

## AGENDA

- Friction
- Investigation Discussion

## Exit Goal

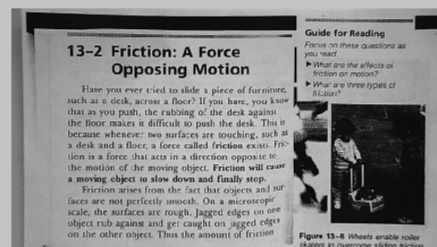
Complete the friction questions and investigation discussion.

*You measured the force required to move a wooden block over various surfaces.*

- How this was related to friction? Why was this called your Friction Investigation?
- What did it show you about friction?

Read p.326 on Friction

Then answer the 3 section review questions.



(this is for your discussion of results)

Learning target: I can prepare a written report of my friction investigation.

## Read p.326 on Friction

As you read think about how friction affects motion and the different types of friction.

Then answer the 3 section review questions.



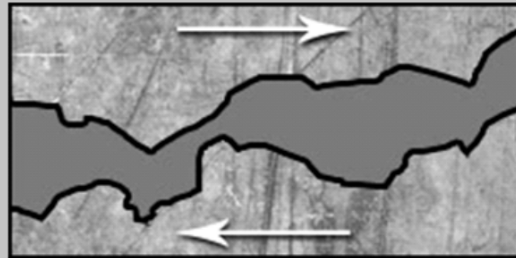
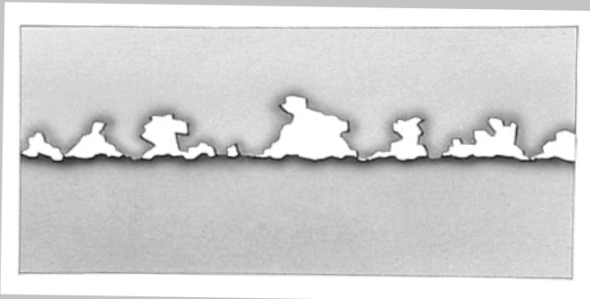
Figure 1

Learning target: I can prepare a written report of my friction investigation.



Figure 1

Friction: A force that acts on surfaces in contact to resist movement



Learning target: I can prepare a written report of my friction investigation.

Does a rough surface always have more friction than a smooth surface?

## Force and the winter olympics



[http://www.nsf.gov/news/special\\_reports/olympics/](http://www.nsf.gov/news/special_reports/olympics/)

Learning target: I can prepare a written report of my friction investigation.

## Finishing the Investigation Write up

Tomorrow you have a final lab day to finish writing the investigation:

A Complete write up includes;

- Question
- hypothesis
- variables
- materials
- Diagram
- Procedures
- Data Table
- Graph
- Conclusion
- Discussion of Results

IN THIS ORDER!

Learning target: I can prepare a written report of my friction investigation.

**Graph** Make a bar graph to show your results.

**Conclusion/Results**



Figure 1

**A** Answer the investigation question and say if your hypothesis was correct/incorrect.

**P** Provide supporting high data

**P** provide supporting low data

**S** say how this data supports your conclusion. ( the block needed \_\_\_\_\_N more force to move on the \_\_\_\_\_ than the \_\_\_\_\_ )

Learning target: I can prepare a written report of my friction investigation.

### Discussion

1. Why do you think you got the results you did? Use your background experience and knowledge of science to explain the reason for the differences in your data.
2. Report any variables not controlled and how they might have affected your results.
3. What would you do differently next time to make your investigation more valid and your data more reliable?



Figure 1

Learning target: I can prepare a written report of my friction investigation.

Friction Review

Learning I can prepare a written report of my friction investigation.  
target:



### **Quick Write:**

Force is required to start an object moving.  
Do objects always move when force is exerted on them? Give evidence for your answer.



Figure 1

Sketch the image and force arrows. Draw an arrow showing the final movement direction and force.



**Net Force:** The sum of all forces acting on an object.

~Forces acting in the same direction add together

~Forces acting in opposite directions subtract

Motion is caused by unbalanced forces!

**Why is this mug able to stay at rest on the table?**



