Lab Report

Name	Block ☐☐☐☐ 1 2 3 4	Date

Assignment Title: **Lab 7: The Force Exerted by a Motor**

Steps of the Scientific Method

1. State the Problem	How does the arrangement of batteries affect the force exerted by a motor?	
2. Hypothesis	Independent Variable ⇨ _____	**IF** _____, **THEN** _____ _____.
	Dependent Variable ⇨ _____	

3. Experiment

Control	Materials
Using 1 battery to power the motor.	1 electric motor with wire leads and alligator clips, 2 insulated connector wires, 1 knife switch, 3 D-cell batteries, 3 D-cell battery holders, 1 large paperclip, 8 washers, string

Procedures (list steps)

1. Attach string with tape to the motor pulley	6. Turn on knife switch
2. Attach paper clip to the end of the string	7. Allow washer to be lifted all the way up to the motor pulley
3. Set up battery arrangement to be tested	8. If washer is lifted all the way up, then add 1 additional washer.
4. Make sure that all wires are connected correctly	9. When no more washers can be successfully lifted, stop and record # of washers that was lifted.
5. Add one washer to the paper clip with a rubber band	10. Repeat process with other battery arrangements

4. Record and Analyze

Battery Arrangement	# of Washers Lifted by Motor
1 Battery	
2 Batteries in Series (2-Series)	
3 Batteries in Series (3-Series)	
2 Batteries in Parallel (2-Parallel)	
3 Batteries in Parallel (3-Parallel)	

* How much force is needed for the battery arrangement that can lift the most washers? _____

5. Conclusion

Did your data support or refute your hypothesis?	
What would you do to improve the experiment in the future?	
What did you learn about this topic?