

Which ferry is faster?

Unit rate as slope — five boats, three representations, one axis pair.
Students leave able to say what the steeper line means in miles and minutes.

TEACHER	Ms. Whitfield
UNIT	4 · Lesson 6 of 9
PERIOD	4 · Room 118
DATE	Tue 12 May 2026
CLASS	27 students · 50 min

OBJECTIVE	Given a table, a graph and an equation for the same kind of journey, students compare five proportional relationships by their unit rate and say, in a sentence with units attached, why the steeper line on a shared pair of axes is the faster boat. 8.EE.B.5 graph proportional relationships and interpret the unit rate as the slope · 8.EE.B.6 slope is the same between any two points on a line · builds on 7.RP.A.2, taught in October
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BELL TO BELL

SIX PHASES · 50 MINUTES · CALCULATORS STAY IN THE TRAY UNTIL 00:24

00:00 4 MIN	Two boats, no method On the board before the bell: Ferry A covers 18 miles in 45 minutes. Ferry B covers 26 miles in 65 minutes. Write down which is faster and one sentence on how you decided. Nothing else is said. LISTEN FOR who scales both to a common time, who divides straight away, and who compares 18 with 26 and stops there.	SOLO
00:04 7 MIN	Put three methods up unlabelled Take exactly three volunteers, in this order: a scaling answer, a dividing answer, and a wrong-but-reasonable answer. Write all three without saying which is which. Do not adjudicate — ask instead what the 0.4 in the second one is counting. LISTEN FOR the first student who says "per minute". That phrase is the hinge of the lesson; put it on the board in their words.	WHOLE CLASS
00:11 13 MIN	Card set: three more ferries Each group gets Ferry C as a table of six readings, Ferry D as a graph through (0, 0) and (20, 9), and Ferry E as $d = 0.38t$. One instruction: rank all five, and write on the card which form you converted to and why. LISTEN FOR groups reading Ferry D's slope by counting squares rather than reading a single point, and groups that rank C on its largest distance.	GROUPS OF THREE
00:24 10 MIN	All five on one pair of axes Plot every ferry on the back board, same axes, minutes across. Name it once and write it once: the unit rate is the slope, and the sentence in the margin is "for every one minute, ___ miles". Calculators come out here, not before. LISTEN FOR "steeper" being used to mean "bigger numbers". Redraw Ferry B on a squashed axis to break that on purpose.	WHOLE CLASS
00:34 10 MIN	Argument round Pairs write one claim in the frame: "Ferry ___ is faster than Ferry ___ because ___ miles per minute, and I can see it in the ___." Swap, mark the partner's against the frame, hand it back. Two are read out uncorrected. LISTEN FOR a because-clause quoting a total distance instead of a rate — that is the whole misconception in one line.	PAIRS
00:44 6 MIN	Exit card at the door Three questions on one card: rank two new ferries given a graph and a table; state the unit rate of the faster one with its units; explain in one line why "26 miles" on its own settles nothing. Collected at the door, not the desk. LISTEN FOR a missing unit on question two — that pile is Friday's twelve-minute reteach group.	SOLO

PREP & MATERIALS

- Card sets C–E, ten copies, cut and banded — 15 min, do Monday
- Exit cards × 30, printed on the yellow stock
- Axis pair drawn on the back board before the bell
- Calculator tray by the door, not on the desks

IF IT STALLS, AND IF IT DOESN'T

Stalls at 00:11: hand the struggling group the version of Ferry C's table with five-minute rows, so the step is visible without arithmetic.
Finishes early: Ferry F leaves six minutes late and covers 15 miles in 30 minutes of sailing.
Does its line still pass through the origin, and is it still proportional?

WHAT THE EXIT CARD DECIDES

Sorted into three piles tonight. **Ranks correctly with units** moves to the late-departure task on Thursday.
Ranks correctly, no units joins the Friday reteach with Devon and Marisol. **Compares totals** gets the double number line again on Wednesday, in a group of four with me.

NEXT	Lesson 7 — proportional or not: the ferry that leaves late, the taxi with a flag fall, and a line that misses the origin. Bring Thursday's exit cards; the two wrong rankings are the opening slide.
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