Learning Targets for
Unit 1: The Scientific Method and QPOE\textsubscript{2}

Throughout this unit, we will be assessing the progress of our understanding of the following concepts. You will be using the following symbols to illustrate where you are at regarding each of the learning targets. These learning targets include the material that will be covered on the unit test.

“Thumbs Down” means that you don’t understand the idea at all.

“Thumbs Sideways” means that you kind of understand the idea. With a little bit more help you could probably figure it out.

“Thumbs Up” means that you completely understand the idea. You could probably even teach it to someone else because you understand it so well.
Unit 1: Scientific Method and QPOE

Learning Target 1: Scientists use the QPOEE process to develop explanations about the natural world.

Success Criteria:

A. Identify and explain the steps of the scientific method (question, knowledge probe, prediction, investigation plan, observations, data analysis, explanation).

B. Identify the variable being changed (independent variable) and the variable being measured (dependent variable) when given a scientifically testable question.

C. Develop a scientifically testable question that is specific, testable, and not based on an opinion.

D. Write a prediction that answers the investigation question and provide reasoning for the prediction using scientific knowledge.

E. Analyze data to answer a scientific question.
   • Communicate patterns in data using mean, median, mode, range, etc.
   • Create graphs that include an appropriate title and label each axis.

F. Write a claim which accurately and specifically answers the investigation question.

G. Provide evidence that is directly related to the claim that comes from the text or investigation.

H. Provide reasoning that links the evidence to the claim.
   • Use content vocabulary to demonstrate understanding of what the text or investigation is telling the reader.

Vocabulary

<table>
<thead>
<tr>
<th>Question</th>
<th>Variable</th>
<th>Knowledge Probe</th>
<th>Prediction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>Observation</td>
<td>Median</td>
<td>Mode</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>Mean</td>
<td>Explanation</td>
<td>Range</td>
</tr>
<tr>
<td>Dependent variable</td>
<td>Control Group</td>
<td>Scientific Method</td>
<td>Independent Variable</td>
</tr>
</tbody>
</table>