Data Tables
The Three Key Elements

Making a data table and accurately recording data and observations are critical *scientific skills* that also require *scientific thinking*. In the process of using their scientific skills and their scientific thinking, students will be able to construct (or continue constructing) their understanding of certain *science concepts* in the unit. The degree to which students are able to develop this understanding depends in large part on the levels at which they have developed their skills in the other two elements of the Three Key Elements.

In planning your instruction and later assessing your students’ data tables, consider these questions. What does the data table reveal about the student’s:

1. Ability to use *scientific skills* (for example, collects and records in an organized way; includes accurate, complete observations and/or data; jots down notes, not complete sentences)?

2. Ability to *think scientifically* (for example, includes detailed, organized, complete observations and/or measured data; distinguishes between an observation and an inference)?

3. Understanding of one or more *science concepts* (for example, includes only relevant and accurate observations)?
Characteristics of an Exemplary
Table of Observed and/or Measured Data

- **Main title, and a heading for each column and row**

- **Observations (qualitative* data, not measured data) if applicable:**
  - notes (not complete sentences)
  - accurate
  - observable, not inferred
  - complete
  - organized
  - legible (not necessarily neat)

- **Measured (quantitative**) data if applicable:**
  - accurate
  - complete
  - organized
  - legible (not necessarily neat)

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*Qualitative data: observed, not measured (e.g., color, condition of a plant—“The plant has yellow leaves and the stem is bending down to the soil.”)

**Quantitative data: measured (e.g., measured height or growth of a plant—“The plant is 13 cm tall and grew 2 cm over the weekend.”)