<p>Candidates provide some level of differentiation based on the backgrounds, knowledge, and characteristics of each child. Candidates use the strengths, areas for growth, and individual characteristics of each child to provide instruction, but do not use a variety of instructional practices.</p> <p>Candidates only consider and cater to certain aspects of the whole child.</p>	<p>Candidates provide very little differentiation for students based on their backgrounds, knowledge, characteristics, strengths, and areas for growth. Candidates do not use a variety of instructional practices.</p> <p>Candidates do not cater to the whole child</p>	<p>Candidates do not differentiate instruction based on the needs or characteristics of their students. Candidates do not use a variety of instructional practices.</p> <p>Candidates do not cater to the whole child.</p>
CAEP 4.b - Candidates teach a cohesive sequence of lessons to ensure sequential and appropriate learning opportunities for each child.	<p>Candidates design and teach a sequence of lessons to help students develop a deep understanding of sophisticated concepts that cannot be completed in a single lesson.</p> <p>Candidates develop content that caters to students’ developmental needs, and provide opportunities for mastery, inquiry, and discovery.</p> <p>Candidates link content from a topic or theme to standards, develop guiding questions, define</p>	<p>Candidates design and teach a sequence of lessons that help students develop some understanding of sophisticated concepts that cannot be completed in a single lesson.</p> <p>Candidates cater to some of the developmental needs of students, and provide some opportunities for mastery, inquiry, and discovery.</p> <p>Candidates link content to standards and include some guiding questions, key term definitions, and</p>	<p>Candidates design and teach a sequence of lessons that help students develop minimal understanding of sophisticated concepts that cannot be completed in single lesson.</p> <p>Candidates minimally cater to students’ developmental needs and provide few opportunities for mastery, inquiry, and discovery.</p> <p>Candidates link content to standards and include minimal questions, definitions, and ways for</p>	<p>Candidates design and teach a sequence of lessons that do not help students develop sophisticated understandings.</p> <p>Candidates do not cater to students’ developmental needs and provide no opportunities for mastery, inquiry, and discovery.</p> <p>Candidates do not link content to standards and provide no guiding questions, definitions, or ways for every child to participate.</p>

	3	2	1	0
	key concepts, and create multiple ways for every child to participate.	some ways for every child to participate.	every to child to participate.	
CAEP 4.c– Candidates explicitly teach concepts, strategies, and skills, as appropriate, to guide learners as they think about and learn academic content.	<p>Candidates provide a clear statement identifying the purpose for learning the content, strategy, or skill.</p> <p>Candidates also provide a clear explanation of the content, skill, or strategy and provide scaffolding to guide each learner.</p>	<p>Candidates provide a statement identifying the purpose for learning the content, strategy, or skill.</p> <p>Candidates provide an explanation of the content, skill, or strategy and provide some scaffolding for students.</p>	<p>Candidates provide an unclear statement identifying the purpose for learning.</p> <p>Candidates provide an unclear explanation of the content, skill, or strategy with little to no scaffolding for students.</p>	<p>Candidates do not provide a statement identifying the purpose for learning.</p> <p>Candidates provide no explanation of the content, skill, or strategy and provide no scaffolding for students.</p>
CAEP 5.b – Candidates design and implement professional learning activities based on ongoing analysis of student learning; self-reflection; professional standards, research and contemporary practices; and standards of ethical professional practice.	<p>Candidates are aware of self-study, and develop a plan using a professional knowledge base.</p> <p>Candidates implement that plan for self-improvement.</p> <p>Candidates draw on current research and demonstrate an understanding of ethical standards to inform and guide their practice.</p>	<p>Candidates are aware of self-study, and develop a plan using a professional knowledge base.</p> <p>Candidates demonstrate some knowledge of current research and ethical standards to inform and guide practice.</p>	<p>Candidates are aware of self-study, but do not develop a plan for self-improvement.</p> <p>Candidates demonstrate minimal knowledge of current research or ethical standards to inform and guide practice.</p>	<p>Candidates are unaware of self-study, and do not develop a plan for self-improvement.</p> <p>Candidates demonstrate no knowledge of current research or ethical standards to inform and guide practice.</p>