Student Learning Summary Form AY2016-17

Due to your dean by June 1
Due from dean to assessment office by June 15

Degree Program Name: Mathematics Teaching

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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

a. What learning outcomes did you assess this year? **If this is a graduate program, indicate the Graduate Student Learning Outcome* each outcome aligns with.**	**b. (1) What method(s)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?**	**c. What expectations did you establish for achievement of the outcome?**	**d. What were the actual results?**	**e. (1) Who was responsible for collecting and analyzing the results? (2) How were they shared with the program's faculty?**
1. Apply knowledge of curriculum standards for middle or high school mathematics and their relationship to student learning within and across mathematical domains.	• Students' unit plans were graded and collected in Math 388-The Teaching of Middle School Mathematics. • Students' unit reports were graded and collected in Math 391-The Teaching of High School Mathematics.	· Students accurately identified and applied the content and the process standards most of the time throughout the unit plan or the unit report.	· (a) Approximately 75% of students in Dr. Jodi Frost's Math 388 met or exceeded the expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the expectation.	• Dr. Jodi Frost collected and analyzed results for the Math 388 students' unit plans. Rubrics were shared on L Drive. • Dr. Winnie Ko collected and analyzed results for the Math 391 students' unit reports. Rubrics were shared at the math education curriculum meetings.
2. Analyze and consider research in planning for and leading students in rich mathematical learning experiences.	• Students' unit plans were graded and collected in Math 388-The Teaching of Middle School Mathematics. • Students' unit reports were graded and collected in Math 391-The Teaching of High School Mathematics.	• At least two appropriate sources outside the primary text were correctly referenced and utilized throughout the unit plan or the unit report • 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.	• (a) Approximately 58% of students in Dr. Jodi Frost's Math 388 met or exceeded the first expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the first expectation. • (a) Approximately 75% of students in Dr. Jodi Frost's Math 388 met or exceeded the second expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the second expectation.	• Dr. Jodi Frost collected and analyzed results for the Math 388 students' unit plans. Rubrics were shared on L Drive. • Dr. Winnie Ko collected and analyzed results for the Math 391 students' unit reports. Rubrics were shared at the math education curriculum meetings.

3. Plan lessons and units that incorporate a variety of	· Students' unit reports were graded and collected in Math	· At least two strategies are used and there is an attempt to	· Approximately 75% of students in Dr. Jodi Frost's	· Dr. Jodi Frost collected and analyzed results for the Math

strategies, differentiated instruction for diverse populations, and mathematicsspecific and instructional technologies in building all middle or high students' conceptual understanding and procedural proficiency.	388-The Teaching of Middle School Mathematics. · Students' lesson plans were graded and collected in Math 391-The Teaching of High School Mathematics.	differentiate instruction. • At least one task uses technology appropriately. • At least two tasks use instructional tools appropriately and effectively.	Math 388 met or exceeded the first expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the first expectation. • Approximately 92% of students in Dr. Jodi Frost's Math 388 met or exceeded the second expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the second expectation. • Approximately 67% of students in Dr. Jodi Frost's Math 388 met or exceeded the third expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the third expectation.	388 students' unit plans. Rubrics were shared on L Drive. · Dr. Winnie Ko collected and analyzed results for the Math 391 students' unit reports. Rubrics were shared at the math education curriculum meetings.
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.	• Students' unit reports were graded and collected in Math 388-The Teaching of Middle School Mathematics. • Students' lesson plans were graded and collected in Math 391-The Teaching of High School Mathematics.	• A connection among mathematics was made at least once throughout the unit plan or the unit report. • Unit report or the unit plan provided opportunities to communicate peer-to-teacher.	• (a) Approximately 92% of students in Dr. Jodi Frost's Math 388 met or exceeded the first expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the first expectation. • (a) Approximately 92% of students in Dr. Jodi Frost's Math 388 met or exceeded the second expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the second expectation.	• Dr. Jodi Frost collected and analyzed results for the Math 388 students' unit plans. Rubrics were shared on L Drive. • Dr. Winnie Ko collected and analyzed results for the Math 391 students' unit reports. Rubrics were shared at the math education curriculum meetings.

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	• Students' unit reports were graded and collected in Math 388-The Teaching of Middle School Mathematics. • Students' lesson plans were graded and collected in Math 391-The Teaching of High School Mathematics.	• Three or more high quality tasks were included in the unit plan or the unit report. • Students attempted to correctly identify and address middle or high school students' misconceptions in the unit plan or the unit report. • Students sued at least two questioning strategies in the unit plan or the unit report · Some opportunity for meaningful mathematical discussions was provided in the unit plan or the unit report.	• (a) Approximately 92% of students in Dr. Jodi Frost's Math 388 met or exceeded the first expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the first expectation. • (a) Approximately 67% of students in Dr. Jodi Frost's Math 388 met or exceeded the second expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the second expectation. • (a) Approximately 83% of students in Dr. Jodi Frost's Math 388 met or exceeded the third expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the third expectation. • (a) Approximately 92% of students in Dr. Jodi Frost's Math 388 met or exceeded the fourth expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the fourth expectation.	• Dr. Jodi Frost collected and analyzed results for the Math 388 students' unit plans. Rubrics were shared on L Drive. • Dr. Winnie Ko collected and analyzed results for the Math 391 students' unit reports. Rubrics were shared at the math education curriculum meetings.

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.	• Students' unit reports were graded and collected in Math 388-The Teaching of Middle School Mathematics. • Students' lesson plans were graded and collected in Math 391-The Teaching of High School Mathematics.	• Some appropriate formative assessment was used. • Only two appropriate summative assessments were used. • Students attempted to address the appropriate mathematical proficiencies essential for all middle or high school students.	• (a) Approximately 92% of students in Dr. Jodi Frost's Math 388 met or exceeded the first expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the first expectation. • (a) Approximately 83% of students in Dr. Jodi Frost's Math 388 met or exceeded the second expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the second expectation. • (a) Approximately 67% of students in Dr. Jodi Frost's Math 388 met or exceeded the third expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the third expectation.	• Dr. Jodi Frost collected and analyzed results for the Math 388 students' unit plans. Rubrics were shared on L Drive. • Dr. Winnie Ko collected and analyzed results for the Math 391 students' unit reports. Rubrics were shared at the math education curriculum meetings.

7. Exhibit knowledge of preadolescent and adolescent learning, development, and behavior and demonstrate a positive disposition toward mathematical processes and learning.	• Students' unit reports were graded and collected in Math 388-The Teaching of Middle School Mathematics. • Students' lesson plans were graded and collected in Math 391-The Teaching of High School Mathematics.	• Students demonstrated a positive disposition toward mathematical processes that is sometimes incorporated in the unit plan or the unit report. • Some tasks showed evidence of candidate knowledge of pre-adolescent and adolescent learning, development, and behavior.	• (a) Approximately 92% of students in Dr. Jodi Frost's Math 388 met or exceeded the first expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the first expectation. • (a) Approximately 92% of students in Dr. Jodi Frost's Math 388 met or exceeded the second expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the second expectation.	• Dr. Jodi Frost collected and analyzed results for the Math 388 students' unit plans. Rubrics were shared on L Drive. • Dr. Winnie Ko collected and analyzed results for the Math 391 students' unit reports. Rubrics were shared at the math education curriculum meetings.

