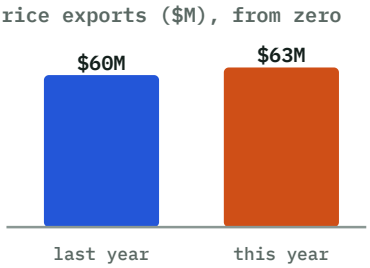
Check the headline

A headline can be **true in every number** and still mislead. Check it with the **ten questions**, the tenth first: **who says so, and where is the source?** Then rewrite it honestly. Question 10 of the ten to ask a number.

1 Three true headlines

questions 1 · 2 · 4

- **Coralia Gazette** (the toy island's newspaper), front page · **A** "Rice exports DOUBLE!" · **B** "Average family earns $90,000" · **C** "Wages hit a RECORD: $54,000!" · every number true, every headline misleading
- **A · axis** (Lesson 1): $60M → $63M (M = million), axis from $57M → bars 3 and 6 = "double" · from zero `63 ÷ 60 = 1.05` → **+5%** · **lie factor** = effect in the picture ÷ effect in the numbers `100 ÷ 5 = 20`
- **B · average** (Lesson 2): 10 families on Pearl Street · total 900 ÷ 10 → **mean $90,000** · middle of 40 and 45 → **median $42,500** · one family at $515,000 drags the mean up
- **C · real** (Lesson 4): $50,000 → $54,000, prices +8% · `50,000 × 1.08 = 54,000` → **unchanged** in real terms · **nominal** = plain dollars · **real** = what they buy · a record in dollars ≠ a record in what they buy



2 Question 10

who says so?

- **Who says so, and where is the source?** → asked **first** in real life · a headline = a copy of a copy
- **Primary source** = where a number was first published: the table, study or survey itself, not a copy
- The checker's order: headline, whom it credits → open the table or study → what it measures (units, year, who is counted) → the nine other questions → only then the honest headline

3 A real number

and its table

- Headline: "The average US household earns **$121,000** a year" · names no table → go to the source
- **US Census Bureau** (government statistics office for people and households) · "Selected Characteristics of Households by Total Money Income in 2024" · Current Population Survey **2025** · **median $83,730** · **mean $121,000** · `121,000 ÷ 83,730 ≈ 1.45`
- Headline true (= the mean) but leaves out the typical household · fair: both numbers + year + source · practice: "half earn more than $121,000" → **false**: half earn more than the **median** · income of 2024, survey of 2025

US, 2024	$
median	83,730
mean	121,000

4 Which question?

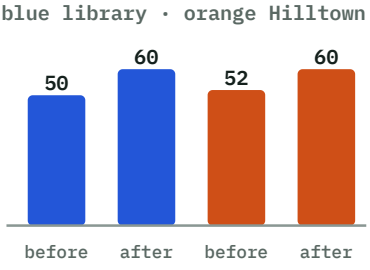
3 · 5 · 6 · 7 · 8 · 9

- **5 what else?** a third thing behind both · ice cream & drownings in July (the season) · taller children read better (age)
- **6 compared with whom?** a **control group**: similar, without the change · "scores rose after the app" → and without it? · "jobs rose after the law" → and with no law?
- **7 who was asked?** who is missing · landline phone poll at noon · a survey at the gym
- Practice · **3 points**: rates 2% → 3% = **+1 point**, +50% · unemployment 9% → 6% = **−3 points**, a third lower · **8 seasonal**: toys in December, hotels in November → same month last year · **9 per person**: most crashes, most aid, but in the biggest place → ÷ people

5 Practice cases

new numbers

- "Fish catch **TRIPLES**!" · 50 → 54 thousand tons, axis from 48 → bars 2 and 6 · real `4 ÷ 50 = +8%` · lie factor `200 ÷ 8 = 25`
- "Palmera wages hit a **RECORD**: $33,000!" · $30,000 → $33,000 = +10% · price index 100 → 120 = +20% · `33,000 ÷ 1.2 = $27,500` in last year's prices → real **−$2,500**
- "Reading scores **+10** since the library opened!" · library town 50 → 60 · Hilltown, no library, 52 → 60 (+8) · library's share `10 − 8 = 2` points · worth the cost = a judgment



6 So what?

all ten questions

- **Ten questions to ask a number** · 1 · Where does the axis start, and what is its scale? · 2 · Average of what: the mean or the median? · 3 · Percent of what? Percent or percentage points? · 4 · Real or nominal: did prices change too? · 5 · What else changed? Could something else explain both? · 6 · Compared with whom? Where is the control group? · 7 · Who was asked, and who was not? · 8 · Where does the series start, and is it seasonal? · 9 · Per person, per year, compared with what? · **10 · Who says so, and where is the source?**
- Gazette rewritten → "Rice exports rose 5%, from $60 to $63 million. The typical family earns $42,500; the mean is $90,000. Wages are $54,000, unchanged in real terms."
- **This lesson teaches you to check a number; it does not tell you what to think.** · a fact-check settles whether a number is what it says · what it means and what to do = values, yours

Watch out: "true" ≠ "honest" · a headline can pass every number check and still mislead by its axis, its average, its dollars or its missing source → check the source first, then the nine questions, then rewrite