

Incorporating Missing Content into Grade Level Work

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Disclaimer

- My work and my focus is on Mathematics.
- I will present from the perspective of mathematics and demonstrate how to make decisions about just-in-time support based on the CCSS-M.
- I have used countless resources to help me determine a path forward for schools--they are all linked for you on the document I am sharing through a link in the chat box.

A top-down view of several children sitting around a light-colored wooden table, playing with various colorful geometric shapes like hexagons, pentagons, and triangles. The children are focused on their play, with their hands reaching for the shapes. The text is overlaid on this image.

Children will not learn grade level content
unless they are taught grade level content

FIGURE 1 STUDENT SUCCESS ON ASSIGNMENTS VERSUS MASTERY OF GRADE-LEVEL STANDARDS ON THOSE ASSIGNMENTS

Students succeeded on

71%

of their assignments

They met grade-level standards on

17%

of those exact same assignments

Even though most students are meeting the demands of their assignments, they're not prepared for college-level work because those assignments don't often give them the chance to reach for that bar.

Opportunity Myth, TNTP,

COVID Closures and Crisis Teaching resulted in *unfinished teaching*



Emphasis on Diagnostic Testing is ***NOT*** the
answer

Assessment Should....

1. Be used to determine how to bring students into grade-level instruction, not whether to bring them into it.
2. Center formative practices. Leverage such sources of information as exit tickets, student work, and student discussions. Use these sources of information to inform instructional choices in connection with high-quality instructional materials.
3. Employ targeted checks for very specific subject and grade-level instructional purposes (specifically, phonics or math fluency inventories, checks for reading fluency).

This approach is being proposed as a deliberate alternative to assessment choices that have the potential to serve as a gatekeeper to grade-level content. It also deliberately recognizes the very real social-emotional needs of students—particularly students who have been disproportionately affected by the pandemic. After such major disruptions, it is essential that students engage, immediately and consistently, in the affirmative act of learning new ideas, not be deemed deficient because of events outside of their control.

A photograph of a classroom scene. A male teacher with glasses and a black shirt is leaning over a desk, pointing at a worksheet. A young male student with short dark hair, wearing a grey hoodie with a skull and wings graphic, is looking down at the worksheet. The background shows other students at desks, bookshelves, and classroom supplies. A blue and white checkered cloth is on the desk to the right.

Using High Quality Instructional Materials
and Teaching in Responsive Ways is KEY

Addressing Unfinished Learning After COVID-19 School Closures (CGCS, 2020)

- Avoid the temptation to rush to cover all of the ‘gaps’ in learning from the last school year. The pace required to cover previous grade level content and current grade level content will mean rushing ahead of many students, leaving them abandoned and discouraged.
- It will also feed students a steady diet of curricular junk food: shallow engagement with the content, low standards for understanding, and low cognitive demand—all bad learning habits to acquire.
- Moreover, at a time when social emotional wellbeing, agency, and engagement are more important than ever, instructional haste may eclipse the patient work of building academic character and motivation.

Selected Productive Beliefs About Children's Mathematical Ability from *Catalyzing Change in Early Childhood and Elementary School Mathematics: Initiating Critical Conversations* (NCTM, 2020a)

Mathematics curriculum and instruction should account for and leverage human difference to promote rich and connected mathematics learning experiences. A common shared mathematics learning experience benefits all children.

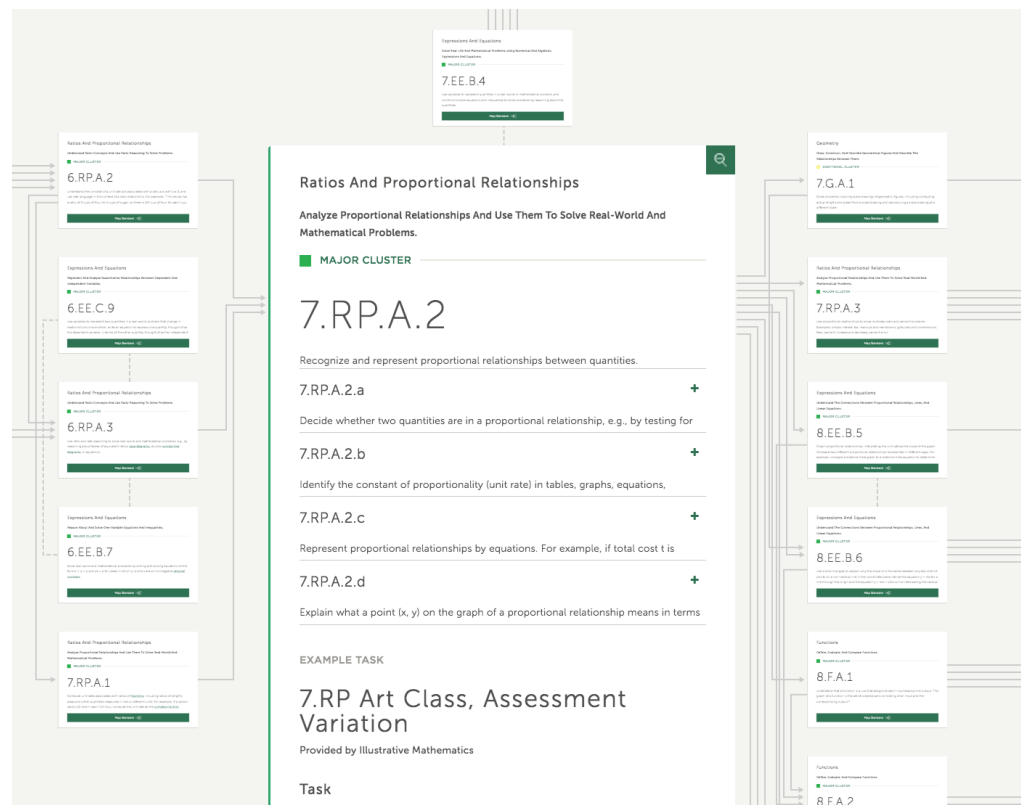
All children should have access to grade-level mathematics content centered on learning mathematics with understanding, actively building new knowledge from their informal experiences and prior knowledge.