8. Plan and create developmentally appropriate, sequential, and challenging learning opportunities grounded in mathematics education research in which students are actively engaged in building new knowledge from prior knowledge and experiences.	• Students' unit reports were graded and collected in Math 388-The Teaching of Middle School Mathematics. • Students' lesson plans were graded and collected in Math 391-The Teaching of High School Mathematics.	• Students provided some discussion of sequential learning opportunities. • Most learning opportunities were challenging and grounded in mathematics education research. • At least half of the tasks required active engagement and building new knowledge. • Most learning opportunities were developmentally appropriate.	• (a) Approximately 92% of students in Dr. Jodi Frost's Math 388 met or exceeded the first expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the first expectation. • (a) Approximately 75% of students in Dr. Jodi Frost's Math 388 met or exceeded the second expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the second expectation. • (a) Approximately 92% of students in Dr. Jodi Frost's Math 388 met or exceeded the third expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the third expectation. • (a) Approximately 92% of students in Dr. Jodi Frost's Math 388 met or exceeded the fourth expectation. (b) 100% of students in Dr. Winnie Ko's Math 391 met or exceeded the fourth expectation.	• Dr. Jodi Frost collected and analyzed results for the Math 388 students' unit plans. Rubrics were shared on L Drive. • Dr. Winnie Ko collected and analyzed results for the Math 391 students' unit reports. Rubrics were shared at the math education curriculum meetings.

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, the mathematics education committee members had developed the rubrics to access pre-service middle and high school mathematics teachers' learning in 2015-2016. The committee members also had 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 developed from 2015-2016 to evaluate their work. The committee members expect that at least 50% of students met the expectations. As the chart above shows, the majority of students met or exceeded our expectations.
- 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.
- Dr. Liz Brown and Dr. Winnie Ko had developed an assessment to evaluate pre-service high school mathematics teachers' content knowledge of mathematics in Spring 2017 and will analyze pre-service high school mathematics teachers' written results in Fall 2017. They will also discuss the revision of this assessment for evaluating pre-service high school mathematics teachers' content knowledge at the math education curriculum meetings in the coming year.

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

Degree Program: BS in Mathematics Teaching Date: 01.20.18

	Level 0 – Undeveloped	Level 1 – Developing	Level 2 – Mature	Level 3 – Exemplary
1. Student Learning Outcomes	☐ No outcomes were identified. ☒ No Curriculum Map was provided.	☐ Outcomes were identified. ☐ Some of the outcomes are specific, measurable, student-centered, program-level outcomes. ☐ A Curriculum Map was provided.	☐ Outcomes are specific, measurable, student-centered, program-level outcomes. ☒ Outcomes at least indirectly support Foundational Studies Learning Outcomes or the Graduate Learning Goals. ☐ The Curriculum Map identifies where/to what extent each outcome is addressed. ☐ At least one outcome was assessed in this cycle.	☒ Outcomes are important, specific, measurable, student-centered program-level outcomes that span multiple learning domains. ☐ Outcomes directly integrate with Foundational Studies Learning Outcomes or the Graduate Learning Goals. ☒ Outcomes reflect the most important results of program completion (as established by an accreditor or other professional organization). ☐ Learning outcomes are consistent across different modes of delivery (face-to-face and online.) ☐ Outcomes are regularly reviewed (and revised, if necessary) by the faculty and other stakeholders. ☐ 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. ☐ Two or more outcomes were assessed in this cycle.
2. Measures & Performance Goals	☐ No measures are provided. ☒ No goals for student performance are identified.	☐ Measures are provided, but some are vague and/or do not clearly assess the associated outcomes. ☐ Measures are primarily indirect. ☐ Performance goals are identified, but they are unclear or inappropriate. ☐ Some performance goals are based on course and/or assignment grades, but there is no evidence that grades are calibrated to the outcomes.	☐ At least one direct measure was provided for each outcome. ☒ Some information is provided to suggest that measures are appropriate to the outcomes being assessed. ☐ Clear and appropriate standards for performance are identified. ☐ Some performance goals are based on course and/or assignment grades, and general information is provided to demonstrate that grades are calibrated to the outcomes. ☐ Mechanisms used to assess student performance (rubrics, checklists, exam keys, etc.) were provided.	☒ Multiple measures were employed, and most are direct. ☐ Detailed information is provided to show that measures are appropriate to the outcomes being assessed. ☒ Measures assess some high impact practices (internships, capstone course projects, undergraduate research, etc.) ☐ If students are required to pass a certification or licensure exam to practice in the field, this was included as a measure. ☐ Some measures allow performance to be gauged over time, not just in a single course. ☐ If a measure is used to assess more than one outcome, a clear explanation is offered to substantiate that this is appropriate.

