

**Friction: Roller Boxes**  
**Inquiry: Station Six**  
**Unit: Force and Motion**

Using the following materials and time allotted at this station, investigate the following problem:

**Can you reduce friction?**

**Materials:**

- different amount of weights
- shoe box with rubber band attached to one side
- dowel rods
- spring scale
- different materials such as: wool, silk, aluminum foil, sand, etc.

**First, think about the following definitions:**

Friction is a force which tends to stop objects sliding past each other.

Force is something that pushes or pulls an object in a particular direction.

**Procedure:**

1. Using the spring scale, measure the force applied to the spring scale just before the box actually moves. Create a table to record the amount of force needed to overcome friction.
2. Place different amounts of weight in the box. Measure how far the rubber band just before the box moves. Record your data.
3. Place the dowel rods under the box. Repeat the procedure for #2.
4. Select one size weight. Put inside the box. Put the different materials under the box. Measure how far the rubber band stretches just before the box moves. Record your data.

**Data Chart:**

	Rubber Band Measurement
Roller Box	
Empty Box	
Box with Weight One	
Box with Weight Two	
Box with Weight Three	

Data Chart:

Roller Box with Weight	Rubber Band Measurement
On wool	
On silk	
On aluminum foil	
On sand	

What did you discover about friction?  
I learned that

Can the amount of friction be reduced? Explain using your data and observations.  
Friction can / cannot be reduced because

Complete this statement:  
If I were to change one thing I tried during this exploration it would be...

**Friction: Roller Boxes**  
**Inquiry: Station Six**  
**Unit: Force and Motion**

Using the following materials and time allotted at this station, investigate the following problem:

**Can you reduce friction?**

**Materials:**

- different amount of weights
- shoe box with rubber band attached to one side
- dowel rods
- spring scale or ruler
- different materials such as: wool, silk, aluminum foil, sand, etc.

**First, think about the following definitions:**

Friction is a force which tends to stop objects sliding past each other.

Force is something that pushes or pulls an object in a particular direction.

**Procedure:**

1. Using the spring scale, measure the force applied to the spring scale just before the box actually moves. Create a table to record the amount of force needed to overcome friction.
2. Place different amounts of weight in the box. Measure how far the rubber band just before the box moves. Record your data.
3. Place the dowel rods under the box. Repeat the procedure for #2.
4. Select one size weight. Put inside the box. Put the different materials under the box. Measure how far the rubber band stretches just before the box moves. Record your data.

**What did you discover about friction? Can the amount of friction be reduced? Explain using your data and observations.**

**Complete the following statement:**

**If I were to change one thing I tried during this exploration it would be...**

**Friction: Roller Boxes**  
**Inquiry: Station Six**  
**Unit: Force and Motion**

**Using the materials provided and time allotted at this station, investigate the following problem:**

**Can you reduce friction?**

**First, think about the following definitions:**

Friction is a force which tends to stop objects sliding past each other.

Force is something that pushes or pulls an object in a particular direction.

**Remember to record your procedure and collect data in an organized table. Write a conclusion statement which answers the test question based on your observations and data collected.**

**Complete the following statement:**

**If I were to change one thing I tried during this exploration it would be...**