

Example GLEs

(Basic Facts for Addition & Subtraction)

- *Know the addition facts (sums to 20) and the corresponding subtraction facts and commit them to memory. (CA, gr. 1)*
- *Develop fluency with single-digit addition and corresponding differences using strategies such as modeling, composing and decomposing quantities, using doubles, and making tens. (NC, gr. 1)*
- *States and uses with efficiency and accuracy basic addition facts with sums from 0 to 20 and corresponding subtraction facts. (KS, gr. 2)*
- *Recall basic addition and subtraction facts through 18. (ID, gr. 3)*

Addition & Subtraction of Fractions

When is the topic introduced?

Over what period of time (what grades) is it developed?

When are students expected to be proficient in adding and subtracting fractions?

ARIZONA

(addition/subtraction of fractions)

- ❖ Demonstrate addition and subtraction of fractions with like denominators (halves) using models. (gr. 1)
- ❖ Demonstrate addition and subtraction of fractions with like denominators (halves and fourths) using models. (gr. 2)
- ❖ Add or subtract fractions with like denominators (halves, thirds, fourths, eighths, and tenths) appropriate to grade level. (gr. 3)
- ❖ Add or subtract fractions with like denominators, no regrouping. (gr. 4)
- ❖ Add or subtract proper fractions and mixed numbers with like denominators with regrouping. (gr. 5)
- ❖ Add or subtract proper fractions and mixed numbers with unlike denominators with regrouping. (gr. 6)

FLORIDA

(addition/subtraction of fractions)

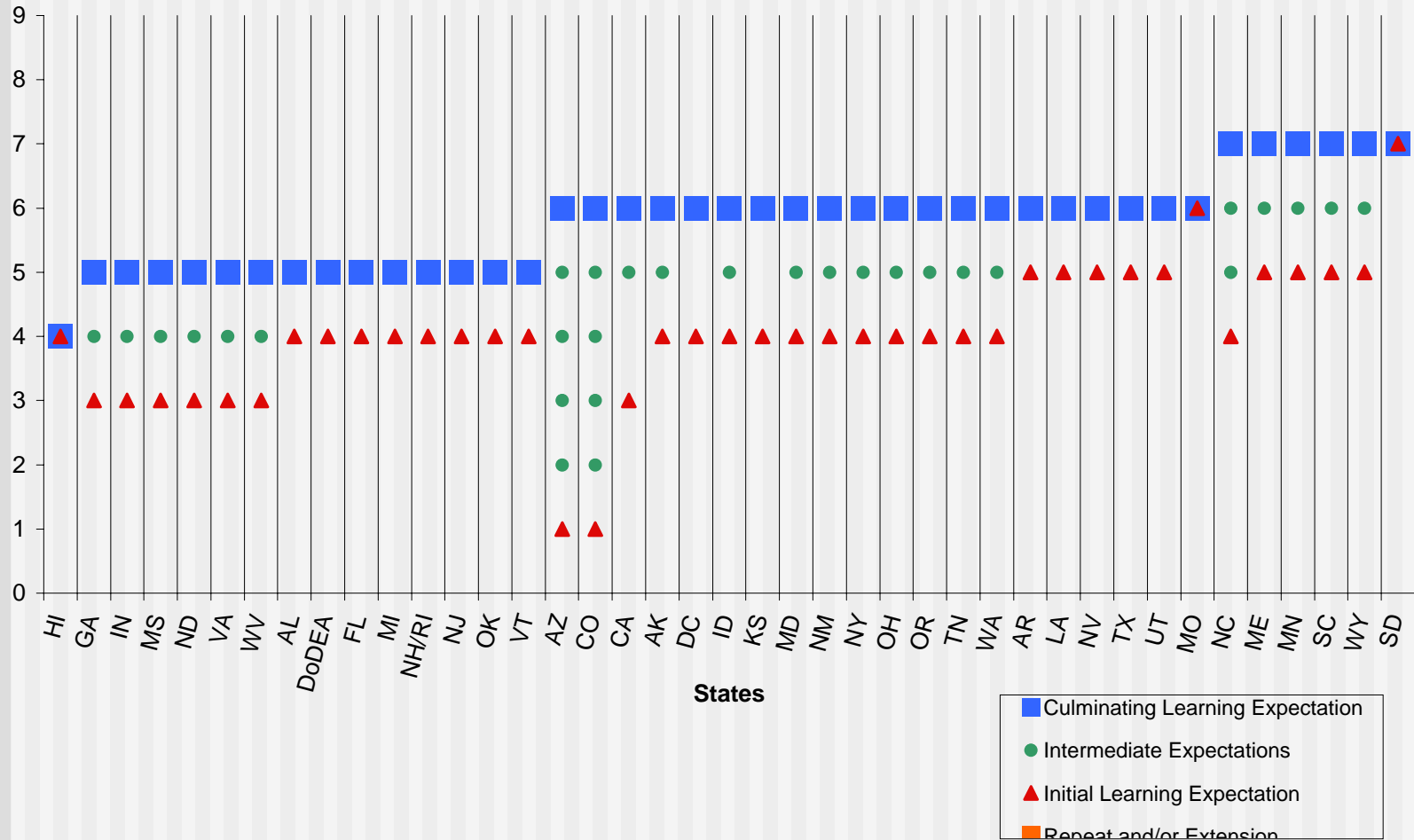
- ❖ Explains and demonstrates the addition and subtraction of common fractions using concrete materials, drawings, story problems, and algorithms. (Gr. 4)
- ❖ Solves real-world problems involving the addition or subtraction of decimals (to hundredths) or common fractions with like and unlike denominators. (Gr. 4)
- ❖ Solves real-world problems involving addition, subtraction, multiplication, and division of whole numbers, and addition, subtraction, and multiplication of decimals, fractions, and mixed numbers using an appropriate method (for example, mental math, pencil and paper, calculator). (Gr. 5)

