

# Lesson 1.3

## Scientific Method

# The Scientific Method

- Systematic study
- Method of verification





# Steps of the Scientific Method

1. Make observations
2. State the problem
3. Hypothesis
4. Experiment
5. Collect and analyze data
6. Conclusion



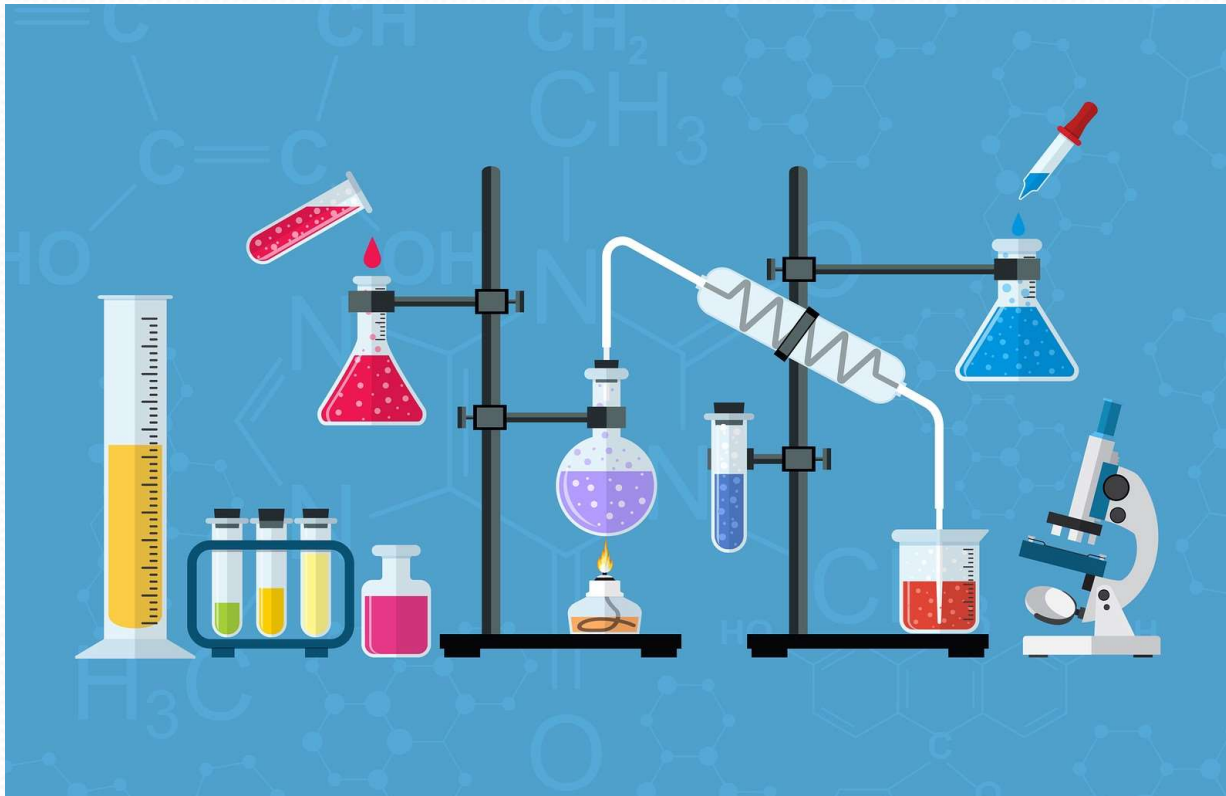
# Hypothesis

- Testable predication
- “educated guess”



# Experiments

- Controlled observations that test hypothesis





- Qualitative Data

- The five senses

- Quantitative Data

- Numerical information



# Qualitative or Quantitative?

- It is yellow
- It boils at  $123^{\circ}\text{C}$
- It smells sweet
- Its density is  $2.26\text{ g/cm}^3$



# Variables

- **Independent**
  - What you change
- **Dependent**
  - What you measure





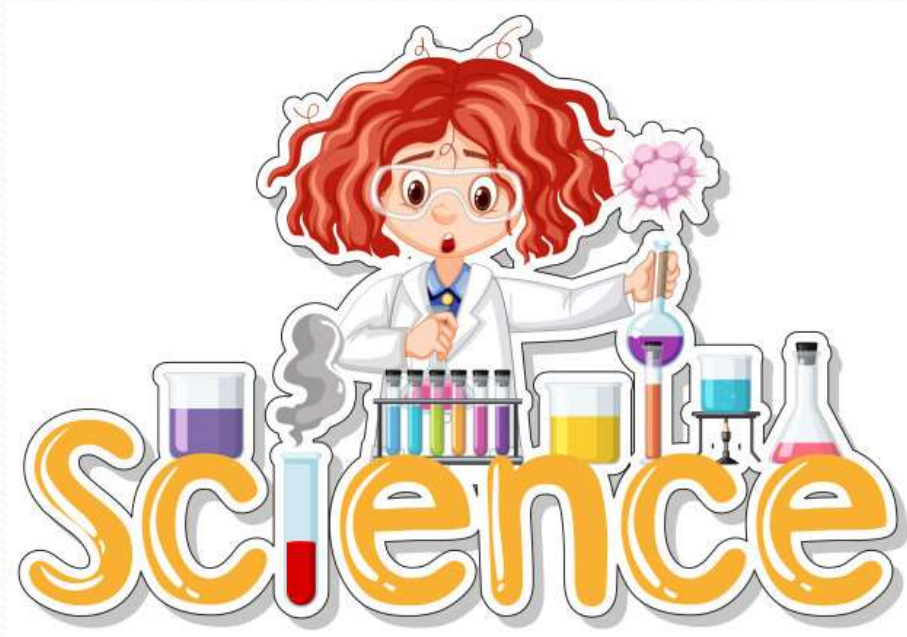
# Control

- Standard for comparison



# Conclusion

- Make a judgment based on findings





- **Hypothesis:** Never proven, only supported data
- **Theory:** Supported by many, many experiments
- **Scientific Law:** a relationship in nature that has never been disproven

