Stats Assignment #1: Case Files – Misleading Graph Investigation

Grade 8 Math | PowerSchool Stem: STATS & PROB | Individual Correction Ticket | Achievement Level: 1–4

Level	Achievement descriptor
4 – Excellent	Demonstrates a **thorough understanding** of misleading graphs. Accurately identifies multiple significant problems and clearly explains how they distort the data, using specific numerical evidence. Proposes mathematically accurate corrections and thoroughly justifies how these changes improve the representation.
3 – Proficient	Demonstrates a **clear understanding** of misleading graphs. Correctly identifies the main misleading features and explains their impact on interpreting data. Uses relevant examples and proposes appropriate corrections with reasonable justification.
2 – Developing	Demonstrates a **partial understanding** of misleading graphs. Identifies some errors but overlooks significant issues or provides incomplete explanations. Uses limited supporting evidence and suggests corrections with little justification.
1 – Beginning	Demonstrates a **limited understanding** of misleading graphs. Identifies few errors accurately or provides substantially incorrect explanations. Corrections are inappropriate, unclear, or absent, demonstrating difficulty interpreting and representing data accurately.

Standardized grading rules

1. Prioritize Question 8 (audit explanation) and Question 10 (correction explanation); use Questions 7 and 9 as supporting evidence.

2. Level 3 meets Grade 8 expectations. Level 4 requires more depth, accuracy and justification; students need not identify every possible error.

3. Credit mathematically valid alternative corrections. Do not award points merely for checking many boxes or writing at length.

4. Prioritize mathematical understanding over spelling, grammar or writing style.

5. Compare claims to the original case files. Do not assume a revised graph is accurate unless it is supplied.

6. If a response is blank or too incomplete to assess, flag it as insufficient evidence rather than inventing a level.

Case-file reference (for verification)

Healthy Fiz: Truncated vertical axis (9,000); missing April; exaggerated sales narrative.

Snack Stats: Doughnut chart obscures upstairs/downstairs comparisons; shown percentages do not match totals.

Stick to the Facts: Line graph less suitable for discrete grade comparisons; grade labels unclear; compare plotted values to table.

Fundraising Fiasco: Pictograph symbol quantities/partial symbols may mislead; needs consistent scale and clear key.

Fitness Fib: First three ranges merged into 0–30; misleading percentages and headline; missing category detail.

Required grading output: Student | Class | STATS & PROB Level (1–4) | Strength | Next Step. Keep comments concise and specific; begin improvement advice with “Next Step:”.