KEY LICENSURE ASSESSMENT #3: Ability to Plan Lessons*
ADOLESCENT TO YOUNG ADULT (AYA) SCIENCE: EDUC 627
Scoring Guide
Graduate Initial Teacher Preparation Program
Educator Preparation Unit
Muskingum University

* Please note that there are two assessments regarding the Ability to Plan Lessons: (1) Key Program Assessment #6 and (2) this Key Licensure Assessment.

<table>
<thead>
<tr>
<th>NSTA Element Statement</th>
<th>Meets Element (2)</th>
<th>Developing Element (1)</th>
<th>Unacceptable (0)</th>
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<tbody>
<tr>
<td>NSTA Element 1c: Show an understanding of state and national curriculum standards and their impact on the content knowledge necessary for teaching P-12 students.</td>
<td>• Lesson plans are aligned with state science standards, • big ideas are used to link important science content into cohesive units, <strong>AND</strong> • extraneous subtopics and technical vocabulary are pruned from the content taught. above 1, but below 2</td>
<td>Lessons plans are aligned with state science standards, but big ideas are not developed <strong>OR</strong> extraneous subtopics and technical vocabulary are not pruned from content taught. above 0, but below 1</td>
<td>Lessons plans are not aligned with state science standards.</td>
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| NSTA Element 2a: Plan multiple lessons using a variety of inquiry approaches that demonstrate their knowledge and understanding of how students learn science. | Lessons consistently:  
- teach, model, practice, and emphasize the behaviors that are necessary to create a successful community of learners engaged in inquiry learning;  
- include instructional approaches such as silent demos, discrepant events, KWL charts, and current events to introduce guided and open inquiries involving hands-on experiments, field observations and web resources to gather and interpret data;  
AND  
- provide the scaffolding needed to link inquiry to big ideas. | above 1, but below 2 | The tenets described under “Meets Element” are included in some lessons. | above 0, but below 1 | The tenets described under “Meets Element” are not included in any lesson. |
<table>
<thead>
<tr>
<th>NSTA Element 2b</th>
<th>above 1, but below 2</th>
<th>Open inquiry is included in only some lesson plans.</th>
<th>above 0, but below 1</th>
<th>Open inquiry is not included in any lesson plan.</th>
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<td>Include active inquiry lessons where students collect and interpret data in order to develop and communicate concepts and understand scientific processes, relationships and natural patterns from empirical experiences. Applications of science-specific technology are included in the lessons when appropriate.</td>
<td>• Lessons are consistently based on open inquiry [i.e., time and opportunities for students to handle and observe the materials including science specific technology to be used in the inquiry, generate own questions, develop a plan for an experiment that answers their questions, perform the experiment and collect data, analyze data, interpret data, and present and discuss finding(s) with peers, AND link inquiry with big ideas] that address the most challenging unit concepts <strong>AND</strong> • lessons are consistently designed to generate a creative and curious classroom environment.</td>
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Open inquiry is included in only some lesson plans.
| NSTA Element 2c: Design instruction and assessment strategies that confront and address naïve concepts/preconceptions. | Lesson plans show that:  
- content knowledge and preconceptions were determined by methods such as KWL, brainstorming, pre-writes, discrepant events, write everything you know activity, mind maps, word prompts, and direct questions;  
- evidence gathered about the knowledge and preconceptions was used to drive instruction;  
- evidence gathered about the knowledge and preconceptions was used to connect new ideas to pre-existing knowledge; **AND**  
- student preconceptions were challenged with sufficient evidence so that students examined and abandoned preconceptions that were not based on scientific thinking. | above 1, but below 2 | Lesson plans provide evidence of working toward the tenets called for under “Meets Element” **AND** reflections indicate learning and progress. | above 0, but below 1 | Lesson plans do not include any evidence of the tenets called for under “Meets Element”. |
| NSTA Element 3a: Use a variety of strategies that demonstrate the candidates’ knowledge and understanding of how to select the appropriate teaching and learning activities – including laboratory or field settings and applicable instruments and/or technology - to allow access so that all students learn. These strategies are inclusive and motivating for all students. | Lesson plans:  
- indicate that all modalities are utilized in engaging all students with science content;  
