Scientific Comparisons
The Three Key Elements

To focus your planning and assessment on the Three Key Elements, consider the following questions. What does the box and T-chart and written comparison reveal about the student’s:

1. Ability to use scientific skills (for example, uses accurate, detailed, complete, and objective scientific observations in comparing and contrasting objects, organisms, or events)?

2. Ability to think scientifically (for example, notices accurate similarities and differences; organizes them appropriately; distinguishes between an observation and an inference—for example, "I notice the cricket is motionless and headless. I infer it is dead.")?

3. Understanding of one or more science concepts (for example, includes relevant similarities and differences in the properties or characteristics of an object, organism, or event)?

Checklists for Exemplary Notebook Entries: Scientific Comparisons
Characteristics of an Exemplary Box and T-chart
and Written Comparison

Similarities in the box and differences in the T-chart are:

- accurate
- complete
- organized, so that each row refers to the same category of information, just as in a data table (e.g., one row includes differences in color; another row includes differences in size)
- observable, not inferred
- relevant, not extraneous (e.g., the color of a plant’s leaves is important because it reflects the health of the plant; the color of a ball is not important because it is not a property that affects the behavior of a ball)

Note: Early in a unit, students might not yet have had enough experiences to determine what is relevant.

Written comparison includes:

- descriptions or explanations that are:
  - accurate
  - complete
  - organized
  - objective (observable, not inferred)

- relevant similarities and differences