

Investigating the Natural World

Develop and/or interpret investigable questions

Step 1: Observe the physical system and state the essential question (EQ)

Step 2: Hypothesize an answer to the EQ based on your prior knowledge and experience

Design and/or Conduct Investigations

Step 3: Design and/or conduct an experiment to collect data aiming to eliminate sloppiness and error, but capturing the unavoidable uncertainty of the measurements.

Collect Data

Step 4: Perform any necessary calculations on the data and organize the data into a table(s) that meets the established norms and allows for easy analysis

Analyze Data

Step 5: Analyze your data to see if your results support your hypothesis, or suggest an alternative answer to the EQ.

Step 6: Graph your calculated data, and using appropriate statistical and mathematical methods, best-fit line, linearization (if necessary), and y -intercept form ($y=mx+b$), develop a specific mathematical model.

Step 7: Generalize your specific model to work for all objects under the same circumstances.

Report Results

Step 8: Discuss your whole experiment, answer challenging questions from your peers and others, and consider new ideas and questions for further investigation.

REPEAT with another Essential Question ☺



You never prove anything in science, your results either support your initial hypothesis or they don't; and they always raise new questions.