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Experimental Design

***Indentifying the Problem:*** How does the height of the blood being dropped affect the diameter of the blood droplet?

***Hypothesis:*** If the blood is dropped from a high distance, then the diameter of the spattered blood will be large.

***Procedure:***

1. Gather materials: Blood stain, pipet, paper, six-inch ruler, graphing paper, rod clamp, and height rod.
2. Place rod clamp on the height rod. Be sure to tighten the clamp securely because if the clamp is loose, then the results may be inaccurate. Also, a glass pipet, might break and cause injuries to operator if the clamp was to inefficiently drop the clamp. Therefore, the operator should wear goggles.
3. Absorb blood in the pipet. Make sure to collect the same amount of blood each trial, this is to assure the experimenter to claim accurate results.
4. Place pipet in the clamp. Make sure to place the pipet in the clamp securely.
5. Adjust clamp to where the pipet is touching the paper. By doing this, the experimenter is creating a control group. Adjust the clamp higher each trial. Try to increase clamp height at a constant height throughout the experiment.
6. Quickly and lightly squeeze blood on the paper (one drop each). Make sure the amount of blood being dropped is constant at every level.
7. Measure diameter of blood spot. Do not allow ruler or measuring device to touch the blood splatter. If the ruler contacts then blood, being a liquid, the stain will expand.
8. Record results and change height each trial. Make sure to include the height in which the blood was dropped and diameter of blood spot.

***Note the Control Group****: The controlled is the height of the dropper being at zero height (dropper touching paper) This has a positive effect on the experiment as a whole for it allows the conductor to have a starting point in which to base or compare the rest of the data to.*

***Observations:*** While conducting the experiment, only one drop was dropped at each level of height. This is to make sure the data is persistent throughout the experiment. Also, the time from which the blood was released from the tube until it made contact with the paper seemed to slightly increase as the clamp/pipet was adjusted higher. The dot of blood and the size of its splatter ring increased, as well, when the height from which the blood was dropped increased.

***Data:*** *Graph is on separate piece of paper.*

***Conclusion:*** The hypothesis stated above was supported by the data in this experiment. The independent variable of this experiment was certainly the height of which the blood was being dropped. This is the independent variable because it is the variable being changed (manipulated) by the conductor and has affect on the size of the blood spot. Thus, making the size of the blood spot on the paper the dependent variable. Although the desired hypothesis was supported, there were two main possible sources of error. In this particular experiment, the amount of blood being dropped was not measured in an accurate manor. This might have negatively influenced the results a great deal for the more blood being dropped, the bigger the splatter on the paper could be. Also, the height rod did not have measurement markings on the rod itself. Thus, making it unclear to if the height of the dropper is steadily being increased. In a broad perspective, the goal of this experiment was achieved.