				☐ Clear and appropriate standards for performance are identified and justified. ☐ Mechanisms used to assess student performance (rubrics, checklists, exam keys, etc.) were summarized as well as provided to demonstrate that the measure provides specific evidence of what students know/can do. ☐ If performance goals are based on course and/or assignment grades, specific evidence is provided to demonstrate that grades are calibrated to the outcomes.
3. Results	☐ No data are being collected. ☐ No information is provided about the data collection process. ☐ No results are provided. ☐ Students are meeting few of the performance standards set for them.	☐ Some data are being collected and analyzed. ☐ Some results are provided. ☐ Insufficient information is offered to demonstrate that data collection, analysis, and interpretation processes are valid. ☐ Students are achieving some of the performance standards expected of them.	☒ Data are being collected and analyzed. ☒ Results are provided. ☒ Some information is offered to demonstrate that data collection, analysis, and interpretation processes are valid and meaningful. ☐ Students generally are achieving the performance standards expected of them. **??**	☐ 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. ☐ Students generally are achieving the performance standards expected of them and demonstrate continuous improvement on standards they have yet to achieve/achieve less well. ☐ If students are required to

				pass a certification or licensure exam to practice in the field, the pass rate meets the established benchmark.
4. Engagement & Improvement	☐ No one is assigned responsibility for assessing individual measures. ☐ Assessment primarily is the responsibility of the program chair. ☐ No improvements (planned or actual) are identified. ☐ No reflection is offered about previous results or plans.	☐ The same faculty member is responsible for collecting and analyzing most/all assessment results. ☐ It is not clear that results are shared with the faculty as a whole on a regular basis. ☐ Plans for improvement are provided, but they are not specific and/or do not clearly connect to the results. ☐ Little reflection is offered about previous results or plans.	☒ Multiple faculty members are engaged in collecting and analyzing results. ☒ Results regularly are shared with the faculty. ☒ The faculty regularly engages in meaningful discussions about the results of assessment. ☒ These discussions lead to the development of specific, relevant plans for improvement. ☐ Improvements in student learning have occurred as the result of assessment.	☐ All program faculty members are engaged in collecting and analyzing results. ☐ Faculty regularly and specifically reflect on students' recent achievement of performance goals and implement plans to adjust activities, expectations, outcomes, etc. according to established timelines. ☐ Faculty and other important stakeholders reflect on the history and impact of previous plans, actions, and results, and participate in the development of recommendations for improvement. ☐ Continuous improvement in student learning occurs as the result of assessment. ☐ Outcomes and results are easily accessible to stakeholders on/from the program website. ☒ Assessment is integrated

				with teaching and learning.
Overall Rating	☐ **Level 0 – Undeveloped**	☒ **Level 1 - Developing**	☐ **Level 2 – Mature**	☐ **Level 3 – Exemplary**

The program assessed eight clear, measurable outcomes that span multiple learning domains using three direct measures (unit plans, unit reports, lesson plans) that are aligned with the outcomes. As I noted last year, you also should include the licensure exam as one of your measures, set a standard for students' pass rate, and report actual results. Performance expectations still need to identify a numerical expectation and the actual Ns (though I appreciate the additional details about the assessment measures). Without this information, the results are difficult to understand: Did students achieve expectations? Also, please note that I still do not have a curriculum map for this program.

At least two faculty members were responsible for collecting and analyzing results, which were made available to the larger faculty. Part Two does not provide any information about what assessment reveals about what students know and can do well and less well. But it does indicate that improvements have been made, including the development of new rubrics and measures to assess students' content knowledge.

Thank you for your report!