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The Science Behind CSI: Blood Drop Patterns And Angle of Impact

The experiment was designed to test the widely held assumption in forensic science indicating that when blood hits a horizontal surface at an angle, it will form a predictable pattern based on the angle at which it hits that surface. The more acute the angle of impact, the more elongated the blood drop will form. To test this theory, simulated blood was dropped from a constant height onto note cards positioned at specified angles as measured with a protractor. An inverse sine function was used to determine the angle of impact from the measured width and length of the individual drops. This experiment worked fairly well and repeats yielded similar results. The mathematical relationship, as stated in numerous forensic books, proved to be sufficiently accurate. The biggest difference (error) between measured and known angle of impact occurred near 90 degrees. It is suspected that this difference is due to the sensitivity of the inverse sine function near values of 1.0 (i.e. inverse sine of 90 degrees).