

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)?

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*