Interventions must focus on content that is connected with and promotes the grade-level curriculum through problem solving and reasoning and not be a review of low-level basic facts or procedural skills.

Focus on Just-in-time Supports



Using the Coherence Maps to Examine Dependencies in Math



7th grade Example from Illustrative Mathematics

Draft Plan for 7.2

Day	Lesson/activities	Rationale
1	7.2.1	Connects to 7.1 with scaling
2	7.2.2	Introduces proportional relationships--still multiplicative thinking--emphasis not on equations
3	7.2.3	Constant of proportionality--connects to scale factor in terms of the multiplicative relationship
4	Warm Up: 6.6.1.2 (mult only) Act 1: 6.6.2.2 (Andre & Jada only) Act 2: 6.6.4.3 (reduced) Act 3: 6.6.6.3 (#2-4) Cool Down: 6.6.4.3 #4	Warm Up: 6.6.1.2 (mult only)--structure in tape diag of mult relationship Act 1: 6.6.2.2 (Andre & Jada only)-- introduce variable, coefficient, solution Act 2: 6.6.4.3 (reduced) --practice solving equations and identifying mult rel Act 3: 6.6.6.3 (#2- 4) writing equations for mult relationships Cool Down: 6.6.4.3 #4 focus on mult relationship and equations in context
5	7.2.4--remove 7.2.4.3 Replace with 7.2.5.3 water cooler	Focus on writing equations-- $y = kx$ --this shift could be supported by work in 7th grade on equation writing--however, the focus should be on multiplicative relationships. Introducing them to additive relationships at this point might derail students
6	7.2.6	Key equation writing lesson
7	Warm Up: 7.2.7.1 Act 1: 6.6.8.2 Act 2: 7.2.7.3 Act 3: 7.2.8.4 Cool Down	Warm Up: 7.2.7.1 meaning of prop relationships, equiv relationships-creating Act 1: 6.6.8.2 highlights diff between equiv expressions and equations Act 2: 7.2.7.3 how to use data to disprove proportional relationships Act 3: 7.2.8.4 connecting equations, and tables to proportional relationships Cool Down 7.2.7.4 determining if relationships are proportional
8	7.9	
9	Warm Up: 7.2.10.1 Act 1: 6.6.16.2 Act 2: 7.2.10.2 Act 3: 6.6.16.3 Cool Down: 7.2.10.4	Warm Up: 7.2.10.1--Reintro to graphing points with linear relationship Act 1: 6.6.16.2--more plotting pts, two variables, writing 2 eqs relating 2 qts Act 2: 7.2.10.2--graphing, 2 qts, prop relationship Act 3: 6.6.16.3--all prop, but different mult relationships cool down? Cool Down: 7.2.10.4--identify proportional relationship on graph
10	7.11	Interpreting graphs and the relationships between variables
11	7.12	Comparing graphs of prop relationships--building towards slope
12	7.13	For point (a,b) in a prop relationship $k=b/a$ and (1,k) is const of prop
13	7.14	Building connections across representations
14	7.15	Pulls together connections of representations (context, words, graph, equation) and meaning/interpretation of constant of prop



Addressing Unfinished Learning After COVID-19 School Closures

June 2020



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Prioritizing Content

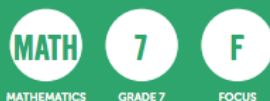
2020-2021

PRIORITY
INSTRUCTIONAL
CONTENT IN
ELA/LITERACY AND
MATHEMATICS

STUDENT
ACHIEVEMENT
PARTNERS



CCSS WHERE TO FOCUS GRADE 7 MATHEMATICS



This document shows where students and teachers should spend the large majority of their time in order to meet the expectations of the Standards.

Not all content in a given grade is emphasized equally in the Standards. Some clusters require greater emphasis than others based on the depth of the ideas, the time that they take to master, and/or their importance to future mathematics or the demands of college and career readiness. More time in these areas is also necessary for students to meet the Standards for Mathematical Practice.

