

**Student Learning Summary Form AY2015-16**

**Due to your dean by June 1**

**Due from dean to assessment office by June 15**

**Degree Program Name:** Mathematics Teaching

**Contact Name and Email:** Winnie Ko; Winnie.Ko@indstate.edu

Before you complete the form below, review your outcomes library and curriculum map to ensure that they are accurate and up to date. If not, you may submit a new version along with this summary.

**Part One**

<p><b>a. What learning outcomes did you assess this year?</b></p> <p>If this is a graduate program, indicate the <a href="#">Graduate Student Learning Outcome*</a> each outcome aligns with.</p>	<p><b>b. (1) What method(s) did you use to determine how well your students attained the outcome? (2) In what course or other required experience did the assessment occur?</b></p>	<p><b>c. What expectations did you establish for achievement of the outcome?</b></p>	<p><b>d. What were the actual results?</b></p>	<p><b>e. (1) Who was responsible for collecting and analyzing the results? (2) How were they shared with the program's faculty?</b></p>
<p>1. Apply knowledge of curriculum standards for middle or high school mathematics and their relationship to student learning within and across mathematical domains.</p>	<ul style="list-style-type: none"> <li>Students' unit plans were graded and collected in Math 388-The Teaching of Middle School Mathematics.</li> <li>Students' unit reports were graded and collected in Math 391-The Teaching of High School Mathematics.</li> </ul>	<ul style="list-style-type: none"> <li>Students accurately identified and applied the content and the process standards most of the time throughout the unit plan or the unit report.</li> </ul>	<ul style="list-style-type: none"> <li>More than 50% of students met or exceeded the expectations.</li> </ul>	<ul style="list-style-type: none"> <li>Dr. Jodi Frost shared the results at an informal meeting.</li> <li>Dr. Winnie Ko shared the results at an informal meeting.</li> </ul>
<p>2. Analyze and consider research in planning for and leading students in rich mathematical learning experiences.</p>	<ul style="list-style-type: none"> <li>Students' unit plans were graded and collected in Math 388-The Teaching of Middle School Mathematics.</li> <li>Students' unit reports were graded and collected in Math 391-The Teaching of High School Mathematics.</li> </ul>	<ul style="list-style-type: none"> <li>At least two appropriate sources outside the primary text were correctly referenced and utilized throughout the unit plan or the unit report</li> <li>Students had few or no tasks that were only procedural in nature and provides accurate analysis for most tasks in the unit plan or the unit report.</li> </ul>	<ul style="list-style-type: none"> <li>More than 50% of students in Math 388 or Math 391 met or exceeded the expectations.</li> </ul>	<ul style="list-style-type: none"> <li>Dr. Jodi Frost shared the results at an informal meeting.</li> <li>Dr. Winnie Ko shared the results at an informal meeting.</li> </ul>
<p>3. Plan lessons and units that incorporate a variety of strategies, differentiated instruction for diverse populations, and mathematics-specific and instructional technologies in building all middle or high students' conceptual understanding and procedural proficiency.</p>	<ul style="list-style-type: none"> <li>Students' unit reports were graded and collected in Math 388-The Teaching of Middle School Mathematics.</li> <li>Students' lesson plans were graded and collected in Math 391-The Teaching of High School Mathematics.</li> </ul>	<ul style="list-style-type: none"> <li>At least two strategies are used and there is an attempt to differentiate instruction.</li> <li>At least one task uses technology appropriately.</li> <li>At least two tasks use instructional tools appropriately and effectively.</li> </ul>	<ul style="list-style-type: none"> <li>More than 50% of students in Math 388 or Math 391 met or exceeded the expectations.</li> </ul>	<ul style="list-style-type: none"> <li>Dr. Jodi Frost shared the results at an informal meeting.</li> <li>Dr. Winnie Ko shared the results at an informal meeting.</li> </ul>

<p>4. Provide middle or high school students with opportunities to communicate about mathematics and make connections among mathematics, other content areas, everyday life, and the workplace.</p>	<ul style="list-style-type: none"> <li>• Students' unit reports were graded and collected in Math 388-The Teaching of Middle School Mathematics.</li> <li>• Students' lesson plans were graded and collected in Math 391-The Teaching of High School Mathematics.</li> </ul>	<ul style="list-style-type: none"> <li>• A connection among mathematics was made at least once throughout the unit plan or the unit report.</li> <li>• Unit report or the unit plan provided opportunities to communicate peer-to-teacher.</li> </ul>	<ul style="list-style-type: none"> <li>• More than 50% of students in Math 388 or Math 391 met or exceeded the expectations.</li> </ul>	<ul style="list-style-type: none"> <li>• Dr. Jodi Frost shared the results at an informal meeting.</li> <li>• Dr. Winnie Ko shared the results at an informal meeting.</li> </ul>
<p>5. Implement techniques related to student engagement and communication including selecting high quality tasks, guiding mathematical discussions, identifying key mathematical ideas, identifying and addressing student misconceptions, and employing a range of questioning strategies</p>	<ul style="list-style-type: none"> <li>• Students' unit reports were graded and collected in Math 388-The Teaching of Middle School Mathematics.</li> <li>• Students' lesson plans were graded and collected in Math 391-The Teaching of High School Mathematics.</li> </ul>	<ul style="list-style-type: none"> <li>• Three or more high quality tasks were included in the unit plan or the unit report.</li> <li>• Students attempted to correctly identify and address middle or high school students' misconceptions in the unit plan or the unit report.</li> <li>• Students used at least two questioning strategies in the unit plan or the unit report</li> <li>• Some opportunity for meaningful mathematical discussions was provided in the unit plan or the unit report.</li> </ul>	<ul style="list-style-type: none"> <li>• More than 50% of students in Math 388 or Math 391 met or exceeded the expectations.</li> </ul>	<ul style="list-style-type: none"> <li>• Dr. Jodi Frost shared the results at an informal meeting.</li> <li>• Dr. Winnie Ko shared the results at an informal meeting.</li> </ul>
<p>6. Plan, select, implement, interpret, and use formative and summative assessments to inform instruction by reflecting on mathematical proficiencies essential for all middle or high school students.</p>	<ul style="list-style-type: none"> <li>• Students' unit reports were graded and collected in Math 388-The Teaching of Middle School Mathematics.</li> <li>• Students' lesson plans were graded and collected in Math 391-The Teaching of High School Mathematics.</li> </ul>	<ul style="list-style-type: none"> <li>• Some appropriate formative assessment was used.</li> <li>• Only two appropriate summative assessments were used.</li> <li>• Students attempted to address the appropriate mathematical proficiencies essential for all middle or high school students.</li> </ul>	<ul style="list-style-type: none"> <li>• More than 50% of students in Math 388 or Math 391 met or exceeded the expectations.</li> </ul>	<ul style="list-style-type: none"> <li>• Dr. Jodi Frost shared the results at an informal meeting.</li> <li>• Dr. Winnie Ko shared the results at an informal meeting.</li> </ul>
<p>7. Exhibit knowledge of pre-adolescent and adolescent learning, development, and behavior and demonstrate a positive disposition toward mathematical processes and learning.</p>	<ul style="list-style-type: none"> <li>• Students' unit reports were graded and collected in Math 388-The Teaching of Middle School Mathematics.</li> <li>• Students' lesson plans were graded and collected in Math 391-The Teaching of High School Mathematics.</li> </ul>	<ul style="list-style-type: none"> <li>• Students demonstrated a positive disposition toward mathematical processes that is sometimes incorporated in the unit plan or the unit report.</li> <li>• Some tasks showed evidence of candidate knowledge of pre-adolescent and adolescent learning, development, and behavior.</li> </ul>	<ul style="list-style-type: none"> <li>• More than 50% of students in Math 388 or Math 391 met or exceeded the expectations.</li> </ul>	<ul style="list-style-type: none"> <li>• Dr. Jodi Frost shared the results at an informal meeting.</li> <li>• Dr. Winnie Ko shared the results at an informal meeting.</li> </ul>
<p>8. Plan and create developmentally appropriate, sequential, and challenging learning opportunities</p>	<ul style="list-style-type: none"> <li>• Students' unit reports were graded and collected in Math 388-The Teaching of Middle School Mathematics.</li> </ul>	<ul style="list-style-type: none"> <li>• Students provided some discussion of sequential learning opportunities.</li> <li>• Most learning opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• More than 50% of students in Math 388 or Math 391 met or exceeded the expectations.</li> </ul>	<ul style="list-style-type: none"> <li>• Dr. Jodi Frost shared the results at an informal meeting.</li> <li>• Dr. Winnie Ko shared the results at an informal meeting.</li> </ul>

