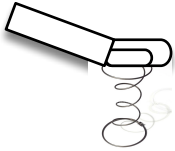
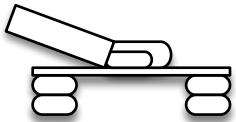
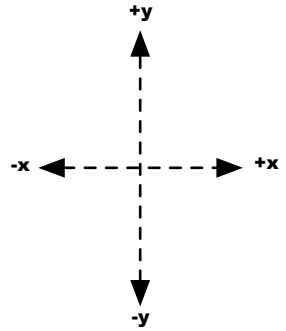


Normal Force (F_n) Investigation



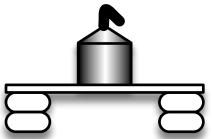
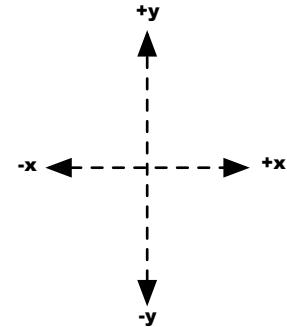
1. Push down on the spring with your hand. What happens to the length of the spring? Do you feel it pushing back?

Put your force and the spring's force on the diagram. Do they have to be equal? (Can your hand change speed?)



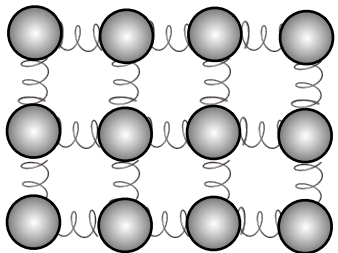
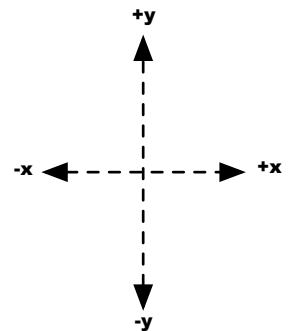
2. Push down on the ruler with your hand. Is it a little springy like the spring? Do you feel it pushing back?

Put your force and the spring's force on the diagram. Do they have to be equal?



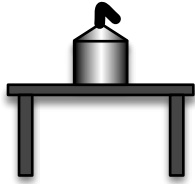
3. Place the kilogram on the ruler. Did the ruler sag downward? Do you think it's pushing back?

Put the weight of the kilogram and the spring's force on the diagram. Do they have to be equal? What if you were to drop the kilogram on the ruler from a height (Don't do it!!)



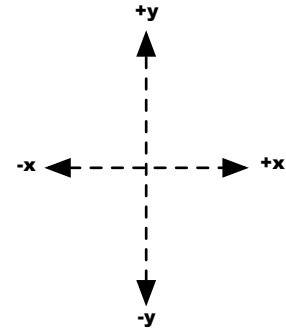
4. The molecules in solid objects have bonds between them that are springy.

Is it possible that a push on a solid object could compress it a tiny bit?



5. Put the kilogram on the table. Does the table push back? How hard? Is it possible that the table is sagging a tiny bit?

Put the weight of the kilogram and the table's Normal force on the diagram.



6. Think of an everyday example where Normal Force and Weight are not equal.
Think of an everyday example where Normal Force and Weight are equal.

7. Right now, you are at rest in your seat and staying at rest. How do you think the force of your weight compares to the force of the seat pushing back?

8. Make an order of magnitude estimate in Newtons (10s, 100s, 1,000s, 10,000s, etc) of the total Normal Force the floor in this room is providing.