Name: _____ Earth in the Solar System

Date: _____ Period: _____ The Physical Setting: Earth Science

The Sun

CLASS NOTES

- Sun - _____
  _____
- Properties of the Sun:
  - The Sun makes up about _____ of the mass in our Solar System
  - The Sun is _____ times Earth's diameter and can hold _____ Earth's
  - The surface temperature is about _____ ° C
  - The interior temperature is about _____ ° C
- Fusion - _____
  _____
  - Hydrogen converts to helium [simple]
  - Estimates indicate that about 4 million metric tons of matter are converted into energy every second, but the Sun is massive, this process can continue for another five billion years!
- Photosphere - _____
  _____
  - Less dense and lower portion of the atmosphere
  - Approximately 400 km thick
- Chromosphere - _____
  _____
  - Only seen during a solar eclipse

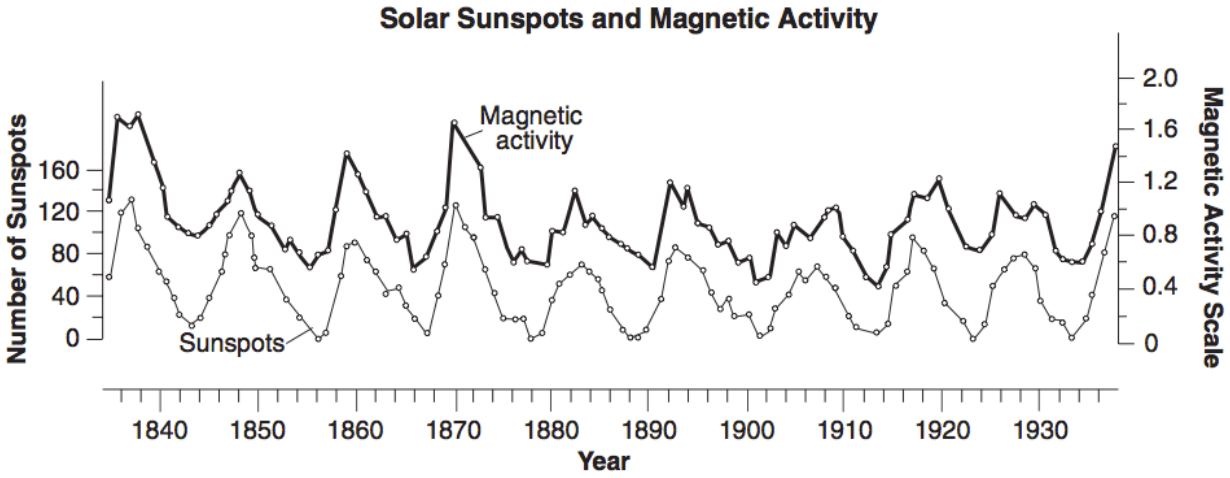
The Sun

- Corona - _____
  _____
  - Only seen during a total solar eclipse

- Prominences - eruption of relatively cool, high-density gas from the chromosphere into the corona
  - May last for hours and can extend millions of kilometers about the photosphere

