

## Friction Notes

What is Friction?

\_\_\_\_\_ is the force that \_\_\_\_\_ the \_\_\_\_\_ between two \_\_\_\_\_ that \_\_\_\_\_. Put another way, it is resistance to movement that is caused by two surfaces sticking together.

The \_\_\_\_\_ of any object is \_\_\_\_\_.

Even an object that feels \_\_\_\_\_ is covered with tiny \_\_\_\_\_ and \_\_\_\_\_.

The \_\_\_\_\_ between the hills of valleys of two surfaces causes them to \_\_\_\_\_, resulting in friction.

What Causes Friction?

The \_\_\_\_\_ depends on:

- \_\_\_\_\_ of the surfaces - The texture of a surface may be \_\_\_\_\_.

- \_\_\_\_\_ pushing the surfaces together- Gravity is pulling \_\_\_\_\_.

Types of Friction

\_\_\_\_\_ friction occurs when force \_\_\_\_\_ to an object is \_\_\_\_\_ to cause the object to \_\_\_\_\_.

Kinetic Friction:

Sliding Friction: resistance of an object being \_\_\_\_\_

Rolling Friction: resistance of \_\_\_\_\_

Fluid Friction: opposes the motion of objects \_\_\_\_\_

Factors Affecting Friction

Friction increases as surfaces are made \_\_\_\_\_.

Friction increases when the \_\_\_\_\_ between two objects is \_\_\_\_\_.

-This can be the \_\_\_\_\_ of an object, or an \_\_\_\_\_ force.

To \_\_\_\_\_ the amount of friction, apply a \_\_\_\_\_ between two surfaces.

\_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_ are examples.

Friction can also be reduced by \_\_\_\_\_, rather than \_\_\_\_\_, an object.

When you \_\_\_\_\_ to move an object, much of your \_\_\_\_\_ is \_\_\_\_\_ pushing two *surfaces* along one another, but that energy \_\_\_\_\_.

The \_\_\_\_\_ states that it can't be created or destroyed. Friction converts useful \_\_\_\_\_ into \_\_\_\_\_, or heat.

Quick Review:

1. The weight of an 100 N object is holding it still. How much force would you have to exert on it to overcome its static friction?

\_\_\_\_\_  
\_\_\_\_\_

2. Which creates less friction: rolling a large bolder, or pushing it?

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3. Which will cause more friction: dress shoes or tennis shoes?

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4. Explain why your hands get hot when you rub them together.

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5. Tile saws pump a jet of water over the blade while it is in motion.  
Why do you think that they were designed this way.

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