

Ohio Mathematics and Science Coalition

Suggested Practices - Evaluation of Mathematics Instructional Materials

Select 5 or more critical benchmarks or indicators from the Ohio Mathematics Academic Content Standards at a grade band for which the materials are planned. These choices should reflect what your selection committee judges as important for students to know, understand, and be able to do as they develop mathematical knowledge, skills and understanding.

Instructional Materials/Textbook Considerations:

Do the instructional materials address each critical benchmark or indicator adequately, and at the grade level or grade band selected?

Are there clear connections between the activities/lessons and the critical mathematics benchmarks or indicators selected?

Are there any significant misalignments or omissions of the content and processes expected by the standards for the grade level or grade band selected?

Is problem solving a significant part of how the material is presented?

Do the materials provide opportunities for students to write about mathematics and their mathematical understanding?

Do the materials develop a series of questions, investigations or tasks that encourage students' mathematical communication through reading, discussion, writing, and reflection?

Do the materials provide open-ended questions and problems that assess student thinking?

Do the materials require students to engage in reasoning and justification or proof?

Do the materials provide questions at different levels of cognitive demand (rote memorization, skill development, concept development, mathematical problem solving)?

Do the materials use and encourage the development of multiple representations of mathematics (concrete, pictorial, and symbolic)?

Do the materials balance sufficient practice sets with tasks that require higher level thinking?

Do the materials help students to make connections with other mathematics topics, phenomena that occur in their daily lives, and other subject areas/disciplines?

Do the materials provide a range of activities and questions to reach a wide range of student capabilities, including the very high?

Do the materials vary the types of questions to reflect student performance expected on state assessments (short answer, multiple choice, and student constructed response)?

Do the materials provide suggestions and opportunities for differentiated homework or problem sets based on students' differing needs?

Does the instruction and assessment provided by the materials align with Ohio's achievement assessments and other standardized testing (e.g. Iowa Tests, ACT, SAT, etc.)?

Do the materials incorporate technology to help develop student understanding for both instruction and assessment?

Do the instructional materials provide opportunities for students to develop understanding about mathematics through hands-on investigations?

Additional Considerations:

Do the teacher support materials provide evidence of the research base used to develop the program of study? Is this research provided to teachers in some form to help them better understand the program's design and approaches to instruction?

Do the teacher support materials provide intervention suggestions and materials to help students who develop at a slower rate?

Do the teacher support materials provide extension and enrichment suggestions and materials to help students learn mathematics to deeper levels?

Do the teacher support materials help to make connections with other mathematics topics, students' daily lives, and other subject areas/disciplines?

Do the teacher support materials specify the prior knowledge that needs to be in place before the lesson? Are there references and connections to earlier sections of the material where the prior knowledge was addressed?

Do the teacher support materials provide dialogue or annotations to help teachers develop content knowledge and a deeper understanding of mathematical topics?

Do the teacher support materials provide suggested calendar maps and daily time management suggestions?

Does the program provide examples and suggestions for formative (ongoing and informative) assessments to help teachers understand each student's development?

Do the teacher support materials provide samples and methods to help teachers examine a range of student thinking/student response?

Do the materials provide assistance in structuring and modifying tasks or lessons to accommodate different types of learners?

Are the materials likely to provide a positive change from the status quo for students and teachers?

Do the teacher support materials provide suggestions and technical assistance for the technologies and applications used to develop student understanding?

Do the teacher support materials provide suggestions and support for alternative assessment options? For example, student-developed projects may be suggested by the text. If so, do the teacher support materials provide descriptions of what the project should consist of and how students' projects will be reviewed and graded (rubric)?

Is there a high likelihood that the instructional materials and teacher support materials will help students and teachers to address local and state content standards and performance expectations?

Is high-quality support available from the publisher to help meet local professional development needs?

Additional Resources:

View the AAAS Project 2061 Instructional Materials Review Process

<http://www.project2061.org/publications/textbook/default.htm?ql>