

## Ink Chromatography

### Casper Forensic Laboratory: Notebook

Interview with Jaimee: Jaimee denies ever attending Casper Secondary College.

Interview with students in Mrs Tang's English class: Students identified an English book used by a female student who called herself Jaimee.

Evidence logged out for test: Black pen from pencil case in Jaimee's possession (Jaimee's evidence bag). Page from English book (Note: This has been replaced with a strip of filter paper with a black pen mark at one end) (Jaimee's evidence bag)

### Casper Forensic Laboratory Investigation:

Aim: To compare patterns produced by chromatography, in order to identify whether the pen from Jaimee's pencil case was used in the English book left in Mrs Tang's classroom.

### Equipment (in addition to the evidence):

Strips of filter paper or chromatography paper, 2 beakers, solvent (acetone or water), paper towels, a new black pen (one belonging to the forensic scientist)

### Diagram:

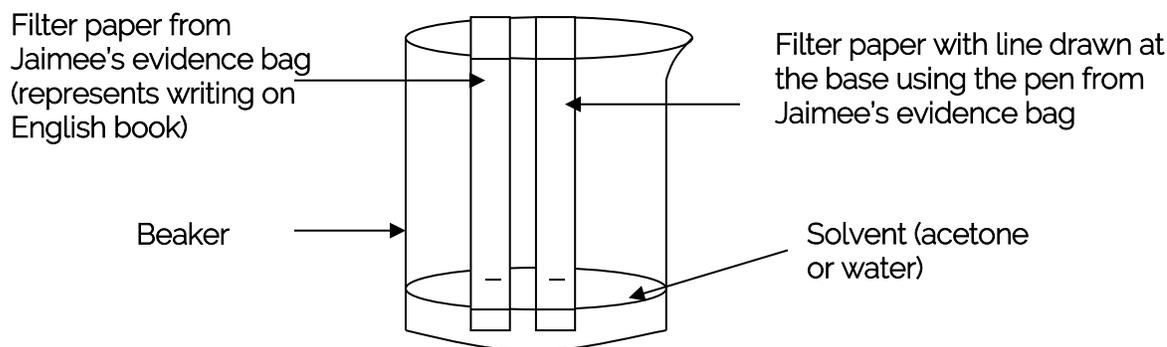


Figure 1: The experimental apparatus for chromatography

### Procedure

1. Set up the equipment illustrated in Figure 1
2. Wait approximately 30 minutes for the ink to separate.
3. Compare the patterns produced by the chromatography.
4. Repeat the chromatography procedure to compare the patterns produced by one of your own black pens, and the pen from Jaimee's evidence bag.
5. Take all the filter paper out and dry it between a couple of paper towels. Glue them to the results section below.

Results

Glue the results of your chromatography here.  
Filter paper from evidence bag (represents writing on English book)

Filter paper with ink from Jaimee's pen

Filter paper with ink from your pen

Analysis of the results

1. Do all black pens produce the same pattern? What evidence do you have to support your conclusion?

2. In your opinion, was the pen from Jaimee's pencil case used in the English book left in Mrs Tang's classroom? What evidence do you have to support your conclusion?

3. Explain how this investigation has increased your understanding of events in Computer Laboratory 4 on the day of the crime.

**Do you need to update your Evidence Summary?**

## Suggested Answers - Ink Chromatography

### Analysis of the results

1. Do all black pens produce the same pattern?  
What evidence do you have to support your conclusion?

*Students should identify that different black pens produce different chromatography patterns.*

*Evidence: Students will compare and describe the chromatography patterns on the filter paper with ink from Jaimee's pen, and the filter paper with ink from their own pen*

2. In your opinion, was the pen from Jaimee's pencil case used in the English book left in Mrs Tang's classroom? What evidence do you have to support your conclusion?

*Students should identify that the pen from Jaimee's pencil case was used in the English book left in Mrs Tang's classroom.*

*Evidence: The similarities in the chromatography patterns.*

3. Explain how this investigation has increased your understanding of events in Computer Laboratory 4 on the day of the crime.

*Idea: Jaimee is the student who attended Mrs Tang's English class at Casper Secondary College and was given the keys to Computer Laboratory 4 on the morning of the crime.*

*Evidence: Students should give a brief description of the experiment and identify that black pens produce different chromatography patterns. Since the chromatography pattern produced by the black pen in Jaimee's possession matches the chromatography pattern produced by the pen used in the English book, they must be the same pen.*