

# Fun With Friction

Name  
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Name

Rub your Hands together.

Really Fast now!!!  
What Happened?

Do you feel Heat?

Yes/ No

That heat is caused by FRICTION!!!

Friction is the force you must overcome to push things.  
When you rub your hands together you overcome friction  
and then the energy becomes heat.

Scientists try to make friction less by using LUBRICANTS.  
These make surfaces have less grip to them.

Rub your hands on the desk. Keep doing this until your  
hand gets warm.

Did it take as long for you hand to get warm?

Yes/ No

It took less time for your hands to warm up because the desk had less grip to it than your hands.

We will look at a very important property of your form of carbon. Your form of carbon can be used as a lubricant.

Before you is the friction display. Right now just pull the box of sand across pan. What did the spring scale read?

Now place the balls in the pan. Place the small box of sand on top of the balls. Pull the box across the pan again. What did the spring scale read this time?

Which time was their less friction?

Why do you think this happened? Why was their less friction? Did it have something to do with lubricants?

Your form of carbon is shaped like the balls. What form do you have?

If you have some time before the other groups are ready to start their posters, you can do some other experiments.

First lets try with diamond.

Take the sand paper and place it on the bottom of the large pan. Sand and diamond both have the same type of structure so it's a good representation of what diamond would be like. Now, pull the box across the pan.

What did the scale read?

Do you think diamond is a good lubricator?

If you have more time, experiment with nanotubes. Take a lot of the nanotube pencils and line the bottom of the pan. Now, repeat the experiment with the pencils?

What did the scale read?

Do you think nanotubes are a good lubricator?