FAQ: Mathematics Instructional Guides

Responses to Common Questions

What is the purpose of the Mathematics Instructional Guides?
The Mathematics Instructional Guides, a companion document to the 2023 Mathematics *Standards of Learning*, amplify the standards by defining the core knowledge and skills in practice, supporting teachers and their instruction, and serving to transition classroom instruction from the 2016 Mathematics *Standards of Learning* to the newly adopted 2023 Mathematics *Standards of Learning*. Grades K through Algebra 2 each have one VDOE Mathematics Instructional Guide. Only Understanding the Standards documents for upper-level mathematics courses (e.g., Discrete Mathematics) will be provided.

What is the intended audience for the Mathematics Instructional Guides?
The Mathematics Instructional Guides are for mathematics educators and for those who support them (e.g., principals, central office personnel, directors, Superintendents).

How were the Mathematics Instructional Guides developed?
The Mathematics Instructional Guides were developed by the Virginia Department of Education Mathematics Team in collaboration with mathematics educators and parents from across the Commonwealth. Focus groups, comprised of divisions from each Superintendent's Region, were also conducted to obtain feedback and inform revisions.

What are the global revisions to increase rigor and depth?

- Global revisions to increase rigor and depth include improving coherence, horizontal and vertical articulation, and pedagogical support for educators. While the five process goals (problem solving, communication, representations, reasoning, connections) are expected to be embedded in each standard, the most prevalent process goals in relation to the content are presented in the Skills in Practice component.

- The contents of the Mathematics Instructional Guides were informed by mathematics national and international research organizations and the U.S. Department of Education's Institute of Education Sciences (IES), *What Works Clearinghouse*, as a central, trusted source of scientific evidence for what works in education. Sample questions reflect applicable and aligned content from the Virginia Department of Education's published assessment items, Mathematics Item Maps, and National Association of Educational Progress (NAEP) assessment questions.

How are the Mathematics Instructional Guides structured?
Instructional Guides are divided into three sections: Understanding the Standard, Skills in Practice, and Concepts and Connections aligned to the Standard. The purpose of each is explained below.

- ***Understanding the Standard:*** This section includes mathematics understandings and key concepts that assist teachers in planning standards-focused instruction. The statements may provide definitions,

explanations, or examples regarding information sources that support the content. They describe what students should know (core knowledge) as a result of the instruction specific to the course/grade level and include evidence-based practices to approaching the Standard. There are also possible misconceptions and common student errors for each standard to help teachers plan their instruction.

- ***Skills in Practice:*** This section outlines supporting questions and skills that are specifically linked to the standard. They frame student inquiry, promote critical thinking, and assist in learning transfer. Curriculum writers and teachers should use them to plan instruction to deepen understanding of the broader unit and course objectives. This is not meant to be an exhaustive list of student expectations.

- ***Concepts and Connections:*** This section outlines concepts that transcend grade levels and thread through the mathematics program as appropriate. Concept connections reflect connections to prior grade-level concepts as content and practices build within the discipline as well as potential connections across disciplines.

What are the provisions of the Mathematics Instructional Guides?

- The ***introduction*** of each content strand includes an overview of the connected topics and global themes addressed.

- The 2023 Mathematics *Standards of Learning* overarching standard and sub-bullets are provided as approved by the Board of Education (August 2023). The ***standards*** as described are to be instructed and assessed. Standards should be frequently reviewed by teachers for cognitive rigor, content, and parameters and by those monitoring and supporting the implementation of the standards. *Test Blueprints for Grade 3 through Algebra 2 have been provided by the Office of Student Assessment and are available on the Mathematics webpage.*

- The ***Understanding the Standards*** section provides ***additional*** content background, academic vocabulary, and instructional guidance ***only***.

- The ***Skills in Practice*** section provides evidenced-based best practices and strategies through the lens of the most prevalent process goals. It provides extensive answers to essential questions that teachers can derive to engage students in formative and summative assessments through units of study. ***These do not represent an exhaustive list.***

- The ***Concepts and Connections*** section provides meaningful vertical, horizontal, and cross-curricular connections. *Across Content Area* connections are addressed in Grades K through 5 only. ***As standards revisions for both Science and Computer Science are approved by the Board of Education, instructional guides will be updated and mathematics division points of contact notified in order to disseminate such information to respective school divisions.***

What is the Mathematics Concepts and Connections Articulation Guide and what is its purpose?
As a supplement to the Mathematics Instructional Guides, the Mathematics Concepts and Connections Articulation Guide provides support in identifying concepts aligned to the 2023 Mathematics *Standards of Learning* that articulate across mathematics grade levels or courses.

- This guide connects prerequisite learning within the context of new learning in such a way that allows teachers to build and support connections between the relevant prerequisite (subsumed) skills and grade level/content area work in support of students' access to content.

- The Concepts are interrelated and support the Connections to illustrate commonalities and connections.

Where to do I send questions about the Mathematics Instructional Guides?
Send questions to the VDOE Mathematics Team at vdoe.mathematics@doe.virginia.gov.