



Science Fair

By Aiden

Dec 7, 2023

Today the teacher introduced science fair and we needed to look for different projects

Some of my Project Ideas:

How does exercise affect the heartrate?

How does playing video games affect hand eye coordination?

Which brand of breath mints last the longest?

Does the time of day affect your flexibility?

How does the type of stuffing in a pillow affect it's fluffiness?

Dec 8, 2023

Today was the day that I came up with my idea that I was going to test. I decided to do “Does the temperature of a hockey puck effect how to it will glide?” which I will be doing with a room temp puck, a cold puck and a hot puck. I also started with my research using the internet.

I decided that I was going to do this project because I heard that the NHL freezes their pucks to make them go faster on the ice. I play hockey and I noticed that sometimes when I shoot or pass the puck it always feels like some glide farther than others. I was curious to test for myself to see if the temperature of a puck really makes a difference with how far they glide.

Dec 12

Today I did a bit of research. My research questions were:

What is a hockey puck?

A hockey puck is something that hockey players use to shoot and score a goal. Hockey pucks are flat, solid, black disk-shaped objects made from vulcanized rubber.

<https://www.encyclopedia.com/manufacturing/news-wires-white-papers-and-books/hockey-puck>

What is a hockey puck made out of?

The first hockey puck was made out of wood. Newer hockey pucks are made out of rubber that is vulcanized - a process that heats and hardens rubber into the small disk. They are made that way so it won't hurt the players when they block a shot but also so they can get a good shot off.

<https://www.purehockey.com/c/what-is-a-hockey-puck-made-of>

Dec 12

How heavy is a hockey puck?

A hockey puck weighs about 6 ounces and that's pretty light. It also can depend on how often the hockey puck is being used since it can be chipped or has some snow on it.

<https://www.freshgear.com/hockey-faqs/how-much-does-a-nhl-hockey-puck-weigh/>

Dec 14

Today I did a bit of more research

Does the NHL freeze their hockey pucks?

The NHL uses frozen hockey pucks for all its games, so the pucks aren't too bouncy. The pucks are kept in a freezer in the penalty box at a temperature between -10 and -6.7 degrees Celsius to ensure they are frozen before they are put into play.

https://knowledgestew.com/hockey-pucks-frozen-nhl/?expand_article=1

This got me thinking about if I could email someone in the NHL to find out more about why they freeze the pucks.

Dec 15

Today I did a bit of more research

Why are hockey pucks flat?

A hockey puck is flat because it glides down the ice better. Initially, the hockey puck was a ball but it didn't glide as well.

<https://www.quora.com/Why-are-hockey-pucks-the-way-they-are>

Why Do hockey pucks glide?

A hockey puck glides because it is flat. A hockey puck slides across the ice and eventually comes to a stop because of friction between the surface of the puck and the surface of the ice.

<https://brainly.com/question/20793317>

Dec 15

How do hockey pucks glide so well?

A hockey puck glides so well because there is a thin layer of water on the surface. The thin water has molecules that move around freely. The water and molecules that move around freely make a much more slippery surface.

What is friction?

Friction is a force that is the motion of two contact areas. When they contact each other they create friction which is what we use to make the puck slide because friction is two objects connecting together.

<https://byjus.com/question-answer/what-is-friction/>

Dec 16

Today we learned about how to write a hypothesis using an If/Then statement. I came up with my hypothesis based on my research:

If the hockey puck is cold, then it will glide farther than a warmer puck because it will create less friction with the ice.

Dec 18, 2023

I decided the title for my project would be “Gliden’ Down”

We learned about variables in class. That there is a control variable which stays the same and independent and dependent variables. The independent variable is the one that changes and the dependent variable is the outcome of what happens.

