Date: _____

Experiment Title:

How ferofluid reacts in different liquids.

Student's Name : Joron D. Mayer

Parent's Name : _____

Parent's Email : _____

Parent's Phone : _____

Purpose - Ask a Testable QUESTION:

Keep it simple, something you can do at home and measure, ideally with a number.

Does the viscosity of the liquid change how the ferofluid react?

Background RESEARCH:

What are six things you learned relating to your topic? Use complete sentences.

1: Ferrofluid is a liquid that has magnetic particles floating inside.

2: It loses magnetic capabilities in extream heat.

3: Ferrofluid was made in the 1960's

4: It was created for the purpose of moving fuel in space

5: It can even be used as a form of art!

6: _____

Independent Variable:

What is the one thing you want change in each trial?
**Remember only one thing can change to be a fair test, everything else must be controlled.*

the liquid

Forming a HYPOTHESIS (Taking your best guess):

What do you think will happen when you change your variable?

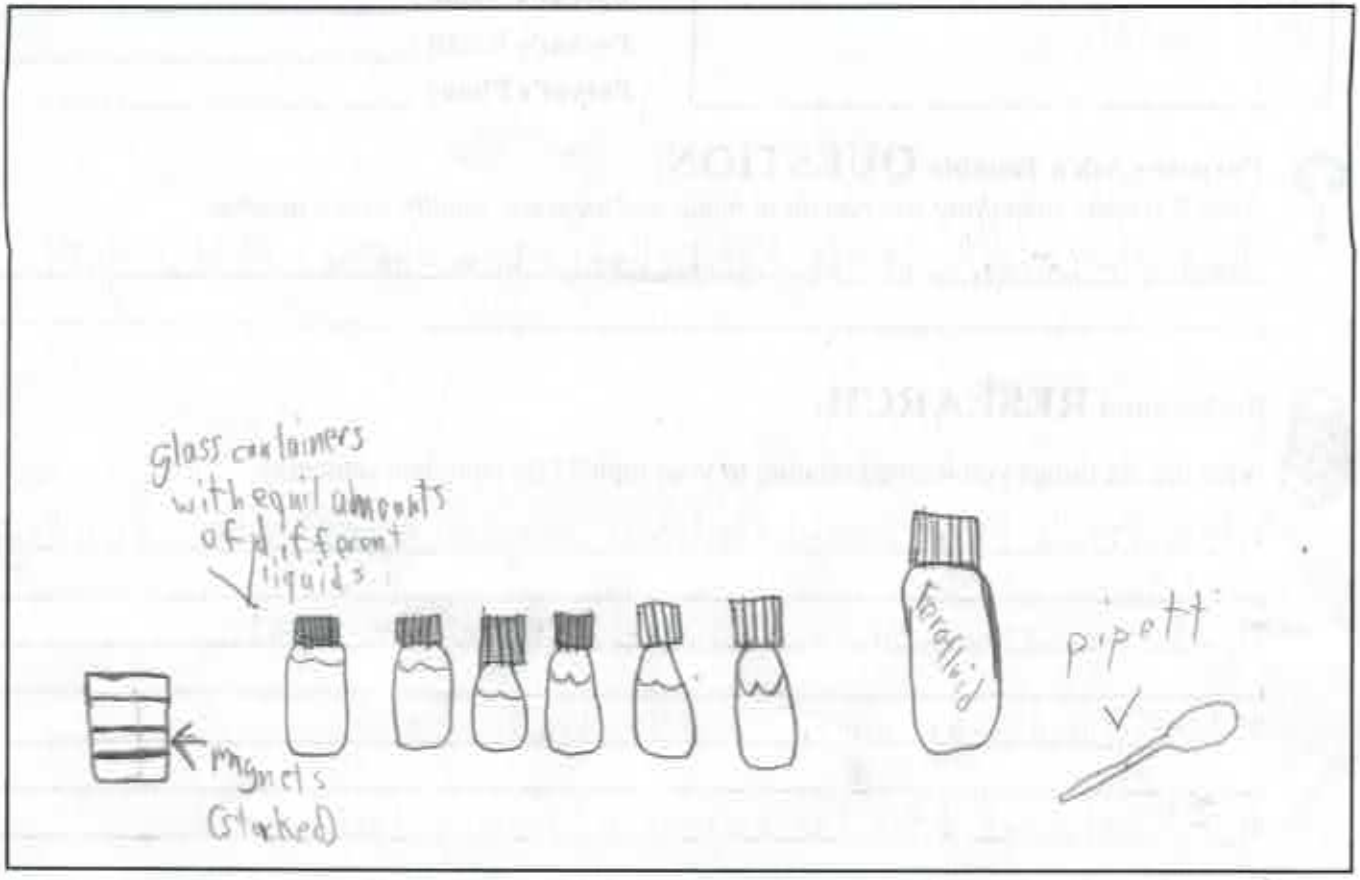
The reaction will be different depending on the thickness of the liquid.

