The Scientific Method

1. Scientist makes an **observation**.

2. The observation leads to a **question**. (The question may come first.)

3. An **hypothesis** is formed as a tentative explanation for the observation. It must be testable.

4. An **experiment** is designed to test the hypothesis.

5. **Data** is gathered, recorded, and carefully analyzed and interpreted.

6. A **conclusion** is reached and carefully interpreted with respect to the hypothesis.
    1. It may support the hypothesis
    2. It may require the hypothesis be modified in some way
    3. It may show the hypothesis to be completely inaccurate and require that a new one be formed.

7. After a number of experiments, the scientist may be able to summarize the results in a **natural law**, which describes how nature works but does not explain why why nature behaves in a certain way.

8. Finally, the scientist may be able to formulate a **theory**. The theory explains WHY nature behaves in the way described by the natural law. It answers not only the original question, but also any other questions that were raised during the process.

9. The theory also predicts the results of further experiments, which is how it is checked.