Controlled variables

- ice surface
- Distance the slingshot was pulled back
- Thermometer
- Measuring tape
- Brand and weight of pucks
- Transportation method

Independent variable

- temperature of the puck

Dependent variable

- Distance travelled of each puck

Dec 19, 2023

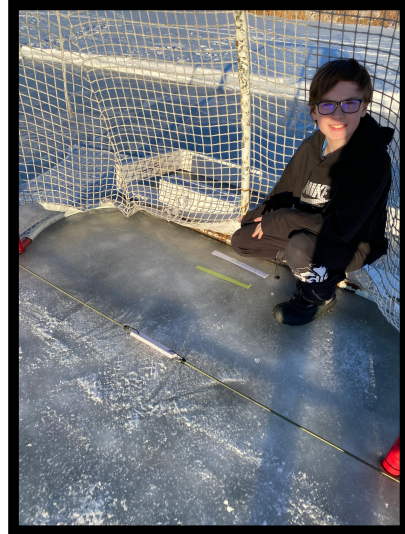
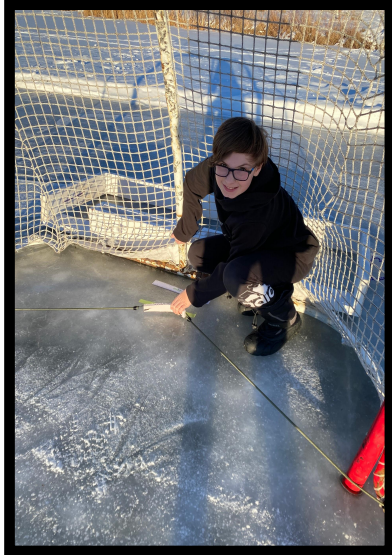
Today we learned about materials and how to write the procedure.

Dec 22 - Jan 9

I used the Winter break to go out and buy my tri-fold and collect all the materials that I would need.

Jan 18

Today was the day that i did all of my testing. I did 5 trials and here are some results. in total the puck that went the farthest in all 5 of the trials is the cold puck

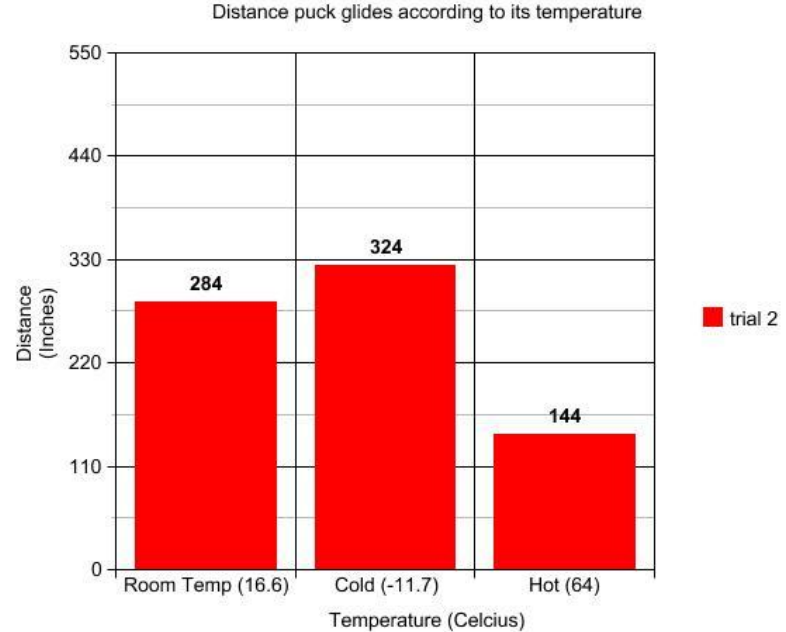
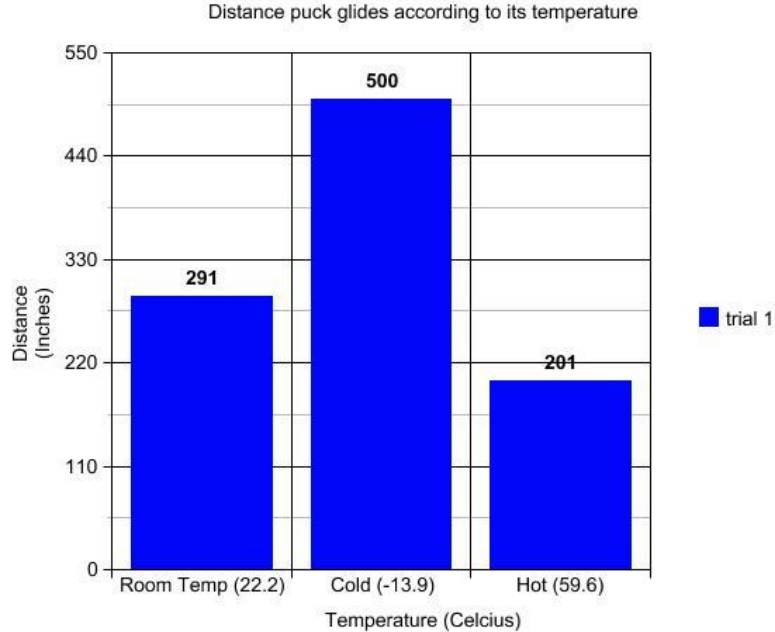