Student's Name : _____

(In case the pages are separated.)

Draw a picture of how your EXPERIMENT will be set up:

Be precise and use labels, we should have a clear idea what you will do.



Materials List:

List everything: specific equipment, supplies, safety items and measuring tools.

1: ferrofluid
2: magnets (Neodemium disk magnets)
3: test vials (glass containers)
4: different liquids
5: a dipett
6: _____
7: _____
8: _____
9: _____
10: _____
11: _____
12: _____
13: _____
14: _____

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Step-by-Step Plan:

What are the steps to complete your experiment?

**Use complete sentences and include measurements and information needed to carry out your experiment precisely. It also needs to include multiple tests changing ONLY your independent variable.*

We should be able to replicate your experiment based on your plan here.

(test vials should be about 2 inches tall)

1: first get some test vials and liquid (like oil, water, and honey).
2: pour enough liquid to almost fill each vial. (different liquid per bottle)
3: Next get some ferrofluid out and use a pipett to pour 5 drops into each liquid.
4: screw on the lids and get out a strong magnet (neodemium disk magnet)
5: now get out a ruler and put one of the vials at the very end of the ruler.
6: Next get your magnet and slowly drag it toward the vial. (make sure your measuring the distance between the vial and magnet)
7: Once the ferrofluid starts moving (reacting) then stop moving the magnet and write down the distance. (inches)
8: Now repeat steps 5-7 with each vial.
9: If you want to, measure the distance again for each vial.
10: Play arround with the ferrofluid when your done. (don't let the ferrofluid touch the magnet directly)
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29:

Student's Name : _____

(In case the pages are separated.)

Carry out the experiment as planned and Collect Data:

Record the results on the T Chart below, or use another sheet of paper if needed.

