

Pythagoras and the Ratios

Grade 4

5 skill lessons · 3 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. Exactly Twice as Long

Concept · Doubling a measured length and checking the double by laying the shorter one along it

2. Stand in a Line According to Height

Representation · Ordering five measured lengths and naming the position of each in the order

3. Exactly Twice, or More Than Twice

Reasoning · Deciding whether a comparison of two measured lengths may be called exact

4. The Biggest Number That Goes Into Both

Fluency · Finding the largest number that divides two given numbers exactly

5. Cut, Not Stretched

Application · Halving a length by folding and checking the two halves against each other

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 Word That Decides What You Measure

Integrated · Students measure two pairs of paper pipes with a strip and no ruler, and decide for each pair which of the book's two phrases the measurement earns, exactly twice as wide or more than twice as long, then say a sentence about their own result using the phrase they chose.

7. Were the Rocks a Good Fix?

Integrated · Students hang rocks on a taut string frame and count how many plucks in ten stay clear of the swinging weight, then take a position on whether the rocks were a good fix and defend it to a partner with their own count in the sentence.

8. Twenty-Four and Twelve, Said Both Ways

Integrated · Students build the longest and shortest pipe as two towers of 24 and 12 cubes, find the relation between them by matching the short tower against the long one, and produce both sentences about it, the one the book's own arrangement invites and the one it does not.

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.

9. The claim the first sentence makes

Comprehension · Supporting a stated character trait with evidence from later in the text

10. Said, cried, quarreled, complained

Language · Reading what a dialogue tag adds beyond the spoken words

11. What the back matter takes back

Comprehension · Telling what a text asserts as fact from what it presents as a story

12. Five names, one word

Vocabulary · Working out a word built from the first letters of other words

13. Starting on the wrong note

Comprehension · Tracing how a character changes and quoting what marks the change