Key Licensure Assessment #7: Mathematical Communication and Connections
Adolescent to Young Adult (AYA) Integrated Mathematics: EDUC 565
Overview
Graduate Initial Teacher Preparation Program
Educator Preparation Unit
Muskingum University

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

   Key Licensure Assessment #7: **Mathematical Communication and Connections** is designed to assess a candidate’s ability to: (1) communicate his/her mathematical thinking orally and in writing and (2) recognize, use, and make connections between and among mathematical ideas in contexts outside of mathematics to build mathematical understanding.

   The assessment is completed as a component of the field experience required for EDUC 565: Adolescent and Young Adult Mathematics Methodology and is graded by the cooperating teacher for the field experience.

   To be admitted into clinical practice at Gateway 3, a candidate must complete Key Licensure Assessments #6 and #7 (Technology Lesson Plan and **Mathematical Communication and Connections**) with at least 80% of the NCTM indicators on the two assessments rated at *meets indicator* and no indicator rated *unacceptable*.

2. **Description of How the Assessment Specifically Aligns with the National Council for Teachers of Mathematics (NCTM) Standards (2003)**

   The following indicators of the NCTM standards are evaluated through this assessment.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
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<tbody>
<tr>
<td>3.1</td>
<td>communicate mathematical thinking coherently and clearly to peers, faculty, and others</td>
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<tr>
<td>3.2</td>
<td>use the language of mathematics to express ideas precisely</td>
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<tr>
<td>3.3</td>
<td>organize mathematical thinking through communication</td>
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<tr>
<td>3.4</td>
<td>analyze and evaluate the mathematical thinking and strategies of others</td>
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<tr>
<td>4.1</td>
<td>recognize and use connections among mathematical ideas</td>
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<tr>
<td>4.2</td>
<td>recognize and apply mathematics in contexts outside of mathematics</td>
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<tr>
<td>4.3</td>
<td>demonstrate how mathematical ideas interconnect and build on one another to produce a coherent whole</td>
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3. **Assessment Instrument**

Guidelines for EDUC 565 Mathematical Communication and Connections Assessment

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

**Purpose of the Field Experience:** to actively participate in a secondary mathematics classroom in which you will have direct contact with individual students and teach small- and large-group lessons under the supervision of your cooperating teacher. A major focus of this field experience is on your ability to demonstrate that you are capable of: (1) communicating your mathematical thinking orally and in writing with students and others and (2) recognizing, using, and making connections between and among mathematical ideas in contexts outside of mathematics to build the mathematical understanding of students.

**Directions:**

1. Make arrangements with your cooperating teacher to work with individual students and to teach small- and large-group lessons during your field experience.

2. As you plan your lessons for these experiences and communicate with your cooperating teacher, ensure that you provide opportunities for your cooperating teacher to assess your skills for carrying out the following:

   - communicate mathematical thinking coherently and clearly
   - use the language of mathematics to express ideas precisely
   - organize mathematical thinking through communication
   - analyze and evaluate the mathematical thinking and strategies of others
   - recognize and use connections among mathematical ideas
   - recognize and apply mathematics in contexts outside of mathematics
   - demonstrate how mathematical ideas interconnect and build on one another to produce a coherent whole