



Key focus

This objective covers the three essential parts of a statistical paragraph: the *statistical statement* (a data-based claim, free of personal opinion), the *evidence sentence* (specific numerical data that supports the claim), and the *context* (an explanation of why the data matters, to whom, or what broader situation it applies to). Students write each part from a real data display – a dot plot, bar graph, or box plot – then critique and rewrite weak paragraphs, and finally compare two distributions (median and spread) and adapt their writing to different audiences and levels of data complexity.

Suggested teaching sequence

1. Introduce the statistical statement: a claim that describes a pattern or finding in data, stated objectively without personal opinion. Contrast “*Most students prefer pizza for lunch*” with the weak “*Pizza is good.*” The statement should be answerable by data, not a matter of taste.
2. Introduce evidence: the specific numbers or measurements that support the statement, read directly from a diagram (a bar’s height, a dot plot’s mode, a box plot’s median and quartiles). Evidence sentences must cite the actual figures, not a vague reference like “most” or “many.”
3. Introduce context: an explanation of why the data matters, who cares about it, or what situation prompted the investigation. Context is not a restatement of the data.
4. Practise writing each part separately from a single data display, then model combining all three into one paragraph.
5. Show and critique a weak paragraph that omits a part or blurs them together, then practise rewriting it using the real numbers from the display.
6. Extend to comparing two distributions with a box plot: writing about the **median** (which group typically scored or measured higher) *and* the **spread** (which group’s interquartile range was wider, i.e. less consistent) – a complete comparison always addresses both, never only one.
7. Discuss how a paragraph changes for different audiences (a school newsletter vs a technical report) and how to handle uncertain evidence (a survey range like “60–70%”) and possible bias in how data was collected.

Marking rubric: strong vs weak paragraphs

- **Weak statement:** “The graph shows numbers. Some are big.” – no claim at all, just a description of the picture. **Strong statement:** “Most students in this class own 2 pets.” – a specific, checkable claim.
- **Weak evidence:** “Lots of students play sport.” – no numbers. **Strong evidence:** “15 of the 25 students surveyed play rugby, and 10 play netball.” – exact figures taken from the display.
- **Weak context:** “We surveyed 20 students.” – this only restates the data. **Strong context:** “This could help the school choose colours for new uniforms that most students prefer.” – explains why the finding matters.
- **Weak comparison:** “Class A did better than Class B.” – addresses only one measure and no numbers. **Strong comparison:** “Class A’s median score (68%) is higher than Class B’s (64%),

but Class A's IQR (20) is far wider than Class B's (8), so Class B's results were more tightly clustered." – addresses both median *and* spread, with numbers for each.

- When marking a student's paragraph, check for all three parts (statement, evidence, context), that every claim is backed by a specific number from the display, and – for comparison paragraphs – that both the median/typical value and the spread are addressed.

Watch for

- Confusing a statistical statement with personal opinion: "*I think blue is best*" is opinion; "*Blue is the most popular colour, chosen by 10 of the 20 students*" is statistical.
- Evidence that is too vague: "many" or "most" on its own is not specific enough – always cite the exact number, count, or percentage.
- Context that merely repeats the data ("we surveyed 20 students") rather than explaining why the finding matters or who it affects.
- In a comparison paragraph, addressing only the median (or only the spread) and calling the comparison complete – both must be discussed, since two distributions can have the same median but very different spreads, or vice versa.
- Over-generalising from a small or narrow sample: a survey of only Year 10 students at one school cannot be assumed to describe every year level or every school.
- Presenting an uncertain survey result (e.g. "60–70% prefer self-checkout") as a single precise figure, which overstates how exact the finding really is.

Checks for understanding

- Can students identify the statement, evidence, and context in a given statistical paragraph, and write each part themselves from a data display?
- Can they write evidence sentences that cite the display's exact numbers, rather than vague words?
- Can they critique a weak paragraph and rewrite it so it includes all three parts, backed by real numbers?
- Can they compare two distributions from a box plot, addressing both the median and the spread (IQR)?
- Can they explain why a small or narrow sample limits how far a finding can be generalised?
- Can they adjust their writing for different audiences (general vs technical) and handle uncertain evidence (a range rather than one number)?