Key Licensure Assessment #7: Safety Inquiry Activity Project
AYA Science: CHEM 200
Overview
Undergraduate Initial Teacher Preparation Program
Educator Preparation Unit
Muskingum University

1. **Description of the Assessment and Its Use in the Program**

   It is incumbent on secondary school science teachers that they understand the legal responsibility they have for the care of their students. They are expected to be knowledgeable about the proper care of organisms under study, and the safety of their students. The **Safety Inquiry Activity Project** is therefore designed to assess a candidate’s ability to demonstrate and maintain chemical safety, safety procedures, and the ethical treatment of living organisms needed in the teaching of science. The Project is completed as part of CHEM 200: Laboratory Safety, and is assessed by the course instructor.

   To be admitted into student teaching at Gateway 2, a candidate must complete Key Licensure Assessments #6 and #7 (Professional Knowledge and Skills and **Safety Inquiry Activity Project**) with at least 80% of the elements of the NSTA standards across the two assessments rated at *meets element* and no element rated *unacceptable*.

2. **Description of How the Assessment Specifically Aligns with the National Science Teachers Association (NSTA) Standards (2010)**

   The following elements of the NSTA standards are evaluated through this key licensure assessment.

<table>
<thead>
<tr>
<th>NSTA Element #</th>
<th>NSTA Element Description</th>
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<tbody>
<tr>
<td>4a</td>
<td>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>
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<tr>
<td>4b</td>
<td>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.</td>
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<tr>
<td>4c</td>
<td>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.</td>
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3. **The Assessment Instrument**

**Safety Inquiry Activity Project Guidelines**

*As you complete the following, refer to the scoring guide for Key Licensure Assessment #7 to ensure that you include all expectations for this assessment.*

**Purpose of Assignment:** To document your ability to demonstrate and maintain chemical safety, safety procedures, and the ethical treatment of living organisms needed in the teaching of science.

**Directions:**

**Part 1:**

1. Develop a science inquiry activity.
2. Identify the chemicals, containers, and heat source for the inquiry.
3. Describe the techniques you would use for the preparation, dispensing, and supervision of materials during the inquiry, and the techniques you would use for the storage and disposal of materials following the inquiry.
4. Describe the legal liabilities of the duty of instruction, the duty of supervision, and the duty of maintenance that you believe you would have in carrying out the inquiry.
5. Include in the submission of your project an up-to-date Material Safety Data Sheet (MSDS) for one of the chemicals used in the inquiry.
6. Include in the submission of your project an inventory sheet of the chemicals you would use for the inquiry.
7. Include in the submission of your project a sample label that would be applied to the container of one of the chemicals used in the inquiry.
8. Include how students should dress for work in the laboratory (this includes clothing, shoes, and hair).

**Part 2:**

1. Describe the safety procedures that would be taught as part of the inquiry noted in Part 1.
2. Describe the safety equipment you would use during the inquiry and how it would have been maintained for use.
3. Describe the procedures you would use should a fire occur during the inquiry.
4. Describe the procedures you would use should a chemical splash in a student’s eye during the inquiry.
5. Describe the procedures you would use should a student receive a cut during the inquiry.
6. Describe the procedures you would use in the cleaning and disposal of bodily fluids during the inquiry should it be necessary.
7. Describe the procedures you would use should a chemical spill occur during the inquiry.
8. Describe accommodations and/or modifications you would make for the following: (a) hearing impaired student, (b) ADD or ADHD student, (c) blind or sight impaired student, (d) autistic student, **AND** (e) ELL student.
9. Include in the submission of your project a rationale with a declaration stating that there will be no mercury in the classroom and, as the teacher, sign the declaration.
(10) Include the following items that comply with national guidelines in the submission of your project: (a) safety contract, (b) medical form, (c) field trip permission form, (d) computer use permission form, and (e) accident report form.

Part 3:

(1) Include in the submission of your project a copy of *A Guide to Using Animals in the Classroom* that may be located at [http://www.dnr.state.oh.us/Portals/9/pdf/pub009.pdf](http://www.dnr.state.oh.us/Portals/9/pdf/pub009.pdf).

(2) Design a meaningful inquiry for an *observation field trip* that includes guidelines for the safe, ethical, and humane treatment of all plants and animals encountered on the field trip.

(3) Design a meaningful inquiry concerning animals or plants in a *classroom setting* that includes guidelines for the safe, ethical, and humane treatment of all plants and animals.

(4) Write a detailed reflection on the pros and cons of using living organisms in the classroom, making sure to address (a) the safe, humane, and ethical treatment of animals in the classroom AND (b) compliance restrictions on the collection of, keeping, and use of living organisms in the classroom.

The **Safety Inquiry Activity Project** is to be submitted to the course instructor.