Name: _____ Block: _____ Date: _____

The Expanding Universe

Materials

- balloon - twist-tie - felt pen/marker - ruler
- piece of string

Procedure

1. Blow up the balloon until it ***just*** starts to get round (don't inflate all the way!!!).
2. Wrap the twist-tie **tightly** around the neck of the balloon to keep it inflated.
3. Using the felt pen or marker, draw **six** dots on **one side** of the balloon at least **2cm** away from each other.
   → label the **bottom** dot **"M"** (for Milky Way)
   → label the other dots A, B, C, D and E (these will be the other galaxies)
4. Measure the distance between **M** and each of the other dots. Record the results in the table below under **Trial 1.**
5. Loosen the twist-tie and inflate the balloon a little bit more. Measure the **new distances** between the dots and record the results under **Trial 2**.
6. Repeat #5 and record the results under **Trial 3**.

Galaxy		**Distance to M**	
	Trial 1	**Trial 2**	**Trial 3**
A			
B			
C			
D			
E			

Questions

1. a) Which trial had the greatest distances?

_____

b) Which distances increased the most?

_____

_____

2. How does this exercise prove Hubble's theory that the universe is expanding because all galaxies are moving away from Earth?

_____

_____

_____

3. Did you expect the results you found? Why or why not?

_____

_____