

### III. Gather Data

#### A. Solar Flares and Magnetic Disturbance

- Click on the "Solar Flare Effect" site.  
Scroll down to the graph.

1. Describe the relationship between x-ray radiation and the magnetic field variation.

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- Click "Back" to return to the Solar Events "Gather Data.1" web page.





## B. Sunspots and Geomagnetic Storms

- Click on "Occurrence of Geomagnetic Disturbances" site.
- Scroll down to the graph.

1. Describe the relationship between the sunspot number and the number of days with geomagnetic storms.

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- Click "Back" to return to the Solar Events "Gather Data.1" web page.

## C. Monthly Storms

- Click on "Seasonal Distribution" site.
- Scroll down to the graph.

1. What two months have the highest number of geomagnetic storms?

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2. What three months have the lowest average of geomagnetic storms?

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3. Recalling the effects of geomagnetic storms, in what months would you want to test a new computer network?



4. Why did you choose these months?

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- Click "Back" to return to the Solar Effects "Gather Data.1" web page.
- Click "Forward" at the bottom of the page.

#### D. Annual Sunspot Numbers



- Click on the "Yearly Average Sunspot Numbers" site.
- Read the legend below the graph for help answering the questions.



1. Yearly sunspot numbers have been calculated using the average of the daily number of sunspots. Which solar minimum year had the lowest yearly average? \_\_\_\_\_



- Click "Back" to return to the Solar Events "Gather Data.2" web page.

#### E. Math Facts and Solar Measurements



- Click on the "Solar Facts" site.



1. The gravity on earth is 9.8 meters per second per second. How much stronger is the gravity on the surface of the sun?

2. Escape velocity is how fast you have to go to escape the sun's gravity and not get sucked back into the sun. What is the escape velocity of the sun in kilometers per hour?



3. What is the diameter of the sun? \_\_\_\_\_ meters



4. Use the diameter you found in question 3 to find the circumference of the sun. ( $C = \pi d$ )



5. Use the rotation period of the sun, the number of hours in a day, the number of meters in a kilometer, and the circumference of the sun to figure out what the surface speed of the sun is in kilometers per hour. (How fast is it moving on the surface?)

6. Use the fact that there are about 1.6 kilometers per mile to convert the speed you found in question 5 to miles per hour.



- Click "Back" to return to the NOAA Research "Solar Events" main page, or choose "Solar Events" from your Favorites or Bookmarks.
- Click on "Application".