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| **CT Knowledge Rubric (Pre and Post)** |
| **CT Term** | **Proficient Reference**Fully explained with a correct definition (may or may not have the word) | **Developing Reference**Partially correct definition with or w/out the term | **Beginning****Reference**Only the term or definition/ term incorrectly described/ named - mismatched | **No** **Basis**No reference to any term and no definition provided |
| **Decomposition** * Explain a complex problem deliberately being broken down into less complex sub-problems
* Reduce the main problem into manageable steps or sub-problems.
 | A4 | A3 | A2 | A1 |
| **Pattern Recognition** * Cluster and modularize steps or parts
* Identify repeated sequences or patterns
 | B4 | B3 | B2 | B1 |
| **Abstraction** * Clarify the problem
* Generate “high-level” or generalized representation of the structure of a problem/solution.
* Remove as much unnecessary or distracting information from the problem.
 | C4 | C3 | C2 | C1 |
| **Algorithmic Thinking** * Create a series of precisely defined steps or rules used to solve a problem.
* Creates a structured formula that provides a predictable outcome given a specified input.
 | D4 | D3 | D2 | D1 |
| **Automation** * Outsource work so that it reduces or removes the requirement for direct human action in order to achieve a desired outcome.
* Use technology and/or coding to execute the process
 | E4 | E3 | E2 | E1 |

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| **CT Application Rubric for Question 1 (Pre and Post)****\*Used “Strategies and Tactics for Data Practices” sheet to evaluate relevance of strategies.**  |
| **CT Term** | **Proficient Reference**Term and appropriate strategy (from list) that encompasses complete definition | **Developing Reference**Term and vague strategy that encompasses part of the term definition | **Beginning****Reference**Term and mismatched/ incorrect strategy or just the term w/ no strategy | **No** **Basis**No reference to any term and, if strategy provided, not linked to CT Term  |
| **Decomposition** * Explain a complex problem deliberately being broken down into less complex sub-problems
* Reduce the main problem into manageable steps or sub-problems.
 | A4 | A3 | A2 | A1 |
| **Pattern Recognition** * Cluster and modularize steps or parts
* Identify repeated sequences or patterns
 | B4 | B3 | B2 | B1 |
| **Abstraction** * Clarify the problem
* Generate “high-level” or generalized representation of the structure of a problem/solution.
* Remove as much unnecessary or distracting information from the problem.
 | C4 | C3 | C2 | C1 |
| **Algorithmic Thinking** * Create a series of precisely defined steps or rules used to solve a problem.
* Creates a structured formula that provides a predictable outcome given a specified input.
 | D4 | D3 | D2 | D1 |
| **Automation** * Outsource work so that it reduces or removes the requirement for direct human action in order to achieve a desired outcome.
* Use technology and/or coding to execute a process.
 | E4 | E3 | E2 | E1 |

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| **CT with Data Practices Application Rubric for Question 2 (Pre and Post)**  |
| **Data Practice** | **Proficient Reference**Term and appropriate strategy | **Developing Reference**Term and vague strategy OR appropriate strategy but term not referenced | **Beginning****Reference**Term and mismatched/ incorrect strategy or just the term w/ no strategy | **No** **Basis**No reference to any term and no strategy provided |
| **Creating Data*** Generating Data
* Using observation and/or tool to answer research question(s)
 | F4 | F3 | F2 | F1 |
| **Collecting Data*** Gathering Data
* Recording data
* Indicating appropriate variables and units to use later to explain the phenomenon
 | G4 | G3 | G2 | G1 |
| **Manipulating Data*** Sorting, filtering, cleaning, normalizing, and/or combining data sets
* Transforming to get from raw to processed data
 | H4 | H3 | H2 | H1 |
| **Visualizing*** Choosing a representation that is most appropriate for the data
* Using data representation to communicate results
 | I4 | I3 | I2 | I1 |
| **Analyzing*** Extracting meaning from a data set or a visualization
* Using extracted meaning to draw conclusions
 | J4 | J3 | J2 | J1 |