1. A brief description of the assessment and its use in the program

Student Teachers are required to take a Seminar (ESEC 450) during their student teaching experience. This assessment is administered at the last seminar meeting. Candidates must orally present artifacts that support the rubric to a Review Committee. Candidates are exposed to the rubric during the Science methods course and go through a mock presentation of their students' work.

The artifacts to support student learning are orally presented to a Review Committee that is composed of the College Student Teacher Supervisor, a faculty member of the candidate's field of licensure, the Cooperating teacher, and an Education faculty member. The Review Committee evaluates the candidate's performance before recommending the candidate for licensure in their science field of licensure. Candidates must achieve a minimum of a basic rating for each standard in the rubric.

This assessment provides evidence of candidate ability to have an effect on student learning beyond memorization of concepts, principles, and theories. Summaries of students' knowledge gain scores can be presented by the candidate in the form of graphs, charts, and/or tables. Students' knowledge gain scores **must** be taken from the Student Teaching experience. The Method's Field Experience student gain scores can also be included if the candidate so chooses. Student knowledge gain scores could include pre- AND post-data, as well as alternative assessments. When alternative assessments are included in the artifacts, the candidate must present clear, unambiguous standards for scoring the student assessment.

2. A description of how this assessment specifically aligns with the standards

This assessment directly addresses the following NSTA standards that candidates can: 1a-c (Content: 1a, successfully convey to students the major concepts, principles, theories, laws, and interrelationships of their fields of licensure and supporting fields as recommended by the NSTA; 1b, successfully convey to students the unifying concepts of science delineated by the NSES; 1c, successfully convey to students important personal and technological applications of science in their fields of licensure) 2c, engage students successfully in studies of the nature of science including the critical analysis of false or doubtful assertions made in the name of science, 3b, engage students successfully in developmentally appropriate inquiries that require them to develop concepts and relationships from their observations, data, and inferences in a scientific manner, 4b, engage students successfully in the analysis of problems, including considerations of risks, costs, and benefits of alternative solutions and relate these to the knowledge, goals, and values of the students; and 7b, involve students successfully in activities that relate science to resources and stakeholders in the community or to the resolutions of issues important to the community.

3. A brief analysis of the data findings

Candidates were able to successfully present artifacts and evidence of student learning. The minimum evaluation rating was a 3, Basic. Of the five Review Committee members, no member gave less than a three to any of the four candidates.

4. An interpretation of how that data provides evidence for meeting standards

The success of the candidates indicate that they can demonstrate student learning in the areas of science content, unifying concepts, personal and technological application, nature of science, inquiry, issues, and use of community.

Candidates did very well in demonstrating student learning in inquiry and well in science content, personal and technological application, and the nature of science. However, the areas of unifying concepts, issues, and use of community need to be strengthened.

†This assessment was modified with permission from Erica Brownstein, Capital University, Columbus, Ohio.

5. Assessment documentation

5A: Assessment Tool

Candidates are given the rubric (scoring guide) below in the Methods class and are asked to present student artifacts that support the NSTA standards listed in the rubric. The Methods candidates are teaching in the field for a minimum of four hours per week and are expected to collect artifacts from their Field Experience (ESEC 386). The "Review Committee" for the Methods class is the Methods instructor and peers in the class and is for experiential learning where feedback is given for the presentation and improvement. The actual Oral Presentation that counts is the presentation of the artifacts during the Student Teaching seminar (ESEC 450). Candidates are expected to present the artifacts from their Student Teaching (ESEC 460). However, if the Methods experience yielded a better example of meeting the standards, that could be used. Candidates are expected to explicitly explain how the artifacts meet the standards.

5B: Scoring guide

General ratings are as follows:

Rating	Description
Emerging	Little or no evidence beyond memorization is presented for meeting the learning standard or the evidence beyond memorization presented is below the minimum acceptable expectations of the program.
Basic	The candidate exhibits minimum to intermediate performance in relation to essential knowledge, skills or dispositions required by the standard. Provides basic but substantially convincing evidence for learning beyond memorization or attainment that meets or moderately exceeds minimum expectations.
Professional	The candidate exhibits intermediate to advanced performance in relation to essential knowledge, skills or dispositions required by the standard. Provides convincing evidence for learning beyond memorization, usually with multiple examples of achievement that substantially exceed minimum expectations and show excellence in performance.

Student learning for the candidate's presentation is a demonstrable change in student understanding of content, reasoning, and/or process skills (as defined by the NSTA standard). Evidence of student learning beyond memorization may include summaries of student gain scores in the form of graphs or tables. Student gain scores could include pre and post data as well as alternative assessments. If alternative assessments are used, the candidate must include criteria for scoring the assessments.

