$\qquad$
$\qquad$ Period: $\qquad$

## Review: Foundations

1. Scientists often use classification systems in order to
a. extend their powers of observation
b. make direct comparisons with standard units of measurement
c. make more accurate interpretations
d. organize their observations in a meaningful way
2. An interpretation based upon an observation is called
a. a fact
b. a classification
c. a measurement
d. an inference
3. Which statement about a stratocumulus cloud seen over East Islip, NY, is an inference?
a. The cloud has an irregular shape.
b. The cloud formed over Long Island Sound.
c. The cloud appears white.
d. The base of the cloud is 2.6 km above ground.
4. The volume of an irregular object could best be determined by
a. placing it in a beaker of water
b. calculating the circumference
c. comparing it to a known standard for mass
d. counting the number of flat surfaces
5. What is the density of a rock which has a mass of 35 grams and a volume of $7 \mathrm{~cm}^{3}$ ?
a. $42.0 \mathrm{~g} / \mathrm{cm}^{3}$
b. $0.2 \mathrm{~g} / \mathrm{cm}^{3}$
c. $28.0 \mathrm{~g} / \mathrm{cm}^{3}$
d. $5.0 \mathrm{~g} / \mathrm{cm}^{3}$
6. What is the mass of a piece of platinum that has a density of of $21.4 \mathrm{~g} / \mathrm{cm}^{3}$ and a volume of $0.4 \mathrm{~cm}^{3}$ ?
a. 8.6 g
b. 21.8 g
c. 53.5 g
d. 115.8 g
7. What is the best example of a cyclic event?
a. the appearance of Halley's comet every 76 years
b. a hurricane moving up the east coast an hitting Long Island
c. an earthquake near Washington DC
d. a tsunami striking the east coast of Japan

## Review: Foundations

Base your answers to questions 8 through 11 on your knowledge of Earth science and the following graph.

## Solar Sunspots and Magnetic Activity


8. Approximately how many sunspots occurred in 1870 ?
a. 1.0 sunspots
b. 1.6 sunspots
c. 200 sunspots
d. 125 sunspots
9. What was the approximate magnetic activity in 1870 ?
a. 0.4 on the magnetic activity scale
b. 1.0 on the magnetic activity scale
c. 1.6 on the magnetic activity scale
d. 2.0 on the magnetic activity scale
10. 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
11. Which graph represents the relationship between the number of sunspots and the amount of magnetic activity on the Sun?

a.

b.

c.

d.

## Review: Foundations

Base your answers to the following question on the passage and data table below and on your knowledge of Earth science. The data table shows the monthly average high air temperatures, in degrees Fahrenheit [ ${ }^{\circ} \mathrm{F}$ ], and monthly average snowfall, in inches [in], at the summit [top] of Mount Washington in New Hampshire.

## Mount Washington

Mount Washington, located in the state of New Hampshire, is one of the highest mountains east of the Mississippi River. It experiences hurricane-force wind gusts at the summit on the average of 110 days per year, including a record wind speed of 231 miles per hour. It also receives very high levels of snow, averaging 282 inches [ 23.5 feet] of snow per year.

Mount Washington Monthly Average High Air Temperatures and Average Snowfall

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Average High Air <br> Temperature <br> ( | 14 F) | 15 | 21 | 30 | 41 | 50 | 54 | 53 | 47 | 36 | 28 | 18 |
| Average <br> Snowfall <br> (in) | 44 | 40 | 45 | 36 | 12 | 1 | Trace | 0.1 | 2 | 18 | 38 | 46 |

12. On the grid below, construct a line graph by plotting the average high air temperatures for each month listed in the data table. Connect all twelve plots with a line.


## Review: Foundations

Base your answers to questions 13 through 15 on your knowledge of Earth science. Object A is a solid cube of uniform material having a mass of 65 grams and a volume of $25 \mathrm{~cm}^{3}$. Cube B is a part of cube A.

13. Calculate the density of Cube $A$ [include proper units].
14. Calculate the density of Cube $B$ [include proper units].
15. The mass of cube $B$ is measured in order to calculate its density. The cube has water on it while its mass is being measured. How would the calculated value for density compare with actual density?

