Coefficient of Friction Lab

In this lab you will design an experiment that will determine the coefficient of friction between a textbook and another surface.

Lab notebook:
Description of your experimental design including: materials, methodology, data collection and analysis. (What, How, Why?)

Any necessary equations, FBD, and calculations should be neat and labeled when appropriate.

Conclusions:

1. Would adding books on top of the book tested affect your results? Justify your answer. Equations may be used to assist, but do not complete the justification.
2. Could another group repeat this experiment on a different surface and achieve the same coefficient of friction? Explain your answer.
3. Suppose we find that the actual coefficient of friction is slightly lower than the one you have determined. Discuss a possible physical reason why your experimental value is too high. Human error is not an answer.
4. Why does the amount of force applied to the book initially have no effect on the coefficient of friction?
5. Suppose your experiment is carried out at a much higher elevation so that the value of the acceleration of gravity is slightly lower than 9.8 m/s^2. Would this impact the value of the coefficient of friction? Explain your answer.