

## Laboratory Report 1: Paper Chromatography

Chromatography has many uses, including identifying forgeries. Somebody is selling fake KJ Apa photograph signatures. This Riverdale star exclusively uses a blue marker to sign pictures for fans. You are a group of forensic scientists that will be dividing and conquering to discover what pen the forger is using. Using chromatography and comparing the ink used in the crime to the ink tested allows us to determine the brand of pen used to carry out the crime. Will you be able to solve this catastrophic event??

### Question:

The main question: Is ink in markers a pure substance or a homogenous solution?

Which marker is a match to the forged signature?

### Hypothesis:

*The format of a hypothesis is an if... then... because statement that has no first person language.*

If \_\_\_\_\_,

then \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_.

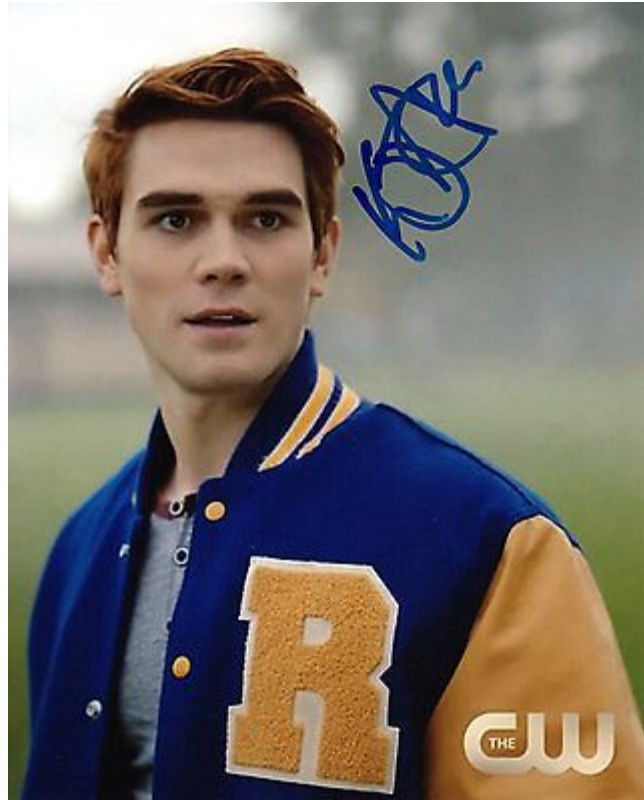
This is because \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### Materials:



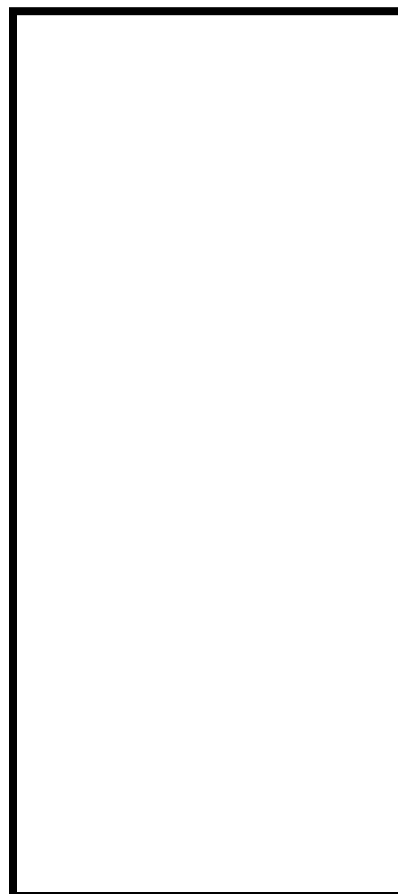
**Procedure:**

1. Obtain your filter paper and place a pencil mark in the centre, 1.5cm from the bottom of the filter paper.
2. Put one large rectangle of your assigned marker ink on top of that pencil mark.
3. Attach the top of your filter paper to the centre of a pencil using a piece of tape that allows the filter paper to touch the bottom of the beaker but not bend.
4. Pour water into the beaker until it is filled 1.0cm from the bottom of the beaker.
5. Place the filter paper in the beaker with the pencil resting at the top. Your ink dot should **NOT** be submerged in the water.
6. The water will soak into the filter paper and travel up. When the water is close to the top of the filter paper, take the paper out and place it on a paper towel to dry.

**Data:**

*Tape your dried chromatography paper next to this text →*

*(only one of you will get the original, refer to the person who has the original chromatogram, rock paper scissors who gets it)*



<b>Time</b>	<b>Observations</b>
0 min	
2 min	
4 min	
6 min	
8 min	
10 min	
12 min	
14 min	
16 min	
18 min	
Final Chromatogram	

1. How many distinct colours do you observe in your final chromatogram? \_\_\_\_\_

2. What might have happened if you used a pen instead of a pencil to mark where your marker ink would go? Would your chromatogram be accurate? Why?

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**Analyzing and Interpreting:**

1. What do your observations indicate about the composition of the ink you chose to test? Is it made of one type of particle or many?

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**Conclusion:**

2. Is this ink a pure substance or a mixture? Why? (use your evidence to support your choice).

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**Extensions:**

*During this lab, did you have any ponderings, wonderings, or the like? Name one question that popped into your head during the course of this lab (related to the subject, not any old silly question. You are allowed to use first person language here and only here in this lab).*

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