To say that some things have greater emphasis is not to say that anything in the Standards can safely be neglected in instruction. Neglecting material will leave gaps in student skill and understanding and may leave students unprepared for the challenges of a later grade.

Students should spend the large majority¹ of their time on the major work of the grade (■). Supporting work (□) and, where appropriate, additional work (●) can engage students in the major work of the grade.^{2,3}

MAJOR, SUPPORTING, AND ADDITIONAL CLUSTERS FOR GRADE 7

Emphases are given at the cluster level. Refer to the Common Core State Standards for Mathematics for the specific standards that fall within each cluster.

Key: ■ Major Clusters □ Supporting Clusters ● Additional Clusters

- 7.R.P.A | ■ Analyze proportional relationships and use them to solve real-world and mathematical problems.
- 7.NS.A | ■ Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.
- 7.EE.A | ■ Use properties of operations to generate equivalent expressions.
- 7.EE.B | ■ Solve real-life and mathematical problems using numerical and algebraic expressions and equations.
- 7.G.A | ● Draw, construct and describe geometrical figures and describe the relationships between them.
- 7.G.B | ● Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.
- 7.SPA | □ Use random sampling to draw inferences about a population.
- 7.SP.B | ● Draw informal comparative inferences about two populations.
- 7.SP.C | □ Investigate chance processes and develop, use, and evaluate probability models.

HIGHLIGHTS OF MAJOR WORK IN GRADES K–8

K–2	Addition and subtraction – concepts, skills, and problem solving; place value
3–5	Multiplication and division of whole numbers and fractions – concepts, skills, and problem solving
6	Ratios and proportional relationships; early expressions and equations
7	Ratios and proportional relationships; arithmetic of rational numbers
8	Linear algebra and linear functions

Considerations for Addressing PRIORITY Grade-Level Content

The clusters and standards listed in this table name the priority instructional content for grade 7. The right-hand column contains approaches to shifting how time is dedicated to the clusters and standards in the left-hand column.

Clusters/Standards	Considerations
7.RP.A	No special considerations for curricula well aligned to analyzing proportional relationships, as detailed by the cluster. Time spent on instruction and practice should NOT be reduced.
7.NS.A	<i>Incorporate</i> foundational work on understandings of rational numbers (6.NS.C.5, 6, and 7) to build towards operations with rational numbers (7.NS.A), as detailed by the cluster.
7.EE.A	<i>Incorporate</i> foundational work on writing and transforming linear expressions from grade 6 (6.EE.A) into the work of using properties of operations to generate equivalent expressions, as detailed by the cluster (7.EE.A).
7.EE.B.3	No special considerations for curricula well aligned to solving multi-step real-life and mathematical problems, as detailed by the standard. Time spent on instruction and practice should NOT be reduced.
7.EE.B.4	<i>Emphasize</i> equations relative to inequalities. <i>Incorporate</i> foundational work of reasoning about and solving one-variable equations (6.EE.B) to support students' work on constructing equations to solve problems, as detailed by the standard (7.EE.B.4). Time spent on instruction and practice relating to equations should NOT be reduced.

Considerations for Addressing REMAINING Grade-Level Content

The clusters and standards listed in this table represent the remainder of grade 7 grade-level content. The right-hand column contains approaches to shifting how time is dedicated to the clusters and standards in the left-hand column.

Clusters/Standards	Considerations
7.G.A.1	<i>Reduce</i> time spent creating scale drawings by hand. Time spent on instruction and practice should not exceed what would be spent in a typical year.
7.G.A.2 7.G.A.3	<i>Eliminate</i> lessons on drawing and constructing triangles, as detailed in the standard (7.G.A.2). <i>Eliminate</i> lessons on analyzing figures that result from slicing three-dimensional figures, as detailed in the standard (7.G.A.3).
7.G.B.4	<i>Combine</i> lessons on knowing and using the formulas for the area and circumference of a circle in order to reduce the amount of time spent on this topic. <i>Limit</i> the amount of required student practice.
7.G.B.5 7.G.B.6	<i>Combine</i> lessons to address key concepts and skills of unknown angles, area, volume, and surface area (7.G.B.5, 7.G.B.6). <i>Reduce</i> the amount of required student practice. <i>Incorporate</i> conceptual understanding of finding the area of polygons and the volume of right rectangular prisms (6.G.A.1, 6.G.A.2) in teaching real-life and mathematical problems involving area, volume, and surface area of two- and three-dimensional objects (7.G.B.6). Do not require students to use or draw nets to determine surface area.
7.SP.A 7.SP.B	<i>Combine</i> lessons on using random sampling to draw inferences about a population and using measures of center and variability to draw comparative inferences about two populations in order to reduce the amount of time spent on this topic. <i>Incorporate</i> students' grade 6 understanding of statistical variability (6.SP.A). <i>Limit</i> the amount of required student practice. <i>Eliminate</i> lessons and problems on assessing the degree of overlap on data distributions, as detailed in the standard (7.SP.B.3).



Thank you

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