Flowchart of students’ thought processes as they develop an investigation

1. What would I need/do to answer that question?
   1. How would you support that claim? What would make your explanation stronger?
   2. I see evidence as necessary to explain or answer a question.
   2. What is the effect I am looking for? What evidence describes that effect?
   3. I can prove it by showing cause and effect relationship.
   3. How do I know my evidence is precise and accurate (measurement)?
   4. I have a plan to measure the effect that includes appropriate units of measure.
   4. How would I know that the result is caused by what I changed and not something else?
   5. I have a plan for controlling variables.
   A well-designed investigation.

- Evidence is not seen as part of supporting a claim.
  Redirect by teacher

- Can state what they want to change but have no plan for what effect they will measure
  Redirect by teacher

- No plan for how they will measure the effect or their plan does not use the most appropriate measurement
  Redirect by teacher

- Students have not considered what other variables might affect their results.
  Redirect by teacher