### Science Writing Heuristic

#### Beginning Questions:
- What do you have to investigate or figure out about this concept?
- What will be the main questions that will guide your learning?

#### Hypothesis:
- Considering what you already know about this concept, write a cause and effect statement that explains what you anticipate will occur.
- If ............... then............ due to........... (Must show cause and effect and should explain why you believe this will occur.)
- “How does one variable depend on another variable?”
- Avoid: “Why?” questions, factoid question, questions that can be answer without doing the experiment

#### Safety Considerations:
- List what general safety concerns should be considered when working with equipment or procedures in the laboratory (Look at S.D.S.)

#### Tests:
- What tests or procedures will I follow to help answer my questions?
- What are the independent and dependent variables? What is the control and the constants to ensure test validity?

#### Observations:
- Observations (qualitative and quantitative) that occurred during the lab.
- **3 drawings (particle diagrams, apparatus set-up, before-during-after)**
- It includes data table, balanced questions, mathematical equations, calculations and graph.

#### At Least 3-4 sentences

#### Claims & Evidence:
- State your claim based on your evidence (data collected from observations).
- What do you claim to be true?
- Consider this: Within a court room both sides have the same data but make different claims
- In this investigation...
  - This is where you use your data to back up the claim you made.
  - This involves analyzing your tables and graphs.
  - How can you prove what you are stating? (Back it up)
  - The claim that when .........., then .......... (happens)

#### Refer back to your hypothesis:
- The hypothesis was **correct/incorrect** because...
### Reading

**Internal Sources:**
In this section you compare your data with your *classmates*. Make sure that you include any examples that may make your ideas clear. Example any Errors that may have resulted inaccurate or not precise data

**External Sources:**
In this section you compare your data with other *scientists*. Use articles, books, or the internet. Below is an example to cite your sources:

**EX**

**AMPLE:**

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### Reflection

**How have my ideas changed?**
- What did you learn about this concept?
- How can you connect this learning to something outside of the classroom?
- Are there any new questions you have about the concept?

- Your thoughts after the experiment (Understandings, Related Thinking, Connections)
  After conducting this experiment it is ..........

- How has your thinking changed based on internal and external sources?
  This concept is similar to..... because....
  The evidence shows that ............ to be true............... and not .................because this is what occurred.