MODELS OF THE UNIVERSE

Name _____
Date _____

Per _____ page _____

Objective: _____

Research:

Expanding Universe: _____

THEORY OF EXPANDING UNIVERSE:

Big Bang: _____

_____

_____

Galaxies, Stars, and Planets: _____

_____

Red Shift: _____

_____

_____

Galaxies farthest from Earth: _____

Big Crunch: _____

_____

OTHER UNIVERSE THEORIES: (no supporting evidence)

Oscillating Theory: _____

_____

Steady State Theory: _____

_____

_____

ACTIVITY: MODEL 1

1. Use a black pen and mark one uninflated balloon randomly with ten (10) dots. Number each dot. Try to keep dots in the center of the flattened balloon.
2. Blow up the balloon less than halfway and close it with a rubber band.
3. Record the distances between the dots on the balloon that is inflated less than half way. (measure with a ruler in cm). This is the column titled "Small" on Data Table 1.
4. Remove the rubber band and blow more air into the balloon. Measure and record the new distances between dots. This is done in the column called "Medium" on Data Table 1.
5. Remove the rubber band and blow more air into the balloon. Measure and record the new distances between the dots in the column called "Large" on Data Table 1.

DATA TABLE 1:

DOTS	Small Distance between dots (cm)	Medium Distance between dots. (cm)	Large Distance between dots. (cm)
1-2			
3-4			
5-6			
7-8			
9-10			

MODEL 2:

1. On the other iuninflated balloon, draw 3 dots labeled dot A, B and C. Put Dot A and Dot B about $\frac{1}{2}$ cm apart. Put dot C about 5 cm away from A.
2. Blow up the balloon part way and close it with a rubber band.
3. Measure the distances from A to B and from A to C with your ruler. Record in the table below.
4. Blow more air into the balloon and measure and record the distances between the dots again.
5. Blow up the balloon as far as possible without popping the balloon and record the distances between A and B and A and C.
6. Calculate the change in distances between A and B and A and C (from the slightly inflated balloon to the totally inflated balloon).

balloon	Distance A to B	Distance A to C
uninflated	0.5 cm	5cm
slightly inflated		
half inflated		
totally inflated		
change in distance		

CONCLUSIONS:

1. What do the dots on the balloon represent? _____
2. What happened to the distances between the dots as the balloons inflated? _____
   _____
3. What do the dots on Model 1 represent as the balloon enlarged? _____
   _____
4. In Model 2 did the distance between A and B <u>change</u> the same amount as the distances between A and C? _____ How were they different? _____
   _____
5. What do the dots A, B and C on Model 2 represent as the balloon enlarged?
   _____
6. If you left the inflated balloon for a long time and the distances between the dots started to decrease, what theory might this be a model for? _____