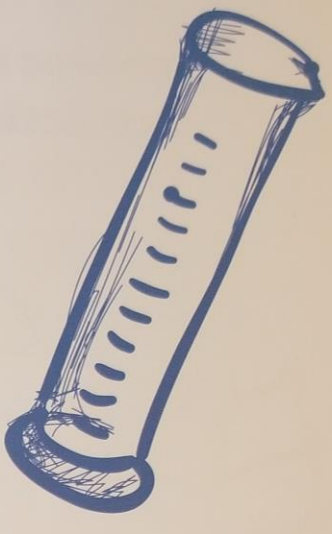
FORENSIC PHYSICS:

Interpreting Blood Spatter



Materials:

2 packets of cherry-, strawberry-, or raspberry-flavored Crystal Light (enough to make 4 quarts)
2 teaspoons boiling water
Paper cup
Straw
Coffee stirrer
White construction paper
Ruler

Procedure:

1. To make fake blood, carefully add 2 teaspoons of boiling water to the paper cup, and then add the Crystal Light.
2. Stir the mixture until the Crystal Light is completely dissolved, and let cool.
3. While the "blood" is cooling, cut white construction paper into 10 pieces (approximately 4 inches by 6 inches each). Take 5 of the pieces and lay them out on a flat surface.
4. Dip a straw into the cooled "blood" and drip one drop onto the first piece of paper from a height of approximately ½ inch. Then drip a drop of the "blood" onto the other 4 pieces of paper from different heights (for example, 1 inch, 6 inches, 12 inches, and 18 inches). How does the size of the drop change as the height is increased?
5. Take another piece of construction paper and, while holding the paper at an angle, use the straw to place a drop of "blood" on the paper. Repeat this for the last 4 pieces of construction paper, but each time hold the paper at a different angle. How does the size of the drop change as the angle of the paper is increased?
6. Lay two large pieces of construction paper side by side on a flat surface and hang another two pieces on the wall directly behind them (a table pushed against a wall works well). Stand about one foot away from the paper and dip a coffee stirrer into the "blood" mixture. With your arm moving across your body, very quickly flick your wrist toward the wall, spraying the "blood" onto the paper. Look at the blood spatter on the paper. The drops should be elongated (teardrop shaped) with the thinner end of the drop pointing in the direction it was traveling. Can you confirm the direction of the blood spatter?

FOR MORE FUN: Do this as a group. Then exchange your cards with others in the group, and try to guess the height and angle each drop came from.