

Paper Chromatography Lab

The problem:

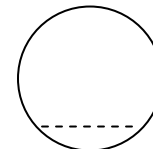
A note was left on the science teacher's desk. The note said, "Please, I beg you to teach us more metric conversions!!!!" The note was unsigned, so the teacher was not sure who might have left it. The teacher thought it would be best to figure out who the student was, so only he/she would be taught more metric conversions. Of course, there is the possibility that all students still wanted to learn more, as well as, this secret student.

The science teacher had some leads on the secret student. One student, **Jimmy Jones**, had been very enthusiastic about metric conversions and seemed disappointed to not be doing more. The teacher found him writing his classwork with a ROSEART black marker. Another student, **Susie Lapoozie**, had been caught doing extra metric conversions that she had downloaded off the internet. She had been seen earlier drawing a poster with Crayola markers. That left only two other clear possibilities, **Pollyanna Potter and Timmy Trotsky**. They both had been seen up by the teacher's desk right before the note was found. Pollyanna was writing with a Vis-à-vis marker and Timmy had been writing with a Staedtler "lumocolor" pen. The teacher was able to acquire samples of each of these pens for the investigation.

The Solution: You must determine which student secretly wanted more metric conversions practice or face the possibility of the entire class learning more conversions.

The Process:

- 1) Cut the bottom curve off of the filter paper circle.
- 2) Draw a pencil line about 1cm from bottom of paper.
- 3) Label 4 spots where you will put a pen mark. (You must use pencil for this!)
- 4) Use all 4 black markers and put a dot on your pre-marked spots.
- 5) Wrap paper into a cylinder and staple or tape shut. Make sure it can stand up.
- 6) Put a small amount of water into a plastic tray. Put your cylinder into the tray.
Be sure that the ink spots are higher than the water!
- 7) Let the water move $\frac{3}{4}$ up the paper filter.
- 8) Remove from the tray and let it dry. Compare to the secret pen sample.



Recording Your Results: (Complete on your own paper)

Make a sketch of the filter paper. (use colored pencils). Label your drawing.

Questions:

- 1) What did your samples look like before you started?
- 2) Explain which person is most likely to have sent the note according to your results.

