Regents Earth Science
Groundhog Day!

Name_____

Date _____ Period____

Adapted and updated from
http://www.ncdc.noaa.gov/oa/climate/extremes/2004/groundhog/groundhog.html

Groundhog Day Background / Folklore

Every February 2nd crowds gather at Gobbler's Knob, in Punxsutawney, Pennsylvania. A groundhog, Punxsutawney Phil, burrowed inside his heated simulated tree trunk, is about to thrust or be pulled into the limelight once again. A pre-dawn fireworks display helps to ignite (hopefully not literally!) the crowd that has gathered in anticipation of Phil's forecast. The awe-inspiring fireworks are set to lively music, which is just what the crowd generally needs at 5:00 am on a cold rural Pennsylvania morn. Phil, and others like him, make the most celebrated weather forecast of the year. Has spring sprung when Phil emerges from his burrow and doesn't see his shadow? Or should he scurry back into his burrow for six more weeks of winter weather if skies are clear and fair?

Groundhog Day has its origins in an ancient celebration of a point mid-way between the Winter Solstice and the Spring Equinox. Superstition has it that fair weather was seen as forbearance of a stormy and cold second half to winter. The early Christians in Europe established the custom of Candlemas Day, when the clergy would bless candles and people would light them in each window of their homes to ward off the darkness of mid-winter.

But the legend of the February 2nd forecast also persisted, as captured in this old English saying:

If Candlemas be fair and bright,
Winter has another flight.
If Candlemas brings clouds and rain,
Winter will not come again.

The trail of groundhog history actually leads back to Clymer H. Freas, city editor of the Punxsutawney Spirit newspaper. In 1887, he was inspired by a group of local hunters and gourmets who held a groundhog hunt followed by a picnic barbecue of, well, you know. Anyway, Freas though it so much fun that he wrote up the group as the Punxsutawney Groundhog Club and went on to promote the Punxsutawney Groundhog as the official weather forecaster. As he embellished the story year after year, other newspapers picked it up and soon everyone looked to Punxsutawney Phil for the critical prediction of when spring would return to the nation.

The chart below shows the results of Phil's appearance over the last few years, along with the average temperature variation from normal in the months following his appearance.

Year	Phil see his Shadow?	Average Feb. Temps	Average Mar. Temps	Prediction (Good or Bad)
2008	Yes	Above	Above	
2007	No	Below	Above	
2006	Yes	Above	Above	
2005	Yes	Above	Below	
2004	Yes	Normal	Above	
2003	Yes	Below	Above	
2002	Yes	Above	Above	
2001	Yes	Above	Below	
2000	Yes	Above	Above	
1999	No	Above	Above	
1998	Yes	Above	Below	
1997	No	Above	Above	
1996	Yes	Above	Below	
1995	No	Above	Above	
1994	Yes	Below	Above	
1993	Yes	Below	Above	
1992	Yes	Above	Above	
1991	Yes	Above	Above	
1990	No	Above	Above	
1989	Yes	Below	Above	
1988	No	Below	Above	

Questions:

1. With regard to the seasons, what is the significance of Candlemas Day?
2. If Candlemas Day is cloudy, what is the "prediction" for the weather during the next two months?
3. Examine the chart to the left and determine whether Phil's "prediction" was Good or Bad. Write "good" or "bad" in the right hand column of the chart.
4. What percentage of the time did Phil get the prediction right? Show and explain your calculation.
5. In 1994, Phil saw his shadow and February was colder than normal. March of 1994 was warmer than normal. Was Phil's prediction Good or Bad? Explain your answer.

5. Where did the idea that the weather on February 2 could be used to predict future weather originate?

6. Is there any valid reason to believe that the weather on February 2 can be used to predict the weather later in February and March? Explain.