<p>grounded in mathematics education research in which students are actively engaged in building new knowledge from prior knowledge and experiences.</p>	<ul style="list-style-type: none"> <li>• Students' lesson plans were graded and collected in Math 391-The Teaching of High School Mathematics.</li> </ul>	<p>were challenging and grounded in mathematics education research.</p> <ul style="list-style-type: none"> <li>• At least half of the tasks required active engagement and building new knowledge.</li> <li>• Most learning opportunities were developmentally appropriate.</li> </ul>		
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\* See <https://www2.indstate.edu/graduate/forms/review.pdf>.

## Part Two

**In no more than one page, summarize 1) the discoveries assessment has enabled you to make about your students' learning, the curriculum, departmental processes, and/or the assessment plan itself; 2) the changes and improvements you have made or will make in response to these discoveries and/or the coordinator's feedback on the previous summary; and 3) what your assessment plan will focus on in the coming year.**

- To meet the NCTM CAEP Standards (2012) Middle Grade and Secondary In 2015-16, the mathematics education committee members developed the rubrics to assess pre-service middle and high school mathematics teachers' learning. The committee members also decided to collect pre-service middle school teachers' unit plans and pre-service high school mathematics teachers' unit reports and to use the new rubrics to evaluate their work. The committee members expect that 50% of students met the expectations. As the chart above shows, the majority of students met or exceeded our expectations.
- Dr. Jodi Frost and Dr. Winnie Ko had used the new rubrics to evaluate students' unit plans or unit reports, and they found that several of our developed rubrics might need to revise. For the mathematics education curriculum meetings in the coming year, the committee members will discuss the revision of our criteria for evaluating students' unit plans or unit reports.
- Unit plans or unit reports continue to enable students to demonstrate their knowledge and understanding of mathematics teaching and learning. The mathematics education committee members will continue to evaluate students' unit plans or unit reports using the revised rubrics. Also, the committee members will develop an assessment to evaluate pre-service middle or high school mathematics teachers' content knowledge of mathematics in the coming year.

**Student Learning Summary Report Rubric :: Office of Assessment & Accreditation :: Indiana State University**

Degree Program: BS in Mathematics Teaching Date: 8.23.16

	<b>Level 0 – Undeveloped</b>	<b>Level 1 – Developing</b>	<b>Level 2 – Mature</b>	<b>Level 3 – Exemplary</b>
<b>1. Student Learning Outcomes</b>	<input type="checkbox"/> No outcomes are identified.  <input checked="" type="checkbox"/> No Curriculum Map was provided.	<input type="checkbox"/> Outcomes were identified.  <input type="checkbox"/> Some of the outcomes are specific, measurable, student-centered, program-level outcomes.  <input type="checkbox"/> A Curriculum Map was provided.	<input type="checkbox"/> Outcomes are specific, measurable, student-centered, program-level outcomes.  <input checked="" type="checkbox"/> Outcomes at least indirectly support Foundational Studies Learning Outcomes or the Graduate Learning Goals.  <input type="checkbox"/> The Curriculum Map identifies where/to what extent each outcome is addressed.  <input type="checkbox"/> At least one outcome was assessed in this cycle.	<input checked="" type="checkbox"/> Outcomes are specific, measurable, student-centered program-level outcomes that span multiple learning domains.  <input type="checkbox"/> Outcomes directly integrate with Foundational Studies Learning Outcomes or the Graduate Learning Goals.  <input checked="" type="checkbox"/> Outcomes reflect the most important results of program completion (as established by an accreditor or other professional organization).  <input type="checkbox"/> Learning outcomes are consistent across different modes of delivery (face-to-face and online.)  <input type="checkbox"/> Outcomes are regularly reviewed (and revised, if necessary) by the faculty and other stakeholders.  <input type="checkbox"/> The Curriculum Map identifies where/to what extent each outcome is addressed and offers evidence that students have sufficient opportunity to master the associated learning outcomes.  <input checked="" type="checkbox"/> Two or more outcomes were