Jan 18



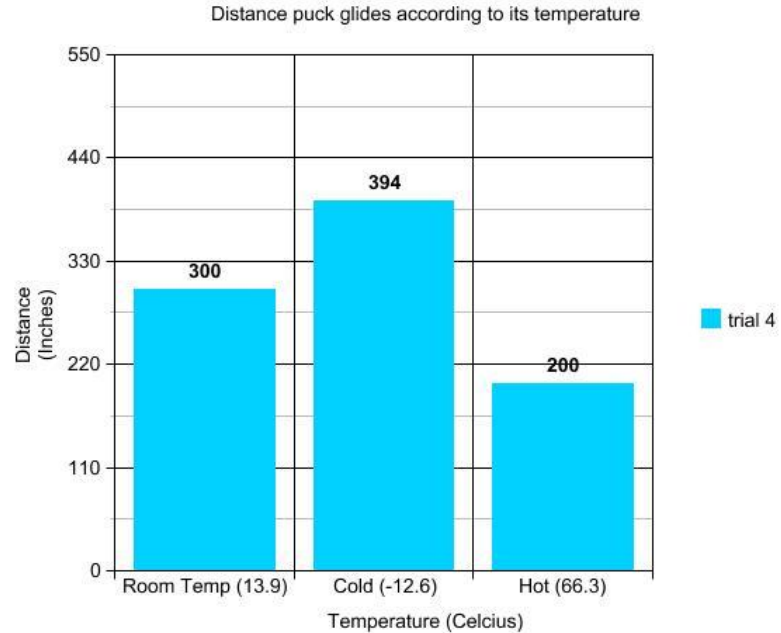
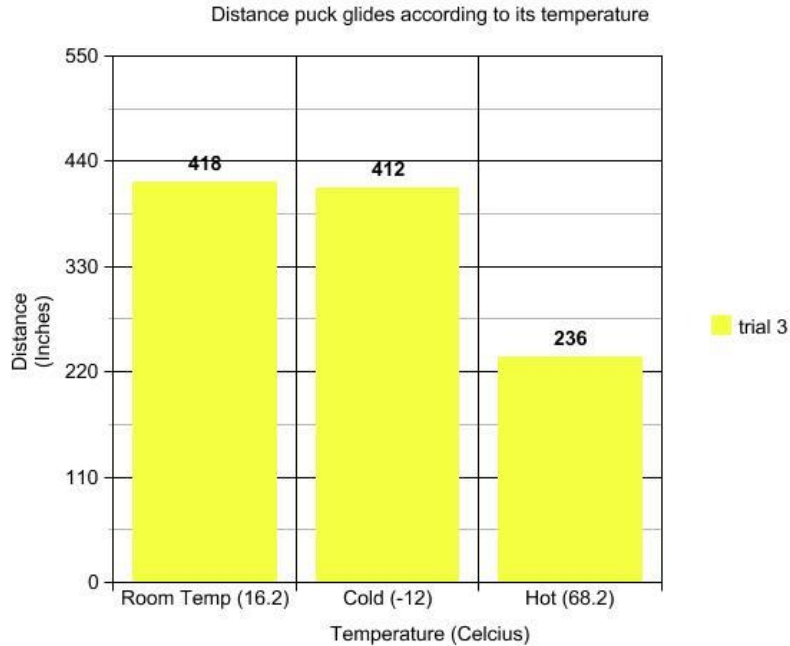
Jan 22

Today I worked on making graphs from my observations.



