

Mathematics Standards

COMPONENT #: 1-009-316

POINTS TO BE EARNED: 120 MPP

PART I – PLANNING

DESCRIPTION: Write a brief description of content and intent of component.

This component is designed to enable the participant to establish proficiency with the Florida mathematics content standards at each grade level and thereby provide a strong foundation for learning mathematics in all grades.

Upon successful completion of this professional development activity, the participant will be able to plan and design student learning that seamlessly and cohesively integrates Florida mathematics content standards and the Standards for Mathematical Practice through appropriate and rigorous mathematics content.

STANDARDS/FOCUS AREAS ADDRESSED BY COMPONENT: Identify the standards, national/state/district imperatives, initiatives or key focus areas this component supports.

Standards for Professional Learning (choose one)

- | | |
|-----------------------------------------------|----------------------------------------------|
| <input type="checkbox"/> Learning Communities | <input type="checkbox"/> Learning Designs |
| <input type="checkbox"/> Leadership | <input type="checkbox"/> Implementation |
| <input type="checkbox"/> Resources | <input checked="" type="checkbox"/> Outcomes |
| <input type="checkbox"/> Data | |

Florida Educator Accomplished Practices (check all that apply)

- | | |
|------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Instructional Design and Lesson Planning | <input checked="" type="checkbox"/> Assessment |
| <input type="checkbox"/> The Learning Environment | <input checked="" type="checkbox"/> Continuous Professional Improvement |
| <input checked="" type="checkbox"/> Instructional Delivery and Facilitation | <input type="checkbox"/> Professional Responsibility and Ethical Conduct |

Florida Leadership Standards (check all that apply)

- | | |
|-----------------------------------------------------------------------|-------------------------------------------------------------|
| <input checked="" type="checkbox"/> Student Learning Results | <input checked="" type="checkbox"/> Decision Making |
| <input checked="" type="checkbox"/> Student Learning as a Priority | <input type="checkbox"/> Leadership Development |
| <input checked="" type="checkbox"/> Instructional Plan Implementation | <input type="checkbox"/> School Management |
| <input type="checkbox"/> Faculty Development | <input type="checkbox"/> Communication |
| <input type="checkbox"/> Learning Environment | <input type="checkbox"/> Professional and Ethical Behaviors |

IPEGS Standards (check all that apply)

- | | |
|----------------------------------------------------------------------------------|------------------------------------------------------|
| <input type="checkbox"/> PS 2 – Knowledge of Learners | <input type="checkbox"/> PS 6 – Communication |
| <input checked="" type="checkbox"/> PS 3 – Instructional Planning | <input type="checkbox"/> PS 7 – Professionalism |
| <input checked="" type="checkbox"/> PS 4 – Instructional Delivery and Engagement | <input type="checkbox"/> PS 8 – Learning Environment |
| <input checked="" type="checkbox"/> PS 5 – Assessment | |

Mathematics Standards

COMPONENT #: 1-009-316

IMPACT FOCUS AREA(S): select the intended impact focus area(s) from the choices below. Note that Impact Evaluation procedures should reflect this level of impact.

- | | |
|------------------------------------------------------------------------|------------------------------------------------------------|
| <input checked="" type="checkbox"/> Educator knowledge/skill (content) | <input checked="" type="checkbox"/> Student learning |
| <input type="checkbox"/> Educator (professional growth) | <input type="checkbox"/> Organizational support and change |

SPECIFIC LEARNER OUTCOMES: Identify the intended learner outcomes (number and content of learner outcomes should be reflective of the total points participants will earn as a result of completing this learning).

1. Increase awareness and understanding of the Florida mathematics content standards and the implication of the standards for student learning.
2. Increase awareness and understanding of the Standards for Mathematical Practice and the implication of the standards for student learning.
3. Enhance the understanding of the key concepts needed to effectively implement the Florida mathematics content standards.
4. Increase understanding and use of research-based instructional strategies, including technology and manipulatives, which will address the needs of a diverse learning population.
5. Identify the different levels of complexity for each standard.
6. Explore research-based instructional strategies used to introduce each topic at the concrete level and move to the abstract level in order to make connections between complex topics.
7. Examine and implement effective instructional practices that help students understand and become proficient with the mathematics standards.
8. Increase content knowledge in the K-8 domains and 9-12 conceptual categories of the mathematics standards.
9. Explore and implement high quality, research-based instructional materials aligned with the mathematics standards.
10. Design pre-tests, post-tests, and end-of-course tests that measure a student's mastery of the mathematics standards.

PART II – LEARNING

LEARNING PROCEDURES: Describe the experiences (the “what”) and formats/methods (the “how”) that will be used to provide participants with the knowledge and skills sufficient to master the intended learner outcome of this component.

1. Participate in inquiry/discovery tasks designed to engage and capture the student's interest. These activities will highlight the use of the standards to illustrate what the student will know and be able to do (SLO 1-10).
2. Engage in activities that pose questions that challenge the participant to think deeply about mathematical ideas, examine materials that address the depth of learning for each standard, and require the participant to design activities that encourage the students to be actively involved in their learning (SLO1-10).
3. Participate in activities that examine recommended strategies and techniques for the purpose of adapting materials to various student achievement levels (SLO 3, 8, & 10).

Mathematics Standards

COMPONENT #: 1-009-316

PART III – IMPLEMENTATION

IMPLEMENTATION PROCEDURES: Method(s) and resource(s) that will be provided to support implementation of new learning for participants (check all that apply).

- X Apply newly acquired professional knowledge, skills, dispositions, and behaviors to improve practice.
- X Provide sufficient classroom- and school-focused support and assistance by skillful coaches, mentors, or others to the educator to ensure high-fidelity implementation of professional learning.
- X Provide educators with web-based resources and assistance to support implementation of professional learning.

PART IV – EVALUATION

IMPACT EVALUATION PROCEDURES: Describe the processes that will be used to determine the impact (as identified in previous section titled “Impact Focus Areas”). Description should reflect methods for determining at least ONE of those areas, and will include a specific section for each impact focus area identified for this component.

1. Educator knowledge/skill (content): Will consist of observation of participants actively engaged in professional learning activities and discussions on mathematics standards and innovative mathematical practices.
2. Student learning: Will include evidence (e.g. student sample work, pre and post assessments) verifying that the content impacted student achievement.

COMPONENT EVALUATION PROCEDURES: Describe the process(es) that will be used to determine the effectiveness of this component to include design, implementation and impact (check all that apply).

- X Evaluate the impact of all professional learning on educator’s practice through reflection, assessment, collaborative protocols for examining educator practice and work samples, peer visits, and/or professional portfolios.
- X Determine the degree to which educator’s professional learning contributed to student performance gains as measured by classroom assessment data.
- X Use summative and formative data from state or national standardized student achievement measures, when available, or other measures of student learning and behavior such as district achievement tests, progress monitoring, educator-constructed tests, action research results, discipline referrals, and/or portfolios of student work to assess the impact of professional learning.

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Department: Mathematics

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