- include applicable instruments and/or technology, where appropriate, to enhance all student learning;  
- are designed to help all students learn through the modifications and accommodations that are described;  
   AND  
- give attention to classroom climate by explaining plans for giving feedback to help all students improve, providing effective questions, creating interesting and relevant tasks, reinforcing progress and effort, showing how lessons help students develop habits of mind that link effort with achievement, AND helping students construct new knowledge and monitor their own progress. | above 1, but below 2 | Lesson plans provide evidence of working toward the tenets called for under “Meets Element” AND reflections indicate learning and progress are being made. | above 0, but below 1 | Lesson plans identify traditional methods of teaching and show no effort in developing a learner-centered classroom climate. |
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<thead>
<tr>
<th>NSTA Element 3b</th>
<th>Lesson plans:</th>
<th>above 1, but below 2</th>
<th>Lesson plans provide evidence of working toward the tenets called for under “Meets Element” AND reflections indicate learning and progress are being made.</th>
<th>above 0, but below 1</th>
<th>Lesson plans indicate that the classroom environment is not collaborative AND scientific thinking is not taught AND is not encouraged.</th>
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<td>Develop lesson plans that include active inquiry lessons where students collect and interpret data using applicable science-specific technology in order to develop concepts, understand scientific processes, relationships and natural patterns from empirical experiences. These plans provide for equitable achievement of science literacy for all students.</td>
<td>• provide opportunities for all students to design experiments and collect data using science specific technology; • show that all students have the opportunity to interpret data and draw conclusions in order to develop scientific understanding; • provide evidence that students are encouraged to share ideas, defend ideas using evidence, communicate data, be creative, and critique evidence; • provide experiences that help all students develop skills in scientific thinking; <strong>AND</strong> • provide evidence that the classroom climate is conducive to scientific thinking through collaboration, and an environment where it is safe to discuss and challenge ideas.</td>
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<td>NSTA Element 3c</td>
<td>Lesson plans include assessments:</td>
<td>above 1, but below 2</td>
<td>Lesson plans provide evidence of working toward the tenets called for under “Meets Element” AND reflections indicate learning and progress are being made.</td>
<td>above 0, but below 1</td>
<td>Lesson plans include assessments that emphasize simple recall, are not fair, do not check for understanding, do not address key concepts, AND are not in alignment with learning goals.</td>
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<td>Plan fair and equitable assessment strategies to analyze student learning and to evaluate if the learning goals are met. Assessment strategies are designed to continuously evaluate preconceptions and ideas that students hold and the understandings that students have formulated.</td>
<td>• to check for misconceptions and student knowledge; • of understanding, not just recall of basic facts; instead, assessments involve explaining, interpreting, applying and adapting knowledge, defending a perspective, asking relevant questions, problem solving in new situations, and metacognition; • to continuously check for the development of student understanding as learning progresses; • that are aligned with learning goals and key concepts; <strong>AND</strong> • about important content that is cognitively complex, developmentally appropriate, fair to all students, <strong>AND</strong> provide evidence of student understanding.</td>
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| NSTA Element 3d: Plan a learning environment and learning experiences for all students that demonstrate chemical safety, safety procedures, and the ethical treatment of living organisms within their licensure area(s). | Lesson plans:  
- reference a safety and ethical treatment of living organisms contract;  
- reference the use of appropriate safety equipment such as goggles;  
- include appropriate safety and/or ethical treatment instructions;  
- reference the prominent posting of safety instructions in the classroom;  

**AND**  
- identify the planned use of developmentally appropriate equipment and materials. | above 1, but below 2 | Lesson plans include some, but not all of the tenets called for under “Meets Element”. | above 0, but below 1 | Lesson plans consistently ignore safety issues and ethical treatment of living organisms. |