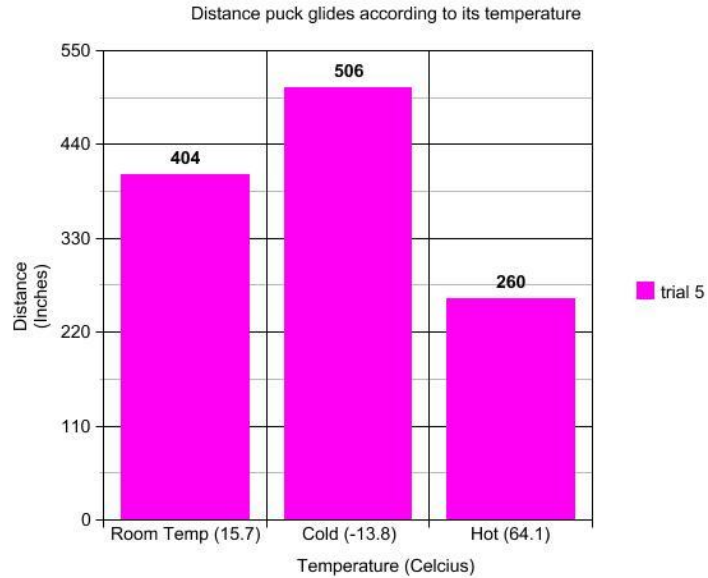
Jan 22

Today I worked on making graphs from my observations.



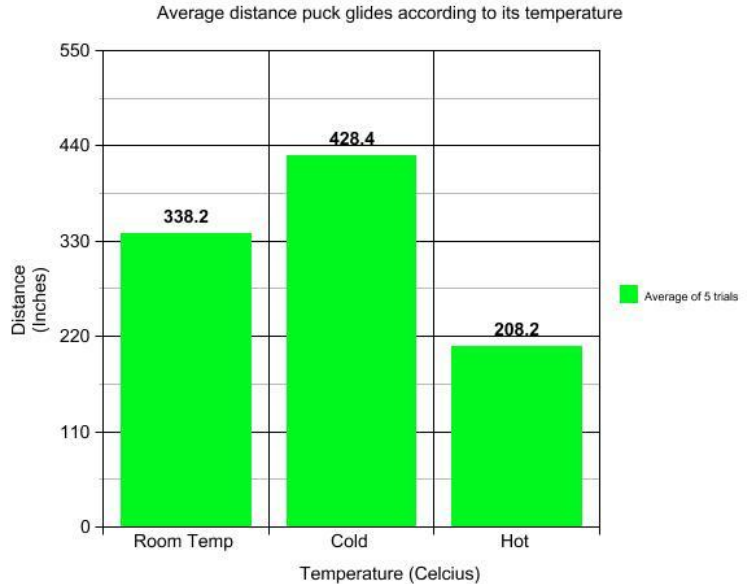
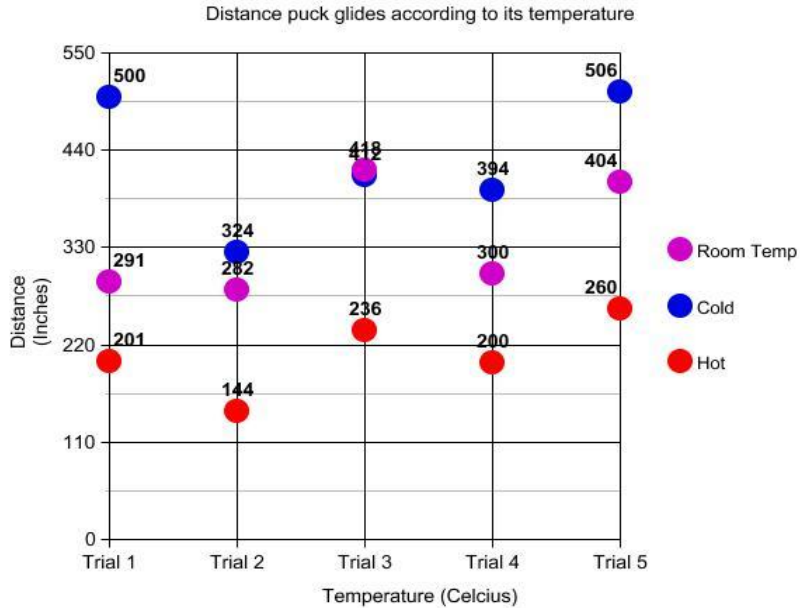
Jan 22