Standard	Emerging (1-2 points)	Basic (3-4 points)	Professional (5-6 points)
1a. The candidate is able to successfully convey to students the major science concepts, principles, theories, laws, and interrelationships of their fields of licensure.	Provides little to no evidence of student learning beyond memorization of a major science concept from a unit plan.	Provides evidence of student learning beyond memorization of a major science concept from a unit plan. Representative sample of student work included.	Provides evidence of student learning beyond memorization of two or more major science concepts included in unit plans and samples of student work that include three different levels of learning. Includes a reflective analysis of students' learning.

Standard	Emerging (1-2 points)	Basic (3-4 points)	Professional (5-6 points)
1b. The candidate is able to successfully convey to students the unifying concepts of science.	Provides little to no evidence of student learning beyond memorization of the unifying concepts of science.	Provides evidence of student learning beyond memorization of at least two of the unifying concepts of science. Representative samples of student work included.	Provides evidence of student learning beyond memorization of each of the five unifying concepts of science. Representative samples of student work included.
1c. The candidate is able to successfully convey to students important personal and technological applications of science in their fields of licensure.	Provides little to no evidence of student learning beyond memorization of the personal and technological applications of science.	Provides evidence of student learning beyond memorization of personal and technological applications of science. Representative sample of student work included.	Provides evidence of student learning beyond memorization of two or more examples of personal and technological applications of science and representative samples of student work. Includes a reflective analysis of students' learning.
2c. The candidate facilitates students learning the nature of science	Provides little to no evidence of student learning beyond memorization of at least one aspect of the nature of science.	Provides evidence of student learning beyond memorization of at least one aspect of the nature of science. Representative sample of student work included.	Provides evidence of student learning beyond memorization of two or more aspects of the nature of science and representative samples of student work. Includes a reflective analysis of students' learning.
3b. The candidate engages students effectively in scientific inquiry and investigations.	Provides little to no evidence of student learning beyond memorization, of the use of inquiry (i.e. guided inquiry, open inquiry, & learning cycle).	Provides evidence of student learning beyond memorization, of the use of inquiry (i.e., guided inquiry, open inquiry, & learning cycle). Representative sample of student work included.	Provides evidence of student learning beyond memorization, of the use of inquiry (i.e., guided inquiry, open inquiry, & learning cycle) and representative samples of student work. Includes a reflective analysis of students' learning.

Standard	Emerging (1-2 points)	Basic (3-4 points)	Professional (5-6 points)
4b. The candidate engages students successfully in the analysis of problems, including considerations of risks, costs, and benefits of alternative solutions; relating these to the knowledge, goals and values of the students.	Provides little to no evidence of student learning beyond memorization, in the analysis of problems.	Provides evidence of student learning beyond memorization, in the analysis of problems including cost-benefit analysis of solutions. Representative sample of student work included.	Provides evidence of student learning beyond memorization, in the analysis of problems including cost-benefit analysis of solutions and representative samples of student work. Includes a reflective analysis of students' learning.
7b. The candidate uses the human/institutional resources of the community to facilitate learning of science in the classroom and field.	Provides little to no evidence of student learning beyond memorization, using local resources and stakeholders.	Provides evidence of student learning beyond memorization, using local resources and stakeholders. Representative sample of student work included.	Provides evidence of student learning beyond memorization, using local resources and stakeholders and representative samples of student work. Includes a reflective analysis of students' learning.

Section IV
Assessment #5
Oral Presentation of Student Learning †
Summary of Evidence beyond memorization of Student Learning in the Teaching of Science

Candidate Name		Term/Year	
Date of exit interview		Licensure Area(s)	

Please note on the form below the appropriate evaluations points based on the above rubric.

Standard	Evaluation (Points)	Rating: Evidence used and Comments
1a. Science content		
1b. Unifying Concepts		
1c. Personal and technological Applications		
2c. Nature Of Science		

3b. Inquiry		
4b. Issues		
7b. Use of community		

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Section IV
Assessment #5
Oral Presentation of Student Learning †

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Attachment C: Student Data

Year		Science Concepts	Unifying Concepts	Personal and Technological Applications	Nature of Science	Inquiry	Issues	Use of Community
Spring 2006	Student Teacher #1	4	3	4	4	5	4	3
	Student Teacher #2	4	3	4	4	5	3	3
	Student Teacher #3	3	3	3	3	4	3	3
	Student Teacher #4	3	3	3	3	4	3	3