## KEY LICENSURE ASSESSMENT #7: Safety Inquiry Activity Project

**ADOLESCENT TO YOUNG ADULT (AYA) SCIENCE: CHEM 200**

Scoring Guide  
Undergraduate Initial Teacher Preparation Program  
Educator Preparation Unit  
Muskingum University

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<tr>
<th>NSTA Element Statement</th>
<th>Meets Element</th>
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<td><strong>NSTA Element 4a:</strong> Design activities in a P-12 classroom that demonstrates the safe and proper techniques for the preparation, storage, dispensing, supervision, and disposal of all materials used within their subject area science instruction.</td>
<td>(2)</td>
<td>(1)</td>
<td>(0)</td>
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| Safety Inquiry Activity Project Part 1:  
• described a truly safe environment for students;  
• identified appropriate chemicals, containers, and heat for the inquiry;  
• accurately described safe and proper techniques for the preparation, dispensing, and supervision of materials during the activity, and safe and proper techniques for the storage and disposal of materials following the activity;  
• described how students should dress for work in the laboratory (clothing, shoes, hair, etc.);  
• accurately described the legal liabilities of the duty of instruction, the duty of supervision, and the duty of maintenance;  
• included an up-to-date Material Safety Data Sheet (MSDS) for one of the chemicals used in the inquiry;  
• included an accurate inventory sheet of the chemicals appropriate for the inquiry;  
• included an accurate sample label that would be applied to the container of one of the chemicals used in the inquiry. | above 1, but below 2 | The safety of students would not be compromised, but some elements of a truly safe environment were missing AND descriptions of the other tenets under “Meets Element” were only somewhat appropriate, accurate, AND up-to-date. | above 0, but below 1 |
| | | | The safety of students would be compromised AND descriptions of the other tenets under “Meets Element” were inappropriate, inaccurate, AND out of date. |
| NSTA Element 4b: Design and demonstrate activities in a P-12 classroom that demonstrate an ability to implement emergency procedures and the maintenance of safety equipment, policies and procedures that comply with established state and/or national guidelines. Candidates ensure safe science practices appropriate for the abilities of all students. | Safety Inquiry Activity Project Part 1:  
- accurately described the safety procedures that would be taught as part of the inquiry;  
- accurately described the safety equipment used during the inquiry and its maintenance;  
- described accurate procedures to be used should a fire occur during the inquiry;  
- described accurate procedures to be used should a chemical splash in a student’s eye;  
- described accurate procedures to be used should a student receive a cut;  
- described accurate procedures to be used in the cleaning and disposal of bodily fluids;  
- described accurate procedures to be used should a chemical spill occur;  
- described appropriate accommodations/modifications for the following: (1) hearing impaired student, (2) ADD or ADHD student, (3) blind or sight impaired student, (4) autistic student, AND (5) ELL student;  
- included an accurate rationale with a declaration stating that there will be no mercury in the classroom and the declaration was signed by the candidate;  
- included safety contract and medical, field trip permission, computer use permission, and accident report forms that comply with national guidelines. | above 1, but below 2 | The safety of students would not be compromised, but some elements of a truly safe environment were missing **AND** descriptions of the other tenets under “Meets Element” were only somewhat appropriate **AND** accurate. | above 0, but below 1 | The descriptions for the emergency procedures did not follow standard protocols; thus, compromising the safety of students. |
NSTA Element 4c: Design and demonstrate activities in a P-12 classroom that demonstrate ethical decision making with respect to the treatment of all living organisms in and out of the classroom. They emphasize safe, humane, and ethical treatment of animals and comply with the legal restrictions on the collection, keeping, and use of living organisms.

Safety Inquiry Activity Project Part 2:
- included the following guide to using animals in the classroom as found at: http://www.dnr.state.oh.us/Portals/9/pdf/pub009.pdf;
- designed a meaningful inquiry through an observation field trip that included guidelines for the safe, ethical, and humane treatment of all plants and animals encountered on the field trip;
- designed a meaningful inquiry concerning animals or plants in a classroom setting that included guidelines for the safe, ethical, and humane treatment of all plants and animals;
- wrote a meaningful and accurate reflection on the pros and cons of using living organisms in the classroom, including the safe, humane, and ethical treatment of animals in the classroom AND compliance with restrictions on the collection, keeping, and use of living organisms in the classroom.

above 1, but below 2  
The inquiry activity and reflection included only some of the considerations necessary for the humane and ethical treatment of living organisms; no living organisms would be directly harmed; OR some tenets included under “Meets Element” were missing.

above 0, but below 1  
The inquiry activity and reflection did not reflect the humane and ethical treatment of living organisms.

above 0, but below 1  
The inquiry activity and reflection did not reflect the humane and ethical treatment of living organisms.

Inquiring Safely: A Guide for Middle School Teachers by Terry Kwan and Juliana Texley  
Investigating Safely: A Guide for High School Teachers by Juliana Texley, Terry Kwan, and John Summers