



Frozen Pucks

Student Lab Packet

Name: _____ Date: _____

Does Temperature Affect The Motion of A Hockey Puck?

Purpose: In this experiment I will be measuring _____
by _____.

Procedure:

1. Gather your materials with your partner. You will need three pucks (one of each type-frozen, room temperature, and warm).
2. Assign one partner to drop the puck and one partner to record how high the puck rebounds.
3. In order to ensure accurate results, review the following measuring tips:
 - a. Before dropping the puck, make sure the **bottom** of the puck is at the very top of the meter stick.
 - b. To make sure each puck starts out with the same initial speed, gently release the puck and allow it to fall on its own.
 - c. Measure the highest height reached by the **bottom** of the puck on the meter stick.
4. Record the height of the bounce for each temperature puck and record the data in your data charts. Repeat each drop for each puck three times to increase the accuracy of your results.



Create Your Hypothesis:


If the hockey puck is _____(temperature type), then it will rebound the highest because _____

Data Collection:

My Partner's Name: _____

<i>Frozen Puck</i>	<i>Measurement of Puck's Rebound Bounce</i>
Drop 1	
Drop 2	
Drop 3	
Average of 3 drops	

<i>Room Temperature Puck</i>	<i>Measurement of Puck's Rebound Bounce</i>
Drop 1	
Drop 2	
Drop 3	
Average of 3 drops	




<i>Warm Puck</i>	<i>Measurement of Puck's Rebound Bounce</i>
Drop 1	
Drop 2	
Drop 3	
Average of 3 drops	

Data Analysis:

1) Which temperature puck's rebound was the highest? Which had the lowest bounce?

2) Did the data support or reject your hypothesis? How can you tell?



3) Explain the relationship between temperature and elasticity of a hockey puck in your own words.

4) What did we do well in this experiment? Why do you believe that your results are accurate?

5) What do we need to do better next time? What could have made the experiment more accurate? Was there anything that made you think the results were not accurate?



Conclusion:

How would a hockey game be different if the hockey puck wasn't frozen? Use evidence from the lab to support your answer.

Above and Beyond: Additional Questions

1. What other factors (besides elasticity) do you think affect the bounce of a hockey puck? Why? What would happen if you bounced the puck on a carpeted floor or on a grassy lawn?
2. Do you think the same thing happens to all sports balls made of rubber? For instance, would the rebound bounce of a tennis ball change depending on the temperature? Explain your reasoning.
3. Do you think temperature affects anything else about a hockey puck? For instance how far a puck travels on ice? Support your reasoning with scientific evidence.