Writing Problem Statements, Hypotheses, and Operational Definitions

Problem Statement
What are the functions of laboratory work in science instruction for junior high students at Towncrest Junior High School? (ethnographic study)

Foreshadowed Problems
1. The interaction among students as laboratory work takes place.
2. The interaction between students and teacher during laboratory work.
3. Student and teacher preparation for laboratory work.
4. The relationship between laboratory work and other aspects of science instruction.

Hypotheses
1. A function of laboratory work is to have students participate in a cooperative activity.
2. More academically able students will monopolize the control of the laboratory work.

Operation Definitions
Participating in the study: A students enrolled in science courses at Towncrest

Science instruction: A courses as their emphasis instruction in physical, earth, or biological sciences; the general science and earth science courses at Towncrest.

Laboratory work: Any activity in which the student is directly involved (either singly or with other students) in conducting experiments, manipulating science apparatus, dissecting biological specimens, etc.

Variables: The functions of laboratory work.
• Types of interaction taking place during laboratory work.
• Extent of laboratory work.
• Type of laboratory work, for example, dissecting animals, physics experiment, and materials analysis.
• The timing of laboratory work relative to other instruction in science.