



Step 1: Make observations leading to 5 good scientific questions.

Natural sciences




Social sciences



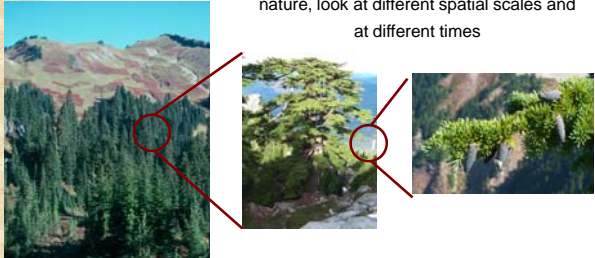

Observations Exercise

There are natural areas on campus that can be used





Observations

If you choose to make observations of nature, look at different spatial scales and at different times




Observations

Linking **PATTERN** and **PROCESS**

Scientists assume these patterns have some understandable basis; that the world is not governed by chance.



Exploring the link between **pattern** and underlying **process** will reveal something about how nature works.

Observations Exercise

- 5 Observations
- Each observation with a question

Observation 1:	Question: Focus on
Observation 2:	Question: • Questions you can conceivably test
Observation 3:	Question: • Questions for which you can derive multiple alternative hypotheses
Observation 4:	Question: "Yes / no" or "greater / less than" questions
Observation 5:	Question: <u>not</u> as good for purposes of this exercise

Observations Exercise

Identifying organisms

If you wish to put a name to any organisms you make observations on, sketch them, note important features, take a digital picture, and come ask me!

Observations Exercise

Step 2: Written Assignment

Due Tuesday (January 18) by the start of class!!!

Submission – your choice of format:

1. Electronic:

On Blackboard (under "assignments")

MS Word format ONLY

Use last name in file name: "BES301 observation gold.docx"

2. Hardcopy:

Hand in at start of class

Observations Exercise

Step 2: Written Assignment

Use an explicit structure with headings in your paper

Part I

1. Observation 1:

Observation Description:

Question 1:

Question Derivation: *if necessary to explain how the question was derived from the observation*

2. Observation 2:

Observation Description:

Question 2:

Question Derivation:

And so on through all 5 observations

Example provided on page 3 of Observations Exercise Handout

Observations Exercise

Step 2: Written Assignment

Use an explicit structure with headings in your paper

Part II

for your "top 2" questions ONLY

1. Question 1:

Why I chose this question:

Hypothesis 1A:

Hypothesis 1B:

Hypothesis 1C:

Present 3 ALTERNATIVE hypotheses for each question

2. Question 2:

Why I chose this question:

Hypothesis 2A:

Hypothesis 2B:

Hypothesis 2C: