

## KENTUCKY DEPARTMENT OF EDUCATION STAFF NOTE

**Topic:** 704 KAR 8:040, Kentucky Academic Standards for Mathematics (Second Reading)

**Date:** October 2018

**Action Requested:** ☐ Review ☐ Action/Consent ☒ Action/Discussion

### SUMMARY OF ISSUE BEFORE THE BOARD:

To take action on the adoption of the *Kentucky Academic Standards for Mathematics* to meet the requirements of Senate Bill 1 (2017) which calls for the Kentucky Department of Education (KDE) to implement a process for reviewing and revising all academic standards and aligned assessments beginning in the 2017-18 school year. Educators have taught the state's current mathematics standards in Kentucky classrooms since 2010. As the content standards are revised, they will be incorporated by reference into their own regulation.

### COMMISSIONER'S RECOMMENDATION:

The Commissioner recommends the adoption of the *Kentucky Academic Standards for Mathematics* as incorporated by reference in 704 KAR 8:040.

### APPLICABLE STATUTE OR REGULATION:

KRS 156.070, 156.160, 158.645, 158.6451, 158.6453, 160.290

### BACKGROUND:

*Existing Policy:* KRS 156.160 requires the Kentucky Board of Education (KBE) to establish courses of study for the different grades and kinds of common schools, with the courses of study to comply with the expected goals, outcomes and assessment strategies developed under KRS 158.645, 158.6451 and 158.6453. KRS 156.070(1) requires the KBE to manage and control the common schools and all programs operated in the schools. KRS 160.290 authorizes local boards of education to provide for courses and other services for students consistent with the administrative regulations of the KBE. This administrative regulation incorporates by reference the required academic standards for mathematics, which contain the general courses of study and academic content standards for use in Kentucky's common schools.

The Kentucky Department of Education (KDE) began the review and revision process for current academic standards in mathematics in January 2018. Standards outline what students are expected to know and do in each grade to successfully transition to the next level of learning, not how they are taught. The curriculum or methods and materials used to teach the standards is decided at the local level.

In addition to requiring the KDE to implement a process for reviewing all academic standards and aligned assessments beginning in the 2017-18 school year, SB 1 (2017) also required:

*The revisions to the content standards shall:*

1. *Focus on critical knowledge, skills, and capacities needed for success in the global economy;*
2. *Result in fewer but more in-depth standards to facilitate mastery learning;*
3. *Communicate expectations more clearly and concisely to teachers, parents, students, and citizens;*
4. *Be based on evidence-based research;*
5. *Consider international benchmarks; and*
6. *Ensure that the standards are aligned from elementary to high school to postsecondary education so that students can be successful at each education level.*

The current schedule calls for one or two content areas to be reviewed each year and every six years after that on a rotating basis. A process for reviewing and revising language arts and writing academic standards and assessments, mathematics academic standards and assessments, science academic standards and assessments, social studies academic standards and assessments was prescribed in SB 1 (2017). Therefore, this process was used to review and revise the mathematics standards.

**Summary of Issue:** The *Kentucky Academic Standards for Mathematics* reflect revisions, additions, coherence/vertical alignment and clarifications to ensure student proficiency in mathematics. By focusing on conceptual understanding, and building from procedural skill and fluency, students will perform at the highest cognitive demand-solving mathematical situations using the modeling cycle. These standards include having the ability to make sense of problems and persevere in solving them, to reason abstractly and quantitatively, to construct viable arguments and critique the reasoning of others, to model with mathematics, to use appropriate tools strategically, to attend to precision, to look for and make use of structure, and to look for and express regularity in repeated reasoning.

Since the first reading of this board item, a couple of changes were made to the standards document. First, language was added to emphasize and/or clarify what parts of the document are “actually” the standards (content standards and standards for mathematical practice). Based on feedback, the additional language was needed in order to provide clarity on the level of detail found within the document. Second, language in the “Education Goals” listed on page one of the front matter was updated to reflect the revision of KRS 158.6451 through the passage of SB 1 (2009).

**Budget Impact:** State funds were used to develop these standards. The cost to review and revise the reading and writing standards has been \$48,015 thus far. The cost of staff time related to the facilitation of development and compilation/preparation of these standards has been \$15,150 thus far. Additional staff time will be impacted through implementation of the standards.

## **GROUPS CONSULTED AND BRIEF SUMMARY OF RESPONSES:**

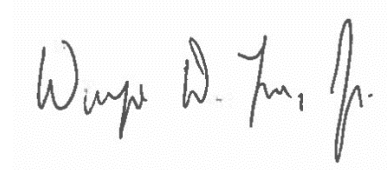
- Advisory Panels consisting of teachers, higher education representatives and community members
- Review and Develop Committees consisting of teachers, higher education representatives and community members

- Mathematics focus groups
- Feedback from the public and mathematics community: 821 respondents (roughly 82 percent were teachers) for a total of 2,608 comments
- Focus groups including representatives from Kentucky education organizations and stakeholders

The Standards and Assessments Process Review Committee, as directed by SB 1 (2017), reviewed the development process of the standards and found that stakeholders had adequate opportunity to provide feedback. A findings summary is provided. The Local Superintendents Advisory Council (LSAC) will review this regulation at its September 25, 2018 meeting. Feedback will be received prior to the October board meeting.

### **CONTACT PERSON(S):**

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**Interim Commissioner of Education**

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| Category: <input type="checkbox"/> District Innovation |   |   |   | <input checked="" type="checkbox"/> Strengthening Educators | <input type="checkbox"/> Family/Community Involvement |
| <input type="checkbox"/> Student/Family Supports       | <input checked="" type="checkbox"/> Student Interventions | <input checked="" type="checkbox"/> Coursework Completion | <input type="checkbox"/> Accountability Reporting |   |   |