Today I worked on making graphs from my observations.



Jan 23

Today I worked on making graphs from my observations.



Feb 1, 2024

I have emailed 3 former NHL players who will hopefully respond. The 3 former players are matt stajan, curtis glencross and troy brauer who all played for the calgary flames in the 2010s.

Subject: Re: temperature of hockey pucks

Thanks!!

I didn't know that freezing a puck affects how it bounces also.

Thanks this really helped,Aiden

On Thu, Feb 1, 2024 at 3:57 PM Matthew Stajan <matthewstajan@gmail.com> wrote:

Hi Aiden

You are correct. The NHL and most professional leagues will freeze the pucks for games. Even junior hockey will use frozen pucks for games. In the NHL we even used frozen pucks for practice. A bucket of pucks would be placed in a freezer every night until we practiced.

The pucks are frozen for games by simply being left in a freezer. At game time they will transport a bunch of pucks to the penalty box area and have them sit in a cooler, that is filled with ice and snow. If a puck is shot into the crowd, a new puck will be given to the refs from that cooler in the penalty box/time keeper area.

A frozen puck will slide/glide way better on the ice. It would also not bounce as much. It actually makes quite the difference in how the puck feels when you handle and stick handle it.

If i were to stick handle or pass a frozen puck, it would be way more crisp compared to a room temperature puck. The room temperature puck would be more bouncy and be on edge more than a frozen puck.

Hope this helps. Let me know if you have anymore questions.

Matt

To: Aiden Girard <aidengirard@rvschools.ab.ca>

To answer your question,

Yes I do think it makes a big difference. The puck slides much better on the ice being a colder temperature, rather than them trying to melt the ice if it was warmer. It also helps with how much the puck bounces. With pucks being rubber they bounce much more at a warmer temperature.

Hope this helps and let me know if you have any further questions.

Troy

Sent from my iPhone

On Feb 1, 2024, at 7:02 PM, Aiden Girard <aidengirard@rvschools.ab.ca> wrote:

Hi coach,an email would be great when you get a chance.Do you think the NHL's decision to freeze pucks is good and do you think it makes a difference as a player?

Thanks,
Aiden

On Thu, Feb 1, 2024 at 5:10 PM Troy Brouwer <troybrouwer36@gmail.com> wrote:

Hey Aiden, of course I could my thoughts on it. Would you like me to send it to you in an email or on the phone?

Let me know.
Troy.

Sent from my iPhone

> On Feb 1, 2024, at 3:21 PM, Aiden Girard <aidengirard@rvschools.ab.ca> wrote:

>

All 3 of them responded and my research is talking about how a cold puck will glide farther and they all said that they like a cold puck because it glides better but we will have to see.i did my variables later that day to.

Feb 4, 2023

I did my application and what i learnt in this project today and i got my trifold.im going to start thinking how i want it tonight.

Feb 5-6

Today i printed the stuff out and started glueing on my trifold.I am doing a similar layout to what i did last year.

I got my trifold figured out how I want I want the layout,i'm going to go with some hockey pucks for the title,red border and a hockey theme background.

Feb 7, 2023

Today was the day that i finished glueing everything on my trifold I stuck with the hockey pucks for the title and a few others,red border and ice hockey theme background.

I practiced presenting at school and at home to prepare for the school science fair