# **Team A**

Question:

Hypothesis:

# The Scientific Method

# Step 4 – 6 in the Scientific Method

Sage-grouse Location Information:

|  |  |  |
| --- | --- | --- |
| Sex | Location or Random | Flag # |
| F | Location |  |
| F | Random |  |
| F | Location |  |
| F | Random |  |

# Objectives

Today, you will continue your investigation of Greater sage-grouse. First, you will strengthen your skills with a GPS Unit as you use it to find locations. The locations were obtained through satellite telemetry, via a transmitter on the back of a sage grouse. Second, you will increase your observational skills as you look for “sign” of sage-grouse and other animals: feces, tracks, feathers. Third you will learn how to assess habitat characteristics of sage-grouse by recording information on height of vegetation. Fourth, you will learn how to correctly record data onto a data sheet and how to summarize that data. Finally, using that data, you will practice how to interpret data to support or refute a hypothesis.

# Step 4: Data Collection

# Instructions

1. Break into your teams

2. Obtain data collection materials from Nicki. Each team has a unique list of locations and a unique hypothesis

**3. Listen closely to Nicki’s instructions and example of data collection**

4. Nicki and Ms. Warner have pre-entered locations for you. You need only find your flag.

**VEGETATION HEIGHT**

5. When you get to your first flag designate a Person A to stand at this location, holding the meter tape.

6. Designate a Person B

7. Find compass bearing 90**°**

* 1. Have Person B, walk along the 90° bearing with the meter tape, out to 5 meters.
	2. Those people not holding the tape will now collect shrub data
1. Starting at Person A, walk down the line of the meter tape stopping at each shrub that intersects the tape.
	1. For each shrub you encounter, record the bearing, the name of the shrub, and the height of the shrub (IN CM) like this:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Male/Female | Flag # | Degree | Common Name of Shrub | Height of Shrub |
| male | 1 | 90 | sagebrush | 62 |
| male | 1 | 90 | rabbitbrush | 32 |
| male | 1 | 180 | sagebrush | 44 |
| male | 1 | 270 | no shrubs | 0 |
| male  | 1 | 360 | rabbitbrush | 55 |
| male | 1 | 360 | sagebrush | 25 |

**EACH PLANT THAT YOU MEASURE GOES ON A NEW ROW. SEX AND FLAG WILL BE REPEATED AS MANY TIMES AS YOU NEED TO FOR EACH BEARING.**

9. When you have recorded all shrubs in the 5-meter line, have person A reel the meter tape in.

10. Find compass bearing 180 and repeat steps 7 -9 for this bearing. Then repeat for bearings 270 and 360/0.

YOU FINISHED ONE DATA POINT!! NOW GO FIND THE NEXT SAGE GROUSE LOCATION FLAG. REPEAT STEPS 5-9 FOR ALL 4 LOCATIONS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Male/Female | Flag # | Degree | Common Name of Shrub | Height of Shrub |
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Step 5: Analyze Results

Use a calculator to answer the questions to summarize your data.

For each sage-grouse location, answer the following questions.

1. Calculate the average Shrub Height per location

|  |  |
| --- | --- |
| Flag # | Average Shrub Height (CM) |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| Average Location |  |
| Average Random |  |

1. What was the most common shrub recorded during your study?
2. What rabbitbrush height similar to that of sagebrush?
3. Were there trees in your location? How did that affect the shrubs?

#  Step 6: Support or Refute Your Hypothesis

1. Does your data support your hypothesis?

2. What other data would help you support your hypothesis with more confidence?

3. Now that you have collected some data on sage-grouse habitat characteristics, what other questions do you want to know the answer to?