NEATH PORT TALBOT COLLEGE
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School of Maths & Science
Science Practical

Blood Pattern Analysis – Part 1

◆ Aim

At the end of this experiment you should be able to:

1. Produce a calibration curve of blood drops produced from a range of angles.

2. Plot an unknown sample and work out the angle of origin.

♦ Introduction

At the scene of a violent crime, bloodstains may be present. One of the roles of the forensic scientist is to offer expertise in the reconstruction of events leading up to the formation of the bloodstains present. This is known as bloodstain pattern analysis.

◆ Safety

Control Measures
- The wearing of safety **glasses** and **a laboratory coat at** all **times** will be sufficient to take account of most hazards and significant risks
- All waste is to be placed in the labeled container immediately after use
- You are reminded of the need of good laboratory practice in order to maintain a safe   working environment.

Hazards

   No harmful substances

◆ Procedure

1. Working in Groups and using the angle boards and simulated blood, set up the angle board to a 5° angle and tape a piece of clean paper to the board.
2. Collect about 20 ml of synthetic blood into a beaker and fill a pipette with some of the blood.
3. Standing over the angle board, at a measured height, carefully drop three drops of blood onto the board about 2 cm from each other.
4. Immediately draw around the body of the drop and wipe any excess blood away.
5. Change the angle of the board to 10° and continue in the same way.
6. Once you have completed all angles, clean the angle board and area and measure each width and length of each drop.
7. An average of the tree drops at each angle is calculated.
8. Plot the average w/l on the y axis of a graph and plot the Sine (angle) on the x-axis and use the results to create a calibration curve for the bloodstains at angles 5 - 90°.

◆ Results

Angle	Width	Length	Average (w/l)
5			
5			
5			
10			
10			
10			
20			
20			
20			
30			
30			
30			
40			

40			
40			
50			
50			
50			
60			
60			
60			
70			
70			
70			
80			
80			
80			
90			
90			
90			

♦ Conclusions

Once you have plotted a graph, plot the unknown sample that you will be given, and try to find the angle of origin.