Name: _____

A EN 2013 – Agricultural Power Units Laboratory
Lubrication Viscosity Lab Exercise

Description of Activity:

This activity is designed to help you understand the different characteristics of engine oils at different temperatures. You will be actively comparing the viscosities of three different oils at three different temperatures.

Materials Provided:

1. 3 – 25ml graduated cylinders & 1 - funnel
2. 9 – Samples of engine oils. (3 SAE grades @ 32° F, Room Temperature, & 200° F)
3. Assortment of BB's
4. Stop watch
5. Data Table (below)
6. Shop rags

Procedure: (Follow the steps below for each SAE rated oil)

1. Place 25ml of an SAE grade engine oil at different temperatures in each graduated cylinder.
2. Drop, from the lip of the graduated cylinder, three BB's, one at a time for each temperature. Record the time it takes for each to travel from the top of the oil to the bottom of the graduated cylinder.
3. Average the times for each trial for each temperature and compare the average times.
4. Pour the contents of each graduated cylinder through the filter screen back into their respective SAE grade containers. Collect the BB's.
5. Repeat the above steps for the remaining SAE grades @ approximately room temperature, 32° F, & 200° F

SAE Grade	Seconds @ Room Temperature: _____° F				Seconds @ approximately 32° F				Seconds @ approximately 200° F			
	T1	T2	T3	Avg.	T1	T2	T3	Avg.	T1	T2	T3	Avg.

Answer the Following Questions on the Back of this Sheet:

1. How did the different oils react to different temperatures?
2. Did the multi-viscosity oil act perform differently than the other oils? If so, how and why?
3. Which oil would you use when? In different geographical locations?
4. Describe what would happen to an engine if an inappropriate SAE grade was used.