

PATIENCE LEARNING · FREE 1-DAY CASE

No Perfect Road

A free single-session case from the world of **The Route**, the 11-day operations & data simulation.

GRADE 7 · MATH (COMPARING DATA, RATES & TRADE-OFFS) · ~45 MIN · 1 CLASS PERIOD

Your students plan deliveries for a company choosing one road for 200 trips a month. Three routes, and none is perfect — each wins on something and loses on something. The one everybody already uses turns out to win on nothing at all. There's no clean answer here, only a defensible one.

TEACHER QUICK-START

Objective: Students compare three options across time, cost, and safety, compute a monthly cost difference, and defend a recommendation where every choice involves a trade-off — including seeing that the familiar favorite is quietly the worst.

Standards tie-in: CCSS 7.RP.A (rates and proportional reasoning), 7.NS.A.3 (real-world rational-number problems), 7.EE.B.3 (multi-step reasoning); argue from evidence (MP.3).

What you need: Just this packet. Print the student pages (works individually or in teams of 3–4). Calculators optional. No prep.

- 1. Set the scene (5 min).** “Your company runs 200 trips a month. Pick the road. The one everyone uses now feels safe — check it.”
- 2. Read the data (8 min).** Teams read the three routes and the trip data.
- 3. Compare & decide (20 min).** Weigh time, cost, and safety, compute the monthly difference, then choose and defend.
- 4. The reveal (8 min).** Walk the answer key. The point: no route is perfect, the familiar one is worst, and a defensible choice names its trade-off.
- 5. Reflection (4 min).** Each student answers the reflection question.

The Operations File

You are the operations planner for Cedar Freight. The company makes **200 delivery trips a month** and wants to commit to ONE route. Three are on the table. The dispatchers all use the Old Highway out of habit. Here's a month of trip data for each.

THE TRIP DATA (per trip)

Route	Time (minutes)	Cost (fuel + tolls)	Safety incidents (per 100 trips)
A — Old Highway (the familiar favorite)	50 min	\$18	12
B — River Road (the quiet one)	62 min	\$6	2
C — Express Toll (the flashy one)	38 min	\$31	7

THE HABIT IN THE ROOM

"We've always run the Old Highway," the head dispatcher says. "Everybody knows it. Why change?" Nobody's actually compared the numbers — they just know it best.

Your Call (Decision Sheet)

Team name: _____ Period: _____

Step 1 — Who wins each measure? Fastest: _____ Cheapest: _____ Safest (fewest incidents): _____

Step 2 — The familiar route. Look at the Old Highway (A). Does it win on time, cost, OR safety? _____ What does that tell you about “we’ve always used it”?

Step 3 — Cost over a month. The company runs 200 trips. Compare the cheapest route to the Old Highway:

Old Highway: $\$18 \times 200 = \$$ _____ River Road: $\$6 \times 200 = \$$ _____ Monthly savings: $\$$ _____

Step 4 — The trade-off. There’s no perfect route. If you pick River Road (cheapest + safest), what do you give up? If you pick Express Toll (fastest), what do you give up?

Step 5 — Your recommendation. Pick a route and defend it with the data. Name the trade-off you’re accepting — and explain why the Old Highway isn’t it:

ANSWER KEY (for the reveal)

Step 1 — Category winners:

Fastest: **Express Toll (38 min)**. Cheapest: **River Road (\$6)**. Safest: **River Road (2 incidents)**.

Step 2 — The familiar route:

The Old Highway wins **nothing** — it's middle or worst on every measure (slower than Express, 3× the cost of River, 6× the incidents of River). "We've always used it" is comfort, not evidence. Habit was hiding a bad option.

Step 3 — Monthly cost:

Old Highway: $\$18 \times 200 = \$3,600$. River Road: $\$6 \times 200 = \$1,200$. Savings: **\$2,400 a month** — just by leaving the route everyone was used to.

Step 4 — The trade-offs (this is the point):

River Road: cheapest and safest, but the **slowest** (62 min) — you trade time for money and safety. Express Toll: fastest, but **far more expensive** (\$31, over 5× River) — you trade money for speed. Neither is perfect; that's real.

Step 5 — A defensible answer:

There's no single right route — but River Road is the strongest default: it saves \$2,400/month and is 6× safer, and 12 extra minutes rarely outweighs that. A strong answer could also defend Express Toll IF speed is truly critical — as long as it names the cost trade-off honestly. What no strong answer defends is the Old Highway, which wins nothing. Judgment here is choosing your trade-off on purpose, not by habit.

The big idea:

Sometimes there's no perfect option — only trade-offs you choose with your eyes open. The trap isn't picking wrong; it's picking by habit. The Old Highway felt safe because it was familiar, and the numbers showed familiar was worst.

REFLECTION (graded on thinking, not the "right" answer)

"There was no perfect route. Which trade-off did you choose on purpose — and how did the data free you from just using the road everyone was used to?"

SCORING THE THINKING

	3 — Strong	2 — Developing	1 — Beginning
Reads the data	Correct winners + monthly math	Some correct	Misreads
Sees habit ≠ best	Shows Old Highway wins nothing	Mentions it	Defends the habit
Owns a trade-off	Names what the pick gives up	Vague	Ignores it
Explains clearly	A reader can follow it	Partly clear	Unclear

READY FOR THE FULL SIMULATION?

This was one choice. The Route is eleven days of trade-offs.

In the full 11-day simulation, students work as an operations planner comparing three routes on time, cost, and safety — where the familiar option loses on nearly every measure except comfort, and the other two each win on one dimension and give up another. Students lock in an early pick, then face data that complicates it. Graded on reasoning, never on a “right” route.

THE ROUTE · GRADE 7 MATH · \$39 · patiencelearning.com/simulations

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