Next Generation Science Standards (NGSS) and edTPA Crosswalk Overview[1]

The Next Generation Science Standards,[2] are organized along three dimensions: 1) practices, 2) crosscutting concepts, and 3) disciplinary core ideas. The second and third dimensions are particular to the content being taught. The practices represent a dimension of science[3] learning that cuts across science topics. They are:

1. Asking questions
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

As stated in Appendix F of the *Next Generation Science Standards*:

> **The eight practices are not separate; they intentionally overlap and interconnect.** As explained by Bell, et al. (2012), the eight practices do not operate in isolation. Rather, they tend to unfold sequentially, and even overlap. For example, the practice of "asking questions" may lead to the practice of "modeling" or "planning and carrying out an investigation," which in turn may lead to "analyzing and interpreting data." The practice of "mathematical and computational thinking" may include some aspects of "analyzing and interpreting data." Just as it is important for students to carry out each of the individual practices, it is important for them to see the connections among the eight practices.

edTPA Secondary Science (SES) incorporates the eight NGSS science practices. As noted in the "Overview of the Assessment," p. 1 of the SES handbook, the focus of the assessment is as follows:

> "For this assessment, you will first plan **3–5 consecutive science lessons** (or, if teaching science within a large time block, **3–5 hours of connected instruction**) referred to as a learning segment. Consistent with *A Framework for K–12 Science Education: Practices, Crosscutting Concepts, and Core Ideas* (NRC 2011)[4] and aligned with the *Next Generation Science Standards*, prepare a learning segment for this assessment that reflects a balanced approach to science, including opportunities for students to develop their abilities to use scientific concepts and apply scientific practices through inquiry to explain a real-world phenomenon.

In edTPA Secondary Science, every rubric that focuses on subject-specific pedagogy related to science teaching (as opposed to those focused on more generic skills such as using knowledge of students and research or theory to justify plans) incorporates the NGSS scientific practices into the rubric. Some of the subject-specific rubrics generally refer to the "application of scientific practices during inquiry"; others mention a particular scientific practice (e.g., analyzing and interpreting data).   It is important to keep in mind that even rubrics measuring more generic skills (i.e., those not measuring subject-specific pedagogy) are embedded in a context of an investigation of a science phenomenon where students are to use concepts and the scientific practices to construct evidence-based explanations and/or arguments.

Next Generation Science Standards (NGSS) and edTPA Crosswalk

Note: The experience of edTPA (based on the directions, prompts, teaching of the learning segment, analysis of teaching) allows candidates to PRACTICE teaching performance required in the NGSS even if not all components of each element and/or standard are measured directly.

For a complete crosswalk, go to the secure post of the full document on the edtpa.aacte.org Resource Library

edTPA Task	edTPA Rubric	NGSS Practices							
		1. *Askg Q's & Def. pblms*	2. *Dev & Using Models*	3. *Plng & Carrying out Inv.*	4. *Anal. & Interp. Data*	5. *Using Math & Comp. thkg*	6. *Constrct. Explan & Des. Solns*	7. *Engaging in Arg. From Evid.*	8. Obtaining, eval., & comm. info.
Task 1: Planning	1: Planning for Content Understandings			√			√	√	√
	2: Planning to Support Varied Student Needs								
	3: Using Knowledge of Students to Inform Planning								
	4: Identifying and Supporting Language Demands								
	5: Planning Assessments to Monitor And Support Student Learning								
Task 2: Instruction	6: Demonstrating a Positive and Engaging Learning Environment								
	7: Engaging Students in Learning				√		√	√	√
	8: Deepening Student Learning While Teaching						√		√
	9: Subject Specific Pedagogy: Science				√				
	10: Analyzing Teaching								
Task 3: Assessment	11: Analyzing Student Work								
	12: Providing Feedback to Guide Learning								
	13: Supporting Students' Use of Feedback								
	14: Evidence of Language Use to Support Content Understandings						√		
	15: Using Assessment to Inform Instruction							√	