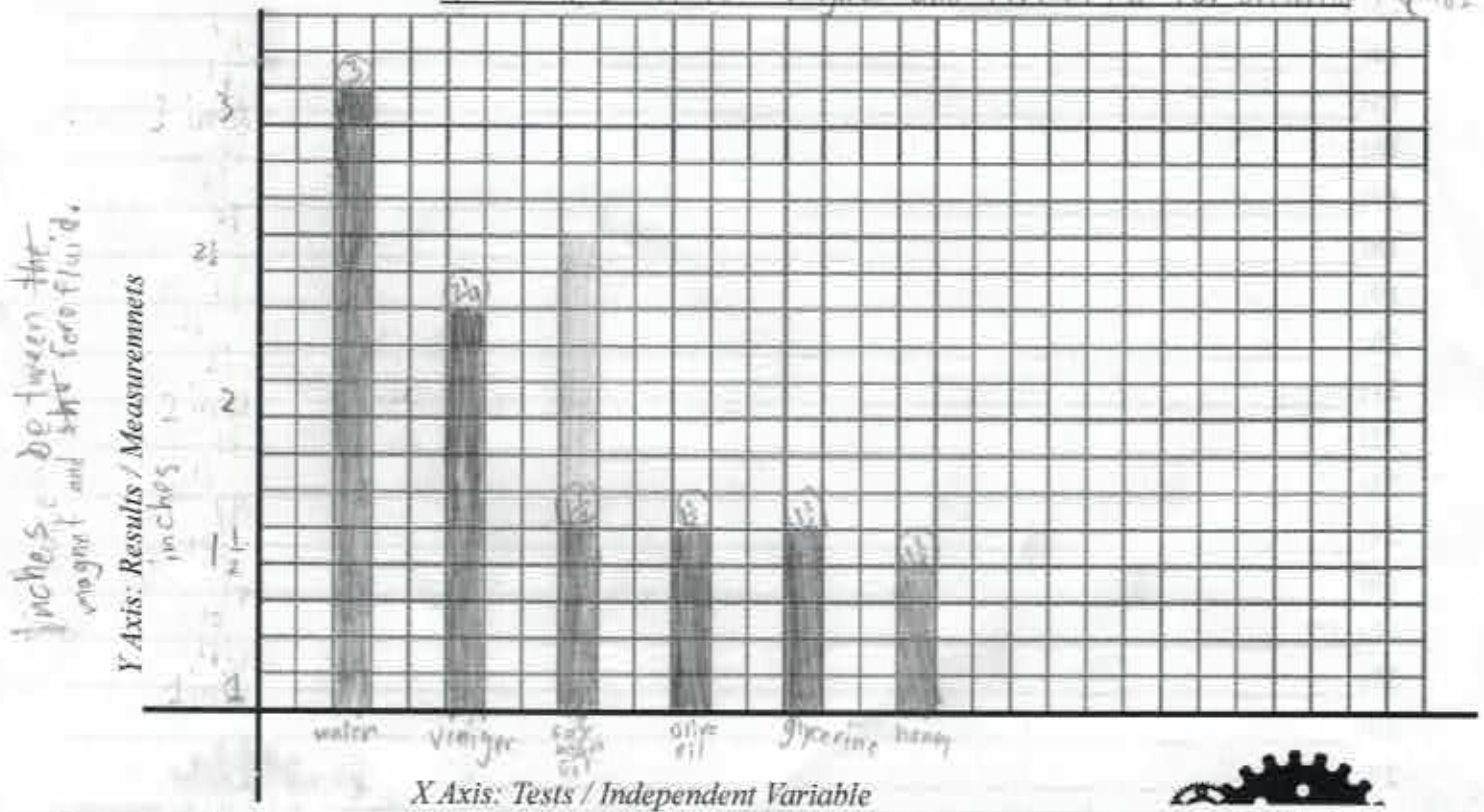
Variable Changed:	*Results / Measurement (remember to record your units)*
Liquid Viscosity	How close (inches) before a reaction
Test #1 water	3 inches
Test #2 vinger	2 1/4 inches
Test #3 Soy bean oil	1 1/2 inches
Test #4 olive oil	1 1/2 inches
Test #5 glycerine	1 1/2 inches
Test #6 honey	1 3/8 inches

Graphing:

Please graph the data above with an appropriate graph.

**Remember to name the graph, label your units, decide on a range, etc. We made a couple of notes to help you get started. Make sure it is beautiful, precise, clean and clear, use another piece of graph paper instead if needed.*

Title: Distance between magnet and ferofluid for different liquids



inches, between the magnet and the ferofluid.

Student's Name : Jaron D. Meyer
(In case the pages are separated)

Drawing CONCLUSIONS:

Examples: Which test had the biggest results? Which had the smallest results? What was your average result? Were there any outliers in your data, if so why? Did anything suprise you?

Water had the best results. It reacted quicker than the other liquids and it had the best reaction for spikes and quickly moving. Honey reacted slowly even when the magnet was touching the vial. The honey (as far as I knew) didn't make spikes. My average result was one and a half inches for soybean oil, olive oil and glycerine. The thicker the viscosity is, the slower the reaction is. The thinner the viscosity is the quicker the reaction is.

REPORT: Was your hypothesis correct? Why or why not?

**Please use complete sentences and DIRECTLY restate your hypothesis in your answer here.*

yes it is. The hypothesis was that the reaction would change depending on the viscosity and that was correct. A thicker viscosity means slower reactions, but a thinner viscosity means a quicker reaction.

What would you do differently next time?

I would put two magnets on either side of the ferrofluid and see if I could suspend the ferrfluid.

What additional questions came to mind regarding this topic?

none that I can remember