

## THE SCIENTIFIC METHOD AND CRITICAL THINKING

### FOR THE NEXT CLASS DO THE FOLLOWING:

1. Read the following about the scientific method.
2. Design a simple experimental study that could be done about a subject related to your major or that you're interested in, using the scientific method. Remember that the rest of the class may not be familiar with technical concepts, so keep it simple.
3. Be ready to tell the class what your study would involve, including all of the following:

population	sample
hypothesis	independent variable
dependent variable	treatment group
control group	pre-test
post-test	
4. Be ready to identify the items from #3 in studies other students describe.

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In your everyday life you act as a kind of scientist. You observe the world around you. You make predictions about how one event will affect another. You develop explanations for what happens around you. When something unexpected happens you try to figure out why.

For example, when you meet a new person you pay attention to the way he or she responds to what you say and do. Based on these observations you predict how he or she will respond to something you are about to say. If the response is what you expect your prediction is confirmed. If the response is not what you expect you think of an explanation. If you continue to interact with that person you continue to observe behaviors and reactions, compare them to past experiences, make more predictions, and develop a better understanding of how the individual will react to various actions.

Or you might have a job that calls for you to determine how to best accomplish a task. Based on what you've learned in classes and your personal experience you may decide that one procedure is more likely to have a positive outcome than the other. If someone were to ask you why you believe that you'd provide an explanation of how the different procedures work and why you predict that one would be better than the other.

Most of us are not very systematic as to do our everyday science. We don't take our observations very carefully. We make rather vague predictions. Our explanations often don't account for all the factors that may be involved. We do well enough to get by