Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 5 Notes

Interactions produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Interaction**: (def)

* + For example-Consider a hammer striking a nail.
    - The hammer imparts a force on the nail, driving it into the wood.
    - The nail imparts a force on the hammer, stopping the motion of the hammer.
    - The forces are equal

**Newton’s Third Law**:

Or

Identifying Action/Reaction Pairs:

* Simple recipe for treating forces
  + Object A exerts a force on object B
  + Object B exerts a force on object A
    - Car exerts a force on tree
    - Tree exerts an equal but opposite force on the car

Example of Newton’s Third Law

* When a rifle is fired, there is an interaction between the rifle and the bullet. The force the rifle exerts on the bullet is equal to the force of the bullet on the rifle. Suppose the rifle has a mass of 10 kg, the bullet 10 grams (.010 kg). If the bullet accelerates at 1000 m/s/s, what is the acceleration of the rifle?
* Answer