Missouri

(addition/subtraction of fractions)

- ❖ Add and subtract positive rational numbers.
(Gr. 6)

Grade placement in state GLEs: Addition and subtraction of fractions



**What mathematics are
fourth graders in the U.S.
expected to learn?**

Analysis of 4th Grade GLEs

Focused on GLE documents from the ten large states:

CA, TX, NY, FL, OH,
MI, NJ, NC, GA, VA

Method

1. Combined and sorted all grade 4 GLEs from the 10 states by content strand (**492** total).
2. Reviewed each strand set and eliminated duplicates.
3. Developed list of “distinct” GLEs (**108** total) and coded each back to the 10 states.

4th Grade GLEs from 10 states

(with duplicates removed)

Strand	Number of <u>LEs</u>	Percent of Total
Number & Operation	45	41
Algebra	11	10
Geometry	18	17
Measurement	20	19
Data & Probability	14	13

Total: 108

Common GLEs across all 10 documents (4 of 108)

- *Read, write, compare, and order whole numbers.*
- *Read, write, compare and order decimals.*
- *Add and subtract decimals.*
- *Solve problems involving whole number multiplication and division.*

Unique GLEs - in only one of ten documents (28 of 108 GLEs)

- *Use concrete materials and symbolic notation to represent numbers in bases other than base ten, such as base five.*
- *Compare decimal number system to the Roman numeral system (using the Roman numerals I, V, X, L, C, D, and M.)*
- *Use models to identify perfect squares to 100.*

Materials included with one popular middle school mathematics series -- per grade.



Pupil Edition—717 pgs.
Teacher's Edition - 782 pgs.

Intervention and Enrichment
Readiness Activities
Test and Practice Generator
Assessment Resources
Transparencies
Solution Key
Success for English Language
Learners
Interdisciplinary Poster Worksheets
Interdisciplinary Posters
Family Involvement Activities
Consumer and Career Math
Technology Lab Activities
Lesson Plans
Interactive Study Guide Workbook
Interactive Problem Solving
Reading & Writing in the Content Area
Homework and Practice Workbook
Hands on Lab Activities
Etc.

Over 3000 pages in all.