



Content and Timeline for Mathematics

Grade 5



West Virginia DEPARTMENT OF
EDUCATION



**West Virginia Board of Education
2018-2019**

David G. Perry, President
Miller L. Hall, Vice President
Thomas W. Campbell, CPA, Financial Officer

F. Scott Rotruck, Member
Debra K. Sullivan, Member
Frank S. Vitale, Member
Joseph A. Wallace, J.D., Member
Nancy J. White, Member
James S. Wilson, D.D.S., Member

Carolyn Long, Ex Officio
Interim Chancellor
West Virginia Higher Education Policy Commission

Sarah Armstrong Tucker, Ed.D., Ex Officio
Chancellor
West Virginia Council for Community and Technical College Education

Steven L. Paine, Ed.D., Ex Officio
State Superintendent of Schools
West Virginia Department of Education

Grade 5

The West Virginia College- and Career-Readiness Standards for mathematics emphasize key content, skills, and mathematical habits of mind at each grade level. The focus of instruction is placed on grade-level standards. Instruction should be attentive to learning across all early and elementary learning grades and link major topics within grades. Instruction should develop conceptual understanding, procedural skill and fluency, and application.

Students in the fifth grade will focus on three critical areas: (1) developing fluency with addition and subtraction of fractions, and developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions); (2) extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations; (3) developing an understanding of volume; solving problems using the coordinate plane.

The following table highlights the content at the cluster level for fifth grade standards. The bulk of instructional time should be given to the clusters and the standards within them. Standards should not be neglected; to do so would result in gaps in students' learning, including skills and understandings they may need in later grades. Instruction should reinforce standards within the clusters by including problems and activities that support natural connections between clusters. **Teachers and administrators alike should note that the standards are not topics to be checked off after being covered in isolated units of instruction;** rather, they provide content to be developed throughout the school year through rich instructional experiences presented in a coherent manner.

Explanations

Domains are broad components that make up a content area. Domains in mathematics vary by grade-level and by course. For example, the five domains for mathematics in Grade 5 are Operations and Algebraic Thinking, Number and Operations in Base Ten, Number and Operations-Fractions, Measurement and Data, and Geometry.

Clusters are groups of standards that define the expectations students must demonstrate to be college- and career-ready.

Standards are expectations for what students should know, understand and be able to do; standards represent educational goals.



Grade 5 Cluster-Level Emphasis	West Virginia College- and Career- Readiness Standards
Operations and Algebraic Thinking	
<p>Clusters</p> <ul style="list-style-type: none"> • Write and Interpret numerical expressions • Analyze patterns and relationships 	<p>M.5.1- M.5.2 M.5.3</p>
Number and Operations in Base Ten	
<p>Clusters</p> <ul style="list-style-type: none"> • Understand the place value system • Perform operations with multi-digit whole numbers and with decimals to hundredths. 	<p>M.5.4- M.5.7 M.5.8 - M.5.10</p>
Number and Operations- Fractions	
<p>Clusters</p> <ul style="list-style-type: none"> • Use equivalent fractions as a strategy to add and subtract fractions • Apply and extend previous understandings of multiplication and division to divide fractions 	<p>M.5.11 – M.5.12 M.5.13 – M.5.17</p>
Measurement and Data	
<ul style="list-style-type: none"> • Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. • Represent and interpret data • Geometric measurement: understand concepts of angle and measure angles. 	<p>M.5.18 – M.5.22</p>
Geometry	
<ul style="list-style-type: none"> • Graph points on the coordinate plane to solve real-world and mathematical problems. • Classify two-dimensional figures into categories based on their properties. 	<p>M.5.23 – M.5.24 M.5.25 – M.5.26</p>

Adapted from California Mathematics Framework



Grade 5 Content Plan

Teachers must provide students the opportunity to master each of the grade-level content standards. **It is important to understand that neglecting grade-level content standards, will leave gaps in students' skills and understandings and will leave students unprepared for the challenges they face in later grades.** Any content plan must demonstrate a means by which students can be provided the opportunity to address all grade-level content standards and to revisit and practice skills and strengthen understandings throughout the school year. The information below is an example of how to address all Grade 6 standards in a school year. The information below is an example of how to address all Grade 5 mathematics standards in a school year.

DOMAIN TOPIC	Measurement and Data	Numbers and Operations is Base Ten	Operations and Algebraic Thinking	Numbers and Operations Fractions	Geometry
	<i>Understanding Volume</i>	<i>Understanding Place Value System</i>	<i>Understanding Patterns and Relationships</i>	<i>Understanding the Multiplication and division of fractions</i>	<i>Understanding the structure of the coordinate system and properties of geometric figures</i>
SAMPLE TIMELINE	August/ September	October/ November	November/ December	January/ March	March/ May
CONTENT STANDARDS	M.5.18 M.5.19 M.5.20 M.5.21 M.5.22	M.5.4 M.5.5 M.5.6 M.5.7 M.5.8 M.5.9 M.5.10	M.5.1 M.5.2 M.5.3	M.5.11 M.5.12 M.5.13 M.5.14 M.5.15 M.5.16 M.5.17	M.5.23 M.5.24 M.5.25 M.5.26
RATIONALE	In the sample above, Grade 5 mathematics begins with students converting among different-sized measurement units within a given measurement system allowing for efficient and accurate problem solving with multi-step real-world problems as they progress in their understanding of scientific concepts and calculations. In grade five, students recognize volume as an attribute of three-dimensional space. Students work with volume as an attribute of a solid figure and as a measurement quantity. Students' understanding and skill with this work support a learning progression that leads to valuable skills in geometric measurement in middle school.				





Steven L. Paine, Ed.D.
West Virginia Superintendent of Schools