

What makes the best ice-skates?

A Friction Experiment



Name: _____

"Ice-Skating" a Friction Experiment

Question: What makes the best indoor ice-skates?

Purpose: What do you want to find out?

Materials: What materials will I use?

1. _____

2. _____

3. _____

4. _____

5. _____

Procedures: What are the steps in my experiment?

1. _____

2. _____

3. _____

4. _____

5. _____

Hypothesis: What I think the result will be.

Results: Analyze the data. What did the data show?

Conclusion: What did I learn from this experiment.

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What makes the best ice-skates? A Friction Experiment

I would like to share a lesson with you that I did every year during the winter season when I was a classroom teacher. Although I did this lesson with younger students, it can be done with students in Pre-K-5th grade.

I began the lesson by telling students that we would be "ice-skating" in the classroom. That always got their attention. After laying some ground rules we began to experiment and learn about friction.

I gave them different items to use as "ice-skates" and had them skate around the room in the area I had designated. For "ice-skates" I used: magazine pages, waxed paper, left-over laminating film and sometimes thin paper plates.

We would try out each set of "ice-skates" for just a couple of minutes. I always did it with them because it is so fun!



waxed paper



laminating film



magazine pages

After trying out each pair of "ice-skates," we created a class graph showing which material they felt made the best "ice-skates".



Using the data from the graph, we talked about more, less, and equal. It also led to conversations about why they felt one material was better sliding vs. another. If you use science journals in your class, they can write about the experiment and discuss friction.

Ideas for extending the lesson:

- Brainstorm other "ice-skating" materials
- Other ways to display the results
- What surface would work better than carpet? Why?
- Lessons on Friction
- Writing about Ice-skating

I love this lesson because it allowed me to incorporate multiple disciplines: science, writing and math. What also made this lesson a success was that it required them all to get up and move and have fun.

The next few pages can be used to conduct this experiment using the scientific method. There are two different levels: one for K-2 and one for 3-5.

Name: _____

What makes the best ice-skates?

List the three materials you will use to ice-skate:

1. _____
2. _____
3. _____



My Hypothesis:

What material do you think will slide best when worn as ice-skates? Why?

Results:

Based on the data collected for this experiment, explain your results.

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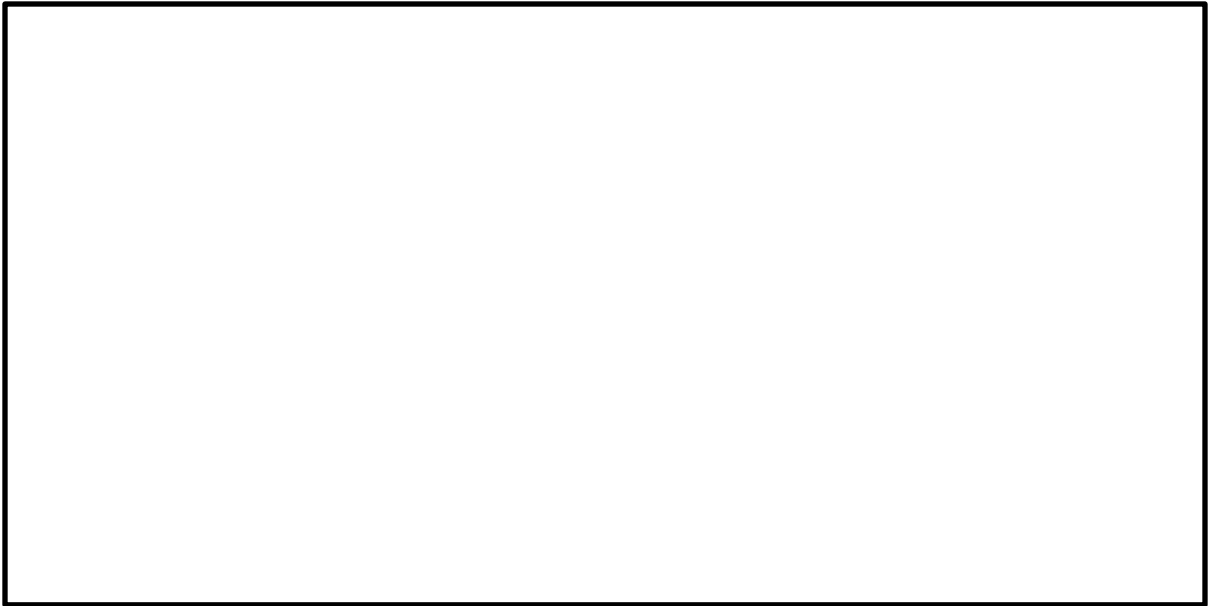
1. _____
2. _____
3. _____
4. _____
5. _____

Procedures: What are the steps in my experiment?

1. _____
2. _____
3. _____
4. _____
5. _____

Hypothesis: What I think the result will be.

Data: Draw a horizontal bar graph in the space below to show the results.



Results: Analyze the data. What did the data show?

Conclusion: What did I learn from this experiment.

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- Nancy

