What is Science? Learning Lab

Objective: Students will answer questions about the nature of science by interacting with material at each station.

Science skill: Criterion A – Knowing and Understanding - i. describe scientific knowledge

ATL skill: Communication - Read critically and for comprehension

Directions: Move from station to station. Write the topic question and then learn about the topic by reading the information. Answer questions for each station in complete sentences.

Station 1:

1. Define Science:

2. How is science set apart from other pursuits?

3. What is Empirical evidence?

Station 2:

1. What are scientific explanations based on?

2. What happens if the results of an experiment do not support the explanation?

3. On p.9, it walks you through the steps to evaluate explanations. Write the rest of the sentences below:

   First,

   Second,

   Third,

   Last,
Station 3:

1. List the steps to the scientific method and define each step.

2. In your own words, explain how the scientific method is an iterative process.

3. Give detail about the CER method of scientific investigation.

Station 4:

1. Read the “What has science done for you lately” page. Without modern science, what kinds of things would we not have (list them):

2. Choose one of the things you just listed and elaborate on its impact on society.

3. Read the “Fueling Technology” page. Why are technological advances sometimes not all positive? Use a specific example from the text to support your reasoning.

4. Read the “Getting personal” section. Choose one of the decisions that you make every day that is informed by science. Discuss how that topic personally affects the decision YOU make in your daily life.

Station 5:

1. What does proof mean in science?
2. Read “Example 1”. Do you think that the evidence provided proves a large meteorite caused the extinction of the dinosaurs? Explain your response!

3. Choose between Example 2 or Example 3. Do you think the evidence provided for these proves the claim made?

Station 6:
1. What is pseudoscience?

2. Complete the chart below from the reading.

<table>
<thead>
<tr>
<th>Science</th>
<th>Pseudoscience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not based on logic</td>
</tr>
<tr>
<td>Has testable explanations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Empirical evidence is not available</td>
</tr>
<tr>
<td></td>
<td>Results cannot be reproduced by others</td>
</tr>
<tr>
<td></td>
<td>Explanations that are not proven false are assumed to be true</td>
</tr>
<tr>
<td>Explanations are modified by new evidence</td>
<td></td>
</tr>
</tbody>
</table>

Station 7:
1. Choose one science misconception: ______________________________________________________________

2. Explanation the correction in your own words: