

Which notebook offer is the better buy?

Illustrative grade 7 math lesson

Quick Start

Grade 7 math. 40 minutes. Topic: proportional relationships and unit rates. Illustrative sample, with general questioning and formative-assessment evidence rather than an official rubric score.

Keep the original goal: compare prices using unit rates. Upgrade the lesson with an error-analysis question, a whole-class check, and a transfer task.

Prepare: print the student handout, open the six classroom slides, and provide scrap paper. Calculators are optional. Review the answer guidance before teaching. Verify alignment to your local standards and students' access needs.

Use the same solve-explain-revise routine next week with a new context.

Learning Intentions & Success Criteria

I can compare offers by finding the cost of one item. I can label the units and explain when a lower unit price might not be the best purchase.

Success: both rates are correct, units are dollars per item, the comparison uses evidence, and the explanation accounts for the buyer's needs.

Lesson-at-a-Glance

0-5 minutes: students make an initial choice between the notebook offers and record a reason.

5-11 minutes: pairs calculate both unit rates and compare methods. Ask two pairs to explain why they divided.

11-17 minutes: analyze the incorrect comparison in item 2. Students revise a partner's explanation.

17-22 minutes: everyone completes item 3 independently. Use the decision point below.

22-33 minutes: solve item 4. If reteaching is needed, use the first three minutes here to model equal groups, leaving eight minutes for the task.

33-40 minutes: complete the exit ticket, self-check against criteria, and submit.

TEACHER NOTE

Say: "A correct price is a start. What does the number mean, and why does it answer this buyer's question?" Provide silent thinking time before pair discussion.

QUESTIONING MOVE

Ask: "When might the offer with the lower unit price still be the wrong purchase?" Listen for budget or quantity needed. Probe: "Which numbers support your choice?"

CHECK FOR UNDERSTANDING

At minute 17, every student finds dollars per pen for 5 pens costing \$4. Correct response: \$0.80 per pen. Scan all responses for reversed division and unlabeled units.

ADJUST IN THE MOMENT

If fewer than four in five students show \$0.80 per pen with units, model splitting \$4 into five equal groups. Recheck with 4 pens costing \$3. If most are secure, ask them to compare total cost for a buyer needing only one pack.

STUDENT OWNERSHIP

Before submitting, students underline the unit labels and circle the sentence that explains their purchase decision. Revise one missing element.

Framework Evidence Map

Questioning and discussion: students explain division and challenge an incorrect claim during item 2. Evidence to collect: initial and revised explanations.

Assessment during instruction: all students answer item 3 before the transfer task. Evidence to collect: response count and the actual adjustment made.

Student engagement: students calculate, justify, and revise a decision with a real quantity constraint. Designed opportunities become observed evidence only when students actually participate and produce work.

Student Handout

Name: _____ Date: _____

Goal: compare offers using dollars per item and justify a purchase.

1. Notebook offer A: 3 notebooks for \$6. Offer B: 5 notebooks for \$9. Find each unit price. Which is cheaper per notebook? Explain using units.

Work and explanation: _____

2. A student says, "Offer A is the better deal because 6 is less than 9." Explain what this comparison misses. Rewrite the claim so it compares unit prices.

My revision: _____

3. A pack of 5 pens costs \$4. What is the cost per pen? Show the division and label the result.

Work: _____

4. A club needs exactly 10 notebooks and can buy only whole packs. Using offers A and B, find the total cost and notebooks received when buying only A packs, then only B packs. Recommend a purchase and explain.

Work and recommendation: _____

Exit ticket: Juice A costs \$4.50 for 3 liters. Juice B costs \$7 for 5 liters. Find both costs per liter. Which has the lower unit price? Explain one reason a shopper might still buy the other offer.

Work and explanation: _____

Self-check: I labeled units. I showed calculations. My decision matches the buyer's needs.

Answer Guidance

Item 1: A is \$2 per notebook. B is \$1.80 per notebook. B has the lower unit price. If a student divides notebooks by dollars, ask which quantity the problem asks them to find for one notebook.

Item 2: The packs contain different numbers of notebooks. A valid revision states that B costs \$0.20 less per notebook. Accept a clear equivalent explanation.

Item 3: $4 \text{ divided by } 5 = \0.80 per pen . After reteaching, the recheck answer is \$0.75 per pen. Use the observed response pattern to decide on support.

Item 4: Buying only A requires 4 packs, costs \$24, and yields 12 notebooks. Buying only B requires 2 packs, costs \$18, and yields 10 notebooks. B meets the exact quantity at a lower cost. If students buy fractional packs, revisit the whole-pack constraint.

Exit ticket: A is \$1.50 per liter. B is \$1.40 per liter. B has the lower unit price. A may suit a shopper who needs only 3 liters or cannot spend \$7. Accept a justified budget, storage, or quantity reason.

Quick scoring: one point for each correct rate and one for a justified decision. A calculation error with a sound method needs different feedback than reversed units. Sort exit tickets into ready to transfer, calculation support, and unit-rate reteaching.

Reuse Plan

Keep the routine: initial choice, unit-rate calculation, error analysis, whole-class check, and a constraint-based decision. Change the offers, units, and quantities. Recalculate the answer key each time.

For the next lesson, compare distance per hour. Ask students to explain how changing the units changes the meaning of the rate.

Before observation: "Students will compare offers, explain their reasoning, and revise a claim. I will use the independent check to decide whether to reteach unit rates before the transfer task."

After teaching: ____ of ____ students labeled both rates correctly. I adjusted ____ because _____. The next lesson will _____.

Actual preparation time for this lesson: ____ minutes. Material I would reuse: _____. Material I needed to revise: _____.