EF+Math Program

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Fraction Ball School/District Schedule Alignment Efforts

Description

These resources** are provided as an example of the Inclusive Evaluation Key Action of "Adjust timelines to match school capacity and readiness." Descriptions of each resource are included below.

- Fraction Ball Alignment to District / School Calendars
  This is an adaptation of a table that Fraction Ball used to organize the implementation activities for two districts. You'll notice acknowledgement of important dates across both districts. (*NOTE:* In the spreadsheet, "MOU" means "Memorandum of Understanding" and "DSA" means "Data Sharing Agreement")

- Fraction Ball Alignment to Scope and Sequence
  This is an adaptation of a scope and sequence document from one of Fraction Ball's partner districts. You'll notice (beginning on page 3) how Fraction Ball aligned their activities to lessons within the scope and sequence.

Please see both resources below.

***NOTE:* Because these resources were used to communicate with district partners, they included a fair amount of district information. To be responsive to sensitivities around district information, we have heavily redacted, reorganized, and/or anonymized the content to be suitable for sharing.

Acknowledgements

- Lourdes Acevedo-Farag
- Kreshnik Begolli

Color key:
Green = completed;
blue = in progress, on track for on time completion;
red = not completed, moved to following week as high priority

Week	Fraction Ball District 1	Fraction Ball District 2
Feb 19-23	District MOU to board approval; District research application approved; Teacher meetings with all schools complete; Begin collecting teacher consent - randomize as able.	Teacher meetings at School Re-engage district about MOU
Feb 26-Mar 1	Teacher meetings with all schools complete District research application approved; District MOU approved by board; District DSA signed; School liaisons identified Courts painted; Paper consent forms arrive at schools; Teacher consents collected - continue randomization as able; Begin scheduling teacher training.	Meeting with School (refresher for teachers); Teacher consents collected; School liaisons identified; Continue discussions about DSA and MOU as needed
March 4-8	Courts painted; Paper consent forms arrive at schools; Catch up School (teacher meeting, liaison); Opt out consent forms sent home (as early as possible); Request and receive class rosters from districts; Randomization of teachers to conditions (as early as possible); Teacher training begins	MOU approved and DSA signed; Randomize teachers to conditions
March 11-15	Preassessments administered (5/7 schools); Consent forms sent home; Teacher training continues; Courts painted; Request and receive class rosters from districts;	Paper consent forms arrive at schools; Courts painted
March 18-22	Finish preassessments; Recieve rosters from district; Courts painted; Finish training; Implementation starts (some schools);	Opt out consent forms sent home; Request class rosters from districts
March 25-29	Implementation continues; Logs distributed to teachers	Receive class rosters from districts; Teacher training begins
April 1-5	SPRING BREAK	Preassessments administered;
April 8-12	Courts painted; Implementation continues; School liaison outreach for student focus group scheduling	SPRING BREAK
April 15-19	Courts painted; Implementation continues; Opt-in consent forms sent home; Outreach for scheduling teacher focus groups; District Educator Advisory Board meeting	Implementation week 1;
April 22-26	Courts painted; Implementation continues; Schedule student focus groups; Outreach for post-assessment scheduling; Collect student consent forms for focus groups Request demographic data from district;	Implementation week 2; Begin focus group outreach
April 29-May 3	School begins State testing; Implementation continues; Conduct 2 student focus groups Continue scheduling post assessments	Implementation week 3; Focus group participants finalized; Opt-in consent forms sent home; District Educator Advisiory Board meeting
May 6-10	Most schools begin State testing. Implementation continues; Conduct remaining student focus groups Finalize scheduling for post assessments	Implementation week 4; Conduct teacher focus groups

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Week	Fraction Ball District 1	Fraction Ball District 2
May 13-17	Post assessments for finished teachers; Begin teacher focus groups; Push for finishing implementation	Implementation week 5; Conduct student focus groups
May 20-24	Post assessments complete; Finish teacher focus groups	Implementation week 6; Begin scheduling post assessments
May 27-31	LAST WEEK OF SCHOOL (3 days with students)	Post assessments for finished teachers;
June 3-7	District Educator Advisory Board meeting	Post assessments complete
June 10-14		LAST WEEK OF SCHOOL (3 days with students)
June 17-21		District Educator Advisory Board meeting

Curriculum Map (2024-2025): Math Grade 5

Scope and Sequence: Fifth Grade (Year at a Glance)

What Students Learn in Fifth Grade Mathematics
In fifth-grade, some clusters of standards require a greater instructional emphasis than the others based on the depth of the ideas, the time that they take to master, and/or their importance. The bulk of instructional time in fifth grade is devoted to "Major" clusters" (units 1-6) and standards within them. To start the school year, fifth grade students will develop fluency with whole number operations by multiplying multi-digit whole numbers using the standard algorithm. The most important goal here is for students to understand the standard algorithm in terms of place value. This unit also includes division and simplifying numerical expressions. Because a critical area of instruction is developing fluency with addition and subtraction of fractions, in unit two students will extend work with fractions to add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions with like denominators. In unit 3 students will continue their work with fractions by multiplying and dividing fractions by fractions. Here they will apply and extend previous understandings of multiplication to multiply two fractions or whole numbers by a fraction. A new concept in fifth grade is dividing unit fractions by whole numbers and whole numbers by unit fractions. Other critical areas of instruction in fifth grade include integrating decimal fractions into the place-value system (unit 4), developing an understanding of operations with decimals to hundredths, and working toward fluency with decimal operations (unit 5). Unit 6 has the students develop an understanding of volume and relate volume to multiplication and addition. In unit 7, Classifying Two-Dimensional Polygons, students will develop an understanding of reasoning about the attributes *(properties)* of two-dimensional shapes and to classify these shapes in a hierarchy based on properties. Lastly, Unit 8 introduces students to the use of two perpendicular number lines to define a coordinate system (focusing on the first quadrant), along with beginning an understanding of the structure of the coordinate system.