- Solar Flares - particles that are ejected from the Sun

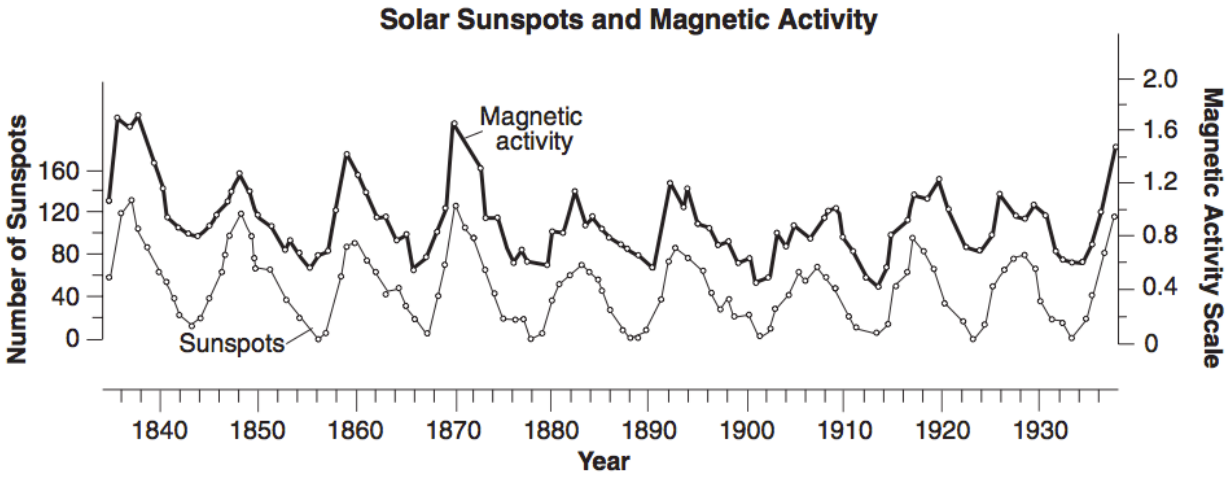
- Sunspot - _____
  _____
  - Cyclic phenomenon occurring approximately every _____ years



The Sun

PART I QUESTIONS: MULTIPLE CHOICE

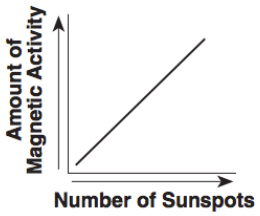
Base your answers to questions 1 through 3 on the graph below and on your knowledge of Earth science.



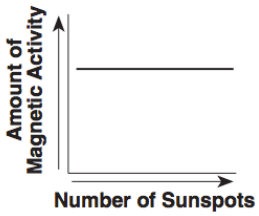
1. The graph indicates that years having the greatest number of sunspots occur
   a. randomly and unpredictable
   b. precisely at the beginning of each decade
   c. in a cyclic pattern, repeating approximately every 6 years
   d. in a cyclic pattern, repeating approximately every 11 years

2. According to the graph, what approximate year did the most sunspots occur?
   a. 1838
   b. 1860
   c. 1916
   d. 1928

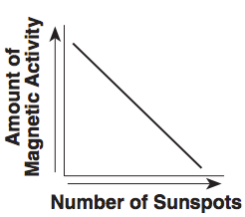
3. Which graph represents the relationship between the number of sunspots and the amount of magnetic activity on the Sun?



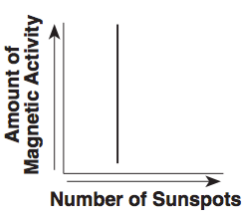
a.



b.



c.



d.

4. Which of the forces listed below is most responsible for the formation of the Sun?
    a. Gravity
    b. Magnetism
    c. Electromagnetism
    d. Light

5. Which process produces the largest amount of energy given off by the Sun?
    a. nuclear fusion of lighter elements into heavier elements
    b. nuclear fusion of heavier elements into lighter elements
    c. radioactive decay of lighter elements into heavier elements
    d. radioactive decay of heavier elements into lighter elements

6. Energy is produced within a star's core by the process of
    a. insolation
    b. conduction
    c. nuclear fusion
    d. radioactive decay

7. What is the Sun's period of rotation at its equator?
    a. 27 days
    b. 59 days
    c. 16 hours
    d. 24 hours

8. What approximate mass does the Sun makeup in or solar system?
    a. 25%
    b. 67%
    c. 99%
    d. none of the above

9. If Earth's mass is one, how many more times massive is the Sun
    a. 317 times more massive
    b. 1,392,000 times more massive
    c. 333,000 times more massive
    d. none of the above

10. What elements are combined in the Sun that allow it to produce energy?
    a. Lithium
    b. Iron
    c. Hydrogen
    d. Neon