EPS 200 (Stapleton) Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Experimental Design Practice

Consider the following question. *How will the learning of EHS students be affected if the school transitions to all heterogeneous classes?*

1. The question above is fairly broad. Try to focus the question to make it more scientifically testable. In other words, refine the question so that it has very clear independent and dependent variables.

2. Identify the independent variable for this question.

3. Identify the dependent variable for this question.

4. Write an alternate hypothesis for your question.

5. Explain the reasoning behind your alternate hypothesis.

6. Write a null hypothesis for your question.

7. a. Briefly describe an experiment that could be conducted in order to answer this question. In your description, make sure that you demonstrate that you will 1) have a decent sample size, 2) control some important variables, 3) have precise and accurate measurements, 4) address possible bias, and 5) have logical reasoning (you actually measure what your question suggests that you measure).

b. On the writing that you generated in part a, circle and label at least one example of 1, 2, 3, 4, and 5 (see numbers above, in part a).

8. In the space to the right, show your data might be organized into a data table for statistical testing. The independent and dependent variables must be easily understood from your table. To save time, **do not create a complete table.** An unfinished table is all that is expected.