

Manga Math Mysteries

#5: The Ancient Formula

Grade 3

5 skill lessons · 5 math-through-reading

Skill lessons

5 lessons on the mathematics the book carries. Printable workbook pages and teacher keys are not available for this book yet.

1. Four fourths make a cup: finding the rest of the mix

Concept · Subtracting a unit fraction from one whole with like denominators

2. Two eighths, one fourth: the same wedge under two names

Representation · Recognising equivalent fractions with a folded circle model

3. The two blank wedges: how much of the formula is not there

Reasoning · Finding the missing part of a whole from a stated count and a stated total

4. Six wedges against two: saying the comparison both ways

Application · Comparing two fractions of the same whole by matching equal groups

5. One eighth of what? Sharing four cups, one cup and eight cups

Fluency · Dividing a quantity into equal shares and naming the share as a fraction of the whole

Math through the reading

The mathematics is reached through a sentence the book prints: change one word in the reading and the numbers change with it. These carry their own standards, matched against these lessons rather than inherited from the skill ones.

6. The rest is a number: reading a recipe that hides one amount in words

Integrated · Students find the unstated amount of red powder by reading the two words that carry it, then test what happens to the recipe when those words are changed.

7. Cut, shared, sold, found, joined: retelling the disk in the order the fractions allow

Integrated · Students rebuild the disk's five-event history in order and show that two of the events cannot be swapped without the fractions ceasing to make sense.

8. What the two blank wedges are worth

Integrated · Students answer the question the book asks twice and never answers, deriving the missing fraction of the formula from three sentences on three different pages.

9. Was a fourth each a good plan? Writing the case into the journal

Integrated · Students take a position on whether Sifu Leung's split could have kept his disciples together, and defend it in a journal entry that must carry the fractions it rests on.

10. Three times as much, one third as much: two true sentences about the same two piles

Integrated · Students compare the journal's six eighths against Miranda's two eighths by matching groups, then say the comparison in both directions and account for why the numbers differ.

Reading and language lessons

5 lessons on the reading and language the book carries - what a word means in its sentence, how a character is shown, how a text is built. No mathematics: these are matched against the English language arts curricula, which are a different and smaller set than the mathematics ones.

11. Which Means: How This Book Teaches You Its Words

Language · Using a Sentence's Own Explanation to Learn a New Word

12. Caption, Speaker, Bracket: Reading a Comic in Print

Language · Reading How a Graphic Novel Marks Who Is Speaking

13. A Secret Everyone Knows: Following an Idea to the End

Language · Tracing a Book's Message Through What Characters Say

14. This Sentence Is Broken: Reading a Damaged Page

Language · Recognising When a Printed Sentence Has Been Garbled

15. Was Miranda a Thief? Weighing What the Book Tells You

Language · Judging a Character Fairly Using What the Text Says