Historical Weather Patterns: Student Capstone

Notes for SHS • Topic 85 • Educational resource • 2026

Task 1: Verify source and UTC London point

Objective: Verify source and UTC London point.

Required evidence: source link, method/code or dated numerical result, units, validation and one limitation.

Common mistake: inventing results or interpreting missing days as observed zero.

Extension: select another verified location or method and explain the change.

Task 2: Retrieve actual historical API response on an internet-connected computer

Objective: Retrieve actual historical API response on an internet-connected computer.

Required evidence: source link, method/code or dated numerical result, units, validation and one limitation.

Common mistake: inventing results or interpreting missing days as observed zero.

Extension: select another verified location or method and explain the change.

Task 3: Inspect metadata and parameter units

Objective: Inspect metadata and parameter units.

Required evidence: source link, method/code or dated numerical result, units, validation and one limitation.

Common mistake: inventing results or interpreting missing days as observed zero.

Extension: select another verified location or method and explain the change.

Task 4: Audit 366 daily positions and gaps

Objective: Audit 366 daily positions and gaps.

Required evidence: source link, method/code or dated numerical result, units, validation and one limitation.

Common mistake: inventing results or interpreting missing days as observed zero.

Extension: select another verified location or method and explain the change.

Task 5: Compute annual summaries with valid counts

Objective: Compute annual summaries with valid counts.

Required evidence: source link, method/code or dated numerical result, units, validation and one limitation.

Common mistake: inventing results or interpreting missing days as observed zero.

Extension: select another verified location or method and explain the change.

Task 6: Construct monthly temperature and precipitation tables

Objective: Construct monthly temperature and precipitation tables.

Required evidence: source link, method/code or dated numerical result, units, validation and one limitation.

Common mistake: inventing results or interpreting missing days as observed zero.

Extension: select another verified location or method and explain the change.

Task 7: Graph daily temperature and seven-day rolling mean

Objective: Graph daily temperature and seven-day rolling mean.

Required evidence: source link, method/code or dated numerical result, units, validation and one limitation.

Common mistake: inventing results or interpreting missing days as observed zero.

Extension: select another verified location or method and explain the change.

Task 8: Graph monthly precipitation with coverage annotations

Objective: Graph monthly precipitation with coverage annotations.

Required evidence: source link, method/code or dated numerical result, units, validation and one limitation.

Common mistake: inventing results or interpreting missing days as observed zero.

Extension: select another verified location or method and explain the change.

Task 9: Compare distributions and investigate suspected outliers

Objective: Compare distributions and investigate suspected outliers.

Required evidence: source link, method/code or dated numerical result, units, validation and one limitation.

Common mistake: inventing results or interpreting missing days as observed zero.

Extension: select another verified location or method and explain the change.

Task 10: Write and reproduce the final research report

Objective: Write and reproduce the final research report.

Required evidence: source link, method/code or dated numerical result, units, validation and one limitation.

Common mistake: inventing results or interpreting missing days as observed zero.

Extension: select another verified location or method and explain the change.