Math Focus/Topic Sequence		By the End of Grade 5:
Tri 1 **Lessons 1-43**	1. Addition & Subtraction of Fractions (6 weeks) 2. Multiplication & Division of Fractions (6 weeks)	<u>Students should master:</u> ● Multiplying multi-digit whole numbers using an algorithm ● Adding, Subtracting and Multiplying fractions ● Classification of 2 dimensional figures in hierarchy based on properties <u>Students work towards fluency in:</u> ● Place Value with whole numbers and decimals to the thousandths place ● Division of whole numbers by 2-digit divisors ● Volume of rectangular prisms ● Add, subtract, multiply, and divide decimals to the hundredths place <u>Students are introduced to:</u> ● The coordinate plane and graphing ordered pairs in the first quadrant ● Rounding decimals ● Dividing unit fractions by whole numbers and Whole numbers by unit fractions ● Writing simple expressions and simplifying them with parentheses, brackets, or braces
Tri 2 ***Lesson 44-79***	*3. Place Value & Addition/Subtraction of Decimals Numbers (3 weeks)* *4. Multiplication of Whole Numbers & Decimal Numbers (5 weeks)* *5. Division of Whole Numbers & Decimal Numbers (5 weeks)*	
Tri 3 ***Lessons 80-131***	*6. Order of Operations (2 weeks)* *7. Coordinate Graphs (2 weeks)* *8. Measurement / Volume (4 weeks)* *9. Geometry / Polygons (4 weeks)*	

Topic 1: Addition and Subtraction With Fractions *Overview*	
Framework Description & Rationale	Major themes of Unit 3 are developing fluency with addition and subtraction of fractions, including adding and subtracting fractions with unlike denominators. This process should be introduced using visual fraction models (area models, number lines, etc.) to build understanding before moving into the standard algorithm. Students should first solve problems that require changing one of the fractions (as in grade four) and progress to changing both fractions. Students understand that multiplying the denominators will always give a common denominator but may not result in the smallest denominator; however, it is not necessary to find a least common denominator to calculate sums and differences of fractions.

Content Standards

Use equivalent fractions as a strategy to add and subtract fractions.
5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.*

5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases with unlike denominators, e.g., by using visual fraction models or equations to represent the problems. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.*
Represent and interpret data.
5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit (½, ¼, ⅛). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*

Topic 1: Addition and Subtraction With Fractions *Resources and Support*		
Instructional Resources	**Performance Tasks (Problem of the Month/ POM & MARS Tasks)**	**Academic Language Support** • **Thinking Maps** • **Linguistic Patterns** • **Vocabulary**
Not included for this example	***Not included for this example***	***Not included for this example***

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Curriculum Map (2024-2025): Math Grade 5

GRADE 5 Trimester 1
Focus/Topic 1: Addition and Subtraction of Fractions (20 - 24 Days)

Lesson Number & Lesson Title, Virtual links, and notes	Fraction Ball Connection	Suggested Time
Lesson 1		1 day
	Introduction to Bottle Caps Bonanza - Area Models and Number line (1-day) Playing Bottle Caps Bonanza (1-day) 4ths & 8th only, no uncommon denominator addition	2 days
Lesson 3	Analyst Midpoint check-in 2-day Requires 4-days of prior PE time with Fraction Ball games (may want to switch the order with Bottle Caps Bonanza 3rd & 6th no unlike denominator and 4ths & 8ths with unlike denominators)	2 days
Lesson 4a	Bottle Caps Bonanza 3rds & 6th only, no uncommon denominator addition (1 day) Playing Bottle Caps Bonanza (1-day) 4ths & 8th with adding unlike denominators	1 day
Lesson 4b	Playing Bottle Caps Bonanza (1-day) 3rds & 6ths with adding unlike denominators 1 free day	2 days
Lesson 5	Combined 4ths & 8ths	2 days
Lesson 6	Combined 3rd & 6ths Bottle Caps Bonanza Subtraction (1-day)	3 days

Lesson 7	Bottle Caps Bonanza Subtraction Sequential (1-day) Combined (2-days)	3 days
Lesson 8	12ths	2 days
Lesson 9	12ths lesson with subtraction	2 days

Lesson Number & Lesson Title, Virtual links, and notes	**Fraction Ball Connection**	**Suggested Time**
Lesson 10		2 days
Lesson 11		1 day
Lesson 12	Ghost!!! Estimating 0 to 1 on a NL (also measurement) with Benchmark Fractions 2-days	2 days
Lesson 13	Estimating with mixed numbers with 0 to 5 NL (2-days) (intro word problems) Contextualize into word problems 1-day	1 day
Lesson 14		2 days
Lesson 15		2 days
Lesson 16		
Lesson 17		
Lesson 18		2 days