NAME _____

Lab: Sunspot Anaylysis

Introduction: Photographs on the sun show dark areas on its surface. These spots are believed to be due to solar storms, areas of cooler gases on the surface. The number and pattern of these spots change with time.

When data collected over many years are graphed, a pattern emerges. This picture-like representation makes it easier to see relationships that are not obvious from a column of numbers.

VOCABULARY:

Cyclic- _____

Extrapolate - _____

Procedure:

1. Using the data given, graph the number of sunspots in the years from 1950 to 2000.
2. Be sure to completely label the graph with *graph title axis titles*

AVERAGE ANNUAL SUNSPOT NUMBERS

Year	**Number of Sunspots**	**Year**	**Number of Sunspots**
1955	4	1972	69
1956	141	1973	38
1957	176	1974	34
1958	185	1975	16
1960	112	1976	13
1961	54	1977	27
1962	38	1978	93
1963	28	1979	155
1964	10	1980	146
1965	15	1981	134
1966	47	1982	116
1967	94	1983	72
1968	106	1984	46
1969	106	1985	24
1970	105	1986	27*
1971	67	1989	154*
*taken off internet		1990	148*
www.exploratorium.edu		1992	100*
		1995	15*

**put in graph

ANALYSIS AND CONCLUSIONS

1. Describe the pattern shown on this graph.

2. List the peaks on the graph (or use the table) in which sunspot maximums occurred.

3. Calculate the average time span (to the tenth of a year) between maximums. SHOW YOUR WORK!

4. List the troughs on the graph (or use the table) in which sunspot minimums occurred.

5. Calculate the average time span (to the tenth of a year) between minimums SHOW YOUR WORK.

6. Using these two averages from above, calculate the average time of one complete sunspot cycle SHOW YOUR WORK.

7. From your data predict when the next maxima will occur following the data points given.

8. . From your data predict when the next minima will occur following the data points given.

9. Extrapolate this graph at its present rate to determine approximately how many sunspots will occur in the year that you will be graduated from high school.

Year you'll graduate _____

10. Looking in your text, learn about *sun flares* and *solar prominences.* Write a short statement defining flares and prominences and how they relate to sunspots.

11. Using sentences, describe two ways solar maxima activity affect humans on earth.

12. With your text, research the ozone layer and its thinning. How will this atmospheric condition cause consequences for humans on Earth during solar maxima?