

**Palo Alto High School TEAM Program:  
Yosemite Journal**

**Focus Quotation:** When we try to pick out anything by itself, we find it hitched to everything else in the universe. – John Muir

Please find time to reflect on the meaning of this quote. Do you find this to be true in your own experience?

## **English: Assignments Overview**

### **Assignment 1 out of 2: Daily Journal**

Every day, you will take a few minutes to write down your thoughts about your time in Yosemite. Some days your hiking group leader will have journal questions for you to answer, but on the days that he/she does not, please choose from the following questions and take some time to thoughtfully respond. Do not answer the same question twice.

- What is the theme of the day as explained by your hiking group leader? Where did you see this theme play out in the day's activities?
- “Me as a Tree”: Following the analogy, explain what are your roots (what grounds you?), what is your trunk (what supports you?), what is your bark (what protects you?), what are your branches (what do you reach for?), what are your leaves (what energizes you?), what are your fruits (what are your gifts?), and what are your seeds (what are your hopes for the future?).
- Explain an activity or challenge that has made an impact on you. Why did it make an impact? What will you take with you from this experience?

### **Assignment 2 out of 2: Poetry Writing**

While in Yosemite, take advantage of the natural environment and let it inspire you to write! *You need to write at least 5 poems while in Yosemite.* Three of these poems should be free-form, and the others may be riddles.

Riddles are a form of poetry in which you look at the world with fresh eyes. Using sensory imagery and metaphorical language, you can describe the world very precisely, but in an unfamiliar way. This week you will be seeing and feeling many new things. Choose three things you encounter and think about how you can describe it using your senses -- sight, sound, touch, taste, and smell. Then think about how you can describe them using metaphorical language -- comparing them to other things. Riddles don't have to rhyme, but it's fun if they do! For each, write the answer scrambled beneath it. Below are two examples:

Icy flowing cracking,  
boulder dragging.  
Valley cleaving,  
Halfdome leaving.  
Look at me, I stand still,  
Wait a while, I flow downhill.  
What am I?

*cirelags in stmeioye leylav*

I see wheel spokes  
with a very long axle.  
I see a tower  
Surrounded by a halo.  
I stare up,  
And trip on roots below!  
What am I?

*aeiouqs*

## Ecosystem Assessment

My ecosystem is: \_\_\_\_\_

Air Temperature: \_\_\_\_\_

Soil Temperature: \_\_\_\_\_

(If your ecosystem contains water)

pH: \_\_\_\_\_ Water Temperature: \_\_\_\_\_

Slope (Yes/No): \_\_\_\_\_

Aspect: \_\_\_\_\_

Canopy Cover (Estimate %): \_\_\_\_\_

Soil Characteristics (height of humus layer, color, texture, smell, etc.):  
\_\_\_\_\_  
\_\_\_\_\_

List 5 plants in your ecosystem: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

List 5 animals in your ecosystem: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

What types of rocks do you see? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Adapted from the California Academy of Sciences)

## Ecosystem Transect Instructions

### Calculating Value of Importance

#### Fieldwork Procedure:

On each of the randomly selected 50m by 2m transects:

1. identify and record each tree, and
2. measure and record its diameter at breast height (DBH).

## Data Analysis:

Calculate the following:

Density (D) = number of each type of plant per sampling area.

Frequency (F) = number of transects in which a given species is present/10.

Dominance (Do) = the summation of DBH values of all plants from a given species.

Then calculate, for each of the species, the 3 parameters above in *relative terms* (that is, in relation to the totals), and in percentages. Therefore:

## 1. Relative Density

**RD** = Density of a given species/density of all species, multiplied by 100.

## 2. Relative Frequency

**RF** = Frequency of a given species/Frequency of all species, multiplied by 100.

### 3. Relative Dominance

**RD** = dominance of a given species/Dominance of all species, multiplied by 100.

4. Finally, the combination of the 3 relative parameters allow us to calculate the most important parameter, **The Value of Importance (VI)** of each species. Therefore:

$$\text{VI} = \text{RD} + \text{RF} + \text{RDo}$$

# Ecosystem Transect Data Recording Sheet

Transect # \_\_\_\_\_ Location \_\_\_\_\_ Date \_\_\_\_\_

Transect # \_\_\_\_\_ Location \_\_\_\_\_ Date \_\_\_\_\_

## Analyzing and Interpreting Ecosystem Transect Results

1. Select at least 3 abiotic factors you described about your ecosystem and discuss how these might affect your ecosystem.
  2. Which plant species had the highest Value of Importance? What can this VI tell scientists about this ecosystem?
  3. Which species had the lowest Value of Importance? List several reasons that might contribute to a lower VI.
  4. Give an example of how the National Park Service might use the data on the Value Importance of each species in managing the ecosystem.
  5. Based on this investigation, what environmental concerns might ultimately affect your ecosystem? List several things that biologists might do to help manage this ecosystem.
  6. Sketch below a food web that might exist in your ecosystem based on the plants and animals you listed. Include at least 3 plants and 6 animals.

## **Art: Assignments Overview**

### **Assignment**

Andy Goldsworthy is a famous sculptor, photographer and environmentalist known for his use of land art, or arrangements of natural and found materials. In groups of 2 to 3 people, you will collect natural materials for an environmental sculpture that you will photograph. Warning: this project will not stay permanent, and you might have to destroy it after you finish!

The goal of this project is for you to explore interesting and alternative ideas about art and photography. It is also an invitation to be more attuned to the naturally beautiful materials and patterns that surround you in nature.

### **Procedure**

- Find inspiration in your surroundings. Look for materials with...
  - Different shapes and sizes – this adds interesting artistic elements to your design
  - Different colors and tonal variations (lights or darks of the same color)
  - Different textures
  - Interesting *natural* configurations already in place to which you can add designs
- Everyone in the group should collect materials. Discuss possibilities for compositions and designs of a nature sculpture using your specific materials. Sketch a plan for a design in the box on the next page. After you sketch your idea, share ideas in your group to come up with ONE group sculpture. Use leadership skills to collaborate and involve everyone in your group.

How did you feel about your group's project, from start to finish? Has your natural role in the group setting changed from Foothills Leadership Retreat? Why or why not?

## **Math: Assignments Overview**

### **Predator / Prey Activity**

The balance between prey, predator and the environment is a complicated and delicate one. The system of equations used to model predator/prey interactions is studied in Calculus; however, it is possible to simulate the outcome of the equations using simulation activities.

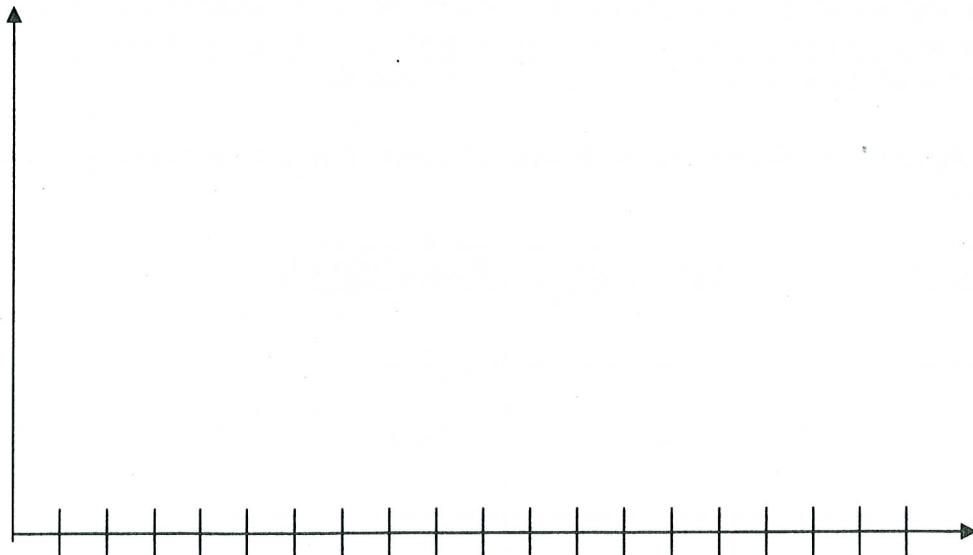
- Participate in the “Predator/Prey” simulation with your YI group. Record the data generated from the simulation below:

<b>Year</b>	<b>Deer</b>	<b>Resources</b>	<b>Mountain Lions</b>
2001			
2002			
2003			
2004			
2005			

2006			
2007			
2008			
2009			
2010			
2011			
2012			
2013			
2014			
2015			
2016			
2017			

### Analysis of Data for Predator/Prey Activity (~20 minutes)

- Using the data from the simulation, make a graph of Population vs. Time.



- Based on your observations from the data above, provide your “best-guess” answers to the following scenarios:

*In 1986 there were 250 deer & 500 “resources” in Yosemite Valley.*

- 1) What would you expect the population of deer to be in 1987? Explain.
- 2) Over the winter of 1987 a disease spread through the Valley’s vegetation, reducing the “resources” down to 30. Based on your answer from #1 and this new information, predict what the deer population would be in 1988 and 1989? Explain.
- 3) Over the next 5 years, the deer population grew to 200 while the resources stayed low - 50. In that year, 1994, a pride of 10 mountain lions migrated into the Valley. Predict what the deer population would be for the next 2 years: 1995 & 1996. Explain.
- 4) In 1997, due to increased tourism, the Park management expanded many of the Valley’s campgrounds. This cut the amount of resources to 10. Using your estimations from the previous problem, predict what the deer population would be at the end of 1997 and also in 1998. Explain.
- 5) At this point, you have seen how many factors can affect the population of deer. One thing we have not discussed is how the actions of campers, like yourself, can directly affect the lives and populations of deer. How might the behaviors of human beings in the Valley affect deer?  
Explain your thoughts below.

### World History: Assignments Overview

Throughout our week in Yosemite, you will have several opportunities to learn about the indigenous people and cultures of the Yosemite Valley. It’s your job to find out as much information as you can about these cultures and be prepared to compare one of these cultures to another that you’ve studied in your history class.

Your teacher will give you a more detailed outline of your assignment before we leave. Please use this space to take notes. When taking notes, pay attention to the following information:

- **Date** (of note taking)
- **Topic** (of notes)
- **Source** (Who/what is giving you this information? Is this source credible? Briefly comment on this kind of information.)
- **Information** (In bullet point form. Take down the titles of texts/resources that are recommended to you for later reference.)
- **Connections** (Are you already seeing patterns? Can you begin to compare/contrast the cultures you are learning about? Take note.)