

Name: _____

Date: _____

Period: _____

AP Environmental Science**Shannon Diversity Index “Car Species” Diversity Lab**

- You and a partner will collect data. However each of you will need a completed data table.
 - Record the make and model (species) in the column titled *Species of Cars in Lot A*.
- Count the number of individual cars in each species and write that number in the column titled *Number of individuals*.
 - Hint: you may want to use tally marks and add an additional tally mark each time you encounter a car of the same species (make & model).
- Next, you will use an Excel spreadsheet to compute and analyze the data that you recorded (next class period).
- Finally, answer the analysis and conclusion questions that follow (after you complete the Excel Spread sheet).

Species of Cars in Lot A	Species identifier	Number of individuals n_i	Species of Cars in Lot B	Species identifier	Number of individuals n_i
	1			1	
	2			2	
	3			3	
	4			4	
	5			5	
	6			6	
	7			7	
	8			8	
	9			9	
	10			10	
	11			11	
	12			12	
	13			13	
	14			14	
	15			15	
	16			16	
	17			17	
	18			18	
	19			19	
	20			20	
	21			21	
	22			22	
	23			23	
	24			24	
	25			25	
	26			26	
	27			27	
	28			28	
	29			29	
	30			30	
TOTALS			TOTALS		
	S = ↑	N = ↑		S = ↑	N = ↑

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1. Analyze the data table at the bottom of the second page of the background information handout.
2. Using the data you collected complete data table below (High, Med, or Low).

Diversity Measurement	"Community" A	"Community" B
Species Richness (S)		
Evenness		
Dominance		
Overall diversity		
Shannon Diversity Index (H')		

Analysis & Conclusion Questions

- 1) Explain specifically what each of the following variables means: S, p_i , n_i , N, H'
- 2) If H' is very close to 0, what does that tell you about the diversity of an ecosystem?
- 3) How is the Shannon Diversity Index a good tool for biologists studying biodiversity?
- 4) List the three most abundant species in each set of data and explain why you think these are the most abundant species.
- 5) Based on your observations, identify the parking lot that was the most diverse. Explain.