Unit 1 REVIEW – The Scientific Method

1. Understands the steps of the Scientific Method

Write the Scientific Method Steps in order, below:

1. **Question** — specific idea that can be tested
2. **Knowledge Probe** — read about the topic, ask advice, think about background knowledge
3. **Prediction** — an 'if, then statement' with scientific reasoning
4. **Investigation Plan** — create a materials list and procedure (step-by-step)
5. **Observation** — perform the experiment, record data on a table
6. **Data Analysis** — look for patterns in data, find the mean, graph data
7. **Explanation** — an answer to your question with evidence and reasoning

2. Generates scientific questions based on observations, labs, and research

Which of the following is the best example of a good scientific question?

- a. How fast does a Ford truck travel to the corner store?
- b. What tastes better, pop or lemonade?
- c. Does the thickness of the paper in a paper airplane affect the speed it travels?
- d. Which plant is more beautiful, daisies or roses?

Develop a strong scientific question you think scientists could test in class.

Which type of marker lasts longer, expo or sharpie?

3. Analyze information from a data table to answer scientific questions (step #6)

% of questions answered correctly in Jeopardy practice

<table>
<thead>
<tr>
<th>Student</th>
<th>Round 1</th>
<th>Round 2</th>
<th>Round 3</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bart</td>
<td>54%</td>
<td>66%</td>
<td>73%</td>
<td><strong>64%</strong></td>
</tr>
<tr>
<td>Homer</td>
<td>69%</td>
<td>98%</td>
<td>64%</td>
<td><strong>77%</strong></td>
</tr>
<tr>
<td>Marge</td>
<td>88%</td>
<td>92%</td>
<td>85%</td>
<td><strong>88%</strong></td>
</tr>
<tr>
<td>Maggie</td>
<td>93%</td>
<td>96%</td>
<td>95%</td>
<td><strong>95%</strong></td>
</tr>
</tbody>
</table>

\[ \frac{64% + 77% + 88%}{3} = \frac{229%}{3} = 76\% \]
Mrs. Roy chose Maggie to compete in the Jeopardy challenge. Did she make the best choice? **YES** or **No** (circle one)
Why or why not?

1. Maggie has the highest average, overall.
2. She was the most consistent in her 3 rounds of correctly answering questions. (highest %)

Mr. Thelen selects Homer because he has the highest score of all the rounds. Did he make the best choice? **YES** or **No** (circle one)
Why or why not?

1. Homer didn't do as well in round 1 & 3.
2. His average % in not as high as others.

4. **Identifies the need for evidence in making scientific decisions (explanations)**

Why are scientific explanations so important? It sums up what you've learned!

"Explanations answer your experiment question, the focus of your entire investigation."

Name 3 components that are required within your scientific explanation. (or conclusion)

1. **Claim** → a statement that answers your question
2. **Evidence** → data (information) that supports your claim
3. **Reasoning** → the argument used to say why the evidence answers the question