				assessed in this cycle.
<p><b>2. Measures &amp; Performance Goals</b></p>	<input type="checkbox"/> No measures are provided.  <input type="checkbox"/> No goals for student performance are identified.	<input type="checkbox"/> Measures are provided, but some are vague and/or do not clearly assess the associated outcomes.  <input type="checkbox"/> Measures are primarily indirect.  <input type="checkbox"/> Measures include course and/or assignment grades, but there is no evidence that grades are calibrated to the outcomes.  <input checked="" type="checkbox"/> Performance goals are identified, but they are unclear or inappropriate.	<input type="checkbox"/> At least one direct measure was provided for each outcome.  <input type="checkbox"/> Some information is provided to suggest that measures are appropriate to the outcomes being assessed.  <input type="checkbox"/> Measures include course and/or assignment grades, and general information is provided to indicate that grades are calibrated to the outcomes.  <input type="checkbox"/> Clear and appropriate standards for performance are identified.  <input type="checkbox"/> Mechanisms (rubrics, checklists, criterion-referenced exams, etc.) were provided.	<input checked="" type="checkbox"/> Multiple measures were provided, and a majority are direct.  <input checked="" type="checkbox"/> Detailed information is provided to show that measures are appropriate to the outcomes being assessed.  <input type="checkbox"/> Measures include course and/or assignment grades, and specific evidence is provided to demonstrate that grades are calibrated to the outcomes.  <input type="checkbox"/> Clear and appropriate standards for performance are identified and justified.  <input type="checkbox"/> If students are required to pass a certification or licensure exam to practice in the field, this was included as a measure.  <input checked="" type="checkbox"/> Measures assess some <a href="#">high impact practices</a> (internships, capstone course projects, undergraduate research, etc.)  <input type="checkbox"/> Some measures allow performance to be gauged over time, not just in a single course.  <input type="checkbox"/> Mechanisms (rubrics, checklists, criterion-referenced exams, etc.) were provided that demonstrate that the measure provides clear evidence of what students know/can do.

				<input type="checkbox"/> If a measure is used to assess more than one outcome, a clear explanation is offered to substantiate how this is effective.
<b>3. Results</b>	<input type="checkbox"/> No data are being collected.  <input type="checkbox"/> No information is provided about the data collection process.  <input type="checkbox"/> No results are provided.  <input type="checkbox"/> Students are meeting few of the performance standards set for them.	<input type="checkbox"/> Some data are being collected and analyzed.  <input type="checkbox"/> Some results are provided.  <input type="checkbox"/> Insufficient information is offered to demonstrate that data collection, analysis, and interpretation processes are valid.  <input type="checkbox"/> Students are achieving some of the performance standards expected of them.	<input checked="" type="checkbox"/> Data are being collected and analyzed.  <input checked="" type="checkbox"/> Results are provided.  <input checked="" type="checkbox"/> Some information is offered to demonstrate that data collection, analysis, and interpretation processes are valid and meaningful.  <input checked="" type="checkbox"/> Students generally are achieving the performance standards expected of them.	<input type="checkbox"/> Clear, specific, and complete details about data collection, analysis, and interpretation of results are provided to demonstrate the validity and usefulness of the assessment process.  <input type="checkbox"/> Students generally are achieving the performance standards expected of them and demonstrate continuous improvement on standards they have yet to achieve/achieve less well.  <input type="checkbox"/> If students are required to pass a certification or licensure exam to practice in the field, the pass rate meets the established benchmark.
<b>4. Engagement &amp; Improvement</b>	<input type="checkbox"/> No one is assigned responsibility for assessing individual measures.  <input type="checkbox"/> Assessment primarily is the responsibility of the program chair.  <input type="checkbox"/> No improvements (planned or actual) are identified.  <input type="checkbox"/> No reflection is offered about previous results or	<input type="checkbox"/> The same faculty member is responsible for collecting and analyzing most/all assessment results.  <input type="checkbox"/> It is not clear that results are shared with the faculty as a whole on a regular basis.  <input type="checkbox"/> Plans for improvement are provided, but they are not specific and/or do not clearly connect to the results.	<input checked="" type="checkbox"/> Multiple faculty members are engaged in collecting and analyzing results.  <input checked="" type="checkbox"/> Results regularly are shared with the faculty.  <input checked="" type="checkbox"/> The faculty regularly engages in meaningful discussions about the results of assessment.  <input checked="" type="checkbox"/> These discussions lead to the development of specific, relevant plans for improvement.	<input type="checkbox"/> All program faculty members are engaged in collecting and analyzing results.  <input type="checkbox"/> Faculty regularly and specifically reflect on students' recent achievement of performance standards and implement plans to adjust activities, performance goals, outcomes, etc. according to established timelines.  <input type="checkbox"/> Faculty and other important

	plans.	<input type="checkbox"/> Little reflection is offered about previous results or plans.	<input type="checkbox"/> Improvements in student learning have occurred as the result of assessment.	<p>stakeholders reflect on the history and impact of previous plans, actions, and results, and participate in the development of recommendations for improvement.</p> <p><input type="checkbox"/> Continuous improvement in student learning occurs as the result of assessment.</p> <p><input type="checkbox"/> Outcomes and results are easily accessible to stakeholders on/from the program website.</p> <p><input type="checkbox"/> Assessment is integrated with teaching and learning.</p>
<b>Overall Rating</b>	<input type="checkbox"/> <b>Level 0 – Undeveloped</b>	<input type="checkbox"/> <b>Level 1 - Developing</b>	<input checked="" type="checkbox"/> <b>Level 2 – Mature</b>	<input type="checkbox"/> <b>Level 3 – Exemplary</b>

## COMMENTS

### Strengths, Concerns, Recommendations for Improvement

#### 1. Learning Outcomes

The eight outcomes listed in the Student Learning Summary Report are clear, specific, and measurable, as well as spanning multiple learning domains. They also reflect CAEP expectations for student learning.

#### 2. Measures & Performance Goals

The program uses two measures, the unit plan and report, to assess each of the eight outcomes. Specific details clarify expectations for performance and demonstrate that these measures are appropriate to the outcomes. Please add numerical expectations to column c (e.g., 50% of students will accurately identify and apply...). Isn't the standard (50% will meet or exceed expectations) set a bit low, particularly for teacher candidates? Last, because students in this program are required to pass the state licensure exam in order to teach, please include this as one of your measures. You also need to identify an indirect measure.

#### 3. Results

While column b makes it clear that you assess each outcome separately, column d lumps results together. Can you separate them? Otherwise, you can't pinpoint students' strengths and weaknesses and develop appropriate plans for improvement. Be sure to include the number of students assessed as well.

#### 4. Engagement & Improvement

Two faculty members are responsible for collecting, analyzing, and sharing results. What is an "informal meeting"? Part Two provides a general summary of assessment processes and results and identifies one plan for improvement (revising the rubrics). In next year's report, please discuss what assessment specifically has taught you about what students know and can do well and less well and how you plan to address the latter. Is there evidence that learning continuously improves?

You have very solid assessment plan. I look forward to learning more about it!